INFLATION Report

September 2012*

* Presented by the technical staff to the Board of Directors, for the Board meeting on October 26, 2012.

Central Bank of Colombia
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 long-term growth in output. Accordingly, the objectives of monetary policy combine the goal of price stability with maximum sustainable growth in output and employment. In this respect, monetary policy complies with the constitution and contributes to the well being of the Colombian population.

HORIZON AND IMPLEMENTATION

The Board of Directors of the Central Bank of Colombia (BDBR) sets quantitative inflation targets for the current year and the next. BDBR policy initiatives are designed to meet each year's target and to provide for long-term inflation at around 3%. The annual variation in the consumer price index (CPI) is the inflation measurement used.

THE DECISION-MAKING PROCESS

Decisions on monetary policy are announced after meetings of the Board of Directors, through a press bulletin posted immediately on the Bank's website (www.banrep.gov.co). Inflation reports are published quarterly and lend transparency to the Board's decisions. They also contribute to a better understanding of monetary policy and help to enhance its credibility. Specifically, these reports i) let the public know how the Board of Directors and the Technical Governor of the Bank view recent and anticipated changes in inflation and its short and mid-term determinants; ii) explain the implications of those determinants for monetary-policy management within the scope of inflation targeting; iii) describe the context and analysis justifying monetary-policy decisions made during the quarter; and iv) provide information that helps economic agents to form their own expectations about future developments with respect to inflation and growth in output.

COMMUNICATION AND TRANSPARENCY

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Overview

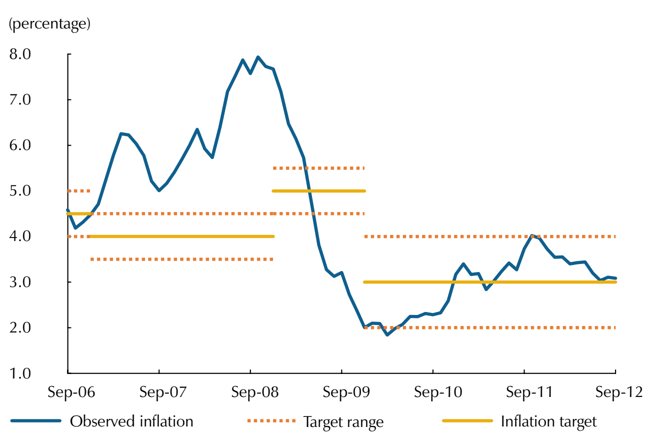
In September 2012 annual change in the consumer price index (CPI), core inflation measures, expectations at different horizons and inflation forecast for December stood around the mid-point of the target range (3%).

At the end of the third quarter annual inflation stood at 3.08%, down by 12 basis points (bp) on June (Graph A), thanks to slower year-on-year growth in food CPI: 3.63% in September, down from 4.22% in June.

Non-food CPI and the other three measures of core inflation expanded year on year in the third quarter, at an overall average rate of 3.16%, up by 14bp on June.

The tradables component of non-food CPI remained relatively stable in the third quarter, rising year-on-year by 1.09% in September. Over the same period, non-tradables accelerated from 3.62% to 4.02%, owing notably to rental CPI, which continued on the uptrend that started more than a year before, reaching an annual rate close to the target-range ceiling. The price rise in regulated goods and services was 3.63% in September, making this the only group that lost pace in the third quarter (-61bp), because of lower increases in energy and gas. One-year-ahead inflation expectations obtained from the survey of analysts stood at 3.23% in October, down from 3.37% in July, whereas inflation expectations at 2, 3 and 5 years derived from public-debt securities rose to stand at rates close to 3%.

Graph A
Headline consumer inflation



Sources: DANE and Banco de la República.

Second-quarter growth in gross domestic product (GDP) was 4.9% year on year, exceeding the technical staff's estimated range of 3.3%-4.8%, as a result of stronger than projected growth in domestic demand (6.4% year on year). This stronger growth was driven mainly by public consumption and investment in civil works.

Figures for third-quarter economic activity point to slower year-on-year growth, partly because of the high base of comparison recorded in the third quarter of 2011. Information on retail trade, vehicle purchases, business perception and household confidence points to deceleration in private consumption. However, the good performance of consumer imports, of credit for this spending and of the labor market indicates that the deceleration should not be too marked. In the case of investment, capital-goods imports and the increase in mortgage and commercial loans suggest that construction and other investment items will be rising at a good pace.

Although local-currency loans at September rose faster year on year than the nominal GDP growth estimated for 2012, their loss of pace went hand in hand with real interest rates on loans close to the average rates calculated since 2000 (except in the case of credit cards).

Externally, economic activity indicators for the third quarter confirm the global economy's weakness. The economy of Europe continues to contract, while the US economy grows at a modest pace. The slowdown observed in some of the larger emerging countries seems to be leveling off. In this context, with no inflationary pressures, external interest rates can be expected to remain low for a long time.

International financial conditions improved throughout the quarter, owing in part to policy action by the major central banks of the world. Volatility has decreased and some asset prices have risen. But there is still great uncertainty about some advanced economies' public finance and banking problems.

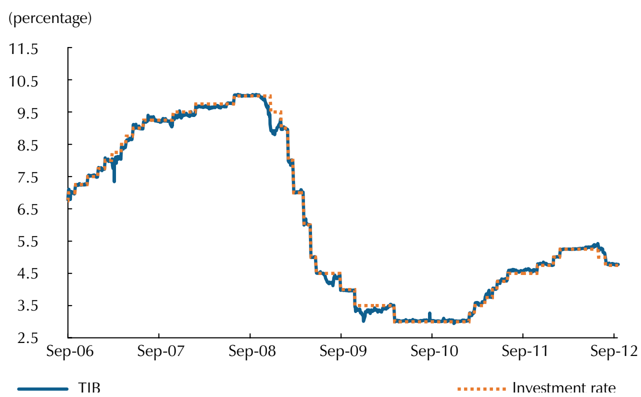
Despite slower global growth, international prices for oil and other commodities remain high, keeping Colombia's terms of trade elevated and boosting national income. However, in Colombia as in other countries, the world economy's weakness has been reflected in slower growth in exports and industrial production.

Based on the above domestic and external developments, the Bank's technical staff expects third-quarter GDP growth to have been in the range of 3.3% to 4.8%, year on year, with 3.9% as the most probable figure. Despite signs of a slowdown, growth in the coming quarters will still be driven by domestic demand. A sound financial system, household confidence and a dynamic labor market will continue to support higher consumption. For their part, commodity prices, confidence levels, the availability of domestic and external funding, and foreign direct investment will help to expand investment.

GDP growth for full-year 2012 is projected by the technical staff to be in the range of 3.7% to 4.9%, with the most probable figure standing at the mid-point of this range. For 2013, growth should be around 4.0%, but in a wider forecast range with a downward bias (2.%-5%), reflecting the possibility of a deep recession in the euro area that could have a significant impact on Colombia's economy.

The above price and growth developments reflect an economy in which inflation, and inflation expectations and projections are close to the long-term target (3%) and the output gap is close to zero. Interest rates on loans are around the average rates calculated since 2000, while housing prices are historically high. The greatest risk to the country's economic activity still relates to a deep recession in Europe, although this appears less likely to occur, given the actions taken by the European authorities and market reactions to them. In view of this macroeconomic setting, the Bank's Board of Directors decided to reduce the policy interest rate in July and August, from 5.25% to 4.75%, and then left it unchanged in September and October (Graph B).

Graph B
Banco de la República's policy rate, and the interbank borrowing rate
(2006-2012)[a/]



a/ Figures refer to working-day data; the last figure is for October 13, 2012.
Sources: Financial Superintendence of Colombia and Banco de la República.

To provide more and lasting liquidity to the economy, the Board decided on August 24 that through to September it would buy US$700 million by means of daily auctions of at least US$20m. On September 28 it decided that from October 1 to March 29, 2013 it would buy at least US$3 billion by the same mechanism.

The Board will continue to monitor carefully the international situation, inflation behavior and projections, growth, and asset-market behavior, and reaffirms that monetary policy will depend on new information that becomes available.

José Darío Uribe Escobar
Governor
Banco de la República

INFLATION
Report

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I. External context and balance of payments

Growth in the developed economies may have weakened again in July-September because of loss of pace in Europe and Japan.

Announcements by the European and US central banks have helped to reduce volatility in international capital markets and the pressures on the peripheral countries' public debt.

Economic-growth forecasts for Colombia's main trading partners remained generally the same, but still with downside risks.

A. INTERNATIONAL CONTEXT

1. Real activity

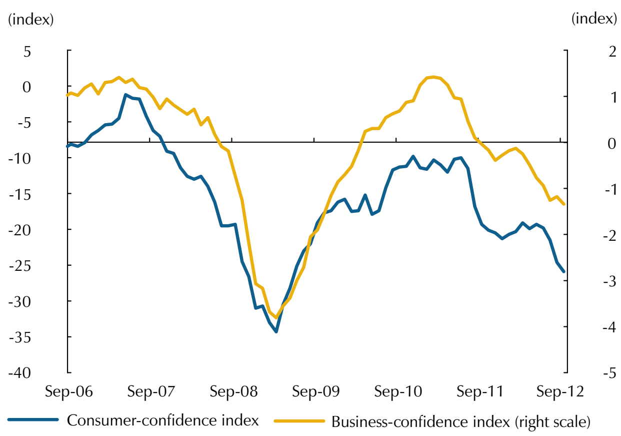
As anticipated in the June *Inflation Report*, the global economy continued to weaken in the second quarter of 2012, with poor growth particularly in the developed countries and in the economies most exposed to the euro-area crisis. Notwithstanding, some Latin-American countries grew satisfactorily, thanks to stronger domestic demand, which made up for the slowdown or contraction in their exports..

Figures to the third quarter show manufacturing and global trade continuing to deteriorate; this, added to weak recovery in confidence, may suggest a further slowdown in global activity. In this context, the developed economies may have lost pace again in July-September, owing to the poor performance of Europe and Japan and to modest expansion in the United States. Growth in the emerging economies may have also moderated, as a result of deceleration in China and low expansion in Brazil.

Manufacturing and global trade continued to deteriorate in the third quarter.

Heightened nervousness in the second quarter over the possibility of Greece leaving the euro area diminished in the following months, thanks to progress on issues of banking integration in the region, and to the European Central Bank's greater willingness to support the peripheral economies, especially Spain and Italy. This has helped to decrease pressure on these countries' public debt, but has failed to reduce uncertainty to tolerable levels.

Graph 1
Euro area: confidence indices



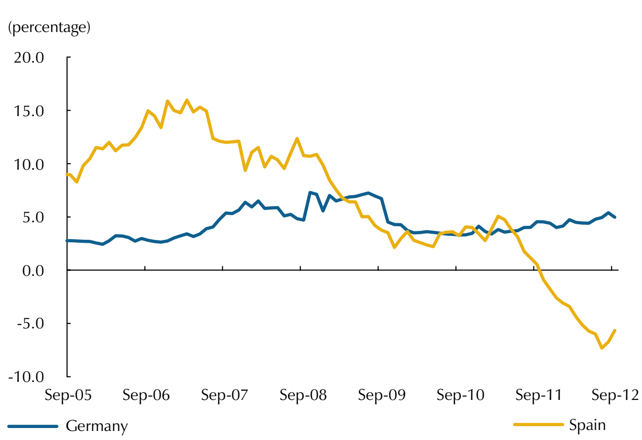
Source: Bloomberg.

The euro area's gross domestic product (GDP) contracted in the second quarter of 2012, in both annual and quarterly terms. And this time the German economy's growth was not sufficient to make up for the recession in other euro-area countries. In fact, Germany's economy was itself affected once more by the European crisis and continued to decelerate, as it had for several quarters. Available information for the third quarter confirms these trends, as suggested by the euro area's manufacturing and services indicators, which stayed in contractionary territory (on figures to September), and by the fact that business and consumer confidence began to deteriorate again (Graph1).

In recent months the peripheral countries' weak situation has once again affected their labor markets and increased pressure on the governments of the moment. In Spain and Greece the unemployment rate has climbed to new historical peaks, creating widespread discontent in society, particularly regarding the austerity measures put in place in recent years.

Concern about the euro-area's stability has moved to Spain, where financial-system difficulties continue to put strong pressure on sovereign debt markets. There is less uncertainty, however, about Greece remaining in the monetary union, and the European authorities have shown greater willingness to support a less traumatic solution to the Greek crisis.

Graph 2
Germany and Spain: annual growth in bank deposits



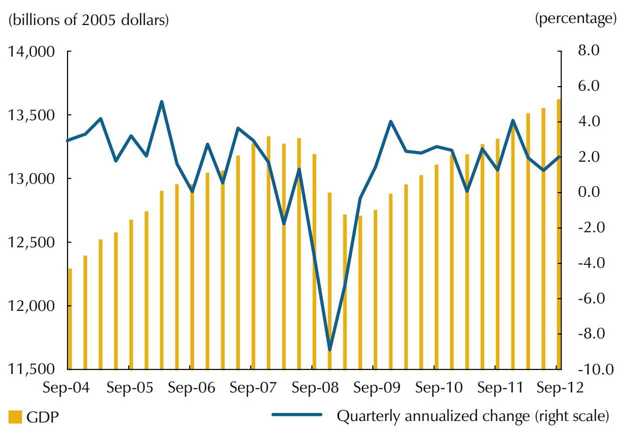
Source: Bloomberg.

Disparities in terms of growth and financial stability between the countries of the periphery and the rest have increased financial fragmentation in the region, as evidenced by capital outflows and the fall in bank deposits in Greece and Spain, with deposits moving to the financial institutions of more stable countries, such as Germany (Graph 2). This situation has also led to an uneven transmission of monetary policy, for while German banks benefit from low funding rates, the indebted countries' banks bear greater costs. This has limited credit expansion in the periphery economies and reduced their sources of funding

To offer a solution to the crisis, the European countries have continued to make progress on their agenda of integration, particularly in banking. Moreover, the

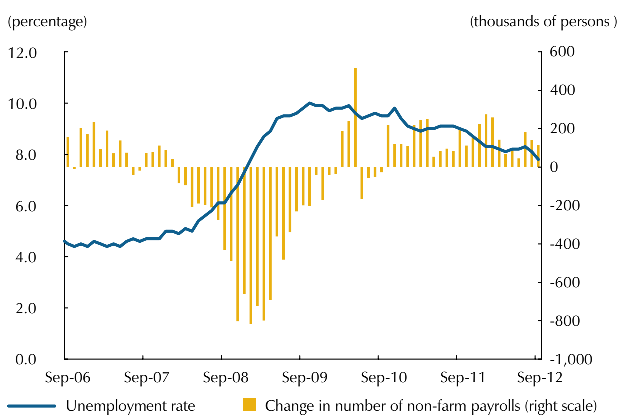
German parliament has ratified the creation of a European stability mechanism, which is to be a permanent rescue fund capable of directly capitalizing commercial banks (once the region's bank supervisory body has come into operation). While the agenda of greater fiscal unity appears to have stalled, the ECB's announcements of its willingness to make unlimited purchases of public debt have been interpreted as a short-term solution.

Graph 3
US: real GDP



Source: Bureau of Economic Analysis.

Graph 4
US labor market



Source: Bloomberg.

In the United States, growth accelerated over the third quarter, to a quarterly annualized rate (qar) of 2%, up from 1.3% in the second quarter, but the economy's expansion continues to be modest (Graph 3). The acceleration was greater than expected by analysts and occurred thanks to faster growth in household consumption, and to a pick-up in government spending after eight straight quarters of contraction. In the external sector, both exports and imports declined, clearly indicating greater transmission of the European crisis and of the global economy's weakness.

In line with the country's growth, US retail sales and indices of industrial production and non-manufacturing activity rose slightly in the third quarter, supported by a pick-up in household confidence, which is still below its historical average. Note that for the coming months there is still the possibility of a new deterioration in US confidence if no satisfactory progress is made on agreements regarding the country's fiscal situation.

The US housing market has continued to show positive signs, having apparently rebounded from the trough some months back; yet, the sector's contribution to economic growth in the coming months is likely to be very small. Although unemployment has decreased in recent months, the level of job creation is not consistent with sustainable recovery (Graph 4). Moreover, initial jobless insurance claims and the average duration of unemployment are still at high levels.

To boost the labor market, in September the US Federal Reserve announced a new round of monetary stimulus (QE3), conditioned this time on labor-market behavior. The Fed also undertook to keep interest rates low until 2015 should the economy fail to show any clear signs of recovery.

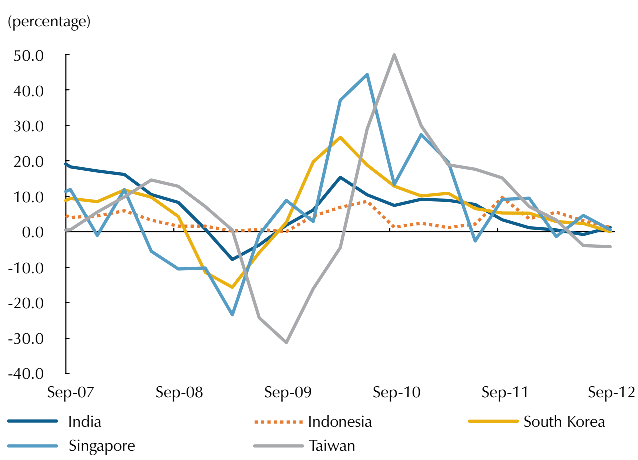
In September the US Federal Reserve announced a new round of monetary stimulus (QE3).

Regarding other developed economies, growth in the United Kingdom returned to positive territory in the third quarter, driven by the momentum given by the Olympic Games. In contrast, economic activity in Japan continued to weaken and could begin to shrink again in the coming quarters.

In the case of the emerging countries, economic growth slowed again in China, falling from a year-on-year rate of 7.6% in the second quarter to 7.4% in the third. The slowdown was much the same as analysts had expected and was consistent with ongoing moderation in the year-on-year growth rates of some real activity indicators. Nevertheless, some figures for September were positive, for they began to show signs of a trend change and acceleration in that month, particularly in industrial production, retail sales and exports.

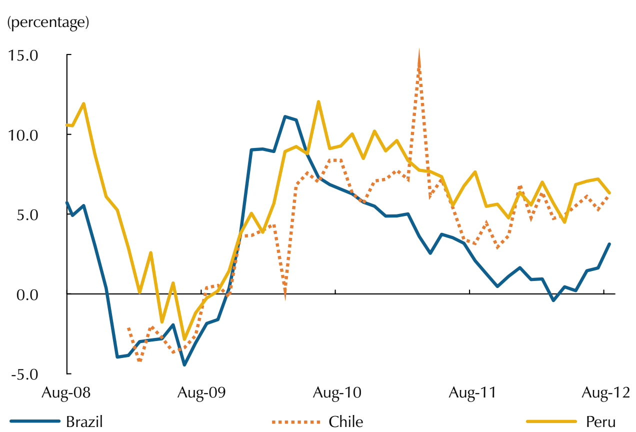
To prevent further deceleration of the economy, the Chinese authorities have taken additional fiscal and monetary stimulus measures and announced new infrastructure investment projects, which should have an impact on growth next year, although analysts do in fact expect the economy to grow faster in the coming quarters. Unlike the stimulus provided by the government in 2008-2009, this time the stimulus is likely to be smaller, in order to avoid the formation of bubbles, particularly in the real-estate market.

Graph 5
Asia emerging economies: annual growth in industrial production indices



Source: Bloomberg.

Graph 6
Latin America: annual change in real activity indices



Source: Datastream.

The slowdown in China, together with poor growth in Europe, has affected the behavior of other emerging economies in Asia. Based on figures to the second quarter, growth moderated in India, South Korea and Singapore, but remained stable in Indonesia. Available information to the third quarter indicates that exports and industrial activity have continued to deteriorate (Graph 5).

In Latin America, the second quarter saw year-on-year GDP growth decelerating in Brazil, Mexico, Ecuador and Venezuela, but remaining at satisfactory levels, except in Brazil, and accelerating slightly in Chile, Colombia and Peru.

In general, domestic demand in the region has managed to offset the effects of slower global growth and in several cases has allowed GDP to grow at a rate close to its potential. The impetus has come from government spending, from strong growth in infrastructure investment, and from expansion in credit to the private sector. This has offset the widespread slowdown in exports.

Available information for the third quarter shows that real activity has begun to pick up in Brazil, a development that may be associated with the stimulus measures implemented in previous quarters. Similarly, in Mexico, Chile and Peru real-activity indices continue to present satisfactory levels of expansion (Graph 6).

At a time when the global economy needs to be boosted by the emerging economies, China and Brazil seem to have reduced their sources of growth and could find it difficult to return to the rates achieved between 2000 and 2007. In China's case, the expected slowdown is a consequence of the size its economy has reached in the past decade, which has made China a major player in global demand and in international commodity pricing. Brazil's economy is beset by structural weaknesses, including the complexity of its tax system, its deficit of infrastructure and its low-trained workforce, which have limited the country's competitiveness.

Slower growth in these countries means deceleration for their main trading partners and lower pressure on international commodity markets, a situation that is likely to affect exports and expansion in producer countries, including those of Latin America.

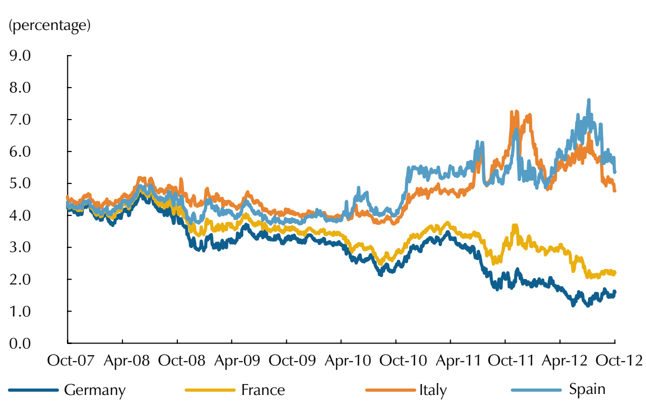
The IMF's world growth forecasts are: 3.3% for 2012 and 3.6% for 2013.

Lastly, note that the International Monetary Fund in its latest world economic outlook report has revised down its world growth forecasts for 2012 and 2013, owing to poor growth and low levels of business and consumer confidence in the euro area, which has not recovered despite the policy measures announced in recent months. Further risks to the global economy include the fiscal situation in the United States and geopolitical tensions in the Middle East and North Africa. In this context, the IMF sees global expansion falling from 3.8% in 2011 to 3.3% this year and expects it to pick up in 2013 (3.6%) as a result of improvement in the advanced countries' economic conditions and of growth close to potential in the emerging economies.

2. Financial markets

Recent announcements by the ECB and the Fed have helped to reduce volatility in international capital markets and have reduced pressure on Spain's and Italy's public debt (Graph 7). As a result, the major stock markets have recovered slightly, and the European authorities may have time to keep on with their integration agenda in an environment of less financial pressure.

Graph 7
Europe: interest rates on 10-year sovereign debt securities

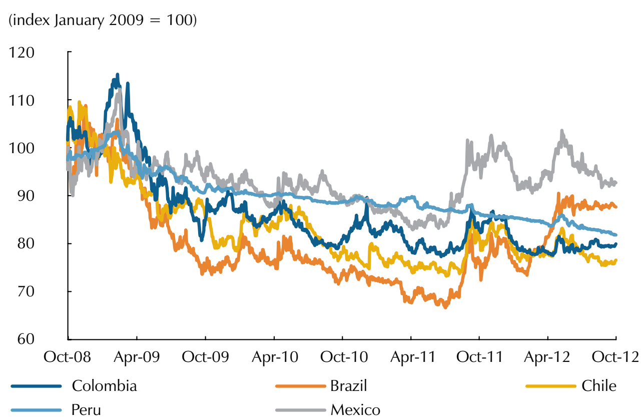


Source: Bloomberg.

In this context, in September and early October the Spanish government succeeded in issuing debt at lower rates than in previous months, auctioning even greater amounts than planned. This development is of key importance to Spain's fiscal stability, because relatively high debt repayments become due in October, which means that unfavorable conditions could jeopardize the country's public finances again.

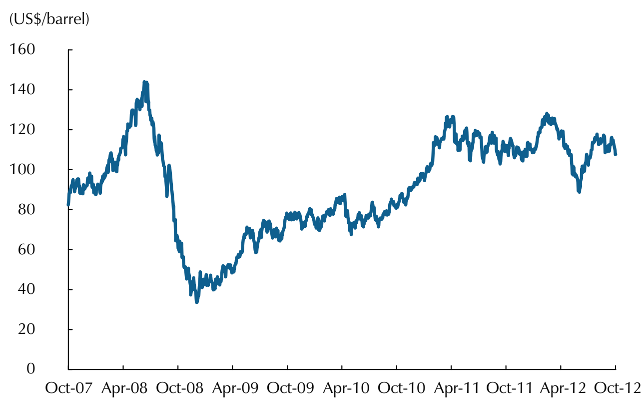
Note that the announcement alone by the ECB of unlimited public-debt purchasing has considerably

Graph 8
Latin America: nominal exchange-rate indices



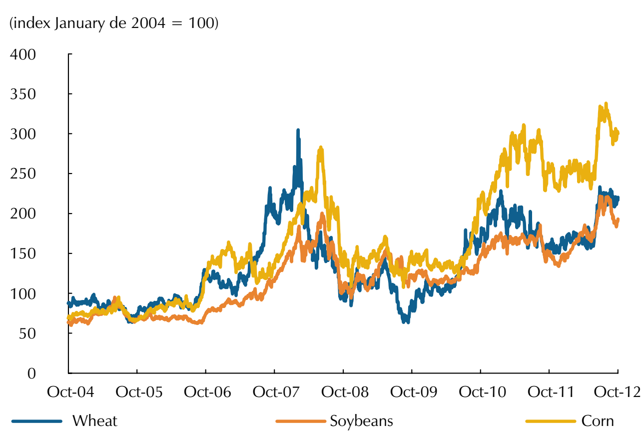
Source: Bloomberg.

Graph 9
Brent international oil price



Source: Datastream.

Graph 10
International prices for wheat, soybeans and corn



Source: FAO.

lowered interest rates on bonds issued by Spain and Italy, without these countries requesting direct intervention by the ECB. ECB intervention requires the beneficiary countries to undertake a new adjustments plan that has to be agreed on with the IMF, the ECB and the European Commission (the Troika).

The markets think that the Spanish government is likely to apply for some kind of aid, probably in the coming months, which should further lower interest rates on the country's public debt.

The announcements of greater monetary expansion in the United States have not yet resulted in Latin-American currencies appreciating against the US dollar, in contrast to what has occurred with previous similar announcements (Graph 8). The region's currencies have remained relatively stable in recent months. This has gone hand in hand with a relatively low perception of risk in the region.

3. Commodity prices, inflation and monetary policy

Despite slowing global demand and Saudi Arabia's announcements of increasing its oil production, in the third quarter geopolitical tensions in the Middle East and North Africa kept international oil prices higher than expected in the June *Inflation Report.* But by mid-October some correction began to be observed in the face of positive supply data (Graph 9).

Regarding Colombia's coal exports, price expectations are turning negative, largely because supply from Australia, Indonesia and South Africa is projected to rise and because global demand is weak.

International prices for some commodities imported by Colombia, such as wheat, soybeans and corn, have remained at historically high levels–despite falls in early October, as a result of weather conditions returning to normal after the climate events that occurred in the middle of the year (Graph 10).

Inflation behavior in the emerging economies has been uneven, rising slightly in some Latin-American countries, such as Brazil, Chile, Mexico and Peru, while prices in China and South Korea have tended to fall. In India prices decreased in September, but are still high. Note that in Latin America increases in inflation have stayed within the target ranges set by the respective central banks and for the moment exert no pressure on policy decisions.

In terms of monetary policy, central banks continue to carefully monitor movements in the global economy, and in recent months they have accordingly either kept their intervention rates unchanged or reduced them.

4. Pronósticos del equipo técnico del Banco de la República

Growth scenarios for the country's main trading partners depend largely on the evolution of the European crisis.

The world economy has generally behaved as anticipated in the June *Inflation Report;* the forecasts presented in this Section are not therefore significantly different from those of three months ago.

As in previous *Reports*, the behavior of the world economy still depends on the evolution of the euro-area crisis. In this respect, the growth scenarios described in the following paragraphs are focused in particular on the euro area, without ruling out the possibility of additional risks from other developed economies or even from some emerging countries (Table1).

Based on the observed movements of a number of indicators so far this year and on the outlook for next year, the Bank's technical staff estimates euro-area growth at -0.5% for 2012 and close to 0% for 2013. These forecasts are consistent with further GDP contraction in the third quarter of this year and with slow recovery in late 2012 and early 2013. The end of the contraction should be associated with improvement in business and consumer confidence, thanks to progress on issues of regional integration.

This scenario presents considerable downside risks associated with greater deterioration in real and financial activity in the euro area, particularly in the peripheral countries. These countries could be at risk of missing their fiscal targets and would come under further pressure in their public-debt markets, unless growth picks up rapidly. In this context, annual expansion for the euro area would be -0.8% in 2012 and -3% in 2013.

However, the possibility remains of additional risks from other developed economies or emerging countries.

In the case of the United States, the central or most probable scenario shows the US economy continuing to grow at a moderate pace, expanding by 2.1% this year and by 2% next year. If global activity deteriorates even more or government authorities fail to take decisions that avoid fiscal contraction, the US economy could go into recession again next year, contracting by 1%. This situation poses a further risk to global economic behavior, curbing growth mainly in Latin-American countries, including Colombia.

Table 1
Growth projections for trading partners

Trading partners	2011	Proyecctions for 2012 Scenario			Proyecctions for 2013 Scenario		
		Minimum expected	Central	Maximum expected	Minimum expected	Central	Maximum expected
Main partners							
US	1.7	1.8	2.1	2.4	(1.0)	2.0	2.6
Euro area	1.4	(0.8)	(0.5)	(0.3)	(3.0)	0.0	0.7
Venezuela	4.2	5.0	5.5	6.0	1.0	3.0	4.0
Ecuador	7.8	3.5	4.5	5.5	2.0	4.0	5.0
China	9.2	7.4	7.8	8.0	6.5	8.0	8.5
Other partners							
Brazil	2.7	0.8	1.6	2.0	1.0	3.5	4.5
Peru	6.9	5.5	6.0	6.5	3.0	6.0	6.5
Mexico	4.0	3.5	4.0	4.5	0.5	3.7	4.5
Chile	6.0	4.5	4.8	5.2	2.0	4.5	5.0
Japan	(0.7)	2.2	2.4	2.7	1.2	1.5	1.8
Total trading partners (weighted by non-traditional exports)	**3.0**	**2.9**	**3.4**	**3.9**	**1.0**	**3.2**	**4.0**
Developed countries [a/]	6.2		1.3			1.5	
Developing countries [a/]	1.6		5.3			5.6	
Global total[a/]	3.9		3.3			3.6	

a/ IMF forecasts to October 2012.
Sources: Calculations by Banco de la República

Regarding the emerging economies, note that, although the Chinese economy has lost pace, the country's public policies designed to strengthen domestic demand will allow it to continue growing at high rates, albeit more slowly than in previous years. In this context, China's expansion should be 7.8% in 2012 and 8% in 2013. Behind the loss of pace lies the fact that this economy has already reached a considerable size (becoming the second biggest in the world), which makes its expansion tend to converge with the rest of the world's over the long term. China's further growth would put pressure on world production costs, thereby setting a limit on such production.

Latin-American countries, except Brazil, could keep growing at a good pace (even faster than expected), thanks to the boost from domestic demand and to the fact of having sufficient fiscal room to implement a counter-cyclical policy should external conditions become more adverse. Accordingly, in the central scenario for 2013 Chile, Ecuador, Mexico and Peru are expected to expand at rates close to their potential.

Based on the above, the 2012 growth forecast for Colombia's main trading partners is slightly higher than in the June *Inflation Report*, owing mainly to the behavior of Latin-America countries. For 2013, growth is expected to edge down from the 2012 forecast, because of moderating expansion in Latin America.

The current-account deficit in the second quarter of 2012 was 3.5% of GDP, higher than in 2011.

Regarding international prices for Colombia's commodity exports, heightened tensions in the Middle East and North Africa explain the upward revision of the June projections for oil prices expected over the rest of the year. If such tensions ease, prices should return to levels close to US$100 a barrel, probably at some point in 2013, and hence the average price for Brent crude in the central scenario would be US$108 a barrel (Table 2).

In the case of coal, favorable supply conditions and slowing global demand should continue to push prices down. In contrast, the price of gold is running higher than expected, because of continuing nervousness in international markets. Forecasts for other goods, such as coffee and ferronickel, are not much different from projections made three months ago.

Table 2
Forecasts of benchmark prices for Colombian commodity exports

Main products	2011	Proyecctions for 2012			Proyecctions for 2013		
		Scenario			Scenario		
		Low growth	Central	High growth	Low growth	Central	High growth
Colombian coffee (ex dock) (dollars/lb)	2.87	1.90	2.00	2.10	1.50	2.00	2.50
Brent oil (dollars/barrel)	111.5	110	112	114	90	108	110
Coal Rotterdam (dollars/tonne)	121.8	90	92	94	65	85	95
Nickel London Metal Exch. (dollars/tonne)	22,865	16,732	17,352	17,972	14,318	16,609	17,754
Gold a/ (dollars/troy oz)	1,573	1,720	1,690	1,660	1,900	1,700	1,600

a/ It is assumed that, gold being a safe-haven asset, its price will rise when there is greater uncertainty (worst-case scenario)
Source: Bloomberg. Calculations by Banco de la República.

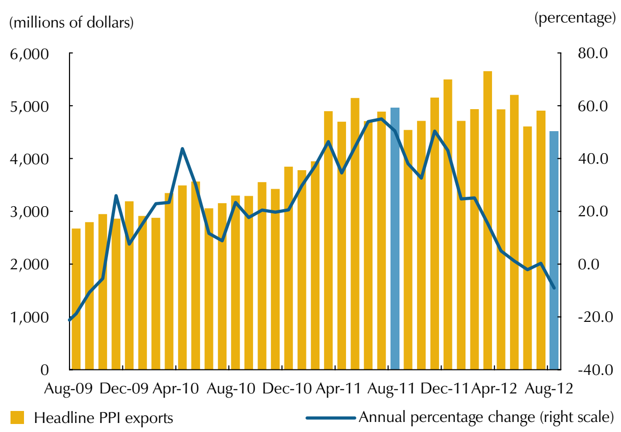
B. BALANCE OF PAYMENTS

In the second quarter of 2012 Colombia's balance of payments recorded a current-account deficit of 3.5% of GDP (US$3,206m), up from 2.4% of GDP (US$1,986m) a year earlier. The deficit widened because of higher payments for imports of goods and services and higher profit transfers by companies having foreign capital. The latter stemmed from higher external funding, which resulted in a surplus on the capital and financial account amounting to US$4,442m (4.8% of GDP), up by US$1,516m on a year earlier (US$2,926m, 3.5% of GDP).

The external imbalance increased mainly because the service-trade deficit rose year on year by US$306m and net factor-income payments by 4.1% (US$155m). Factor-income payments were mostly connected with profit transfers by companies having foreign capital; growth in these companies slowed in the second quarter relative to the first, as a result of lower oil prices. The service-trade deficit was offset in part by a goods-trade surplus that resulted from a year-on-year increase of 2.1% in exports and 8.6% in imports in the second quarter. In the same period, net income from current transfers rose by 5.7% year on year, with the component of workers' remittances expanding by 1.9%.

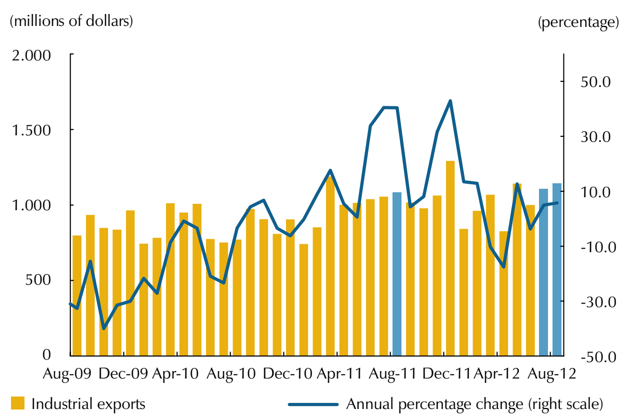
The 2012 second-quarter current-account deficit was funded mainly from US$4,104m in foreign direct investment and from US$1,368m in portfolio investment. Those inflows were partly offset by Colombian-capital outflows in the amount of US$647m for asset acquisition abroad, particularly on the part of decentralized public-sector entities. Balance-of-payment figures show that the balance of gross international reserves rose by US$1,370 in the second quarter.

Graph 11
Total exports
(monthly)



Source: DANE.

Graph 12
Industrial and other exports [a/]
(monthly)



a/ Excluding oil and its derivatives, coal, ferronickel, gold, coffee, bananasand flowers, but including other mining and agricultural goods.
Source: DANE.

DaGiven the current-account deficit observed in the first quarter of 2012 (1.8% of GDP), the country's accumulated balance-of-payment deficit in the first half of 2012 was 2.7% of GDP (US$4,806m), higher than in the same period the year before (2.4% of GDP, US$3,881m).

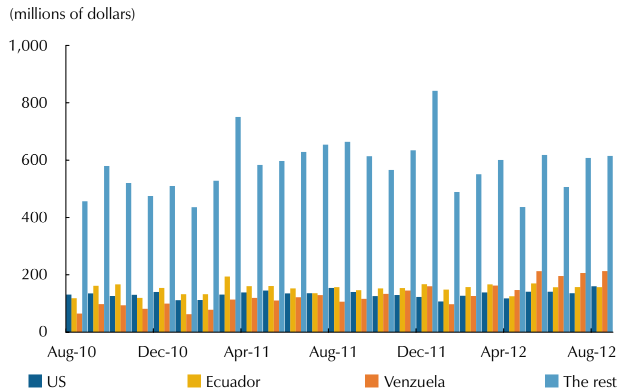
Available information for the third quarter of 2012 indicates that owing to uncertainty and volatility in international markets export growth has continued to decelerate, while imports have maintained their pace of expansion. Specifically, in July and August this year total exports in dollars averaged US$4,713m (excluding re-exported aircraft), down by 4.4% on the same period in 2011 (Graph 11), whereas FOB imports[1] in dollars grew by 10.5%, to an average value of US$4,901m.

Export behavior in those two months reflected a 9% year-on-year fall in average exports of mining goods (coal, ferronickel, oil and its derivatives), which accounted for 69% of total exports in that period. The fall was a sharp deceleration relative to the 18.5% year-on-year growth in mining-goods exports during first half of the year. The deceleration was caused both by lower export volumes of oil and coal and by lower prices in July and August. The export value of the country's main agricultural products (coffee, bananas and flowers) rose on average by 15.5% year on year in those two months, on the back of widespread increases in their export volumes. Industrial exports[2], representing 24% of total exports, grew on average by 5.5% relative to the same months in 2011 (Graph 12). Note that growth in industrial exports accelerated in July and August relative to their 0% expansion in

1 AThe measurement of the balance of payments takes into account FOB import prices; in contrast, calculation of GDP according to the national accounts uses CIF import costs, which include freight and insurance. In July and August 2012 total CIF import costs in dollars averaged US$5,162m, a year-on-year rise of 10.8%.

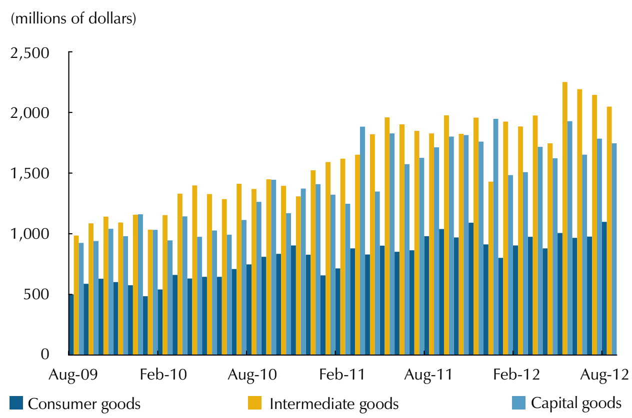
2 Excluding oil and its derivatives, coal, ferronickel, gold, coffee, bananas and flowers. Industrial exports represent 98% of this group, as it includes other mining and agricultural goods.

Graph 13
Industrial exports, excluding commodities, to the US, Ecuador, Venezuela and the rest[a/]



a/ Excluding coffee, oil derivatives, ferronickel and gold.
Source: DANE.

Graph 14
Goods imports (FOB)



Source: DANE.

the first half of the year (having fallen by 2.8% year-on-year in the second quarter). The acceleration came mainly from a 77.9% year-on-year surge in sales to Venezuela, and to a smaller extent from sales to the United States (1.6%) and Ecuador (7.6%), while exports to all other countries fell on average by 7.3% in July-August relative to a year earlier (Graph 13).

Average growth during July and August 2012 in FOB imports in dollars was concentrated mainly in higher purchases of intermediate goods (14%, driven in particular by fuel and lubricants), followed by consumer goods (12.4%, thanks in particular to a 23.1% rise in nondurables). Imports of capital goods also expanded in July and August, on average by 5.7% year on year, with goods for industry growing by 16.9% and construction materials by 8.5% (Graph 14).

In the year to August, remittances from Colombian workers abroad fell year-on-year by 1.3%, reflecting weakness in the countries of origin of this capital, including Spain.. Note that in the first half of the year, the fall in workers' remittances was 0.9% year on year. At September 2012 the foreign-exchange balance[3], continued to show strong inflows of private capital relative to a year earlier, mainly in the form of FDI. However, the inflows were being offset by private-sector capital outflows, resulting largely from flows other than direct investment

The current-account deficit for 2012 is expected to be in the range of 2.9%-3.1% of GDP.

Based on the above information, and on the forecast intervals for the main external variables and for domestic growth (presented in different Sections of this Report), balance-of-payment projections point to a current-account deficit for 2012 similar to the one observed in 2011. Thus, according to the previous Section's scenarios of assumptions about trading partners' growth and price movements for the country's main exports[4], the deficit this year could be in the range of 2.9% to 3.1% of GDP. In this context, in 2012 imports in dollars could grow by 8.3%-12.9% in annual terms, with a central scenario of 10.6%, and exports by 7.%-11%, with a mid-point

3 Capital flows recorded in the foreign-exchange balance refer to currency inflows and outflows, and therefore are not exactly equal to capital flows recorded in the balance of payments, but they do give some idea of the latter's trend.

4 For balance-of-payment forecasting, projections are constructed of the average implicit prices for the main exports, using as the base the benchmark price ranges presented in the previous Section. Thus, for 2012, in the most probable scenario, the average price projected for Colombian oil is US$102.8/barrel, for Colombian coal US$98/tonne, and for ferronickel US$2.8/lb. For gold and coffee the projections are equal to their benchmark prices.

of 9%. These results would be consistent with lower external demand, reflected in lower prices for the country's main export goods and involving slower export growth, despite an expected rise in the production of such goods. Imports are also projected to lose pace, in view of declining domestic demand. The forecasts also take into account higher factor-income outflows, associated mainly with profit transfers from the hydrocarbon sector, owing in particular to greater production, which should offset the fall in the price of crude.

FDI growth in 2012 will be considerably stronger than in 2011.

Regarding the capital and financial account, FDI is expected to remain the main source of funds. Gross FDI is projected to be higher than last year, directed mainly to the oil sector, where the price of oil is still historically high though lower than in 2011, and also to the sectors of finance, and hotels and tourism. Outflows of Colombian capital for investment abroad are expected to fall relative to last year. This means that, in net terms, FDI growth will be considerably stronger than in 2011. Projections for 2012 assume an increase in public-sector external funding, consisting largely of external credit operations associated with specific investment projects, particularly in the hydrocarbon sector (Table 3).

For 2013, exports (in dollars) are estimated to increase by less than the figure considered for 2012, given the continuing uncertainty about the advanced economies' performance, which implies a lower price outlook for the country's main exports. Imports should maintain their pace of growth observed in 2012, since domestic demand is expected to stabilize. In addition, income from workers' remittance is projected to recover moderately, while factor-income outflows should decrease in response to a scenario of lower commodity prices. Accordingly, the current-account deficit for 2013 could be in the range of 2.7%-3.3% of GDP and should continue to be financed mainly from FDI inflows, which should remain at much the same levels as this year, and from public-sector external funds, obtained in particular from borrowing.

Lastly, it should be pointed out that the balance-of-payment projections reflect a change in gross international reserves consistent with the Banco de la República's intervention announcements[5] and the associated financial returns.

5 Includes currency purchases announced by the Bank in a statement dated September 28, 2012.

Table 3
Colombia's balance-of-payment forecast
(central or most likely scenario)

	(millions of dollars)				(percentage of GDP)[d/]			
	2009	2010	2011 (pr)	2012 (proy)	2009	2010	2011 (pr)	2012 (proy)
I. Current account	(4,960)	(8,758)	(10,032)	(10,955)	(2.1)	(3.1)	(3.0)	(3.0)
A. Non-factor goods and services[a/]	(275)	(1,384)	862	594	(0.1)	(0.5)	0.3	0.2
B. Factor income	(9,298)	(11,849)	(15,831)	(16,424)	(4.0)	(4.1)	(4.7)	(4.5)
C. Transfers	4,613	4,475	4,938	4,875	2.0	1.6	1.5	1.3
II. Cuenta de capital y financiera	6,255	11,813	13,494	15,979	2.7	4.1	4.0	4.4
A. Private sector: net direct investment and other capital flows[b/]	(1,029)	7,033	10,697	7,683	(0.4)	2.5	3.2	2.1
B. Public sector	7,293	4,789	2,839	8,304	3.1	1.7	0.9	2.3
III. Errors and omissions	52	80	282	263	0.0	0.0	0.1	0.1
IV. Change in gross international reserves[c/]	1,347	3,136	3,744	5,287	0.6	1.1	1.1	1.4

(pr): preliminary.
(proj): projected.
a/ The balance of non-factor goods and services and special trade operations.
b/ Includes net flows of FDI and portfolio investment, and net external borrowing.
c/ Including contributions to the Latin American Reserve Fund (LARF).
d/ Real GDP growth for 2012 is an estimate by the Bank's Economic Studies Division.
Source: Banco de la República.

Box 1
RECENT ECONOMIC CYLES OF LATIN-AMERICAN COUNTRIES

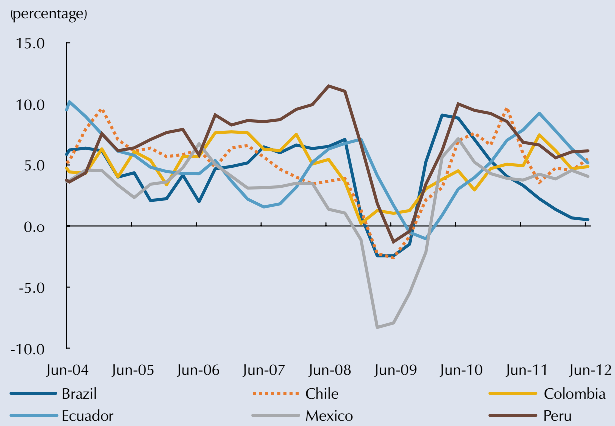
Óscar Iván Ávila
Celina Gaitán Maldonado
Juan Sebastián Rojas*

In the years before the 2008-2009 financial crisis some Latin-American countries were characterized by growth rates close to or higher than their historical averages, thanks to the favorable external context and good levels of domestic demand. Accelerated growth in the emerging countries of Asia and stable expansion in some developed economies kept the terms of trade for Latin America at satisfactory levels and boosted foreign direct investment. Similarly, credit helped to increase consumption, thereby supporting domestic demand.

Despite the shared context, Latin-American countries differed from each other in the impact they received from the 2008 crisis, with some economies suffering steep falls in output (for example Mexico and Chile), while others only saw slowing growth (for example Colombia). Recovery after the crisis was also uneven among them. Nor has the current European situation affected them all equally. Although these countries' phases of expansion and contraction have on the whole coincided in the past ten years, the turning points and intensities have been different, resulting in imperfect synchronization of their economic cycles (Graph B1.1).

This desynchronization (of time and size) stems from the Latin-American countries' diversity in terms of external exposure, economic structure and domestic-demand behavior, among other factors. Regarding external exposure, the effects of weak growth in the developed economies (euro area and the US) have been transmitted to Latin America in disparate ways, depending on the degree of openness, the destination of exports, and the types of export products. Colombia, like Brazil, can be said to be one of the region's least open economies, compared for example with Ecuador, Chile and Mexico, where the degree of openness is over 60%,[1] making them more vulnerable to weakness in external demand.

Graph B1.1
Annual change in GDP of several Latin-American countries



Source: Datastream.

In addition to the above factors, the structure of export-destination markets has an important impact (Graph B1.2). The importance arises from the fact that the crises in recent years have occurred in the US and the euro area, where Latin America's foreign trade is largely concentrated, though to a different relative extent for each exporting country. So, for instance, in the 2008 crisis Mexico was the country most affected by weak external demand, whereas in the current European crisis Peru, Chile and Brazil have been the first to feel its impact, by reason of being the region's countries with a greater share each of their respective total exports directed to Europe.[2]

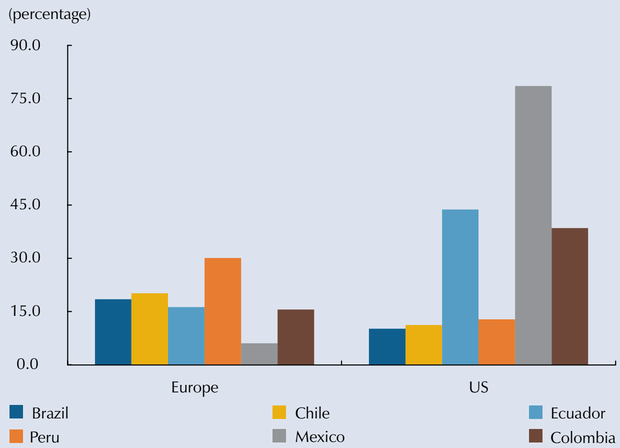
EFurthermore, the countries of Latin America differ also in the types of products they export: Mexico and Brazil sell industrial goods in particular, whereas Peru, Chile, Ecuador, Venezuela and Colombia export a greater proportion of mining and energy goods. The latter group differ also among themselves, in that Peru and Chile export copper and gold, while Ecuador, Venezuela and Colombia are exporters of hydrocarbons (mostly oil). Those differences are an important reason for the imperfect synchronization of economic cycles in the region. In the case of the exporters of industrial goods, lower external demand directly affects their output through lower export volumes. For the other countries this effect is added to the behavior of benchmark prices for commodity exports. One example of this has

* The authors are staff of the Programming and Inflation Department of the Economic Studies Office. The opinions expressed are exclusively the authors' and do not necessarily reflect the views of the Bank or its Board of Directors.

1 The degree of openness is calculated as the sum of the dollar value of exports and imports, as a percentage of GDP for each country.

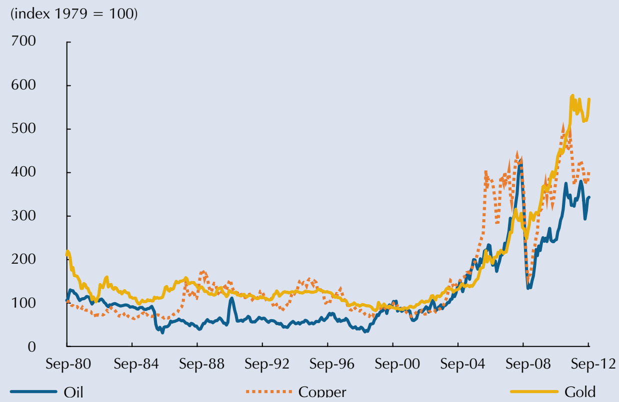
2 In 2011 exports to Europe as a percentage of total exports was 30% for Peru, 20% for Chile and 18% for Brazil.

Graph B1.2
Exports in 2011, by exporting country and destination



Source: Datastream.

GraphB1.3
International price indices for Latin-American commodity exports



Source: World Bank.

been movements in the price of copper compared with the price of oil. The price of copper has been rising steadily for the past decade, up to historically high levels for the past several years, generating positive effects on growth, exports and investment for the main producer countries, such as Chile and Peru (Box B1.3). Last year international oil prices rose faster than the price of copper, giving an additional boost to the economies of oil exporters.

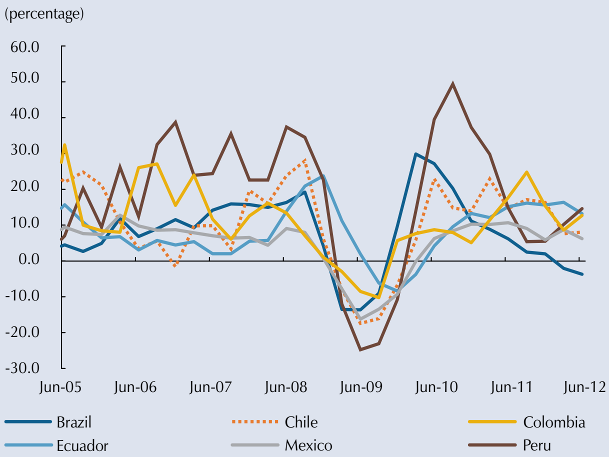
The difference in behavior among the Latin-American economies has also had to do with the margin of maneuver available to each country's economic authorities to carry out counter-cyclical policies. Countries with greater external exposure, such as Mexico, Chile and to a lesser extent Peru, have reacted more immediately to weakness in external demand (having felt the impact of it before other countries) and have thus managed to grow on the back of expansion in domestic demand. Before the 2008 crisis, government spending evolved somewhat differently among the region's countries. Thus, while the governments of Peru and Chile took advantage of the boost from the private sector to improve their fiscal position, Colombia's fiscal position showed a slight uptrend, and Mexico's and Brazil's recorded a relatively low rise. At the outbreak of the 2008 crisis, however, the region's governments reacted in similar ways, announcing fiscal-stimulus plans designed to contain the adverse effects of the global recession. But the size of the stimulus packages varied significantly among countries, and hence so did their impact on economic activity. So, for example, Peru's public-spending expansion in 2009 was the biggest in the region and allowed it to return quickly to positive growth rates.

In recent quarters, though, there has again been a dissimilarity in public spending (mainly on investment) among the region's countries, which may be contributing to the differences in their economic cycles (Graph B1.4). Specifically, spending has accelerated in Peru, Colombia and Brazil, while in Chile and Mexico it has grown at a moderate pace in line with the long-term path. Note that accelerated spending among the first group has been in response to factors specific to each economy. In Brazil it is associated with the stimulus plans designed to overcome weakness in domestic activity; in Peru it is a consequence of delayed budget execution by local governments. In Colombia the faster rise in public spending is connected with the start of infrastructure works included in the current government development plan, and with meeting the needs of people who suffered damages in the latest rainstorms.

As in the case of public spending, the rise in household consumption has also displayed various patterns among the region's economies. In this respect, although in the five years up to 2008 all the countries recorded positive growth, the trends were not the same. So, for instance, while in Ecuador, Mexico and Chile household spending grew at high, stable rates, in Brazil and Peru it trended up. In Colombia's case, household consumption accelerated up to the beginning of 2007, when it started to moderate, owing to domestic factors and a contractionary monetary policy. In late 2008 and early 2009 the collapse in confidence and the slowdown in global demand had a negative impact on household spending in the region. The impact was widespread, but the size of the fall in consumption varied among the countries and depended on the extent of their exposure to the US economy. Post-crisis recovery has not been uniform either; it has been connected with each country's particular stimulus policies, and with the behavior of available income, which has benefited from higher international prices for mining and energy goods.

Domestic factors, such as fiscal discipline in some Latin-American countries in the years before the 2008 crisis, have thus made it possible for them to make more

Graph B1.4
Latin America: annual growth in quarterly investment



Source: Each country's central bank and statistics office.

effective use of counter-cyclical policies based on public spending, becoming strengths in the current process of boosting domestic demand. As a result, countries such as Peru and Chile have managed to make the most of the greater fiscal leeway they have in order to expand public investment, which together with good credit behavior has kept consumption performing well.

To sum up, although the economies of the region can be regarded as sharing a great number of features, the evolution of their production cycles has been determined by factors defining each country's exposure to the international environment, and by some differences in their domestic-demand behavior. Those factors explain how countries with less external exposure, such as Colombia, have performed better in the face of the past decade's external shocks, whereas other countries, more vulnerable to those shocks, have levered up their recovery by means of domestic demand. In most cases domestic demand has been boosted by public-investment programs, and by satisfactory evolution of credit and domestic consumption. In the current context, therefore, it can be stated that the countries of the region most exposed to external conditions have sustained their economic growth at around potential by means of policies designed to stimulate domestic demand.

II. Domestic growth:

Current situation and short-term outlook

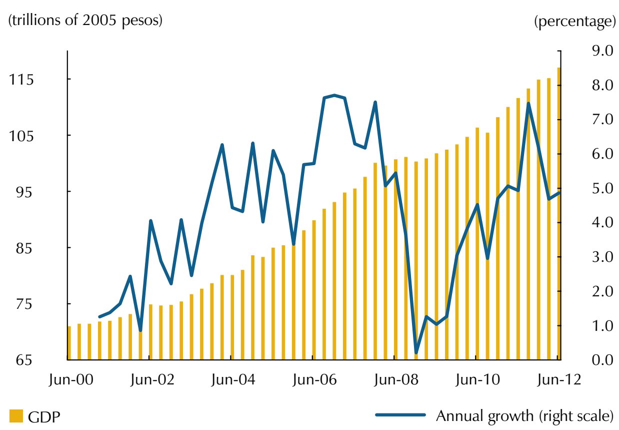
In the second quarter of 2012 the Colombia economy maintained its first-quarter pace of year-on-year growth, exceeding the Bank's and market forecasts.

Domestic demand continued to expand but was driven this time mainly by public consumption and investment in civil works

Economic growth in the third quarter is projected to be in the range of 3.3%-4.8%. Private consumption may lose pace, but this should be offset in part by public consumption and investment.

A. GDP in the second quarter of 2012

Graph 15
Gross domestic product
(seasonally adjusted)



Source: DANE. Calculations by Banco de la República.

In the second quarter of 2012 gross domestic product grew year on year by 4.9%, just above the forecast range presented in the June *Inflation Report* (Graph 15). The Colombian economy thus maintained the pace of annual growth observed in the first three months of the year. In quarterly terms, the rate of expansion was 1.6%, the highest in the past four quarters.

In March-June domestic demand continued to be the main driver of economic growth, rising by 6.09% year on year and contributing considerably to economic expansion. But, whereas in the first quarter the biggest boost had come from private consumption, in the second it came from public consumption and investment (particularly in civil works).

Household consumption grew in the second quarter by 4.0% year on year, more slowly than in the first months of 2012 and also more slowly than in the second half of 2011, which confirms its moderating trend. Although private consumption is decelerating, its pace of growth is not low compared with the 3.8% average annual rate observed since 2000. Government consumption accelerated strongly, rising by 4.6% year on year, the highest rate in the past eight quarters (Table 4). Note that acceleration in public consumption did not offset the slowdown in private consumption, with the result that the contribution of overall consumption to economic activity decreased, as explained earlier.

All components of household consumption lost pace in the second quarter.

Breakdown of household consumption by type of spending shows all its components losing pace in the second quarter, especially consumption of durable goods (2.3% growth, down from 5.8% in the first quarter) and nondurable goods (3.2%, down from 5.7%), with spending on intermediate goods slowing the least: by barely 0.8pp, to 8.3%. The slowdown in private consumption can be explained in part by a high base of comparison in the second quarter of 2011. Other reasons for it are connected with smaller increases in disposable household income, owing to the drop in remittances from abroad accumulated in the first half of 2012 relative to the same period in 2011, and to the greater potential importance of debt in current spending.

Table 4
Real annual GDP growth, by type of spending

	2011		2011	2012		Contributions to annual growth (Q2-2012)
	Q3	Q4	full year	Q1	Q2	
Total consumption	**6.1**	**5.6**	**5.8**	**5.1**	**4.2**	**3.4**
Household consumption	6.8	6.3	6.5	5.7	4.0	2.7
Nondurable goods	4.9	4.0	4.3	5.7	3.2	0.7
Semi-durable goods	13.8	13.7	15.1	9.1	8.3	0.5
Durable goods	24.5	10.5	23.9	5.8	2.3	0.1
Services	4.9	5.1	4.6	4.5	3.6	1.2
Government final consumption	2.7	3.0	2.6	3.1	4.6	0.7
Gross capital formation	**24.8**	**15.4**	**17.2**	**8.6**	**12.7**	**3.4**
Gross fixed capital formation	24.7	16.9	16.7	7.8	15.5	4.0
Farming, forestry, hunting & fishing	2.3	1.6	2.1	(0.2)	(2.4)	(0.0)
Machinery and equipment	28.6	20.0	25.8	15.9	10.6	1.0
Transport equipment	43.0	39.5	45.2	24.9	29.9	1.1
Construction and buildings	12.8	1.8	5.1	4.6	17.3	1.0
Other civil works	29.9	22.4	6.7	(8.1)	20.4	1.3
Services	8.9	1.4	5.3	3.5	8.2	0.0
Domestic demand	**10.7**	**8.5**	**8.8**	**6.0**	**6.9**	**7.6**
Total exports	**11.4**	**15.2**	**11.4**	**6.6**	**2.0**	**0.3**
Total imports	**20.7**	**21.2**	**21.5**	**12.4**	**9.5**	**(2.5)**
GDP	**7.5**	**6.2**	**5.9**	**4.7**	**4.9**	**4.9**

Source: DANE. Calculations by Banco de la República.

The sharp acceleration in civil works occurred in the construction of mining works, railways and aircraft runways.

The second quarter saw investment rising strongly, year on year, in the sector of construction and buildings (17.3%, up from 4.6% in the first quarter) and in civil works (20.4%, up from -8.1%). The sharp acceleration in civil-works investment was driven in particular by disbursement of funds for construction of mining works, railways and aircraft runways, which had not been paid in the first quarter of 2012. In addition, local governments made headway in implementing infrastructure projects, something that had not occurred in the first quarter.

Transport equipment, and machinery and equipment, two other important items of gross capital formation, continued to show robust growth, rising year on year by 29.9% and 10.6%, respectively. Although these rates are lower than the averages recorded for 2011, they reflect the impetus given by this GDP component to expansion of Colombia's production apparatus.

Both exports and imports slowed considerably in the second quarter, exports rising year on year by 2.0% (down from 6.6% in the first quarter) and imports by 9.5% (down by from 12.4%). The factors causing this behavior included lower external demand and declining domestic consumption. The outcome was a smaller contribution from net exports to GDP growth.

On the side of supply, the sectors that contributed most to year-on-year GDP growth in the second quarter of 2012 were construction, mining and financial services (Table 5). Industry was the only sector that contracted, but only slightly.

In construction, both buildings and civil works were responsible for the expansion. Growth in buildings was accompanied by an increase in actual constructed area,[6] although building permits continued to decline. Civil works expanded year on year by 20.9%, a significantly higher rate than forecast in the previous *Report,* in contrast to their 7.3% contraction in the first quarter. In the aggregate, construction was the sector that made the biggest contribution to growth of the economy as a whole.

The mining sector expanded year on year by approximately 8.5%, a higher rate than the 5.7% average since 2002, though lower than the double-digit rates recorded in the second half of 2011 and the first quarter of 2012. The slowdown stemmed largely from a fall-back in oil production caused by, among other things, public-order problems and difficulties in transporting crude. In contrast, production of coal and metallic and non-metallic minerals expanded year-on-year by over 14%, offsetting the loss of pace in oil GDP. In fact, oil production in the second quarter was lower than forecast in previous Reports and lower also than the oil-sector companies' projected production targets.

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6 According to DANE, in the second quarter of 2012 actual constructed area increased year on year by 15.2%. The share of the area under construction was 82%, while completed works made up 16%, and the rest consisted of works at a standstill.

Cuadro 5
Real annual GDP growth, by economic activity

Sector	2011				2011 año completo	2012		Contribution to annual growth (Q2-2012)
	Q1	Q2	Q3	Q4		Q1	Q2	
Farming, forestry, hunting & fishing	7.4	1.4	1.6	(1.7)	2.1	0.2	2.2	0.1
Mining and quarrying	9.4	11.2	19.0	18.3	14.5	13.1	8.5	0.7
Manufacturing	4.5	2.6	5.9	3.6	4.1	0.2	(0.6)	(0.1)
Electricity, gas and water	(0.9)	1.8	3.3	2.6	1.7	4.4	3.6	0.1
Construction	0.2	(7.1)	18.8	11.7	5.5	(2.0)	18.4	1.2
Buildings	1.6	4.9	12.1	1.0	4.8	3.6	16.2	0.5
Civil works	(1.3)	(16.9)	30.0	20.4	6.2	(7.3)	20.9	0.7
Commerce, repairs, restaurants & hotels	5.9	6.7	6.1	5.3	6.0	4.6	4.3	0.5
Transport, warehousing & communications	6.2	6.9	8.0	5.6	6.7	6.0	3.6	0.3
Financial, real-estate and corporate services	4.5	5.9	6.5	6.5	5.9	6.7	5.1	1.0
Social, community & personal services	2.6	3.0	3.9	3.3	3.2	3.5	3.9	0.6
Subtotal value added	4.6	4.2	7.3	5.9	5.5	4.3	4.8	4.4
Taxes less subsidies	10.0	13.0	10.1	9.2	10.5	8.7	5.4	0.5
GDP	5.1	4.9	7.5	6.2	5.9	4.7	4.9	4.9

Source: DANE. Calculations by Banco de la República.

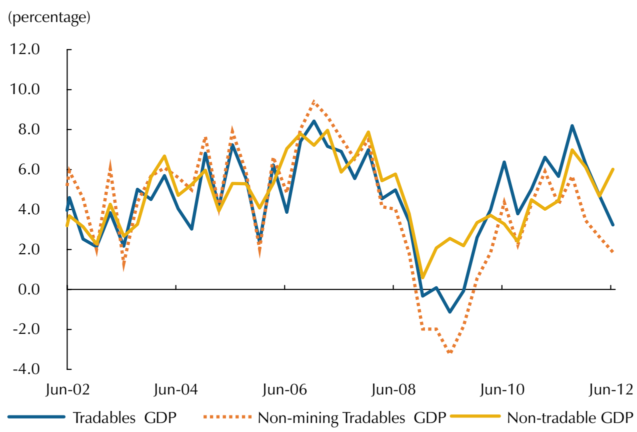
The sector of financial, real-estate and corporate services grew by 5.1% year on year, a higher rate than its average for the past decade. This notable performance, combined with the sector's large share (19%) of the economy as a whole, continued to make it one of the activities that contributed most to economic expansion in recent quarters: in April-June its contribution of GDP was the second biggest. The subsector of financial intermediation increased its value added by 10% year on year–a slightly lower rate than the average for 2011–, despite slower expansion in the loan portfolio (17.8% average growth for all loans).

Manufacturing performed poorly owing to both weak demand and supply factors.

Manufacturing performed pretty modestly, in line with industrial performance on the international front, posting a year-on-year contraction of 0.6% in aggregate value, the lowest result since 2009. The slowdown resulted in part from weak demand, including external demand–as suggested by a 2.8% year-on-year average contraction in industrial exports in the second quarter. But behind the slowdown there may have also been supply factors that caused fall-backs in oil refining and chemicals, two subsectors that account for 25% of total manufacturing. The fall in oil refining was connected with the closing of major refineries for scheduled maintenance work; and the chemical industry was beset by problems in obtaining supplies of raw materials.

Second-quarter results for all other large sectors were mixed, with some accelerating slightly, such as: agriculture and social, community and personal services; while in the case of transport, commerce, and electricity, water and gas there was a slight deceleration. In agriculture, coffee production increased by 18% in the second quarter, making up for slowdowns in the rest of the agricultural GDP. Commerce continued to show significant year-on-year growth (4.3%), although the value added by commercialization of goods slowed a little, owing to the poor supply of such goods (particularly by industry) and the performance of some segments of retail sales.

Graph 16
GDP of tradable sector, non-mining tradable sector, and nontradable sector
(annual growth)



Source: DANE. Calculations by Banco de la República.

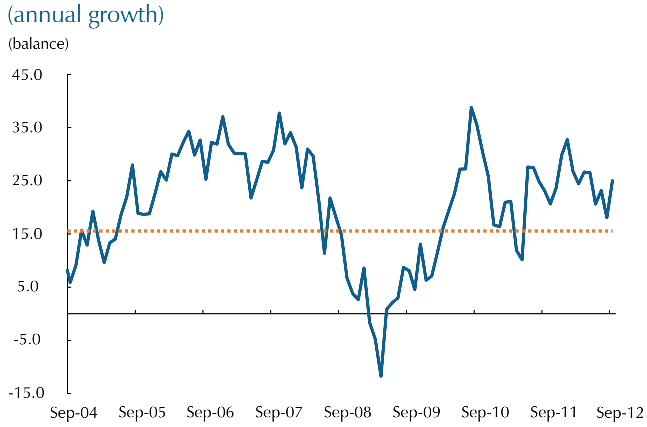
Thus, in the second quarter of 2012 year-on-year growth in nontradable sectors accelerated (6.0%) and was greater than in tradable sectors (3.2%) (Graph 16), for reasons including, in the case of nontradables, the strong expansion in civil works and, in the case of tradables, weakness in agricultural and industrial production. The relatively slower growth of tradables becomes more evident by excluding mining, since without mining the tradable GDP grew just 1.9%.

B. SHORT-TERM GDP FORECAST

The latest indicators of economic performance and household spending suggest that the slowdown in investment and private consumption could continue into the third quarter of this year. In addition, so far in the quarter exports have been weaker in dollar value and in volume, and imports of capital goods have also lost pace.

Regarding spending, the consumer-confidence index edged down between June and September, perhaps because of increasingly difficult conditions in the external context. According to information provided by Fedesarrollo, the index's pick-up in September did not make up for its falls in the previous two months (Graph 17). Given the high correlation between the consumer-confidence index (in quarterly terms) and household consumption, the slight fall in the index suggests a slowdown in third-quarter private spending.

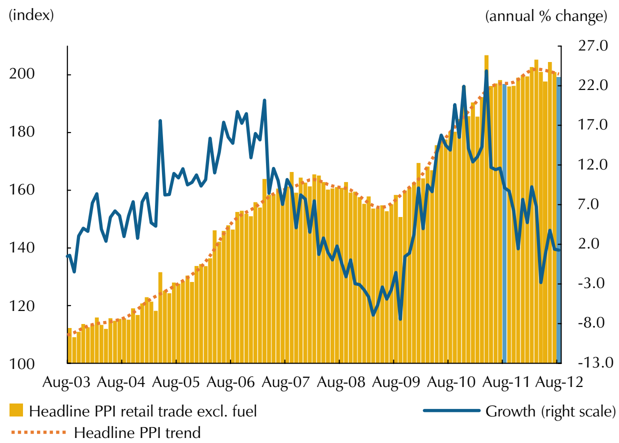
Graph 17
Consumer-confidence index
(annual growth)



Source: Fedesarrollo.

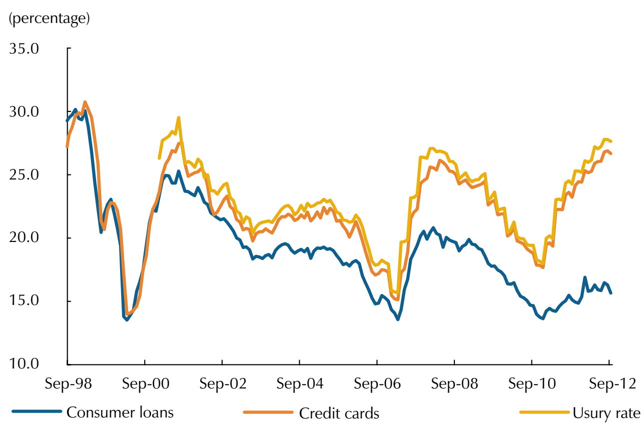
Information on retail sales published by DANE also provides evidence of a loss of pace in household spending in the third quarter, which was expected in the June *Inflation Report*. Specifically, in August consumer sales grew year on year by 1.2%, down from 1.4% in July and 4.0% in June. The trend component of the series has been sloping down for several months now (Graph 18).

Graph 18
Monthly retail trade sample
(total retail trade excluding fuel, seasonally adjusted)



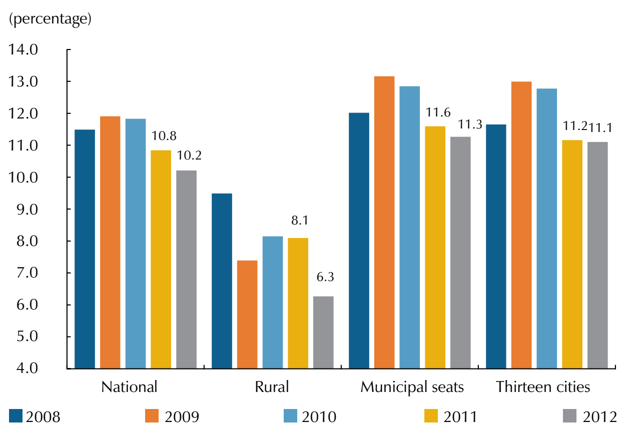
Source: DANE. Calculations by Banco de la República.

Graph 19
Real household interest rates
(deflated by non-food CPI)



Source: Financial Superintendence of Colombia.

Graph 20
Unemployment rate
(June-July-August moving quarter)



Source: DANE (GEIH).

Breakdown of retail sales figures by type of goods shows sales of motor vehicles and motorcycles falling (-3.7% year on year), whereas retail trade excluding vehicles and fuel increased (2.5% year on year). Hence, consumption of durable goods can be expected to decelerate much faster than consumption of semi-durables and nondurables. At the same time, consumer-goods imports reveal that their deceleration in recent months is more evident in purchases of consumer durables than in purchases of consumer nondurables. The imports most affected have been transport vehicles and electrical and other household appliances.

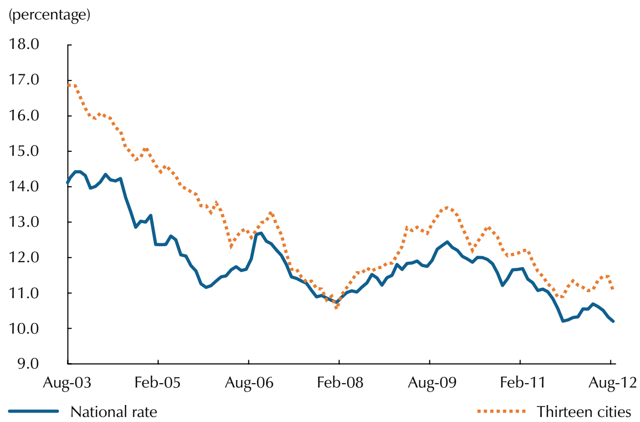
Regarding income indicators, although the terms of trade are still at levels that can be considered historically high, they stood lower in the third quarter than in the first and second. This was caused mainly by lower international prices for oil and coal, which could mean lower export income for the country.

With respect to funding of household spending, real interest rates were on average higher in the third quarter than in the second, though with falls in their levels at the margin (Graph 19). Note that there is the usual lag in market interest rates' response to the more expansionary monetary policy that was in place throughout the third quarter. Nominal credit expansion continued to slow down toward normal levels. In particular, year-on-year growth in consumer loans fell from close to 23.0% in the second quarter to rates of 20.5% in the third. This, too, could suggest less strong private consumption in the third quarter.

Moreover, although the unemployment rate has been falling, the size of the falls has become progressively smaller, continuing the trend described in the previous *Inflation Report*. In the moving quarter ended in August unemployment was 10.2% nationwide and 11.1% for the thirteen main metropolitan areas. The performance of the rural labor market was notable in that, on this occasion, rural unemployment dropped by 1.8pp to 6.3% (Graph 20).

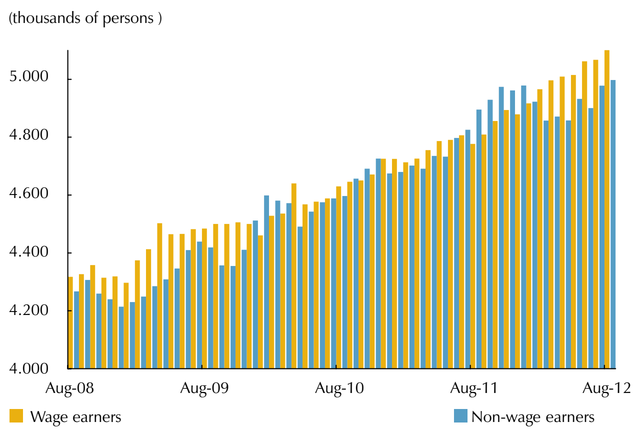
Analysis of unemployment based on the seasonally adjusted series reveals that in the year to date the rate has remained relatively stable in the thirteen cities, but has decreased nationwide (Graph 21).

Graph 21
Unemployment rate
(seasonally adjusted moving quarter)



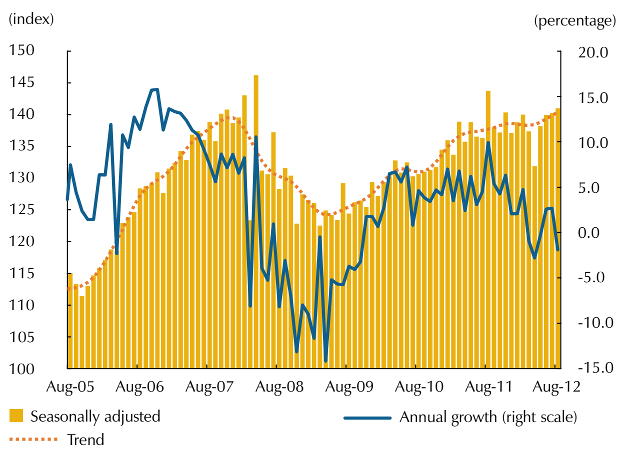
Source: DANE (GEIH). Calculations by Banco de la República.

Graph 22
Employment, by type of occupation
(thirteen cities, seasonally adjusted moving quarter)



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

Graph 23
Industrial production index, excluding coffee threshing
(thirteen cities, seasonally adjusted moving quarter)



Sources: DANE. Calculations by Banco de la República.

The employment trend, however, continued to be favorable in August: the number of people with jobs increased by around 4.5% in the thirteen cities and 5% nationwide, while wage employment continued to gain momentum, and non-wage employment slowed (Graph 22). This could explain why consumer confidence remains above its historical average, despite the levels recorded in July and August.

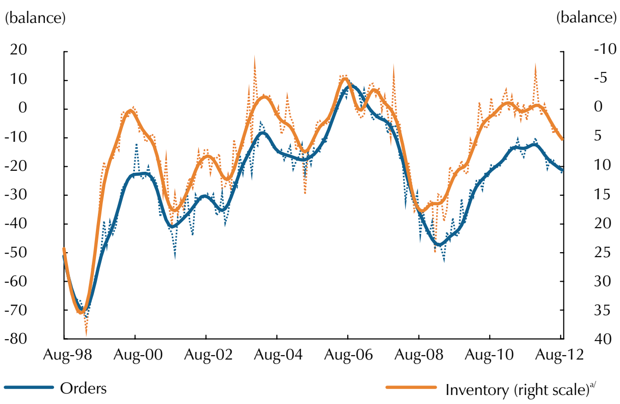
On the side of investment, available information suggests that the pace of growth observed in the second quarter could be maintained. CIF imports, in dollars, of capital goods for industry increased on average by 16.8% in July-August, up from 13.7% in the April-June quarter. In contrast, year-on-year growth in capital goods imports for agriculture fell from 8.7% in the second quarter to 8.3% in July and August, and in transport equipment from 1.4% to 10.4%. The outlook is less certain for investment in construction and buildings and in civil works. Growth in both groups is expected to moderate, in part by reason of the sector's activity returning to normal after the sudden sharp surges in growth rates observed in the second quarter.

On the side of supply, available indicators for the third quarter give mixed signals. For instance, some industry indicators continued to show deterioration. In contrast, figures associated with farming and mining recorded improvement for the third quarter. In other sectors, such as commerce, the indicators show uneven behavior.

This *Report* estimates that value added by industry will have grown at a moderate pace in the third quarter year on year, an improvement on the situation observed in the second quarter. Specifically, in July and August the industrial-production index excluding coffee threshing rose on average by 0.4%, up from 0.2% in April-July, causing the trend component of the series to slope up (Graph 23). The behavior of the index has thus been favorable, despite the falls in the sectors of chemicals and oil refining, which have been facing a number of supply problems since the middle of the second quarter. The chemical industry has reported problems regarding the availability of raw materials, while oil refining has been affected in the year to date by scheduled maintenance work on some refineries. Although these drawbacks have continued to exist in recent months, they are less pronounced than they were in April-June. This improvement, together with moderate growth in other sectors, could signify a modest expansion in industry over the third quarter.

Accordingly, the behavior of industrial exports in July and August (5.4% average growth year-on-year) suggests some recovery in demand for this sector, mainly from Venezuela. Similarly, according to surveys by ANDI (National Business Association), the problem of low demand, which had been getting much worse since the beginning of the year, eased in August. This should help to improve the performance of industry, assuming that external and domestic demand will continue to recover over the rest of the year. But expansion in industry is expected to be modest, since confidence is still badly affected by the slowdown in world demand and the supply shocks described above. This is borne out, for example, by Fedesarrollo's orders and inventory indicators, which continued to fall in August, though they are still above their average levels for the past twenty years (Graph 24). Furthermore, production expectations for three months ahead have fallen considerably.

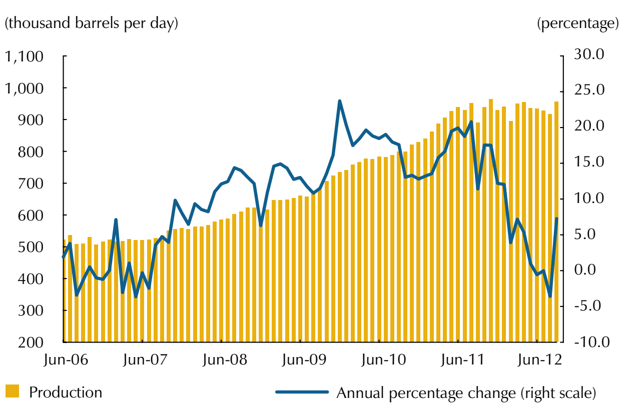
Graph 24
Manufacturing orders and inventory indices



a/ Inverted scale.

The most favorable third-quarter indicators include coffee production, which expanded year-on-year by 21%, continuing its strong recovery. In contrast, in the case of mining, oil production in July-August was less than projected and even less than the average for the year to date, a development associated with problems of crude transportation. However, the figure for September was significantly higher, suggesting that those problems were being resolved (Graph 25). Yet, despite the recovery observed in September, the level of oil production was still lower than the targets proposed at the start of the year.

Graph 25
Oil production
(monthly production, and annual growth)

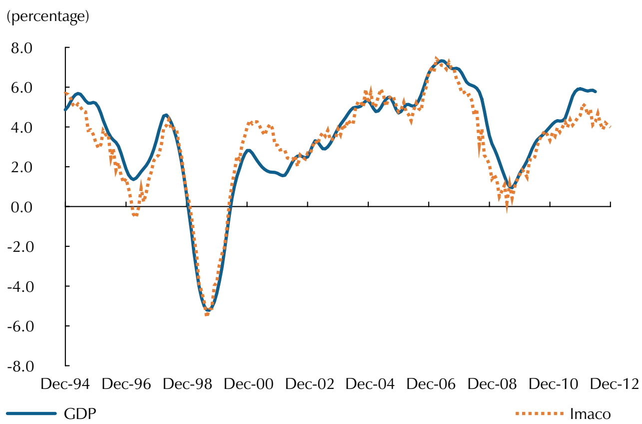


Source: National Hydrocarbon Agency and Ministry of Mines and Energy.Calculations by Banco de la República.

By economic sector, therefore, industry should continue to be the worst performing, though it is expected to pick up relative to the second quarter, as stated earlier. In contrast, the financial sector and construction could be the most dynamic. As described above, despite the slowdown in credit, the financial sector continues to perform well, which should allow financial intermediation to continue to contribute significantly to GDP. In the case of construction, the second-quarter buildings census shows a considerable increase in actual constructed area, which bodes well for the sector's performance. In addition, civil works appear to be maintaining the high levels observed in the second quarter. The mining sector, which had been growing year on year at around double-digit rates for several quarters, is expected to have slowed down quite fast, owing to the performance of oil production.

Based on the foregoing, Colombia's third-quarter GDP growth is forecast to have been in the range of 3.3%-4.8%, with the most probable scenario giving a growth rate below the mid-point of the range. This signifies a deceleration relative to the second quarter (4.9%), resulting in part from a very high base of comparison in the same period the year before and a slowdown in domestic demand, but it is consistent with an economy expanding in quarterly terms. The forecast assumes that public consumption will have grown relatively well, based on the government's announced spending plans and on the second-quarter rise in public consumption.

Gráph 26
Imaco: five-month GDP leading indicator [a/]



a/ Accumulated annual growth in twelve months.
Source: DANE. Calculations by Banco de la República.

Lastly, the leading indicator Imaco, calculated from several sectoral variables on information to August, also indicates a deceleration, similar to the above forecast (Graph 26). The growth rate suggested by the indicator is lower than the average for the past decade. However, in the past three quarters this methodology has to some extent underestimated the economy's actual expansion, at least as reported in the earlier publications. The reason for this may be the lack of representativeness of the series that make up the indicator, especially as regards mining and construction, and more particularly civil works.

Box 2
A FIRST APPROACH TO IDENTIFING TEMPORARY SUPPLY SHOCKS IN COLOMBIAN INDUSTRY

Sebastián Amador
Camilo Cárdenas Hurtado*

This Box describes a first approach to identifying transitorzzzy supply shocks in Colombian industry. The aim is to suggest a number of criteria that, by providing a better understanding of economic imbalances, facilitate the work of the monetary authority.

A temporary supply shock is defined as an exogenous event that restricts a firm's production conditions without affecting either agents' expectations or the level of employment in the medium and long term. This definition is in line with the hypothesis that firms facing factor-adjustment costs reduce their production level during the restriction period, by lowering their levels of installed capacity utilization but keeping constant, for example, their hiring levels (labor hoarding). This reaction implies that firms incorporate into their information set the fact that the shock is temporary, and this is why it does not affect their medium- and long-term expectations. On the other hand, a temporary shock can affect prices, but the price change will depend on the size of the shock compared with the menu costs. Only sufficiently large and persistent shocks will affect expectations and thus have an inflationary impact (Ball and Mankiw, 1995).

If the shock is transitory, a policy reply designed to stabilize output would involve a permanent well-being cost in the form of a higher level of prices (Gordon, 1984). Hence, for monetary policy to play its part of fostering long-term price stability and thereby facilitating a path of sustainable growth, it would be best not to respond to transitory shocks, provided they do not affect agents' expectations. Correct identification of transitory shocks is therefore relevant to monetary policy.

Bearing in mind the above considerations, we review those periods that provide evidence of strong decelerations in annual growth in the industrial production index (IPI)[1] published by DANE. At the same time we observe relative trend stability in an aggregate economic expectations index built from information produced by Fedesarrollo, and in the growth rates of permanent-employee hiring obtained from DANE's Monthly Manufacturing Sample. In addition, we make a sweep of information from newspapers and official sources, to identify anecdotically those periods in which any type of supply shock as defined above was considered to exist. The series are analyzed on a quarterly basis and are seasonally adjusted.

1. Methodology

The identification criterion was determined by analyzing the empirical distributions of the series of quarterly accelerations in annual growth in IPI and the permanent employment index, and of the series of quarterly level changes in the aggregate industrial expectations index. Quarterly acceleration in annual growth was used because it shows the same dynamics as production activity, in that if there are any factors curbing or boosting industry they will be fully reflected in the behavior of its growth rate.

After establishing the distribution of each of the series, for IPI, permanent employment and expectations, only those periods were considered in which the observed decelerations were in the 35th percentile. Thus, the quarters in which IPI growth accelerations were below this percentile and the series of industrial expectations or permanent employment were above it were classified as quarters in which production lost pace because of temporary supply shocks.

2. Findings

Through historical verification we identified 16 quarters in which, according to official sources and newspapers, transitory supply shocks occurred in the Colombian economy. The statistical exercise reveals 15 quarters in which such shocks occurred; most of these quarters coincide with the identified historical events described in Table B2.1

3. Conclusions

DOf the sixteen possible transitory supply shocks revealed by reviewing the historical sources, fourteen were identified by statistical analysis as quarters in which, on the proposed criterion, industrial production decelerated and no falls were recorded in either business expectations or permanent hiring decisions. Of these fourteen, eleven coincided in time with the historically identified events, while the other

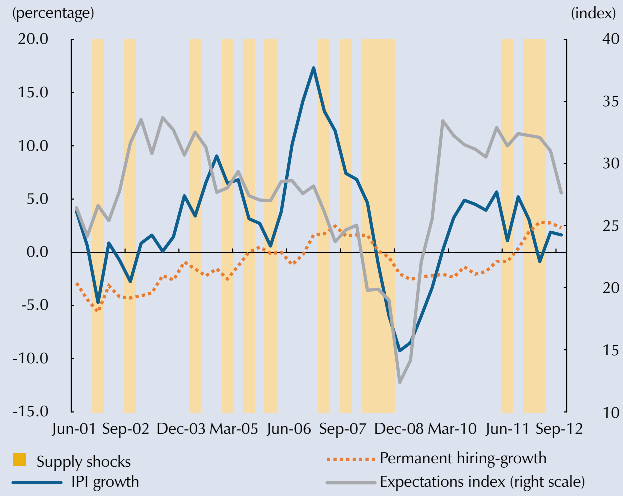
* The authors are staff of the Macroeconomic Programming and Inflation Department. They are grateful to Adolfo Cobo for his comments and to Jackeline Piraján for her help. The opinions expressed are the responsibility of the authors and do not necessarily reflect the views of the Bank or its Board of Directors.

1 The IPI series is normalized based on the number of working days in each month.

three occurred at most one quarter later or one quarter ahead. This leads to the conclusion that despite its simplicity the statistical technique described above has provided appropriate results compared with Colombia's economic history of the past ten years (Graph B2.1). Furthermore, these results support the hypothesis that companies will react to supply shocks by reducing production, without altering their expectations or levels of employment. Note that, although this model identifies supply shocks, we do not exclude the possibility of demand shocks occurring at the same time.

This article is a first approach to developing methodologies for identifying transitory supply shocks in Colombian industry. It aims therefore to draw attention to this question, rather than to give conclusive answers. Future studies should look into the part played by expectations in production decisions made by firms, and also into the significance of other variables and indicators that may be connected with identifying supply shocks.

Graph B2.1
Statistically identified supply shocks, annual IPI and permanent-hiring growth, and industrial-confidence levels



Source: Authors' calculations based on information from DANE and Fedesarrollo

References

Ball, L; Mankiw, N. G. (1995). "Relative-Price Changes as Aggregate Supply Shocks", The Quarterly Journal of Economics, vol. 110, núm. 1, pp. 161-193.

Gordon, R. J. (1984). "Supply Shocks and Monetary Policy Revisited", The American Economic Review, vol. 74, núm. 2, Papers and Proceedings of the Ninety-Sixth Annual Meeting of the American Economic Association, pp. 38-43, mayo.

Table B2.1
Historical identification of supply shocks

Year Shock?	Quarter	Description of supply shock	Statistically identified
2002	Q3	Climate factors affecting farm supply, especially potatoes.	Same quarter
2003	Q3	Adverse climate factors and transport-sector strike.	Different quarter
2004	Q2	Transport-sector strike.	Ahead
2004	Q4	Adverse farm-sector shocks connected with climate factors and a strike in banana-growing areas.	Same quarter
2005	Q2	Hurricane Katrina disrupted the supply chain of industries in the Gulf of Mexico Bay, affecting access to raw materials, and manufacturing exports.	Same quarter
2005	Q4	Excessive rainfall caused problems in coffee production and land freight transportation. Closing of Barrancabermeja refinery for maintenance.	Same quarter
2006	Q1	Drummond coal strike. Climate factors affected coffee production and gold and coal mining.	Ahead
2007	Q1	El Niño event mainly affected production of milk and fruit and vegetables.	Same quarter
2008	Q1	Strike at Cerromatoso nickel mine. Weather conditions remained adverse for farm production.	Same quarter
2008	Q2	Strikes in transport sector and in Valle del Cauca sugar-cane plantations. Rainfall continued to affect farm production and impeded freight transportation	Same quarter
2008	Q3	Lagged effects of transport strike.	Same quarter
2010	Q3	Heavy rainfall affected farm production, freight transportation and mining.	No
2010	Q4	Partial closing of Cerromatoso at the end of November. Slight contractions in iron and steel production.	No
2011	Q2	Closing of Cerromatoso had effects in the first half of 2011, especially on nickel mining. Some lagged effects of El Niño event on farm supply. The tsunami in Japan disrupted the US manufacturing supply chain, affecting the Colombian industrial sector as well.	Same quarter
2011	Q4	Climate problems affected farm supply.	Same quarter
2012	Q1	Supply problems and raw-material difficulties in the petrochemical and refining industries	Same quarter

Sources: Banco de la República's Inflation Reports and different newspapers.

III. Recent inflation developments

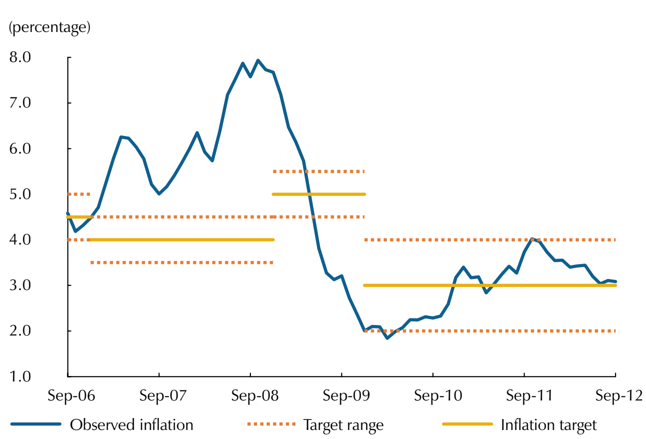
In the third quarter, annual consumer inflation continued on a downtrend, ending very close to the mid-point of the target range. Core inflation changed little, remaining somewhat above 3%.

Inflationary pressure has not been significant in recent months, for reasons including slower growth in private consumption and exchange-rate stability.

Food prices behaved satisfactorily, particularly processed-food prices, helping to reduce strongly inflation. Lower adjustments to utility rates also helped, in the case of the CPI of regulated items.

Annual consumer inflation decreased a little in the past three months relative to the second quarter, edging down from 3.20% in June, to stand in September at 3.08%, lower than forecast in the previous *Inflation Report* (Graph 27 and Table 6). After reaching a peak in October 2011, CPI has been on a significant downtrend except for a few months, converging slowly to 3%, the mid-point of the 2%-4% target range set by the Bank's Board of Directors.

Graph 27
Headline consumer inflation



Sources: DANE and Banco de la República.

From late 2011 to the third quarter of this year the falls in annual consumer inflation were associated with smaller annual price increases in food, particularly processed food, and in regulated items, especially utilities. From January to September 2012 the accumulated rise in CPI was 2.32%, significantly lower than the rise over the same period in 2011 and still well below 3%. In view of this and the fact that price increases tend to be lower late in the year than

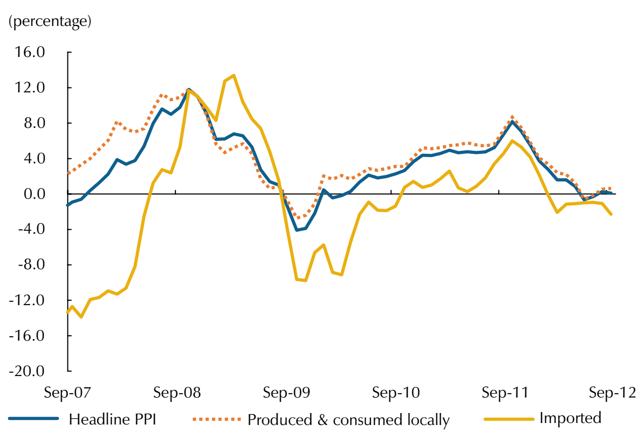
Table 6
Consumer inflation indicators
(at September 2012)

Description	Dec-11	Mar-12	Jun-12	Jul-12	Aug-12	Sep-12
Headline inflation	**3.73**	**3.40**	**3.20**	**3.03**	**3.11**	**3.08**
Non-food inflation	3.13	2.95	2.80	2.74	2.75	2.87
Tradables	0.80	0.68	1.01	1.03	0.97	1.09
Non-tradables	3.64	3.71	3.62	3.68	3.94	4.02
Regulated items	5.81	4.94	3.92	3.48	3.13	3.31
Food inflation	**5.27**	**4.56**	**4.22**	**3.79**	**4.02**	**3.63**
Perishables	7.73	5.18	(2.04)	(3.86)	(3.00)	(2.35)
Processed food	4.50	3.69	5.12	4.95	5.08	4.33
Eating out	5.59	5.87	5.52	5.37	5.39	5.21
Core-inflation indicators						
Non-food inflation	3.13	2.95	2.80	2.74	2.75	2.87
Core 20	3.92	3.76	3.56	3.65	3.80	3.71
CPI excl. perishable food, fuel & utilities	3.18	2.99	3.23	3.27	3.30	3.33
Inflation excluding food and regulated items	2.38	2.38	2.48	2.52	2.64	2.74
Average of all indicators	3.15	3.02	3.02	3.04	3.12	3.16

Source: DANE. Calculations by Banco de la República.

in the first half, the likelihood that inflation ends 2012 very close to the long-term target (3%) can be said to be quite high.

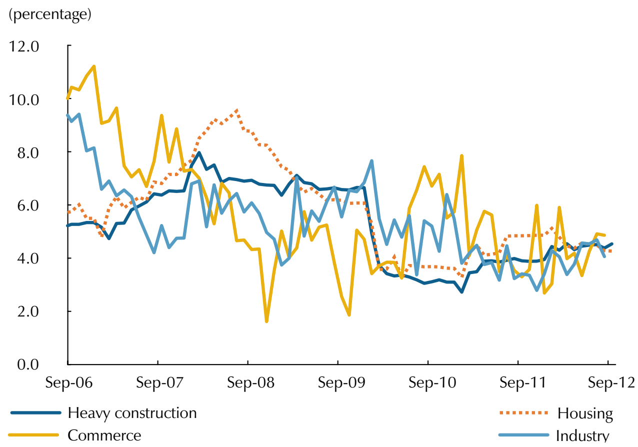
Graph 28
PPI, by origin of goods
(annual change)



Source: DANE.

In general, there was no evidence of significant inflationary pressure in the third quarter. On the side of demand, inflationary pressure should have eased a little, given that household demand tended to lose pace and consumer and business loans decelerated. Moreover, non-wage cost pressures have continued to moderate in recent months, as suggested by low annual changes in the headline producer-price index (PPI): 0.1% in September and 0.7% in June (Graph 28). Furthermore, wage costs have been contained for several months, with nominal increases ranging between 4.0% and 5.0%; these rates are compatible with meeting the inflation target, provided that labor productivity grows at an annual pace of 1.0% (Graph 29).

Graph 29
Nominal wages
(annual percentage change)



Source: DANE. Calculations by Banco de la República.

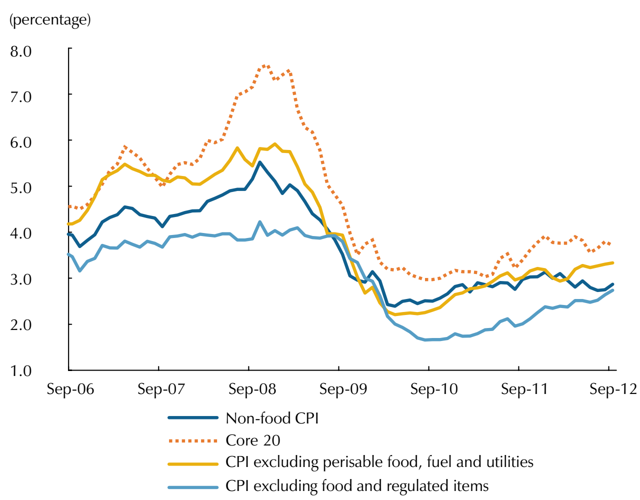
In addition to the above factors, inflation expectations have behaved satisfactorily, and there has been little pressure from depreciation. At September, expectations had fallen back, converging toward 3%, as described in Chapter IV. That should have reduced the frequency of price adjustments to many indexed goods and services, and it has attenuated wage increases. The exchange rate has stayed fairly stable at around 1,800 pesos to the dollar in the past eight months, curbing pressure both on import costs– as evidenced by the low level of the respective PPI (2.3% at September)–, and on consumer prices, as described in detail below.

A. CORE INFLATION

The average of the four core-inflation indicators regularly monitored by the Bank edged up in the third quarter, from 3.0% in June to 3.2% in September. This was not much of a change relative to the average observed in the first half of 2012, when core inflation was relatively stable. In fact, the average rate in December 2011 also stood at 3.2%.

The rise in the core-inflation indicators' average cannot be attributed to greater inflationary pressure in recent months, for it resulted in good measure from a low base of comparison in the third quarter of 2011, when some prices for entertainment, culture and recreation fell sharply, a development that has not occurred this year.

Graph 30
Core-inflation indicators



Source: DANE. Calculations by Banco de la República.

In the year to date, including the third quarter, the four core-inflation indicators have stayed within the range of 2% to 4%. Non-food CPI, in particular, rose year-on-year from 2.8% in June to 2.9% in September; since March it has stayed below 3%, without exhibiting any particular trend. Core 20 has behaved somewhat similarly, though it stands highest of the four indicators (3.7% in September) (Graph 30).

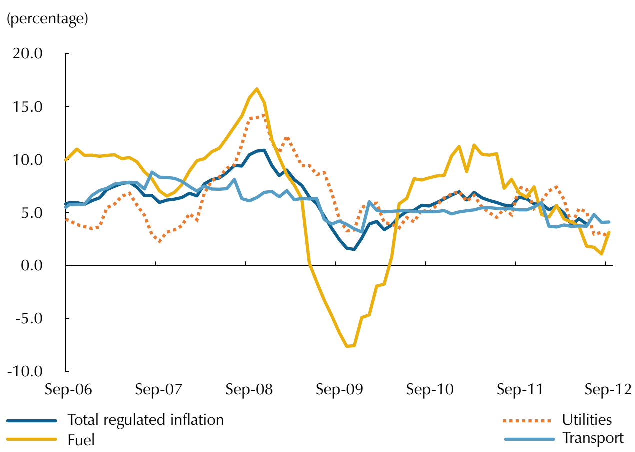
The other two indicators have also risen in recent months, the CPI excluding food and regulated items, which has been on an uptrend for over two years, but running still below 3% (2.7% in September) (Graph 30). In 2010 and 2011 exchange-rate appreciation and, probably, lower international prices brought down the prices of tradable goods, which kept the annual change in the CPI excluding food and regulated items at around

2%. Those developments have not occurred in 2012, and so this indicator should be approaching the 3% point target.

In the third quarter two influences were evident in non-food CPI and the other core-inflation indicators: price falls in regulated goods and services, and price rises concentrated in some items of both tradables and nontradables.

The CPI of regulated items fell year on year from 3.9% in June to 3.3% in September, a bigger fall than forecast in the previous quarterly *Report*. This indicator has been decelerating almost uninterruptedly for a year, from the latest peak of 6.5% in September 2011 (Graph 31). Its fall in the past three months is attributable to utilities CPI, which has been decreasing all through the year, but more sharply between June (5.1%) and September (2.7%).

Graph 31
Annual inflation of regulated items and its components

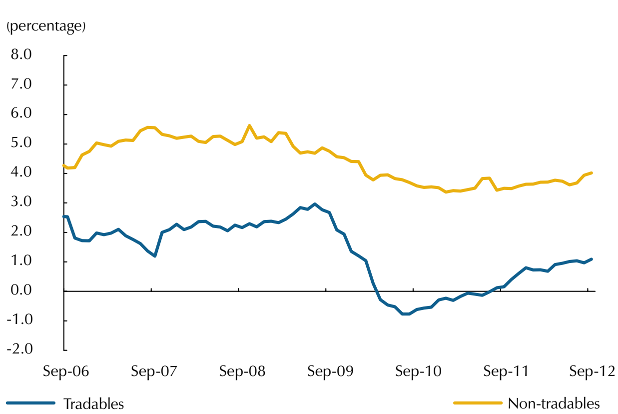


Source: DANE. Calculations by Banco de la República.

In September, however, there was an unexpected significant increase in electricity rates (over 3%), attributable to an unusual price rise on the National Power Exchange, owing to the greater initial probability of an El Niño climate event occurring. But prices on the Exchange began to fall in early October, as soon as the probability was revised down.

The third quarter saw acceleration in fuel (3.1%) and public transport (4.1%). In the case of fuel, if the Tax Reform bill is approved it should go into effect in 2013 and could lower the price of gasoline by around 200 pesos a gallon, by replacing VAT and the global tax, now amounting to approximately 1,250 pesos a gallon, by a general gasoline tax of 1,050 pesos a gallon. In the case of transport, fares on Bogotá's Integrated Public Transport System (SITP) can also be expected to decrease: transfers within the system are to be free of charge in off-peak hours and cost 300 pesos in peak hours, introducing a considerable reduction for passengers making transfers. This change is being put in place gradually, according to a pre-established schedule: for example, of the 650 new routes, only a few have been inaugurated in some quarters of the city. But faster progress should be made in 2013.

Graph 32
Annual inflation in tradables and non-tradables , excluding food and regulated items

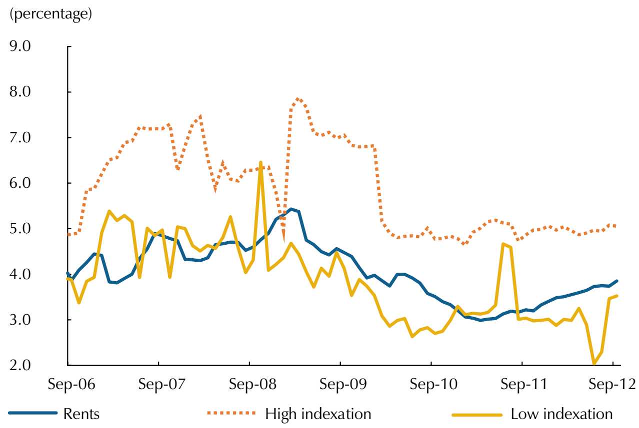


Source: DANE. Calculations by Banco de la República.

The non-tradable component of non-food CPI, having remained relatively stable for two years at around a year-on-year rate of 3.6%, rose to 4.0% at the end of the third quarter (Graph 32), owing to two developments.

The first and larger one was a year-on-year acceleration in the CPI of entertainment-connected services, which

Graph 33
Annual inflation in non-tradables



Source: DANE. Calculations by Banco de la República.

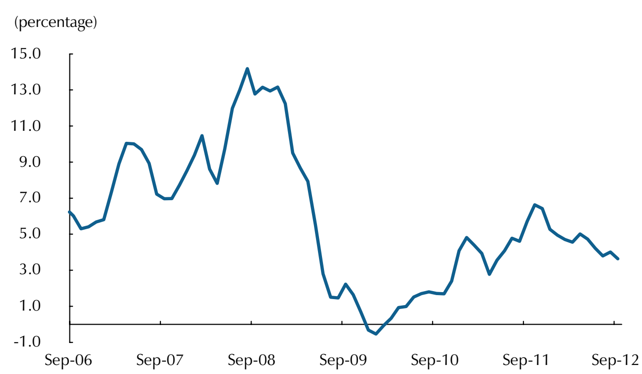
stemmed not so much from prices rising in recent months as from a fall in prices in the third quarter of 2011, which did not occur again this year. This item (particularly football tickets) decreased by a little over 17% from June to September of last year, compared with just 1.6% this year, with the result that the year-on-year change surged, pushing up the non-indexed segment of nontradables as well as nontradables as a whole (Graph 33). In this case, the acceleration was not attributable to greater demand pressure or expectations issues, for it was caused, among other things, by specific shocks that should have no bearing on either long-term inflation or monetary inflation.

The second development had to do with a slow but steady rise in housing rents, which continued into the third quarter. The year-on-year rise in rental CPI was 3.9% in September, up from 3.7% in June and 3.4% in December 2011 (Graph 33). The accumulated increase in demand since 2010 probably explains this rise, which may also be connected with higher real-estate prices.

Lastly, the tradable component of non-food CPI fluctuated around 1% in the past quarter, rising very little between June and September. This was in contrast to its steeper uptrend from the second half of 2010 (Graph 32). Some toiletries and household products, such as insecticides and clocks, rose by more than 1.0% during the quarter. In contrast, the prices of such items as electrical, electronic and communications devices continued to fall. Cars, the consumer basket's third biggest item (4.4%), registered a pick-up in prices, after almost continuous falls in recent years. In general, the tradable group's relative stability in recent months is consistent with the fact that there were few changes in the exchange rate over the same period.

B. FOOD INFLATION

Graph 34
Annual food inflation

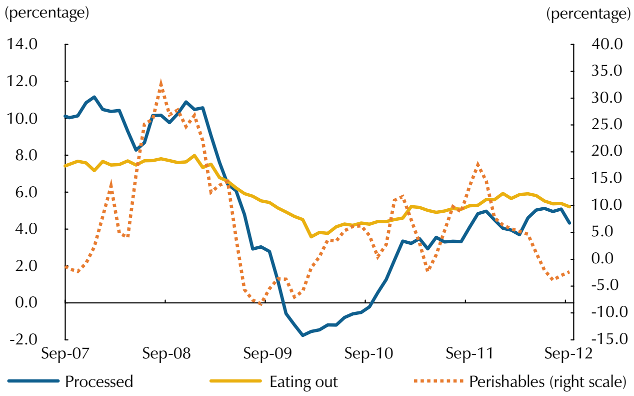


Source: DANE. Calculations by Banco de la República.

Food CPI is the subgroup that has contributed most to slowing inflation in recent months. At 3.6% in September, food inflation was 59bp lower than in June and lower also than forecast in the previous *Inflation Report* (Graph 34).

Year-on-year change in food CPI has been on a downtrend since the end of last year, largely because prices for a broad range of perishable products have either fallen or risen only slightly. Relatively high prices in 2011 and favorable weather conditions so far this year have favored this behavior, which extended into the third quarter (Graph 35). In August and

Graph 35
Annual food inflation, by group



Source: DANE. Calculations by Banco de la República.

September, however, perishable-food prices began to exhibit some increases or smaller falls, which could indicate that their down cycle was coming to an end, and that the year-on-year change in perishable-food CPI will stop falling in the coming months, as in fact it did last month.

Processed-food prices rose rather modestly in the third quarter and even fell in some cases, which lowered their year-on-year rise slightly, from 5.1% in June to 4.3% in September, making this the subgroup that most contributed to slowing inflation during the quarter. The third-quarter increase in international prices for cereals and oils does not seem to have passed through yet to consumer prices in Colombia. Eating out has also trended down in 2012, from levels close to 5.9% at the beginning of the year to 5.5% in June and 5.2% in September.

IV. PMEDIUM-TERM FORECASTS

This Report's growth forecasts are not much different from the June Report's. The Colombian economy is expected to maintain a growth rate for all of 2012 and 2013 close to the average for the past decade (4.3%).

It is highly likely that inflation will end this year at around the long-term target (3.0%) and remain at this level in 2013. Demand pressure will continue to be subdued.

Risks to growth and inflation in Colombia continue to have a downside bias because of the hazards still surrounding world economic stability.

A. ECONOMIC GROWTH

The growth estimates presented here are only marginally different from those of the previous *Inflation Report.* According to the latest forecasts for the whole of 2012 and 2013, the Colombian economy will grow in real terms at a rate close to the average for the past decade. Although a greater amount of information has become available for assessing the forecast range, much uncertainty still surrounds the international environment, posing considerable downside risks. Private consumption and investment are generally projected to continue expanding by less than they did in the first half of this year and in 2011, as a result of domestic confidence being dented, owing in part to the difficult international conditions and weak external demand.

Although growth in the world economy and Colombia's main trading partners is projected to be slightly higher this year and next, the international situation is still expected to remain difficult and exports to continue to lose pace. In addition, the uptrend in the terms of trade that started in 2009 is projected to slow down on average for this year (as in fact it has been doing in recent months) and in 2013, with oil prices not increasing over the rest of this year and even falling a little next year, as discussed in Chapter I. Both these developments could have an adverse effect on public and private national income for the rest of this year and for the next.

The growth projections presented further below also took into account the following assumptions on government consumption and on investment in civil works. Government consumption is assumed to expand year-on-year at rates in the range of 4.7%-5.3% for 2012 and 3.0%-6.0% for 2013. These figures are generally consistent with: satisfactory central-government tax collection; higher spending on ongoing programs of recovery from the previous years' rains; and greater regulation and oversight responsibilities assigned to the State. In view of the programs of investment in road building and social-housing construction, growth in civil works is expected to be in the range of 1.5%-10.2% for 2012 and 7.0%-13.0% for 2013; the large width of these ranges is meant to capture the volatility observed in recent years in civil works.

Growth in consumption for the whole of 2012 is projected to be lower than in 2011.

Based on the foregoing and as anticipated in a number of recent *Reports,* growth in private consumption for the whole of 2012 is still projected to decelerate relative to 2011, with year-on-year growth rates at around the average for the past ten years. Note, however, that consumption of durable goods is forecast to pick up in the fourth quarter of 2012 relative to its expansion observed in the second and growth projected for the third, driven in particular by higher car sales. For 2013, household consumption is seen as maintaining its pace of expansion, with year-on-year growth rates that could be similar to those forecast for this year

Some of the reasons for this moderation are mainly connected with the behavior of disposable family income. Remittances from the rest of the world to Colombian households decelerated in the first half of the year and are expected not to grow in the second half and to expand by very little in 2013, because of Spain's deteriorated situation and the low performance of the US economy. In addition, credit expansion for the rest of the 2012 is projected to be low, owing in part to the measures taken by the financial authorities in the first half of the year. Besides, the cycle of household consumption may be reaching a peak, particularly in the case of durable goods, so that the outlook for the second half of 2012 and for 2013 points to smaller expansion in these segments. It is not yet clear what impact the Tax Reform will have on household consumption, but the proposed tax changes are not expected to have any bearing on patterns of family consumption.

Year-on-year growth in fixed-capital formation should also be lower in 2012 and 2013 than last year, with investment in transport equipment and in machinery and equipment slowing down the fastest, owing to loss of pace in credit expansion and lower levels of industrial confidence.

EMining, construction and the financial sector will be the most dynamic sectors in 2012.

Regarding external trade, exports are still projected to decelerate significantly in 2012 relative to 2011. This is consistent with the external sector described earlier and with lower commodity prices on international markets. For 2013, export growth should continue to be weak, in view of the very poor expansion projected for the world economy and the country's main trading partners. Imports, too, are forecast to perform less well in 2012 and 2013 than they did in 2011, in line with the poorest expansion estimated for private domestic demand.

Regarding the supply side of GDP, in the most likely scenario mining, construction and the financial sector are forecast to be the most dynamic sectors in 2012. In mining, the June *Report's* projections for oil production have been revised down, because the downside risks associated with crude transportation problems did materialize and extended into the middle of the third quarter.[7] The most probable growth scenario therefore envisages production for the next three months to remain at around the levels observed in September. Thus, average annual crude production should be around 940,000 barrels a day, lower than the previous Report's forecast (950,000 barrels), but higher than was recorded in 2011. For 2013, oil production is projected to rise by 11.6% (to one million barrels a day), which is consistent with the central scenario discussed in Chapter I for the balance of payments.

Oil production this year will be lower than projected in previous Reports.

Something similar is expected to occur in the case of coal production. It was expected to grow significantly in 2012 as a whole but is now projected at less than 93 million tonnes, which is below the targets proposed at the beginning of the year and also lower than forecast in previous *Reports*.

In this context, mining GDP is projected to grow at lower rates than in the past four years and a little more slowly than predicted in the previous quarterly *Report*. It should, nevertheless, continue to be the most dynamic sector of the Colombia economy this year and next.

In construction, the subsector of buildings should show positive growth for 2012 as a whole, but at a lower rate than the 10% average observed for the first half of the year. In view of the government's social-housing program and higher real-estate prices, a relatively satisfactory performance can also be expected for 2013. For the subsector of civil works, the most probable scenario predicts that the levels observed in the second quarter will be maintained over the rest of 2012, signifying a deceleration for the third and fourth quarters, but even so the contribution of civil works to growth should be considerable. For 2013, the announcements of investment in projects including road infrastructure and mining bode well for civil-works performance next year.

Construction can be expected to perform well in 2013, in view of the government's housing programs.

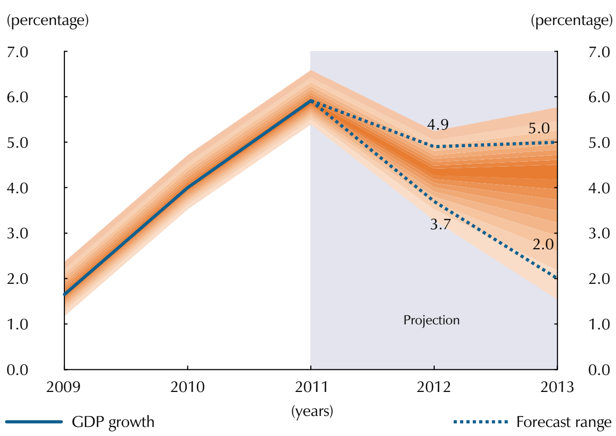
7 In that environment, production was less than forecast, particularly in July and August (924,000 barrels of crude a day, on average), but recorded a significant recovery in September (956,000

In 2013 industry will expand by less than the overall economy.

Lastly, financial-sector GDP should continue to expand at a significant pace, thanks to growth in value added by financial intermediation, driven by the still relatively high rate of increase in bank credit. Although this credit behavior will tend to moderate in the second half of the year relative to the first, the rate of increase will continue to be high. Something similar can be expected for next year, since banking levels are still low in Colombia compared with other countries of the region, and there is therefore room for the coverage of intermediation services to be extended.

Regarding other sectors of the economy, the projections also envisage a slowdown in transport and commerce for 2012 as a whole, relative to last year, and a moderate expansion for 2013. Industry is projected to pick up in the second half of the year, having fallen back slightly in the first half, assuming that the supply problems connected with access to raw materials and scheduled maintenance work on some refineries will be resolved over the rest of the year. Moreover, the recent behavior of industrial exports, particularly to Venezuela, points to some recovery in the sector's external sales, at least according to data for July and August. Industrial production can therefore be expected to show signs of recovery toward the end of this year, thereby managing to avoid contraction for 2012 as a whole. But deterioration in industrial confidence and great uncertainty about the international environment could outweigh the recovery, resulting in a moderate expansion for 2013, below the average for the economy.

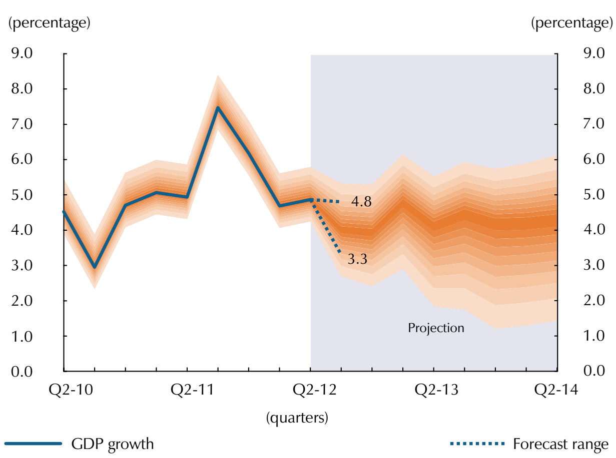
Graph 36
Fan chart of GDP growth



Source: DANE. Calculations by Banco de la República.

The above information has provided sufficient reason for slightly raising the previous *Report's* central growth projection for the Colombian economy for 2012 and at the same time reducing the GDP forecast range. For 2013, however, the range has been left unchanged, given the existing great uncertainty, mainly surrounding the international context because of the difficult situation in Europe. The new forecast range for 2012 as a whole is 3.7%-4.9%. For 2013, the projection should be 2.0%-5.0%. The most probable path indicated by assessment of the balance of risks is consistent with the central scenario and runs close to the mid-point of the range for 2012 but stands in the upper half of the range for 2013 (Graphs 36 and 37)

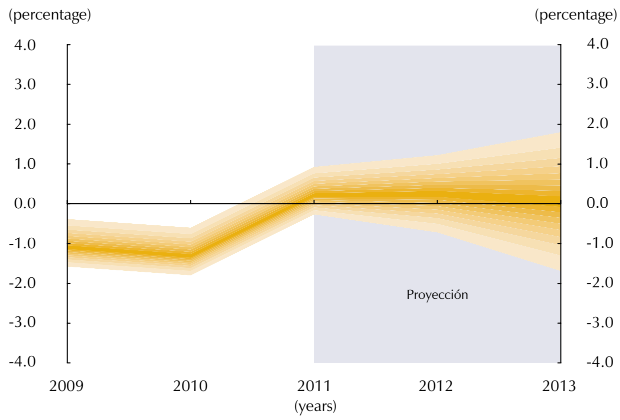
Graph 37
Fan chart of annual growth in quarterly GDP
(annual average)



Source: DANE. Calculations by Banco de la República.

In the current assessment, the downside risks associated with the international context are connected with those envisaged in the low scenario described in Chapter I: significantly lower external demand, lower transfers, lower levels of FDI, and lower terms of

Graph38
Fan chart of output gap



Source: DANE. Calculations by Banco de la República.

trade. In this more adverse environment, household and investor spending could decelerate sharply, from the impact that higher external uncertainty would have on consumer and business confidence. The upside risks are mainly associated with possible decreases in raw-material import costs and better performance in public investment and consumption.

The growth expectations for 2012 and 2013 presented in this Chapter point to a positive output gap for 2012, and a narrower gap for 2013 that should not however go into negative territory. Graph 38 shows the 2012 gap interval to be 0.8%-1.2%, slightly smaller than projected in the previous Inflation Report.

Regarding the labor-market gap, the new projections are in line with the previous Report's, as they indicate a negative gap for 2012 and a slightly more negative one for 2013. That is to say, the unemployment rate is expected to remain a little below Nairu in the next quarters. Although a tighter labor market could lead to higher wage increases, such increases are currently lower than envisaged in the previous Report, because unemployment has been falling more slowly.

B. INFLATION

1. Forecasts

The inflation forecasts presented in this *Report* are not much different from those of the June Report, for no significant changes have occurred in the domestic and external economic outlook. Colombian consumer prices are not expected to come under strong upward pressure in the coming quarters, for several reasons.

First, because the global economy is expected to perform weakly for the rest of this year and in 2013, which will mean slow expansion of Colombia's export markets, particularly for industrial products. This can have some bearing on business and consumer confidence, as might have already occurred in recent months. This situation should lead to lower growth in domestic spending on both consumer and capital goods this year and next, relative to 2011.

Moreover, interest-rate increases up to February 2012 and Financial Superintendence regulations have helped to moderate growth in the different types of credit, and everything seems to indicate that this trend will continue over the rest of the year. Note that the two the intervention rate cuts made in July and August, totaling 50bp, are passing through with a lag to market rates and hence to the pace of lending. Credit performance in the coming months should not therefore be a factor boosting growth beyond the economy's potential capacity, at least during the rest of 2012.

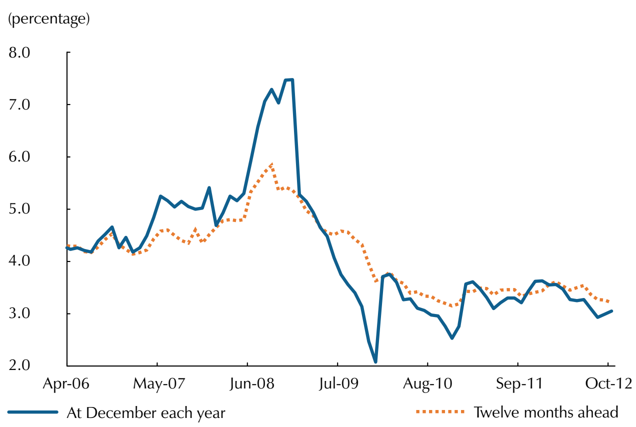
In this setting of weak external demand and a more moderate rise in domestic demand than in the past, output gap estimates suggest that the gap may have narrowed in the year to date and should be converging to zero in the coming quarters, reducing the likelihood of inflationary pressure arising from demand. Those estimates, which are similar to the June *Report's* projections, envisage GDP growth rates for full-year 2012 close to the mid-point of the forecast range (3.7%-4.9%), while growth for 2013 stands in the upper half of the respective range (2.0%-5.0%), both presented above.

With world demand growing very modestly, international commodity prices are not expected to rise during the rest of the year or in 2013. Although the forecast for the international oil price one to two years ahead has been revised up in this *Report,* the projected figure is still below the levels observed in recent months. In fact, as shown in Chapter I, the average forecast for next year (US$108 a barrel for Brent) is lower than the average projected for 2012 (US$112 a barrel). If this situation materializes, it should limit commodity- and transport-price rises and thus prevent pressure from non-labor costs.

No significant upward pressure is expected from labor costs, at least for the rest of 2012 and early 2013. The unemployment rate should not deviate much from its noninflationary level (Nairu) in the coming quarters; and a more moderate economic growth at the end of this year and in 2013 may imply smaller successive falls in unemployment than those observed recently. This will ensure a balanced labor market, in which wage increases should not move too far from the 3% inflation target. Furthermore, if the labor reform is approved as presented by the government with regard to reduction of payroll parafiscal taxes, it could mean a one-time reduction of up to 8% in hiring costs for many firms.

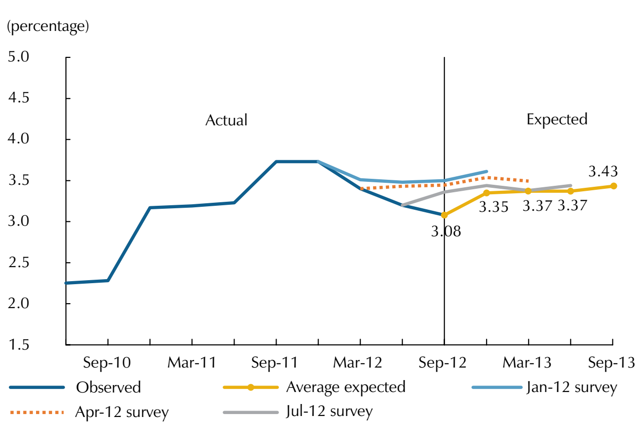
Inflation expectations also favor consumer prices consistent with the inflation targets set by the Board. According to the Bank's monthly survey of financial-market analysts, inflation expected for December this year stood at 3.0% in October, down from 3.3% in June, while the rate for twelve months ahead stood at 3.2%, down from 3.4% (Graph 39). Expectations derived from two-, there-, and five-

Graph 39
Forecasts of annual inflation by banks and stockbrokerage firms



Source: Banco de la República.

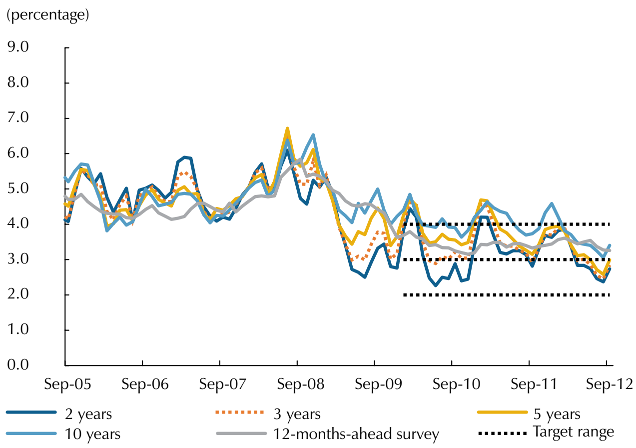
Graph 40
Observed inflation ,and inflation expectations (three, six, nine and twelve months ahead) (annual inflation)



Sources: DANE and Banco de la República.

year TES securities, on figures to the third week of October, also indicate a figure around 3%, though expectations were lower the month before (Graph 40). The highest results came from the quarterly survey of businessmen and analysts, but neither in this case did they exceed 3.5% for horizons of one to four quarters, and as in the previous cases they were lower than in the past quarter (Graph 41).

Graph 41
Inflation expectations derived from TES securities
(2, 3, 5 and 10 years ahead)
(monthly average)[a/]



a/ Nelson and Siegel methodology.
Source: Banco de la República.

Consequently, the central forecast for headline consumer inflation has changed marginally relative to the path estimated in the June Report. Headline inflation is now expected to remain a little above 3% in the next four quarters, without exhibiting a definite trend. By the end of next year it should converge to 3% and stay there or a little below this rate in 2014.

The short-term forecast for non-food inflation is very similar to the June *Report's,* while the forecast for mid-2013 and early 2014 has been revised up a little. As explained below, the upward revision resulted from higher projections for regulated items and non-tradable, which were not fully offset by lower projections for tradables. Non-food inflation should rise slightly in the last months of the year, but without exceeding the 3% target. For 2013 it could go up a little, to run above the target but should converge toward it in the fourth quarter and stand below it by mid-2014.

The likelihood of an El Niño event occurring has decreased substantially in recent months.

Better-than-expected food prices in recent months have lowered the projection for food inflation for the end of this year and for 2013. The central path of the forecast envisages food inflation fluctuating between 3.5% and 4.0% in the next three quarters and then converging toward 3% or a little below this in the second half of 2013 and in 2014.

Perishable food may exert less downside pressure in the next two or three quarters than in the year to date, but more moderate price rises are expected in processed food, since no significant increases are anticipated in international prices for food, fuel and transport. Moreover, the fact that there is little depreciation pressure on the exchange rate will help to moderate the transmission to Colombian consumer prices of the increases recorded up to a few months ago in world prices for oils and cereals.

The forecast for inflation assumes that annual change in rental CPI will stabilize at around 4%.

This Report's central path does not envisage the potential impact of an El Niño climate event. Note that, according to Colombian and foreign meteorological organizations, the likelihood of such an event occurring has diminished significantly since the last *Inflation Report*: it is currently 55%, down from 80% before. If an El Niño event does occur, it is expected to be weak or moderate, producing a transitory and not very pronounced impact on food prices, particularly in the first half of 2013.

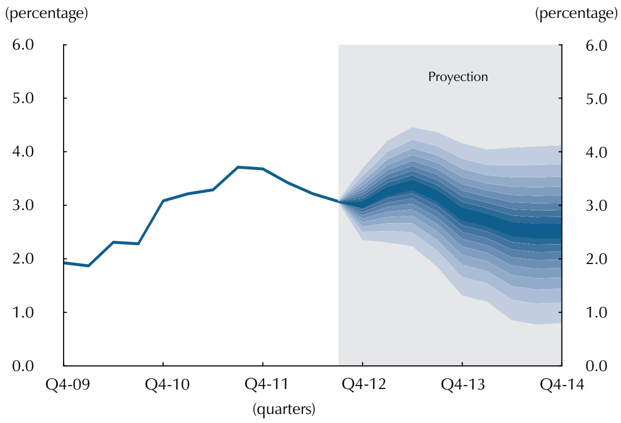
The projection for nontradable CPI excluding food and regulated items has risen a little for the rest of 2012 and for 2013. It is expected to fluctuate at around 4.0% for the next three quarters and then fall slowly toward the long-term target. The rise in the forecast has been caused by recent months' higher-than-expected results and by the fact that the models used have a strong autoregressive component that captures the historical behavior of this variable. It has resulted also, in part, from the year-on-year surge in entertainment, brought about by a low base of comparison, as indicated in Chapter III. It is thus a one-time development that may persist in nontradable CPI for up to a year. Note that there has been little change in both output-gap projections and inflation expectations, so that in principle the upward revision does not stem from estimations of higher demand pressures or of less confidence about the inflation target being met. The forecast assumes that the annual change in housing rents will stabilize at levels close to 4.0%.

The forecast path for tradable CPI excluding food and regulated items has fallen a little in this *Report*. It is expected to stand very close to levels observed in the third quarter by the end of 2012 and to rise a little in 2013, without moving away too much from 1%. In the long term it should converge slowly to the inflation target. In this *Report*, as in the June *Report,* this performance results from the expectation that in the coming quarters there will be little depreciation pressure, and that international prices for commodities and industrial products will remain stable or tend to fall because of weak global demand.

Lastly, relative to the June *Report* the forecast for regulated items has been revised down for the short term but raised a little for the second half of 2013 and for 2014. In any case, the path for the coming quarters is still expected to remain below 4% and should not therefore generate any upward pressure in that period. By mid-2013 a rise should be observed because of a low base of comparison, but it should be transitory. For the end of next year price adjustments in fuel, public transport and utilities should not be much different from the levels expected for this year.

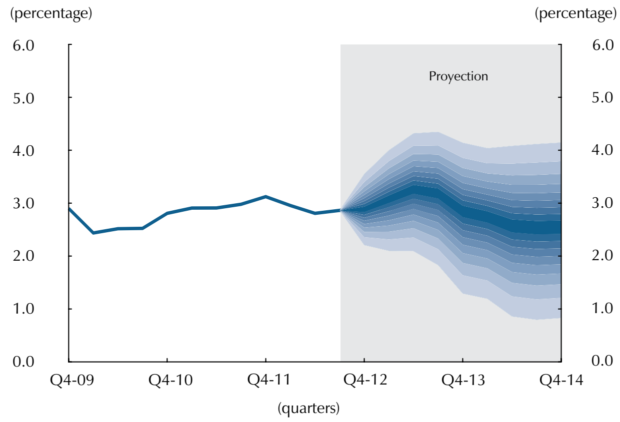
The central path does not take into account any potential fuel-price reduction that would occur if the tax reform presented by the government in mid-October is approved by Congress, as mentioned in Chapter III. According to the government, the reduction would be 200 pesos a gallon; that is to say, 2.3% of the price at September this year. Nor does the current forecast take into account the downside effect that could arise from extension of Bogotá's integrated public-transport system, as explained also in Chapter III.

Graph 42
Fan chart of headline inflation



Source: DANE; Calculations by Banco de la República.

Graph 43
Fan chart of non-food inflation



Source: DANE; Calculations by Banco de la República.

2. Balance of risks

The balance of risks estimated for headline consumer inflation and the one for non-food inflation are presented in the fan charts of Graphs 42 and 43. The width of the intervals is the same as in the previous *Report* because of the continuing uncertainty stemming from the international context. And downside biases are still greater for next year, though a little less so than in the previous quarter's *Inflation Report.*

The main downside risks envisaged in this *Report* are:

- *Slower world growth than is predicted in the central path of the forecast:* Although international financial conditions have improved in recent months, thanks to policy actions by the major central banks, there is still great uncertainty about the sustainability of some advanced economies' public finances and financial systems, particularly in Europe. The possible effects of a worsening of these problems still pose a considerable risk to growth, which could lead to a new world recession. These fears are based on: the little chance several of those economies seem to have of growing in the middle term; the weakness and fragmentation of commercial banks; and the lack of any signs of recovery in consumer confidence. Furthermore, there is little clarity about some of those countries' government policies on public finances. In the United States there is the risk of a potential contractionary impact if an appropriate solution is not found to the fiscal-cliff problem. Lastly, the Chinese economy may slow down faster than expected.

If the downside risk described above materializes, the impact on Colombia's economy would include, among other things, consumer and investor confidence being hard hit, as they were in the 2008-2009 recession, and lower income from exports and FDI. Moreover, this scenario would entail a fall in the terms of trade, which would affect government and private-sector income. As a result, consumer prices would be pushed down by negative demand pressure, lower production costs and lower fuel prices. These effects would outweigh the impact of greater pressure from depreciation of the peso, as happened in 2009.

- *Lower regulated prices than is projected in the central path:* It is possible that in 2013 oil and other fuel prices will be lower than is projected in the central path of the forecast, if supply conditions are better than is anticipated in this Report. There is currently some evidence that the advanced countries' fuel inventories are rising and doing so not only because of weak global demand. For example, there are signs that the United States is expanding its oil and gas production capacity, to which can be added a more efficient use of energy inputs.[8] In the short term (2013), this can have a downside impact on inflation, through lower production and transport costs and lower adjustments to regulated prices. In the long term, the repercussions will be more problematic for a commodity-exporting country like Colombia.

- *Impact of the Free Trade Agreement with the United States:* Lower tariffs under the Agreement on a great number of intermediate goods and some final goods could put further downward pressure on consumer prices, affecting especially tradable goods but also all other goods by reducing production costs. They would have a one-time effect on price levels, and the impact on annual inflation would be transitory.

- *Impact of the tax reform on prices:* If the tax reform is approved, it could have a one-time downward impact on price levels, which would be transitorily reflected in annual inflation. The impact would come from the proposed lowering of the price of gasoline and labor-hiring costs. The new VAT structure would also have a net downward impact on CPI, albeit a small one.

The main upside risks are:

- *Stronger growth in domestic demand:* Domestic demand could grow faster than expected, driven in particular by investment in civil works and by the government's housing programs. Should these developments occur, they could lead to upward revision of the output gap and of the projections for the CPI components most influenced by demand.

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8 In Australia an important policy response was the central bank's public awareness campaign, directed at families and economic agents in general, on the risks involved if the rising trend in housing prices and in credit were to continue.

- *Occurrence of an El Niño climate event:* Although the likelihood of an El Niño event occurring is substantially lower than envisaged in the previous *Report*, it cannot be overlooked completely. If it does occur, its impact on inflation will depend on how long it lasts and how strong it is. In principle, the estimated risk is that food prices would rise by more than is projected in the central path presented in this *Report* and that the rise would be concentrated between the first and third quarters of next year. The direct impact on CPI would be transitory, but could become stronger and last longer if it affects inflation expectations.

- *Greater exchange-rate depreciation than expected in the central scenario:* The high level of international uncertainty may increase the perception of risk posed by emerging economies such as Colombia, thereby affecting capital flows both of portfolio investment and FDI and of credit. In that event, the peso and also other currencies of the region could tend to depreciate by more than projected, and such higher depreciation could be passed through to the prices of tradable goods and of commodities, among other things.

Although the assessment of the different risks in the fan charts shows a downside bias, the probability that headline inflation will be in the range of 2%-4% for 2012 and converge to the long-term target (3%) for 2013 is still high and, in fact, a little higher than in the previous Report. The same is true for the balance of risks for non-food inflation. It is worth saying that the central path of the forecast presented in this *Report* assumes an active monetary policy, with interest rates being adjusted to ensure that the long-term inflation target is met.

V. Risks to long-term Macroeconomic stability

Estimates show that since 2007 some macroeconomic indicators have been deviating from trend, which suggests that imbalances could be accumulating in the economy.

The recent international financial crisis has given relevance once again to global and local macroeconomic imbalances. Such imbalances can make an economy vulnerable to adverse shocks or heighten this vulnerability and can be a contributing factor to the occurrence of future crises. Hence, discussion continues on the role that should be played by economic policy when a macroeconomic imbalance is expected to occur or has occurred, including, for example, overvaluation of assets, and excessive credit growth. The discussion is carried out both in countries that apply inflation targeting and in others that do not do so explicitly but do pursue price stability and other aims.

Although it is difficult to foresee with certainty the formation or presence of macroeconomic imbalances, it is important to monitor their potential generation.

Although it is difficult to foresee with certainty the formation or presence of macroeconomic imbalances, it is important to monitor their potential generation. In this respect, analyzing and publishing studies that report on the monitorings can be considered a macroprudential policy, which will provide broader information to agents and help at least to prevent imbalances from growing.[9]

9 In Australia an important policy response was the central bank's *public awareness campaign,* directed at families and economic agents in general, on the risks involved if the rising trend in housing prices and in credit were to continue.

Publishing studies that report on the monitorings can be considered a macroprudential policy, which will provide broader information to agents and help at least to prevent imbalances from growing.

The evidence shows that in developed countries whenever large capital inflows or considerable increases in the terms of trade have occurred, the financial system has tended to multiply their impact on asset prices and aggregate demand, through significant increases in credit. That may happen partly because greater confidence is incorporated in the formation of expectations by agents. Several authors[10] suggest that those flows may also contribute to forming imbalances, for persistent capital inflows are associated with real appreciation and with significant deterioration in the capital account. At those times there is usually an increase in credit supply and overvaluation of assets, potentially leading to exchange-rate and financial crises.[11]

The above situations, in addition to helping to create bubbles and boosting current-account deficits that may become unsustainable, make credit institutions more vulnerable. Hence, the importance of monitoring the evolution of the current-account deficit, the potential misalignment of the real exchange rate, and the rise in credit or asset prices.[12] This Chapter analyzes, individually and as a group, the risks to long-term macroeconomic stability and presents a macroeconomic disequilibrium index[13] as an early warning indicator of the Colombian economy's potential vulnerabilities. Note that no confidence intervals can be calculated for the estimates presented in this Chapter, because the long-term levels of the variables are not observable.

A. CCURRENT ACCOUNT

In the past seven years the current-account deficit has been higher than its historical average.

In the past seven years the current-account deficit (2.7% of GDP on average) has been higher than its historical average calculated since 1970 (1.6% of GDP) (Graph 44). This has been the outcome of the investment rate growing faster than saving. According to the national accounts, from 2000 to 2011 the Colombian economy's investment rate rose at a faster pace than the saving rate and did so more sharply in the last five years. In 2011 the investment rate stood at 24% of GDP, 10pp higher than in 2001, while the saving rate stood at 19% of GDP, having risen by 6pp over the same period.

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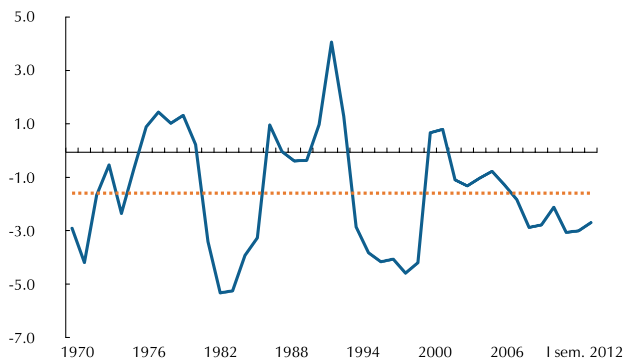
10 G. Calvo (2011) "On Capital Inflows, Liquidity and Bubbles", Working Paper, Columbia University; M. Agosin and F. Huaita (2009) "Overreaction in Capital Flows to Emerging Markets: Booms and Sudden Stops", Working Papers, No. wp295, University of Chile, Department of Economics; among others.

11 C. Reinhart and V. Reinhart (2009) "Capital Flow Bonanzas: An Encompassing View of the Past and Present", Working Paper No. 14321, National Bureau of Economic Research.

12 The importance of such monitoring is underlined by the fact that some of those imbalances have also been observed in developed countries where inflation was under control and the economy growing close to its potential.

13 For a detailed discussion on this subject, see C. Arteaga, C. Huertas and S. Olarte (2012), "Índice de desbalance macroeconómico", Borradores de Economía, No. 744, Banco de la República, Colombia.

Graph 44
Actual current account, and historical average



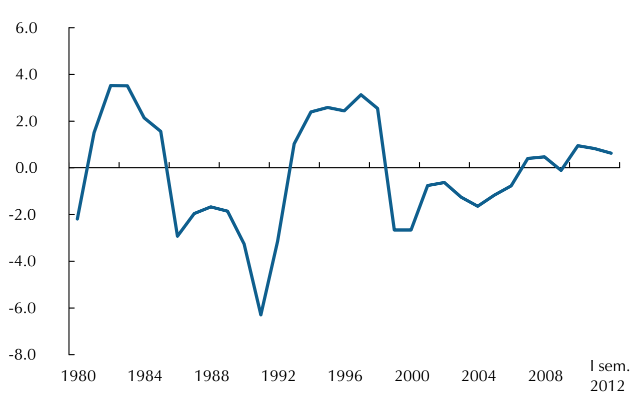
Source: Banco de la República.

Although the national income has increased, owing in particular to favorable terms of trade, consumption has also risen at high rates, causing the saving rate to lose pace. The satisfactory trend in consumer confidence and better labor-market conditions have resulted in household consumption–largely financed by credit–expanding at rates above the historical average[14]. The public sector, too, has seen its income increase strongly, as a result of high oil prices and the economy's good growth; this has allowed public consumption to maintain its momentum, but without reducing saving.

Private investment has been driven by great international liquidity, together with low country-risk premiums and greater confidence in the region, which has generated high capital inflows. High commodity prices in particular have attracted FDI, with inflows to the oil sector increasing at average annual rates close to 30% in the past seven months. Other sectors have in turn benefited from mineral-sector linkages and the current international situation, receiving FDI inflows that increased on average by nearly 11% over the same period. According to the national accounts for 2006-2012, investment grew at an average annual rate of 10.3%, higher than the historical average (6.6%). Notably, investment in transport equipment expanded by 23.3%, in machinery and equipment by 15.3% and in civil works by 8.3%.

Thus, private-consumption growth has meant that expansion in saving has not been sufficient to offset the rising investment rate and moderate the uptrend in the external deficit. Looking ahead, persistence of the accumulated current-account deficit will be determined by the evolution of the fundamentals that have caused it: high terms of trade that boost national income; good labor-market and confidence levels that encourage consumption; a sound financial system that provides sufficient domestic funding; high international liquidity; lower country-risk premiums; and rising FDI that has ensured external funding

Graph 45
Current-account gap



Source: Arteaga, Huertas and Olarte (2012)

Graph 45 presents the current-account gap, defined as the difference between the actual series and an estimate of the long-term path, both as a proportion of GDP (see Arteaga, Huertas and Olarte, 2012). According to this methodology, the gap has been positive since 2007 (except in 2009), reflecting a current-account deficit somewhat higher than the long-term estimates. All the

14 In 1978-2012 average year-on-year growth in consumption in June was 3.1%, compared with 4.9% in 2006-2012.

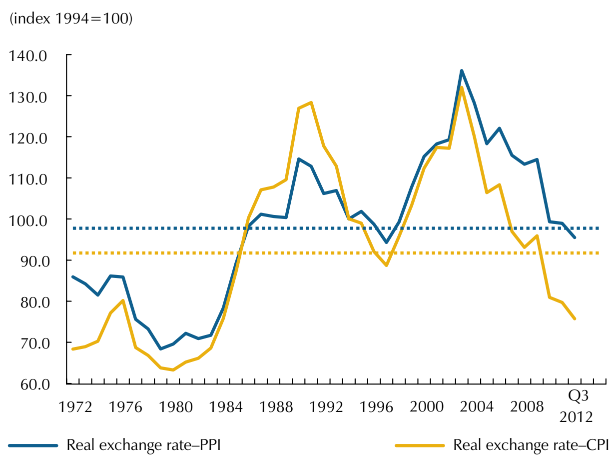
Since mid-2003 the real exchange rate has been on an appreciation trend.

same, the accumulation of this positive gap is still lower than it was in 1981-1985 and 1993-1998.

B. REAL EXCHANGE RATE

Since mid-2003 the real exchange-rate index (RERI)[15] has been on an appreciation trend. This trend, whether deflated by the CPI or the PPI, has placed the index in 2012 very close to or lower than its respective historical average (Graph 46). The real exchange rates of some of the country's trading partners have also exhibited an appreciation trend in recent years.

Graph 46
Real exchange rate, and historical average



Source: Banco de la República.

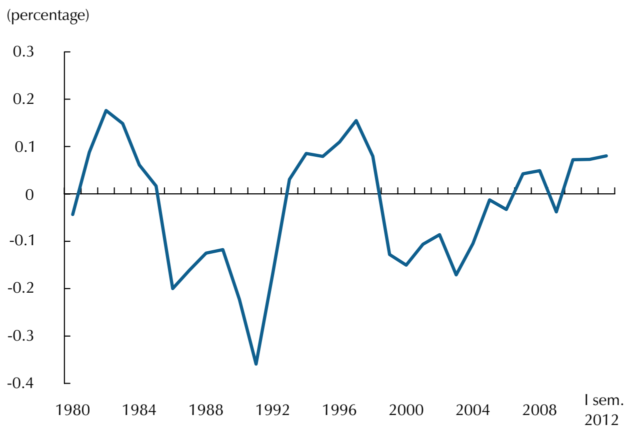
The recent trend of the real exchange rate may be explained by the evolution of several of its fundamental determinants. First, a relative increase in Colombia's tradable productivity compared with US productivity could be at least partly responsible for the recent appreciation trend.

Changes in demand for nontradable goods affect their prices relative to tradable prices, thereby modifying the real exchange rate. Nontradable demand depends, among other things, on national income, the real exchange rate, public spending and exogenous shocks, for example to the terms of trade. All these factors can cause real appreciation of the peso, if they reflect greater local spending on nontradable goods. In this respect, Colombia's terms of trade have improved considerably in recent years, owing to high international oil prices; this, together with improved security, has increased not only oil exports but also FDI in this sector. Higher external earnings from both current-account and capital-account operations have had a bearing on public- and private-sector spending decisions and have put pressure on the real exchange rate to appreciate.

Other factors leading to appreciation have been lower country-risk premiums and lower short- and long-term interest rates. While in Colombia the debt level as a proportion of GDP has fallen and the financial system is sound, in some advanced economies the fiscal position and financial sector have deteriorated considerably. In these circumstances, Colombia's country risk compared with advanced economies' has decreased and demand for the country's assets has increased, with the result of attracting foreign capital inflows, which have put pressure on the peso to appreciate.

15 The real exchange-rate index is the average of bilateral exchange-rate indices, weighted according to each country's share in non-traditional trade with Colombia.

Graph 47
Real exchange rate gap



Source: Arteaga, Huertas and Olarte (2012).

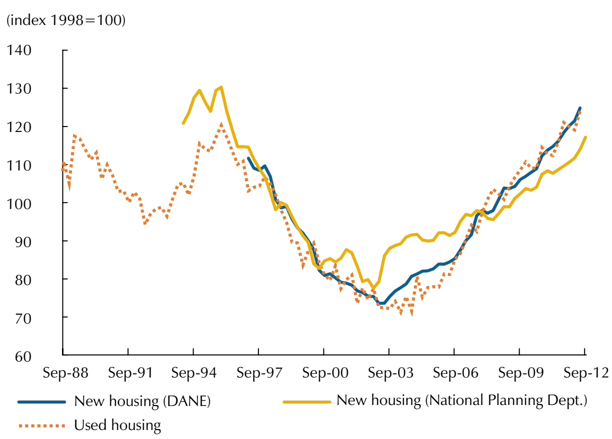
The Bank's technical staff use several of the above fundamentals in trying to estimate the real exchange rate's expected long-term level, or behavioral equilibrium exchange rate *(BEER)*.[16] They also employ other approaches taken from the theory of purchasing power parity (PPP) or from the methodology of fundamental equilibrium exchange rate *(FEER)*.[17] They have thus used three of these measures to estimate the real exchange-rate gap, defined as the difference between the long-term rate and the observed rate (Arteaga, Huertas and Olarte, 2012). Graph 47 shows that, according to this estimation, the real exchange rate has been lower than its long-term level since 2007 (except in 2009).

C. EVOLUCIÓN DE LOS PRECIOS DE LA VIVIENDA

In the second quarter of 2012 housing-price indices stood at historically high levels.

Housing prices in Colombia have been rising continuously since 2004 at average annual rates (relative to CPI) of 6.2% for used housing and 5.9% for new housing (Graph 48). As a result, prices for both types of housing stood at historically high levels in the first half of 2012 nationwide.

Graph 48
Housing-price indices, relative to CPI



Sources: DANE, National Planning Department and Banco de la República.

Both supply and demand factors can account for this trend. On the side of demand, the main determinants identified by the literature are: income, household financial wealth, the rate of interest, demographic factors, expectations of higher values, and expected rate of return.

In the case of supply, the most important variable is the expected profitability of projects, which depends positively on housing prices and negatively on production costs, the latter including especially the price of land, wages and cost of construction materials.

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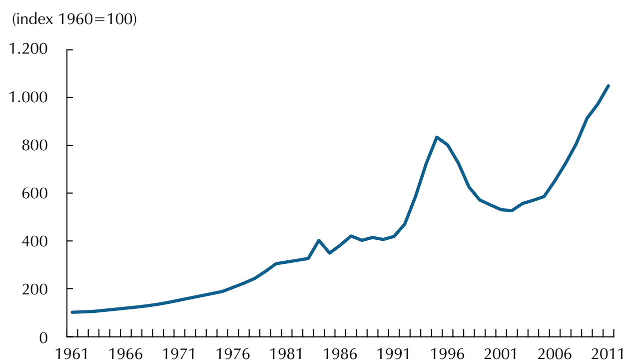
16 See C. Arteaga, J. Granados and J. Ojeda (2012) "El comportamiento del tipo de cambio real en Colombia: ¿Explicado por sus fundamentales?", *Borradores de Economía*. No. 742, October.

17 A detailed explanation of the different methodologies will be published soon in the Banco de la República's series *Borradores de Economía.*

In Colombia, in recent years, disposable family income has risen significantly, unemployment has fallen and confidence levels are above the historical average. These developments, together with low inflation and a better outlook for future income stability, have raised the purchasing power of families and increased the demand for housing, pushing up house prices. Moreover, higher FDI has led to the arrival of more foreigners, with the result that demand for housing has risen, especially for housing in the middle- and high-income ranges.

Recent years have also seen Colombians selling off assets abroad and replacing them by domestic ones, partly because of losses caused by the international crisis, and because of the peso's real appreciation. Thus, a not insignificant portion of the purchase price of housing has been paid from own funds. And there has been less use of mortgage loans than in the 1990s. Low external profitability and increasing risk in the developed countries have thus led to greater demand for housing, regarded as a safer investment that should rise in value.

Graph 49
Residential land price in Bogotá (relative to CPI)



Source: Bogotá Realtors Association; Calculations by Banco de la República.

With respect to supply, the price of land in Colombia has been rising steeply in recent years (Graph 49); in 2011 it rose even faster than housing prices. Some studies[18] suggest that factors including, among other things, the lack of land suitable for urban development, legal restrictions imposed by land-use plans, and inefficient provision of utility services largely account for land-price behavior. This situation has occurred in a context of high housing shortage.

The housing-construction cost index, which includes the costs of materials, labor, and machinery and equipment, rose in the first half of 2012 at an average annual rate of 2.1% (relative to CPI), a higher rate than was recorded for full-year 2011 (1.3%).

At September 2012 the ratio of loans to GDP stood at an all-time high.

The long-term path of housing prices in Colombia was estimated by using two methodologies–panel data and a statistical filter–and applying them to new-housing prices from 1988 to the first half of 2012 (Arteaga, Huertas and Olarte, 2012). Next, the gap between the observed value and the long-term path was calculated. The results suggest that since 2008 housing prices have been above the long-term level estimated by those methodologies, but that the gap has been smaller than in the nineties (Graph 50). It is also important to point out that, the real-estate sector's recent growth, in contrast to its expansion in the nineties, does not involve a significant increase in mortgage loans, although expectations of higher property values may have led households to become more leveraged with consumer loans to buy housing.

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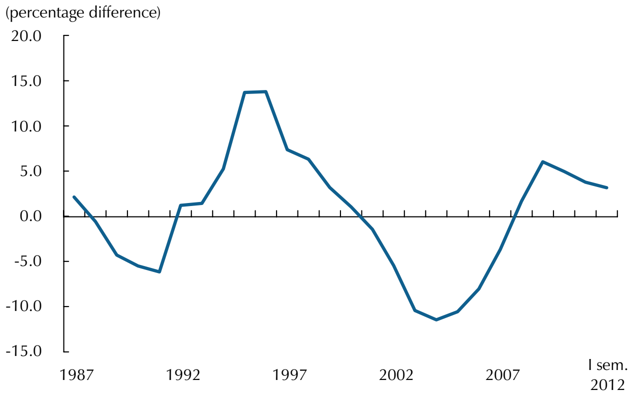
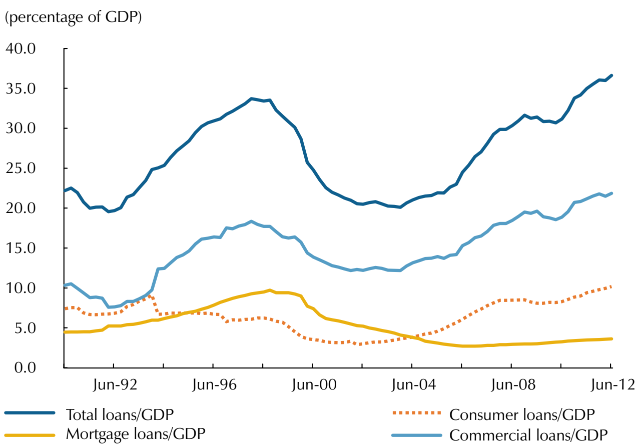
18 Salazar, R. Steiner, A. Becerra and J. Ramírez (2012) "¿Qué tan desalineados están los precios de la vivienda en Colombia?", working paper, Fedesarrollo, April.

Graph 50
Housing gap



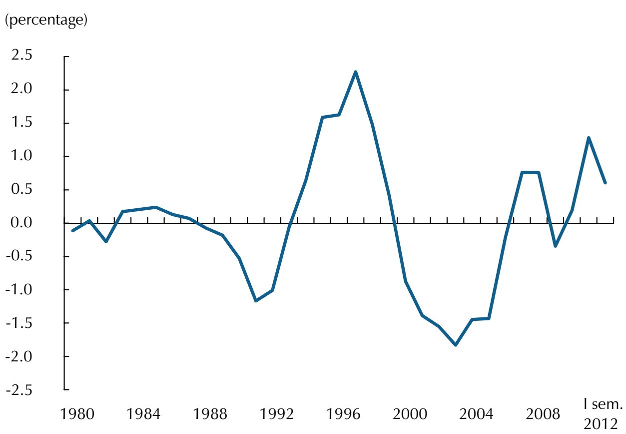
Source: Arteaga, Huertas and Olarte (2012).

Graph 51
Gross loans



Sources: Financial Superintendence of Colombia and DANE.

Graph 52
Credit gap



Source: Arteaga, Huertas and Olarte (2012).

D. MOVEMENTS IN CREDIT

Lending has surged in the past four years, standing at 36.6% of GDP at September 2012, its highest level in the series since 1990 (Graph 51). Yet, financial deepening (ratio of loans to GDP) continues to be low in Colombia compared with other Latin-American countries, indicating perhaps that there is still room for gross loans to maintain that momentum. But their speed of growth should be monitored, because a significant acceleration could be the source of macroeconomic imbalances.

From the side of demand, the recent considerable rise in lending, especially in consumer loans, can be explained by several factors: (i) a rise in disposable household income, which has increased the borrowing power of households and could be regarded as permanent; (ii) higher housing prices, which generate a wealth effect and hence the possibility of greater leverage; (iii) a lower rate of unemployment, which makes households more certain about meeting their future debt payments; and (iv) greater household confidence in the country's economy, which may encourage them to consume more and increase their demand for loans.

On the side of supply, the main factors that have contributed to loan expansion are: (i) high international liquidity, which has increased the supply of external credit to the large companies, leading to greater availability of domestic funding for other firms and for families; (ii) the increase in government income, which has reduced public funding needs and generated a greater supply for private funding; (iii) the financial system's greater confidence in the country's economy, which in past years led to the loosening of some credit standards; and (iv) a lower country risk, which has also attracted greater liquidity to the Colombian economy.

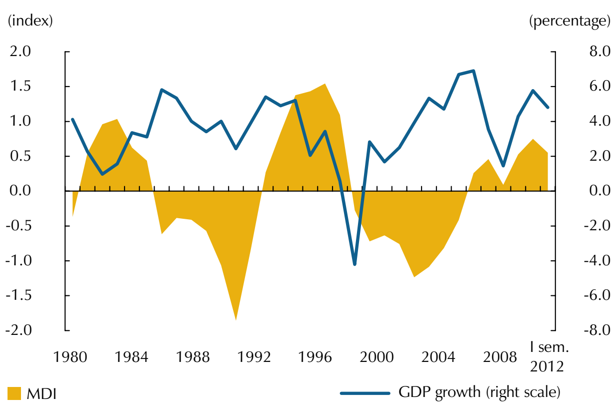
So far in 2012, however, year-on-year growth in bank credit has slowed, falling from 21.1% in December 2011 to 16.1% in September 2012. This moderation has occurred particularly in commercial loans, and more recently in consumer loans. The Financial Superintendence's latest measures imposing liquidity, provisions and capital requirements on the financial system may have also reduced credit supply.

To estimate the long-term trend in credit, a filter was applied to real per-capita loans; next the credit gap, defined as the difference between the observed variable and said filter, was calculated. Graph 52 shows that since 2009 credit has been higher than its trend level (according to Arteaga, Huertas and Olarte, 2012), but that the gap closed a little in the first half of 2012.

E. MACROECONOMIC DISEQUILIBRIUM INDEX

The Macroeconomic Disequilibrium Index (MDI) extracts the common component of the imbalances referred to earlier (Arteaga, Huertas and Olarte, 2012). The Indicator uses the main component of the individual standardized gaps to estimate the importance of each gap. Thus, the Index is a weighted average of the variables that account for a large proportion of the joint variance of the gaps. In this context, the Macroeconomic Disequilibrium Index is not a crisis forecasting variable, but rather a tool that gives warning of an economy's potential vulnerabilities in the event of facing adverse shocks.

Graph 53
Macroeconomic disequilibrium index (MDI) and GDP growth



Source: Arteaga, Huertas and Olarte (2012).

The exercises conducted for several countries show that positive levels of the Indicator have preceded future financial crises, caused perhaps by an external shock. Moreover, higher accumulations of imbalances increase the likelihood of a crisis one year ahead. In Colombia's case, the results show that the Indicator gave warning of the economy's vulnerability before the 1999 crisis. In the past six years the Indicator has suggested that macroeconomic imbalances have been accumulating, and doing so more strongly since 2009; but the accumulation is much less (41%) than the one recorded between 1993 and 1998 (Graph 53).

Box 3
LONG-TERM MEASURES OFTHE REAL EXCHANGE RATE*

Carolina Arteaga Cabrales**

It is essential in any open economy to carry out real exchange rate analysis, for the RER is an appropriate measure of a country's competitiveness in the different economic sectors and takes into account the relative prices of tradable and nontradable goods. Given the uncertainty and volatility of the exchange rate and its importance to decision-making by agents, tools are needed to measure its deviation from a theoretical long-term level derived from fundamental determinants. In recent years Colombia has undergone considerable changes that have affected its production structure and the relationships between economic variables. Evolution of the exchange-rate system, economic openness, terms-of-trade fluctuations, financial deepening, and lower perception of country risk are some of the elements that have influenced both the trajectory of the actual real exchange rate and that of the long-term real exchange rate.

Real exchange rate equilibrium is not a unique concept, depending as it does on the horizon of analysis on and the assumptions made for estimating it. In addition, like any relative price, the real exchange rate is determined by a series of economic variables and random shocks, some of which may have a permanent impact on the level of the series, while others will have only a transitory effect (Clark and MacDonald, 1999). In this respect, economics literature has found different ways of defining and approaching the notion of real exchange rate equilibrium. They include: purchasing power parity (PPP), a generalization of the law of one price; the behavioral equilibrium exchange rate (BEER), which estimates econometrically a long-term real exchange rate determined by the movements of its fundamentals; and lastly the fundamental equilibrium exchange rate (FEER). The FEER refers to the concept of medium-term equilibrium, in which domestic equilibrium is achieved when output is at its potential level (the output gap is zero), while external equilibrium is achieved when the current account is at a sustainable long-term level, the long-term RER being the rate accountable for this adjustment. Each of the above methods provides different approaches to the long-term real exchange rate. But this is an unobservable variable, which makes it difficult to select the most appropriate long-term measure, because there is no way of calculating the error to find out how accurate the estimation is.12 Given that the three methods involve different equilibrium concepts, their results do not necessarily coincide and should not be compared. The following Sections provide brief descriptions of the various measures of the long-term real exchange rate for Colombia.

1. Purchasing power parity (PPP)

a. Absolute PPP: Big Mac index

PPP is based on the notion that in the medium and long term a currency should be capable of buying the same basket of goods in different parts of the world (Pearce, 192). The intuition is simple: the prices for the same good expressed in the same currency traded inside or outside the country should be equal, thanks to pressure from arbitrage opportunities. In effect, if a good costs more in one place than in another, it would be exported from the cheaper to the more expensive place, pushing up prices in the cheaper place and pushing them down in the more expensive one, until they become equal. On this premise the long-term real exchange rate would be equal to 1. For the price of a fixed domestic basket would be P while the price of the international basket should be EP* and the long-term real exchange rate equal to 1.

$$E_t P_t^* = P_t \text{ : law of one price; then } \quad E_t = \frac{P_t}{P_t^*}$$

$$\frac{E_t P_t^*}{P_t^*} = Q_t^E = 1$$

Thus, the nominal exchange rate should be equal to the ratio of the price levels, and hence the currency's depreciation should be equal to the difference between domestic and external inflation (Sarno and Taylor, 2006). One way of calculating this measure is by comparing the prices of a Big Mac hamburger in the US and in Colombia, as an example of a good that should have the same price worldwide when expressed in the same currency. This analysis assumes that the US is the only relevant market for Colombia in terms of trade and competition. A broader measure of the long-term exchange rate can, however, be built by taking as the Big Mac external price the weighted average of its price in dollars in Colombia's main trading partners.

* A detailed description of the different methodologies will be published soon in the Banco de la República's series: *Borradores de Economía*.

** Specialist staff member in the Programming and Inflation Department of the Economic Studies Office. The opinions expressed are exclusively the author's and do not necessarily reflect the views of the Bank or its Board of Directors.

b. *Relative PPP*

The presence of transaction costs, including shipping and customs charges, which in the extreme scenario make goods internationally untradable, and of non-homogenous goods means that the PPP in its strict version will not hold. The fact that capital and labor are not freely movable between countries also makes it difficult for prices to be equal. But where these impediments do not alter arbitrage and there are particular trade and production structures, a somewhat weaker form of PPP can be observed, in which the long-term real exchange rate is not 1 but equal to a constant.[2]

Thus, absolute PPP may not hold for reasons including trade restrictions, shipping charges and different inflation expectations, and the long-term real exchange rate may be a constant other than 1:

$E_t P_t^* = K P_t^*$, where K may be τ, or shipping charges

$$\frac{E_t P_t^*}{P_t} = Q_t^E = K$$

One way of approximating this measure is to take as the long-term level the average of the series, using either the simple historical average or an average with structural change [3].

c. *PPP adjusted by nontradables*

Changes in tradable-sector productivity may generate continual deviations from absolute and relative PPP (Balassa-Samuelson effect).[4] If a country's tradable-sector productivity increases (decreases) relatively, its exchange rate will appreciate (depreciate) and will have a downtrend (uptrend). In general, the Balassa-Samuelson effect suggests that a country's productivity gains that are concentrated in the tradable sector will cause an increase in the economy's wage level, which must be offset in the nontradable sector by a higher level of prices, leading to greater appreciation of the real exchange rate. In effect, when the nontradable sector's technological lag relative to the tradable sector increases, the supply of tradable goods increases. This, in turn, puts demand pressure on the labor market. Labor, which can be regarded as a nontradable good, rises in price because of the natural adjustment that has to be made to the labor market in the face of greater demand. Hence, if there is labor mobility, the cost of labor rises in all sectors of the economy, increasing the marginal cost. The new equilibrium in the nontradable sector will thus stand at a higher price. Given the exogeneity of the price of tradables, an increase is observed in the relative price of nontradables, that is to say, an appreciation in the real exchange rate.

An approximation to this long-term measure is the Hodrick and Prescott filter of the actual RER, whereby an estimation can be obtained of the trend of this series as an approximation of the long-term RER. Where the slope of said measure is other than 0 and changes over time, it can be said to be reflecting variations in the tradable sector's productivity relative to the rest of the world. Another measure is built from the data base of Penn World Tables, where exchange-rate deviation from parity is a function of the country's level of development compared with that of the US. Developing countries may be continually deviating from PPP because their productivity levels tend to be low. As developing countries grow, their productivity increases, the price of nontradables rises, the exchange rate appreciates and they get closer to PPP. This methodology measures the deviation of each country's nominal exchange rate from the PPP nominal exchange rate as a function of the ratio of each country's per-capita GDP to that of the US. Accordingly, deviations from PPP are explained by the level of development and productivity of the economies (Balassa-Samuelson effect) as follows:

$$\frac{TRM_i}{TC(PPP)_i} = f\left(\frac{PIB\,pc_i}{PIB\,pc_{USA}}\right)$$

Where:

$$TC(PPP) = \frac{P_{NT}^{\alpha} * P_T^{(1-\alpha)}}{P_{NT}^{\alpha *} * P_T^{(1-\alpha *)}}$$

2. Behavioral equilibrium exchange rate (BEER)

EThe behavioral equilibrium exchange rate methodology maintains that PPP models are not appropriate for determining medium- and short-term equilibrium because the real exchange rate's deviations from the mean can be very long-lasting. BEER models therefore try to define the long-term real exchange rate in a reduced fashion and are based on time-series estimations intended to capture how the dynamics of different variables determines the

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2 Statistically, the real exchange rate should be a stationary series, so its movements would be transitory, at least at medium- and long-term horizons.

3 According to Cárdenas (2011) and Misas and Ramírez (2006), there is evidence of a structural change having occurred in Colombia in the eighties. Application of the Perron and Yabu test (2009: 369-396) revealed a break in the series; there were thus two distinct periods in which the real exchange rate fluctuated around two different means. This affected the equilibrium measure based on the historical average of the series. Accordingly, an average was calculated for 1970 to June 1985 and another one for July 1985 to the present.

4 In analyzing the dynamics of nontradable sectors it is more appropriate to use an RER measure of the consumer basket rather than of the producer basket.

evolution of the long-term RER. According to this notion, the equilibrium varies over time and is specified as a function of its macroeconomic fundamentals. In general, this methodology is based on econometric models designed to explain long-term RER behavior by identifying common trends and differentiating between the permanent and transitory components of RER fundamentals.

A number of studies follow this methodology in the case of Colombia. Echavarría et al. (2007) calculate a long-term RER measure[5] by using a structural VEC (SVEC) model and taking as fundamentals: net external assets as a proportion of GDP, the terms of trade, and the degree of openness (non-traditional exports plus imports as a share of GDP). Arteaga et al. estimate a VEC model (with quarterly data since 1994) for the real exchange rate, taking as long-term variables: net external assets multiplied by the prime rate, the terms of trade, public consumption as a percentage of GDP, and relative productivity with respect to the US; and as short-term variables: the interest-rate differential, the EMBI, and GDP of trading partners. These same authors, following MacDonald and Ricci (2003), also estimate a smoothed VEC by applying the cointegration vector of the estimated VEC to the fundamentals smoothed by the Hodrick and Prescott filter to calculate the long-term RER. This methodology attempts to incorporate the fact that in the short term there are rigidities that prevent relative prices from adjusting fully in order to balance markets; it may therefore be appropriate to model a long-term RER that does not incorporate the short-term movements of its determinants.

3. Fundamental equilibrium exchange rate (FEER)

The fundamental equilibrium exchange rate methodology sees the long-term RER as the rate that prevails when the economy is in internal and external balance. Internal balance is achieved when output is at its potential level (zero output gap), and external balance is obtained when the current account is at its long-term level (Williamson, 1983). FEER models can be implemented in practice by using at least two alternative approaches. The first specifies a relationship between the current account, the GDP gap, the real exchange rate and the terms of trade; and it gives a long-term RER that is the rate prevailing when simultaneously (i) the current account is at a level consistent with a zero output gap, and (ii) the terms of trade are at levels similar to trend. The second approach, denominated the external sustainability approach, sees the long-term RER as the rate that makes the sustainable current account equal to the current account that would prevail in the medium term. In this Section we describe three methods for applying the second approach.

In practice, the approximation to this long-term measure follows the IMF methodology and is calculated as the necessary RER adjustment when the trend current account (the actual current account filtered by the Hodrick and Prescott procedure) deviates from the long-term current account. Next, this difference is divided by the elasticity of the current account to the exchange rate, weighted by their shares of GDP, as follows:

$$\textit{Exchange rate assesment} = \frac{CC^{*} - CC_{trend}}{\mu_{tc}}$$

The value of the long-term current account to be used can be: (i) the value that keeps external assets at their long-term levels, (ii) the historical value, or (iii) a panel estimation following Arteaga et al. (2011). The first alternative involves calculating the long-term RER that is consistent with a sustainable current account, defined as the current account that makes the ratio of net external assets to GDP stand at its long-term value; this is equivalent to a balance of payments position in which the current-account deficit is offset by sustainable flows of international capital. The long-term RER is the rate that makes the sustainable current account and the trend current account (HP filter of the actual current account) equal. Following Edwards (2005), one way of determining this long-term CC is to assume a ratio of net international investment position (IIP) to GDP at its trend level; in other words, it is assumed that the trend rate of growth of GDP in dollars should be equal to the growth rate of net international liabilities. Given that the current-account deficit is the change in the IIP, this translates into:

$$\frac{\Delta \mathrm{P}II}{\mathrm{P}II} = \frac{CC^{*}}{\mathrm{P}II} = g + \pi - \Delta e$$

where CC* is the real output growth rate, π is inflation, and Δe is the nominal rate of depreciation. If it is further assumed that relative purchasing power parity (RPPP) is achieved, $\pi - e = \pi^*$, where π^* is the respective external inflation, simplifying the previous expression to:

$$\frac{CC^{*}}{\mathrm{P}II} = g + \pi^{*} \quad \text{o} \quad CC^{*} = \left(g + \pi^{*}\right)\frac{\mathrm{P}II}{PIB}$$

where CC* is the sustainable current account (as a percentage of GDP) when a certain deficit level is found that, assuming potential growth for Colombia's economy and trend-level inflation for its trading partners, keeps net external assets as a share of GDP at the level resulting from application of a Hodrick and Prescott filter.

5 Calculated since 1964 on a yearly basis. The model has been re-estimated, keeping the same theoretical structure but using the balance of payments, rather than national accounts, as the source of the economic-openness variable.

The second alternative, the historical value of the long-term current account, is obtained by calculating the average of said variable for 1980-2011, which for Colombia was 1.8% of GDP. And the third alternative measure of long-term CC, following the work of Arteaga, Luna and Ojeda (2011), is a panel estimation for developing countries, which reveals the relationship of the current account has had with its fundamentals over time and among countries sharing similar characteristics.[6]

6 The sample used included information from 38 developing countries for the period 1970-2008.

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Annex

Local and foreign analysts' Macroeconomic projections

This Annex provides a summary of local and foreign analysts' latest projections for the economy's main variables for 2012 and 2013, based on information to July 2012.

1. Projections for 2012

On average, local analysts expect an economic growth of 4.5%, compared with 4.3% estimated in the previous *Inflation Report*. The foreign entities consulted also forecast an average expansion of 4.5% in GDP.

Table A1
Projections for 2012

	Real GDP Growth (Percentage)	CPI Inflation	Nominal Exchange Rate (End of)	Nominal	Fiscal Deficit (Share Of GDP)	Unemployment Rate In the 13 Main Cities
Local Analysts						
Alianza Valores	4.3	3.0	1,850	5.2	-1.8	10.5
Anif[a]	4.5	3.0	n.a.	5.0	-1.3	9.8
Banco de Bogotá	4.5	3.0	1,806	5.0		10.2
Banco Santander[b]	4.5	3.1	1,840	4.7	-1.2	10.2
Bancolombia[a]	4.3	2.9	1,800	5.2	-2.1	10.3
BBVA Colombia	4.4	3.1	1,775	5.0		9.7
Corficolombiana[a]	4.5	3.0	1,928	4.9	-2.0	11.0
Corredores Asociados	4.5	3.1	1,834	5.1	-1.2	9.8
Correval	4.6	3.1	1,850	5.0	-1.5	9.9
Davivienda[a]	4.6	3.0	1,820	5.2	-2.2	10.2
Fedesarrollo	4.4	3.1	1,827	5.0	2.4	10.5
Ultrabursátiles	4.7	3.0	1,805	5.1	-2.2	9.8
Ultrabursatiles	4.6	3.0	1,830	5.1	n.a.	10.5
Average	**4.5**	**3.0**	**1,830**	**5.0**	**-1.3**	**10.2**
Foreign Analysts						
Citi[a]	4.4	2.9	1,865	5.3	-2.5	10.5
Deutsche Bank	4.6	3.1	1,800	n.a.	-1.9	9.9
Goldman Sachs	4.7	3.0	1,800	n.a.	-2.4	n.a.
JP Morgan	4.3	3.0	n.a.	4.5	-0.8	n.a.
Average	**4.5**	**3.0**	**1,822**	**4.9**	**-1.9**	**10.2**

n.a. Not available.
a/ The deficit forecast refers to the central government.
b/ Average unemployment rate for the year.
c/ Formerly Banco Santander.
Source: Banco de la República (electronic surveys).

Table A2
Projections for 2013

	Real GDP Growth	CPI Inflation	Nominal Exchange Rate (End of)
	(Percentage)		
Local Analysts			
Alianza Valores	4.4	4.2	1,830
Anif	4.8	3.3	n.a.
Banco de Bogotá	4.6	3.0	1,820
Banco Santander	4.5	3.6	1,780
Bancolombia	4.4	3.2	1,820
BBVA Colombia	4.8	3.3	1,750
Corficolombiana	4.6	3.2	1,898
Corredores Asociados	4.9	3.2	1,750
Correval	5.3	3.2	1,850
Davivienda	4.6	3.0	1,800
Fedesarrollo	4.3	2.9	1,832
Ultrabursátiles	5.1	3.1	1,807
Ultrabursatiles	4.7	3.1	1,810
Average	**4.7**	**3.2**	**1,812**
Foreign Analysts			
Citi	4.5	3.2	1,850
Deutsche Bank	4.2	3.0	1,770
Goldman Sachs	5.0	3.0	1,850
JP Morgan	4.5	3.0	n.a.
Average	**4.6**	**3.1**	**1,823**

n.a. Not available.
a/ Formerly Banco Santander.

Regarding inflation, both local and foreign analysts see prices rising by 3.0% by the end of the year. This price growth is within the 2.0%-4.0% target range set by the Bank's Board of Directors for 2012.

With respect to the exchange rate, Colombian analysts expect the representative market rate to end the year at an average value of 1,830 pesos to the dollar, the same value as was estimated in the previous Report's survey. Foreign analysts forecast a year-end exchange rate close to 1,822 pesos.

For the fixed-term deposit rate (DTF), local analysts project values averaging 5.0%. And they expect unemployment to stand at 10.2%.

2. Projections for 2013

For 2013, economic growth is forecast at 4.7% by local analysts, and at 4.6% by foreign analysts. Inflation is projected at 3.2% by local analysts and 3.1% by the foreigners. The exchange rate is expected to average 1,812 pesos by local entities and 1,823 pesos by external firms.

The Publications Section of the Department of Economic and Financial Education was responsible for coordinating, editing and diagramming this Report, in Times New Roman font, 10.5 point.