



INFLATION REPORT

December 2010

ISSN - 2145 - 6526



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*Submitted by the Technical Staff for the meeting of the Board of Directors held on January 31, 2011

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

ISSN - 2145 - 6526

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

Monetary-policy decisions are based on an analysis of the current state of the economy and its prospects for the future, and on an assessment of the forecast for inflation in light of the targets. If the assessment suggests, with enough certainty, that inflation will deviate from its target under current monetary-policy conditions and the deviation would not be due to temporary shocks, the BDBR modifies its policy stance. For the most part, this is accomplished by changing the intervention interest rate (charged by the Central Bank of Colombia on short-term liquidity operations).

COMMUNICATION AND TRANSPARENCY

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.

CONTENIDO

Evolution of the Inflationary Situation, and Monetary Policy Decisions	9
I. Inflation and its Determinants	15
A. Recent inflation behavior	15
B. Factors responsible for inflation	20
Box 1: Electricity fees and inflation	40
Box 2: Retrospective analysis of colombian economy during 2010, according to the Patacon model	43
II. Financial Markets	46
A. External markets	46
B. Domestic financial markets	49
III. Macroeconomic Outlook	58
A. The international context	58
B. Balance of payments	63
C. Domestic growth	64
D. Inflation forecasts	67
Box 3: Commodity prices perspective	73
Box 4: Food inflation and monetary policy response	75
Annex: Macroeconomic projections by local and foreign analysts	78

INDEX OF GRAPHS

Graph 1	Annual consumer inflation	15
Graph 2	Annual core inflation indicators	18
Graph 3	Annual inflation – regulated items and their components	18
Graph 4	Annual Inflation – tradables and non-tradable excluding food and regulated items	18
Graph 5	Annual inflation – Non-tradables excluding foods and regulated items	19
Graph 6	Annual food inflation	19
Graph 7	Food inflation	19
Graph 8	Gross Domestic Product (GDP) growth	21
Graph 9	GDP of the tradable and non-tradable sectors	26
Graph 10	Monthly sample of retail trade	26
Graph 11	Fedesarrollo consumer confidence indicator	27
Graph 12	Total energy demand	28
Graph 13	Total approved area for construction according to building permits	28
Graph 14	Total energy demand	29
Graph 15	A. Employed in the national total	31
	B. Employed in the 13 metropolitan areas	31
Graph 16	Employed by type of employment	31
Graph 17	Formal and informal employment	31
Graph 18	Formal and informal employment by qualification	32
Graph 19	Global participation rate (GPR) and employment rate (ER)(13 areas, deseasonalized mobile quarter)	32
Graph 20	Unemployment rate UR	32
Graph 21	Nominal Salary Index: heavy construction and housing	33
Graph 22	Nominal salary index: industry and commerce	33
Graph 23	Headline PPI	34
Graph 24	PPI by origin	34
Graph 25	Produced and consumed PPI by economic activity	34
Graph 26	Non-wage costs indices from the social accounting matrix	35
Graph 27	Installed capacity utilization (ICU)a/	36
Graph 28	Annual GDP: observed and potential growth:	36
Graph 29	Output gap	37
Graph 30	Observed inflation and inflation expectations	37
Graph 31	Percentage of inflation target credibility from 2004 to 2011	38
Graph 32	Annual inflation forecast, according to banks and stock brokers	38
Graph 33	Forecasts of annual inflation excluding food according to banks and stockbrokerage firms	38
Graph 34	One, five, and ten-year break-even inflationa/	39
Graph 35	5-year credit default swaps (CDS) in some European countries	47
Graph 36	Returns of the 10-year sovereign debt securities of the United States	47
Graph 37	Credit Default Swaps (CDS) in some Latin American countries	48
Graph 38	Exchange rate index in some Latin American countries	48

Graph 39	Total credit	51
Graph 40	Commercial bank credit in national currency (n/c), real sector bonds and private sector's external debt	51
Graph 41	Bank credit in national currency, by type of credit	51
Graph 42	Main assets and liabilities of the financial system	52
Graph 43	Default indicator of the loan portfolio	53
Graph 44	Passive interest rates	53
Graph 45	Interest rates for the household loan portfolio	53
Graph 46	Interest rates for the commercial loan portfolio	54
Graph 47	Prices of land and housing in Bogota	56
Graph 48	IGBC (General Colombian Stock Market Index)	56
Graph 49	Zero coupon TES interest rates	56
Graph 50	World growth	59
Graph 51	A. Industrial production index in some developed economies B. PMI for some developed economies	59
Graph 52	Contribution to growth of the main GDP components in the United States	59
Graph 53	Unemployment rate in developed economies	60
Graph 54	United States consumers' sentiment and confidence	60
Graph 55	International oil price WTI	62
Graph 56	A. Inflation in developed economies B. Inflation in Latin America	63
Graph 57	Imaco: five month GDP leading indicator	67
Graph 58	GDP forecast range for 2010 and 2011	67
Graph 60	Headline inflation Fan Chart	71
Graph 60	Inflation excluding foodFan Chart	71

INDEX OF TABLES

Table 1	Breakdown of annual inflation according to upward pressures as of December 2010	17
Table 2	Annual GDP growth by type of expenditure	22
Table 3	Annual GDP growth by economic activity	25
Table 4	Producer price index (PPI)	35
Table 5	Real interest rates	54
Table 6	Commercial partners' growth projections	61
Table 7	Forecasts of the main commodities exported Colombia	62

EVOLUTION OF THE INFLATIONARY SITUATION, AND MONETARY POLICY DECISIONS

In 2010, the annual CPI variation was 3.17%, this figure being close to the midpoint of the inflation target range (between 2% and 4%) fixed for this year by the JDBR, the Board of Directors of Banco de la Republica, the Central Bank of Colombia.

In the past quarter, the so-called “La Niña” event, along with an increment in the international prices of some commodities, caused an impact on those of food and some regulated goods and services, these groups being largely responsible for inflation acceleration.

The highest increase in food prices as recorded between September and December 2010, was seen in perishable products affected by a very intense rain period. Although to a lesser extent, the consumer price index (CPI) of processed foods did also increase its annual growth rate. This behavior took place in a context of peso depreciation accompanied by a rise in the international quotations for some basic products of agricultural origin. In addition, the highest world oil prices have moved to the regulated-item CPI.

In the last quarter of 2010, acceleration was shown by all core inflation indicators estimated by Banco de la Republica. Nevertheless, their average annual growth still remains at the lower part of the target range.

In the CPI without foods and regulated items, tradable continued to exhibit negative annual increase rates in the past quarter, though in an upward trend. On its side, the non-tradable group remained stable; likely, this behavior reflects low demand pressures relating to a still negative gap in the product, a still high unemployment rate, and the presence of some excess production capacity in some sectors like industry.

One-year-ahead inflation expectations rose and reached the mid upper part of 2011 target range, while long-long term (five to ten-year) prospects, as measured with public debt papers, exceeded its ceiling. This behavior can be explained in good part by the temporary food-price shock.

With regard to economic activity in the third quarter of 2010, the CPI annual growth was 3.6%, this figure being lower than the range projected by the technical team. The weak performance of investment and exports was in part explained, in that order, by the falls registered in building and civil works construction, as well as climate factors affecting external sales of some primary products of agricultural and mining origin. Again, household's consumption was accelerated and became the main engine of domestic demand in the same quarter.

By the end of 2010, the rain period intensity could have had negative effects not only on agriculture but also on the gross fixed capital formation and certain exports of mining origin that could not be attended to due to extraction or transportation problems. Thus, by the last quarter of 2010, a performance of the economy similar to that recorded in the third quarter is expected, *mainly driven by household consumption*.

For 2011, several factors make it possible to estimate growth acceleration, the rate of which may be around 4.5%. This would consolidate the convergence of economic activity towards its long-term sustainable levels, and the conditions for monetary policy to adopt a less expansive stance would appear. In the first place, consumption and investment would continue to be driven by historically low real interest rates as well as by an accelerated credit being reflected on increased household and business indebtedness. Surveys on the perception of credit supply and demand indicate that credit availability will continue, even with some acceleration for certain sectors.

The labor market, continuing to recover since the beginnings of the previous year, would be another encouraging factor for household consumption. In 2010, employment acceleration was seen in both the so-call self-employment/freelance ("*por cuenta propia*") and formal jobs, the latter mainly focused on workers with higher education levels.

As per the external outlook, a more favorable but slowly recovering demand after the intense international crisis would also help improve our country's balance of trade. Trading terms being likely to remain at historically high levels in 2011, would encourage exports of basic products, thus improving the economy's disposable income.

Finally, and despite the fact that the climatic phenomenon might affect the GDP again, the Government's additional spending to confront the rainfall-related emergency may mitigate the impact. On the other hand, local public administrations happen to expire and generally, the implementation of budget spending by the regions tends to accelerate in these periods,

In this macroeconomic context, according to the technical team forecast there is a high probability that inflation will end in 2011 within the target range

(between 2% and 4%) defined for the present year. Although it may be accelerated in the first semester of the year by temporary supply shocks, this tendency is likely to revert by the second half of 2011

In the light of the above, at its meetings of November and December 2010 and January 2011, the JDRB, decided to keep its reference interest rate unaltered, and announced in their last session that whether the economy remains on the expansion path as expected or there are signs of *deviations in inflation expectations* from the goals established, then the proper conditions will be made available to start withdrawing the monetary incentive in a gradual way, in order to consolidate a sustained growth of production and employment.

Banco de la Republica Board of Directors

INFLATION REPORT

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I. INFLATION AND ITS DETERMINANTS

Annual inflation accelerated in the course of the fourth semester of 2010 due to the recovery of food prices and, to a lesser extent, and to the upturn of the regulated component of the family basket. Excluding these two components, annual inflation remained stable.

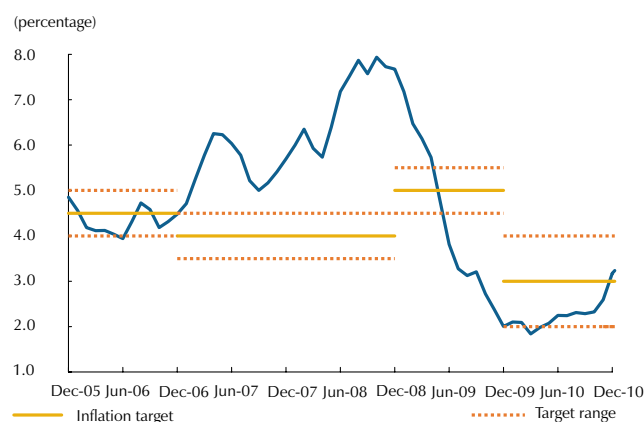
Labor demand continued to increase, and consequently the unemployment rate has declined.

In 2010, Colombian economy had grown between 3.7% and 4.1%. Domestic demand, particularly household consumption, was the main source of expansion.

One-year ahead inflation expectations were higher and reached the upper half of the 2011 target range, while long-term prospects exceeded its ceiling.

A. RECENT INFLATION BEHAVIOR

Graph 1
Annual consumer inflation



Source: DANE, calculations by Banco de la República.

2010 ended with a total consumer inflation of 3.17%, which is within the target range (from 2.0% to 4.0%) defined by Banco de la Republica Board of Directors. Notwithstanding, it was higher than the 2.0% recorded in December 2009 and was above the forecasts of both the market and the previous issues of this Report. This increase was concentrated in the last two months when some pressures on consumer prices arising from supply shocks (“La Niña” event) became evident, as well as external factors (rising international food prices) (Graph 1)

Apart from the effects of these shocks, inflation behavior registered in 2010 was according to the expectations, with few upward pressures. Spare

production capacity and still high unemployment rates prevented increases in domestic prices and costs. Also there were no exchange rate pressures, despite the depreciation observed in the last quarter, and even during a great part of the year, the performance of this variable favored price reductions in an important segment of goods registered by the consumer price index (CPI).

Likewise, the fact that inflation had closed 2009 at low levels and managed to remain unchanged during the first semester of 2010 reduced the influence of indexation mechanisms as a rising factor. Also there was an increase in the competition in some specific markets, which moderated price increases. All these circumstances have helped maintain inflation expectations within the target range since 2009, which has favored the postponement of price increases in some cases.

The low inflation registered in the past two years has had important effects on the Colombian population's economic stability and well-being. On the one hand, a low inflation that is within the target range helps to preserve household purchasing power. On the other hand, it generates more confidence in the economy, allowing for a more efficient allocation of resources.

1. Core Inflation

In 2010, core inflation remained below the mid point of the target range during the whole year there were some slight increases at the end of the year, anticipated to some extent, due to the effects of intense rainfall on transportation costs. In fact, the average of the four indicators monitored by Banco de la Republica at the year's end was 2.6%, below the December 2009 record (3.1%).

All core inflation indicators followed a similar behavior in the year (Table 1). The one that contracted the most was the CPI excluding food and regulated items, which remained below the target range floor. On its side, core 20 ended with highest figure of these indicators, and slightly above the mid point of the inflation target range. It is worth pointing out that the latter is strongly influenced by the behavior of certain items with high inflationary momentum, such eating out, medical services, and education (Graph 2).

CPI excluding food, the core inflation indicator used in forecasts, at the end of the year was 2.8% against 2.5% in the third quarter, and 2.9% in December 2009. Increase in the last three months was higher than anticipated in the previous report, because 39. of an unexpected readjustment of the CPI of regulated items, and of the tradable goods excluding food and regulated items. The non-tradable basket did not show any major variation in these months.

Just like in the fourth quarter, the the CPI of regulated items for 2010 was the subgroup that contributed most to the acceleration in total inflation and inflation excluding food. At the end of the year, its annual variation reached

Table 1
Breakdown of annual inflation according to upward pressures as of December 2010

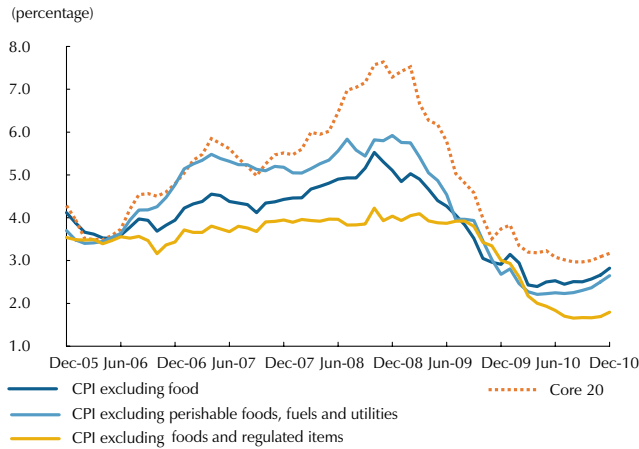
	Weights	Annual growth						Percentage share in the fourth quarter's acceleration	Share in percentage points of the acceleration (so far this year)
		Dec-09	Jun-10	Sep-10	Oct-10	Nov-10	Dec-10		
Total	100,0	2,0	2,2	2,3	2,3	2,6	3,2	100,0	100,0
Excluding foods	71,8	2,9	2,5	2,5	2,6	2,7	2,8	26,6	(4,1)
Tradables	26,0	1,4	(0,5)	(0,6)	(0,6)	(0,5)	(0,3)	9,7	(36,6)
Non-tradables	30,5	4,4	3,8	3,6	3,5	3,5	3,5	(1,3)	(21,1)
Regulated	15,3	2,6	5,1	5,6	5,9	6,3	6,6	18,2	53,6
Foods	28,2	(0,3)	1,5	1,7	1,7	2,4	4,1	73,4	104,1
Perishable	3,9	(7,0)	5,3	4,4	0,5	2,7	11,0	25,7	56,6
Processed	16,3	(1,2)	(0,8)	(0,2)	0,6	1,3	2,3	45,1	47,8
Eating-out	8,1	4,7	4,3	4,3	4,4	4,4	4,5	2,6	(0,3)
Core inflation									
Indicators									
Excluding foods		2,9	2,5	2,5	2,6	2,7	2,8		
Core 20		3,7	3,1	3,0	3,0	3,1	3,2		
CPI excluding perishable foods, fuels, and public services		2,7	2,2	2,3	2,4	2,5	2,6		
Excluding food and regulated items		3,0	1,8	1,7	1,7	1,7	1,8		
First three indicators' averages		3,1	2,6	2,6	2,6	2,8	2,9		
All indicators' averages ^{a/}		3,1	2,4	2,4	2,4	2,5	2,6		

a/ Average of four
Source: DANE; calculations by Banco de la República.

6.6%, largely above the previous year's record and the Bank's target (Table 1, Graph 3). Its performance was fundamentally explained by rising fuel prices as a result of the higher quotations of oil in the external markets, particularly during the second half of the year. This effect was rather strongly felt even in the fourth quarter. It is worth pointing out that the rises in the price of gasoline was 10.4% in the whole 2010, while one year earlier it had recorded reductions (-4.9%). These increases were partially reflected on increases of the transportation CPI above the target range.

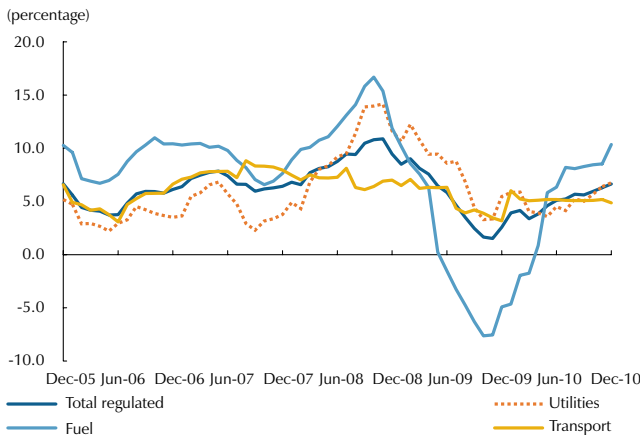
Among the regulated items, utilities (6.8%), particularly electric energy charges, did also contribute to the acceleration of consumer inflation, although to a lesser extent than fuels (Graph 3). At this point, it is necessary to explain that major adjustments in electric energy supply during 2010 are the reflection of the very high prices at which energy

Graph 2
Annual core inflation indicators



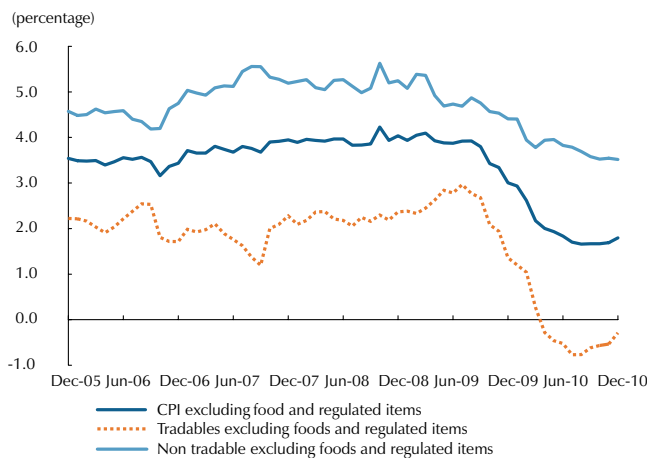
Source: DANE, calculations by Banco de la República.

Graph 3
Annual inflation – regulated items and their components



Source: DANE, calculations by Banco de la República.

Graph 4
Annual Inflation – tradables and non-tradable excluding food and regulated items



Source: DANE, calculations by Banco de la República.

of household consumption was contracted by the power distribution companies at the time the rigors of El Niño Event were being strongly felt.

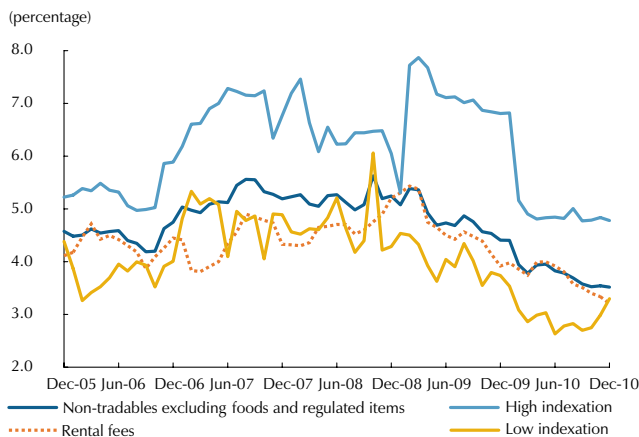
Tradable CPI, on its side, did not contribute much to inflation acceleration in the fourth quarter, though its annual variation remained in negative terrain, the same as in previous quarters (Graph 4). To some extent, the Colombian peso depreciation by the end of the year might have allowed for this situation to occur, although it did not prevent many tradable prices from showing absolute drops in their levels. This is the case of imported goods as vehicles (the fourth most representative item in the whole CPI, with a 4.4% share), in addition to household appliances and communication equipment.

In this report, price reductions in tradables during 2010 are still deemed to be in good part attributable to the accrued appreciation of the Colombian peso with respect to US dollar. The recent depreciation has been slight and temporary and, therefore, its effect on consumer prices is less clear, particularly considering the low degree of transmission to prices in Colombia. Besides, as regards the year’s average, the 2010 exchange rate was 11.8% below that registered in 2009.

On its side, the non-tradable segment of the CPI excluding foods and regulated items did not help increase annual inflation in 2010. This group’s growth shifted from 4.4% in December 2009 to 3.5% in December 2010, with very few changes in the last three months of the year. The final result was very close to the forecasts of the previous *Inflation Reports* (Graph 5).

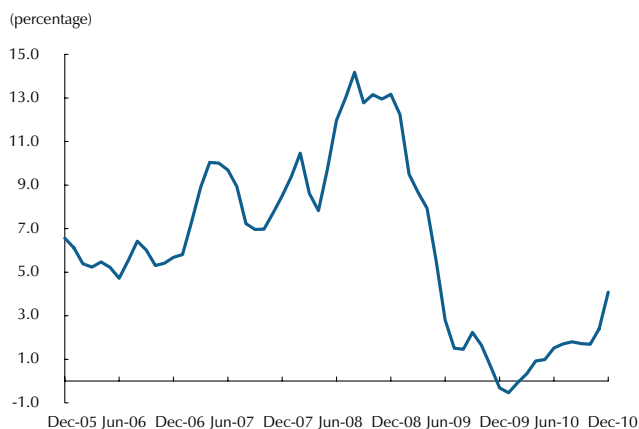
Among this group, the behavior of housing rental fees stood up, this being the component with greater weight in the CPI (accounting for 19% approximately). The annual variation of this component shifted from 3.9% in December 2009 to 3.5% in September and 3.2% in December of last year, the lowest annual adjustment rate ever seen since January 2003 (2.6%). Likewise, those items with a low inflationary persistence, including a wide range of personal services rendered by small or unipersonal enterprises, where indexation

Graph 5
Annual inflation – Non-tradables excluding foods and regulated items



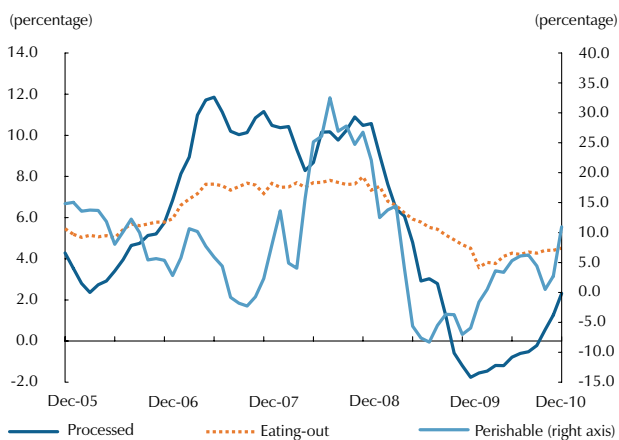
Source: DANE, calculations by Banco de la República.

Graph 6
Annual food inflation



Source: DANE, calculations by Banco de la República.

Graph 7
Food inflation



Source: DANE, calculations by Banco de la República.

mechanisms play a modest role, exerted downward pressure on inflation, thus closing 2010 at a 3.3% rate, nearly 44 bp below the record seen twelve months earlier, showing no variations at the end of the year. Something similar happened with services like health and education that are highly indexed, although in this case price adjustments remained above the target range ceiling (Graph 5).

According to previous reports, the decline of non-tradable inflation suggests few demand pressures with a still negative output gap, and a relatively high unemployment rate. In addition, this is compatible with the fact that inflation expectations have remained aligned with the target for several quarters, which has increased the monetary polity credibility.

2. Food Inflation

As shown in Table 1, the food group was the component of the consumer basket that generated the greatest upward pressures on *inflation* in both the fourth quarter and the whole year. Its annual variation shifted from -0.3% in December 2009 to 1.7% in September, and to 4.1% at the end of 2010. This increases, which were partially anticipated in the previous Inflation Report, were mostly concentrated in the prices of perishable food in November and December. However, in the fourth quarter, there were also some increases in the prices of processed food, especially the more tradable and those of imported origin. In the course of the year, eating out kept a stable adjustment rhythm though high with respect to the inflation target (Graphs 6 and 7).

Two circumstances explain the rises in food prices at the end of the year, both of them exogenous to the monetary policy management. The first one pertains to the impact of the intense precipitations and floods that are affecting both production and distribution of farming products, especially perishable food. It is important to remember that in early 2010, the presence of El Niño event prevailed in a considerable part of the country, with negative impacts on some crops due to the lack of rain. That

climatic event disappeared during the second semester of 2010 and gave way to another one known as “La Niña”, which brought very abundant and intense precipitations, causing a very adverse impact on farming production, apart from very severe damages to the road system and serious obstacles to transportation

In addition, this event reduced the size of the cultivated area in many zones of the Northern coast and the interior of the country that were affected by floods, which would then have serious repercussions on supply in the first half of 2011. Besides, it has to be considered that La Niña may extend through the middle of the year as a particularly strong rainfall period between March and June; for this reason, production might be exposed to new shocks.

Nonetheless, it is worth pointing out, that part of the rises registered in the prices of perishables is also due to the normal agricultural supply cycle. Something of this sort had been anticipated in previous reports.

The second shock came from international food prices, which for several reasons (as explained in Chapter III of this Report) began to increase since August and continued to do so very strongly in November and December, beyond what had been envisaged in the projections made by Banco de la Republica’s Division of Economic Studies. This fact, together with the peso depreciation that took place at the end of the year, began to generate significant increases in the consumer prices of processed or semi-processed food, especially those imported, such as cereals and oils, or others that are highly tradable, like sugar.

Besides the above, in the second half of the year, the domestic prices of foods had already assimilated the Venezuelan demand drop unlike what had occurred in the first semester. Once supply was re-directed and adjusted to the new demand conditions, the prices of products like meat, stopped falling, and even began to show some recovery.

B. FACTORS RESPONSIBLE FOR INFLATION

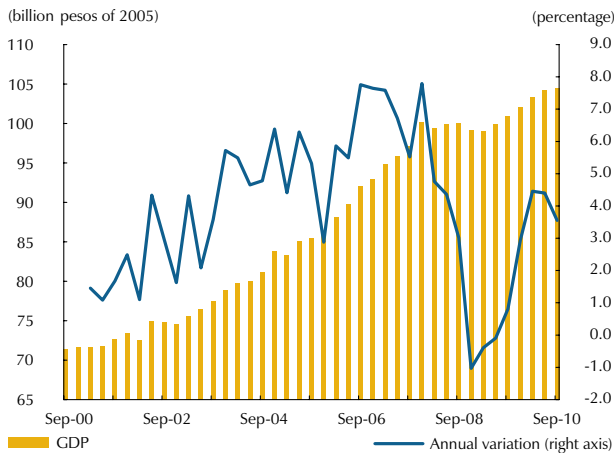
1. Aggregate demand in 2010

a. *The third quarter’s GDP*

According to the National Department of Statistics (DANE), the gross domestic product (GDP) in the third quarter of 2010 grew 3.6% annually (Graph 8). This annual increase, lower than those of the two first quarters, surprised the different analysts and stood even below the most pessimistic of all estimates (between 4.0% and 4.8%) forecast in the *Inflation Report* for the previous quarter.

Broadly speaking, the explanation of the lower than expected growth was the presence of some demand and supply shocks, like the contraction⁹⁰ of the construction of civil works and of the production coal and coffee as well as

Graph 8
Gross Domestic Product (GDP) growth



Source: DANE.

a contribution of external demand that was more negative than initially expected. In addition, and in terms of its quarterly dynamics, the GDP in the third quarter exhibited a deceleration stage, since its growth was merely 0.2% with respect to the previous quarter, in contrast with the expansion it had been exhibiting in the course of the year (i.e. 1.1% quarterly on average).

By type of expenditure, it was observed that, just like in the previous months, the greater contribution to GDP growth came from the expansion of private consumption. This component type expanded at a higher rate than the average since 2000, and it was supported by factors such as the strong improvement in consumer confidence and the evolution of credit destined for consumption which, in turn, was driven

by the low market interest rates. Within private consumption, the most dynamic components were purchases of durable goods, particularly automobiles and home and office furniture. Likewise the acquisition of semi-durable goods, especially textile and footwear products, stood out. The two components with the highest share in household consumption (non-durable goods and services) showed relatively modest growth rates, similar to their historical averages (Table 2).

On its side, government consumption in the third quarter showed a significant deceleration, together with a reduction of from the level seen in the previous quarter. In terms of levels, stagnation in this type of spending has already lasted several quarters.

As per investment in fixed capital, it has shown a modest expansion, which was lower than expected. In the third quarter of 2010, this component grew at a rate similar to the one of the previous quarter and significantly below its historical average (about 10% in annual terms). Its behavior was affected by a drop in investment destined for construction and buildings, but most of all due to the downward trend of civil works, especially those related to the construction of waterways, ports, roads, and bridges (Table 2).

In contrast, other components of investment in fixed capital, as those destined for transportation equipment and machinery, continued to show buoyant growth. In both cases, spending was backed by imports of capital goods, and also by a recovery in their national production.

The outlook of total investment in the third quarter was completed with an inventory accumulation slightly higher than the one recorded in the previous quarter. Despite this, total investment expanded at a relatively modest rate if compared to the rate historically exhibited by this aggregate (Table 2).

Table 2
Annual GDP growth by type of expenditure

	2009	Annual growth (percentages)			Contributions (pp)
		I Qtr.	2010 II Qtr.	III Qtr.	2010 III Qtr.
Consumption	1,7	4,3	4,1	4,2	3,4
Household consumption	1,1	3,6	3,6	4,3	2,9
Non-durable goods	0,3	1,5	1,5	1,6	0,4
Semi-durable goods	5,6	9,0	10,8	10,1	0,6
Durable Goods	(12,1)	11,5	25,1	28,7	1,4
Services	2,1	3,2	2,8	4,0	0,6
Government's final consumption	2,9	7,0	5,8	3,3	0,5
Gross capital formation	(2,9)	8,5	20,4	6,8	1,7
Gross fixed capital formation	2,5	8,2	2,9	2,7	0,7
Farming, forestry, hunting and fishing	1,9	3,9	3,1	1,6	0,0
Machinery and equipment	(14,7)	(1,2)	24,6	27,8	1,7
Transportation equipment	(13,3)	3,0	12,0	27,2	0,7
Construction and buildings	(3,9)	2,5	(15,7)	(5,1)	(0,4)
Civil works	43,0	34,3	5,7	(15,2)	(1,3)
Services	1,4	4,1	(7,9)	(1,7)	(0,0)
Stock variations	(552,6)	5,5	(163,2)	126,3	1,1
Total exports	(8,0)	(6,0)	2,1	5,4	0,8
Total imports	(7,9)	4,6	19,1	20,3	(4,3)
GDP	0,8	4,5	4,4	3,6	3,6

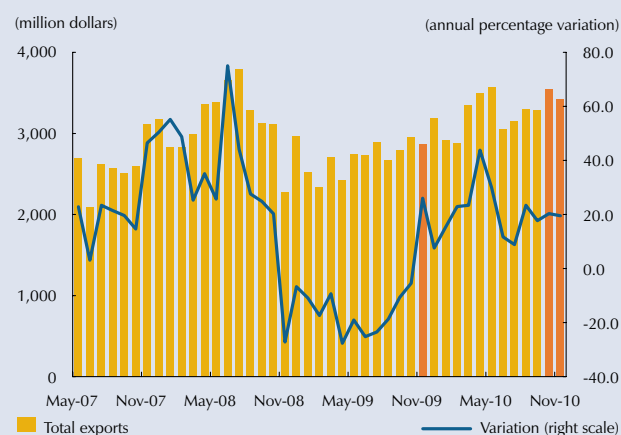
Source: DANE; calculations by Banco de la Republica.

In the third quarter, the trade balance (in constant pesos) widened and contributed negatively to growth. Imports grew at a high rate, and their level stood above the maximum observed before the recent financial crisis. This behavior was the result of the dynamics exhibited by imports of consumption goods, particularly those of durable goods, as well as purchases of raw materials. Exports, on their side, showed a significantly lower increase that was not enough to overcome the stagnation in the current level, which has not changed for three consecutive quarters. In this aggregate, as it has been usual in the previous months, the dynamics of traditional product sales stood out, while those of non-traditional items remained weak (see shaded text below).

EXPORTS AND IMPORTS IN DOLLARS IN OCTOBER AND NOVEMBER 2010

In the third quarter of 2010, total exports in dollars recorded a monthly average of US\$3,248 millions (m), which represents an increase of 16.4% from the same period in the previous year. In October and November, these exports amounted to US\$3,483 m on average, thus recording an annual increase of 19.9% (Graph A). This behavior can be explained by the higher value of mining and industrial exports, since they increased 31.1% and 10.7%, respectively. Moreover, the exported volume of these sectors exhibited annual growth rates 13.2% and -2.0%, respectively.

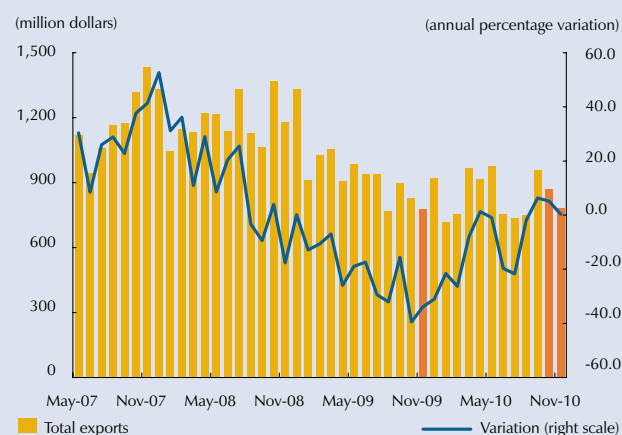
Graph A
Total exports
(monthly)



Source: DANE; calculations by Banco de la Republica.

With regard to the main exported products (coffee, coal, ferronickel, gold, oil and its derivatives), on average they accounted for 70% of total external sales in October and November, recording a 30% increase in value and 13% in volume during these months, with respect to the year before. The destinations of these products were: United States, Panama, Dutch Antilles, and Chile. Excluding the industrial sector's exports, the main products (coffee, oil derivatives, ferronickel and gold) showed an exported-value growth of 2.8% during the elapsed part of the year from the fourth quarter to November, with respect to the same period in 2009 (Graph B).

Graph B
Industrial exports excluding main products
(monthly)

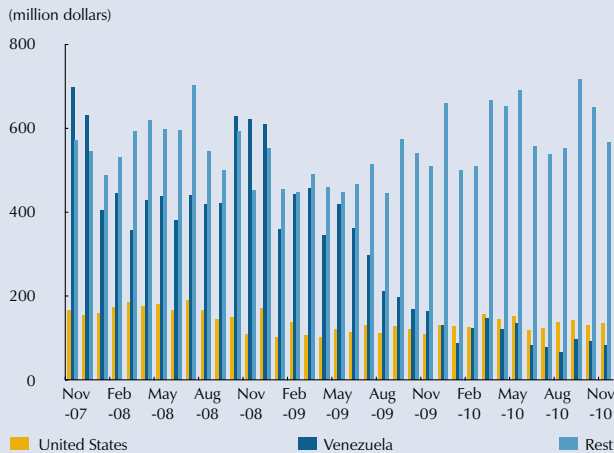


Source: DANE; calculations by Banco de la Republica.

By destination, sales of these products to Venezuela experienced an annual 47% contraction in October and November, while those destined to the United States and to the countries of the rest of the world (without the United States and Venezuela) increased 15.7% in annual terms (Graph C). It is worth highlighting that the annual growth rate of these products was 29.0% to Ecuador, 29.9% to the ALADI (Latin American Integration Association) without Venezuela, and 12.6% to Asia. On average, these three destinations account for 57% of industrial exports, excluding the main products.

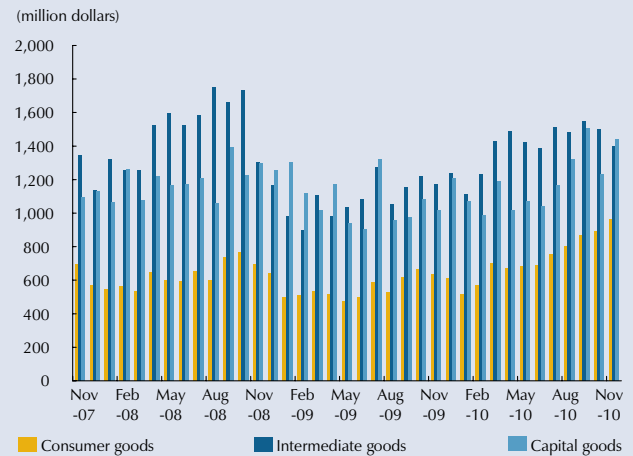
With respect to total (CIF) imports, they amounted to US\$3,659 m on average during the third quarter of 2010, with an annual 29.6% increase. In October and November, purchases reached US\$3,713 m on average, this value being higher by 28.2% than the one recorded during the same period in the previous year. This increment can be explained by increased purchases of consumer goods, up by 42.8%, mainly due to the acquisition of durable goods, as well as by the growth of 27.1% of capital goods imports (specifically those destined to industry) and of the 21.2% in the purchases of intermediate goods, mostly directed to the industry (Graph D).

Graph C
Industrial exports excluding main products towards the United States, Venezuela, and rest of the world^{a/}



a/ Does not consider coffee, oil derivatives, ferronickel, and gold.
Source: DANE; calculations by Banco de la Republica.

Graph D
Import Goods (CIF)



Source: DANE.

On the supply side, the economic activities that contributed the most the annual growth of the GDP were, in their order, commerce, restaurants and hotels, financial, insurance and estate services, and mining (Table 3). In the first case, its momentum was mainly associated to retail sales, which reflects household consumption dynamism. With respect to the financial sector, despite its moderate expansion rate, its contribution to annual growth was significant, due to its important share in the total.

In mining, its performance is still being explained by a permanent increase of oil production, which has continued to respond to the important investments made in the past few years. Although the annual growth rate of the sector remained high (above 10%) in the third quarter, there was a significant deceleration from previous quarters, due to a reduction in the production of coal and other minerals caused by the intense rainfall period. This fact was not anticipated in projections of previous reports, and consequently served to accentuate forecast errors.

The only economic activities that contributed negatively to growth were construction and farming (Table 3). With regard to construction, apart from the aforementioned downward trend of civil works, a new annual contraction of building construction was seen, in contrast with the improved performance of other economic activity indicators associated with the sector (i.e. mortgage portfolio and cement production, among others). This fact is due to several factors: in the first place, an important number of projects was at the excavation and foundation laying phase (with annual growth rates of 54% for the residential sector and 6.5% for non-residential ones). In this stage, there is a greater demand for cement, but its incidence is three times lower in

Table 3
Annual GDP growth by economic activity

Activity branch	2009	Annual growths (percentages)			Contribution (pp) to the annual growth of the III Qtr. of 2010
		I Qtr.	II Qtr.	III Qtr.	
Farming, forestry, hunting and Fishing	(0,4)	(2,2)	0,6	(0,9)	(0,1)
Mining and quarrying	9,6	13,2	14,7	10,3	0,7
Manufacturing industry	(5,9)	4,5	8,2	3,4	0,4
Electricity, gas, and water	1,4	5,7	3,0	0,0	0,0
Construction	14,6	15,4	(5,0)	(10,5)	(0,7)
Buildings	(3,8)	2,3	(14,2)	(5,1)	(0,2)
Civil works	38,9	36,7	5,7	(15,2)	(0,6)
Commerce, repairs, restaurants and hotels	(2,3)	4,1	4,8	7,0	0,8
Transport, storage, and communication	0,0	2,5	4,2	7,6	0,6
Financial establishments, insurances, real estate, and services to enterprises	3,1	1,9	3,1	3,3	0,7
Social, community and personal services	1,3	5,5	3,9	3,1	0,5
Aggregate value subtotal	1,3	4,6	4,3	3,1	2,8
Taxes less subsidies	(3,1)	3,6	6,5	8,4	0,7
GDP	0,8	4,5	4,4	3,6	3,6

Source: DANE; calculations by Banco de la Republica.

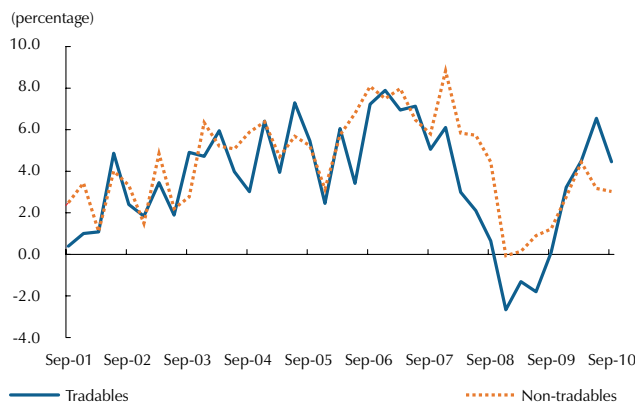
terms of added value than the final phases of construction, like work finishes. In fact, the latter fell in annual terms (-4.9%), particularly in the residential segment. In the second place, housing construction was dynamized in a significant way by social housing, which generates, in relative terms, lesser added value. And, in the third place, it is not superfluous to discard the effect that precipitations may have had in the sector's activity, without necessarily affecting cement orders or mortgage credits.

With regard to agriculture, stockbreeding and fishing, their annual drop was mainly due to the contraction registered in agricultural activities, excluding coffee. Among them, it is worth highlighting the reductions observed in temporary crops, like cereals, tobacco, legumes and tubers, which may have been affected by the initiation of the intense precipitations, especially by the end of the quarter. Moreover, although coffee production grew 9% in annual terms, its level fell from the previous quarter; since this fact had not been anticipated in previous projections, just like in the case of coal, it served to accentuate the forecast error.

Therefore, in the third quarter of 2010, the tradable sectors' GDP had a more moderate annual growth rate, due to the performance of agriculture, mining

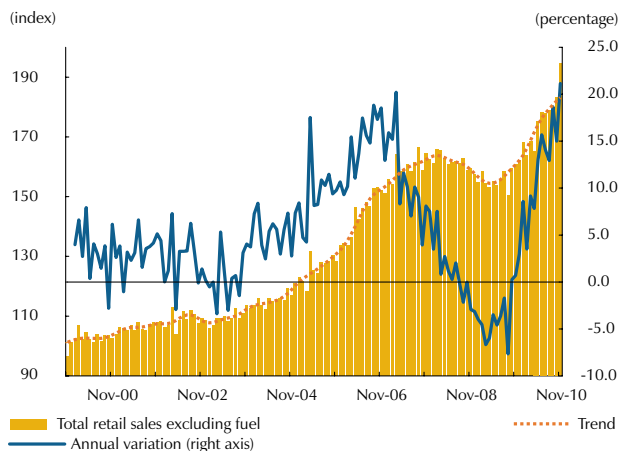
and industry, as mentioned above. Nevertheless, this aggregate continues to increase at a higher rate than the non-tradable sectors' GDP, especially due to the high growth rate of mining. Non-tradable GDP is still being dynamized by the expansion of commerce and services, despite the poor performance of construction (Graph 9).

Graph 9
GDP of the tradable and non-tradable sectors
(annual growth)



Source: DANE; calculations by Banco de la Republica.

Graph 10
Monthly sample of retail trade
(Seasonally adjusted series)



Source: DANE, calculations by Banco de la Republica.

b. GDP in the fourth quarter and the whole of 2010

Information available from economic activity indicators suggests that the growth rate in the fourth quarter of 2010 was probably similar to that registered in the previous quarter. In this sense, expansion during this period was mainly driven by domestic demand, while the contribution of external demand was negative, although in this occasion at a lower rate than in the previous quarter. Notwithstanding, some sectors may have been affected in different degrees by the intense raining, which might imply a strong shock to economic growth, and lead to the reduction of the forecasts. (see shaded text on next page).

The behavior of retail sales shows the momentum of household consumption. According to the Dane's Monthly Sample of Retail Trade, in October and November 2010 sales grew 18.2% on average with respect to the same period in 2009 (Graph 10). In these two months, the expansion of vehicle sales stood out (66%), as well as those of other durable goods, among them home and office furniture (25.4% and 46.1% respectively). Excluding automobiles, it can be seen that sales increased 9.7% in these two months, which is relatively high. In the case of food, expansion was 4.7%, twice the rate observed in the first three quarters of 2010.

However, the good behavior of sales contrasted with consumer confidence. Fedesarrollo Consumer Opinion Survey reported a persistent decline in this indicator between September and December,

after the peak attained in August (Graph 11). This downturn in household confidence was explained mainly by a reduction in the agents' long and mid-term expectations and, to a lesser extent, by a less favorable perception of the prevailing economic conditions at the time of making the Survey. Nevertheless, it is worth noting that, despite confidence decline, its level remains being relatively high and similar to that observed on average in 2006-2007, when

IMPACT OF THE RAINS ON GDP GROWTH IN 2010

The impact of the heavy rains on the production of each of the branches of economic activity was estimated in order to quantify the total effect of the intense rainy period on economy growth in the fourth quarter of 2010. In this exercise, only the service sectors were not affected, while for the other, the estimated impacts were of different magnitude.

The most affected activities in terms of production would be agriculture, livestock, and mining; in the case of farming this occurs due to the of hectares dedicated to food production and stock breeding being affected (amounting to 1,394,000 according to the Ministry of Agriculture) and because of the significant figure of dead animals- over 370,000 between bovines, and laying hens and fattening birds (according to calculations from the same source); in mining, this would happen due to

the drop in coal production, particularly in open cut fields, and the setback of non-metallic minerals like, salts.

Sectors that would experience more moderate impacts are commerce, restaurants and hotels —given the fall of hotel occupation—, transport and communications services - mostly because of the adverse effects on land cargo transportation -, and construction - due to delays in the execution of works. Finally, the sectors in which the impact may have been softer would be electric power, gas, and water, because of the lower gas demand by thermal-electric companies; and industry, due to the decline in food production, especially sugar. In total, putting all the impacts together, annual growth is deemed to have been reduced by nearly 1 pp solely because of the effect of intense rains.

Graph 11
Fedesarrollo consumer confidence indicator



Source: Fedesarrollo,

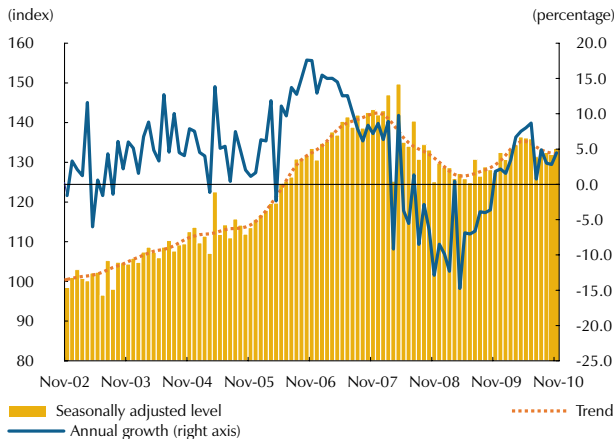
household consumption grew at annual rates close to 7%.

As per economic activities, the indicators showed mixed behaviors. On the industry side, the DANE Monthly Manufacturer's Sample showed that production in the October-November two-month period had grown 3.6% on average in annual terms (Graph 12), slightly higher than the third quarter average (2.9%). Nevertheless, despite these positive rates, if the production index is refined, it can be seen that it had remained at a standstill during the second semester, and even showed moderate falls in some

months. This low momentum might reflect the difficulties of the industrialists to consolidate the process of substitution of the Venezuelan market following the bi-national trade collapse. The above becomes more evident if it is noted that industrial production continues to be driven only by the dynamism of sales to the domestic market, course of the year up to November had increased about 5%, while foreign sales were dropping at a rate close to 1%, without any evidence that this trend might have recently changed..

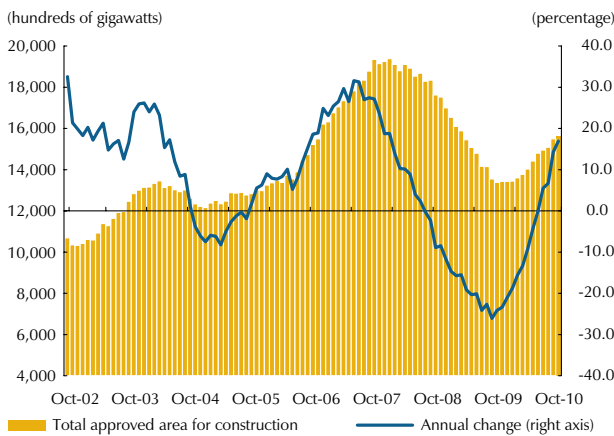
Similarly, in construction, the associated activity indicators continue to show a positive trend. For example, the approved area according to construction

Graph 12
Total energy demand^{a/}
(Seasonally adjusted series and annual growth)



a/ Does not include exports.
Source: XM filial ISA.

Graph 13
Total approved area for construction according to building permits
(Twelve month aggregate)



Source: DANE; Banco de la República calculations

licenses grew in October at an annual rate of 12% (Graph 13), although driven mainly by the social housing segment. On its side, cement production in the October-November two month period expanded 6.3% annually, and its levels show a small recovery, which is solely the result of internal demand, since its exportation have remained at a standstill. Thus, in the fourth quarter, some acceleration is to be expected in building construction, although still limited by the effect of rainfall, and because most works are barely initiated or still at their early stages.

On the contrary, the annual growth of the total demand for energy, an indicator of the behavior of economic activity in the urban area, decelerated for the second consecutive month. In annual terms, it grew only 0.4% in the fourth quarter, which is the lowest rate since mid 2009, while its level fell from the records of the previous months. (Graph 14). This behavior was more marked for the regulated component, which is mostly destined for household consumption.

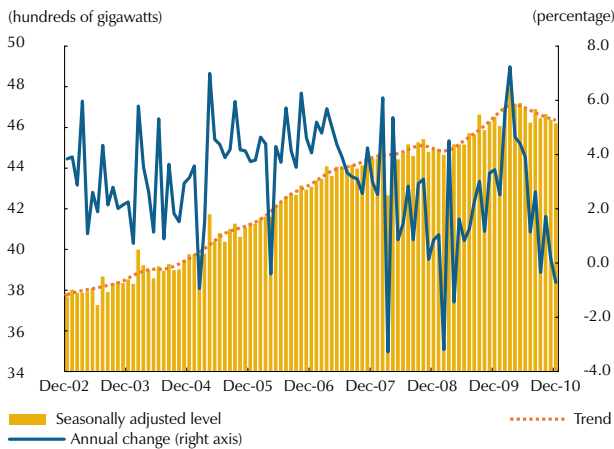
Based on these and other indicators, a new forecasting exercise was carried out for the fourth quarter, which includes different negative shocks to the production of various economic activities due to the intense suffered by the country in this period (see shaded text on page 27). The forecasting exercise exhibits the following results.

The forecasts suggest that the greatest contribution to GDP growth from the different types of expenditure in the fourth quarter will come again from household consumption. This aggregate would have accelerated by the end of the year, growing in the whole year 2010 at a slightly higher rate than the average since 2000. Household spending would have improved in all of its components, but especially in the purchases of durable goods.

With respect to Government consumption, a break in the deceleration trend of its annual growth is expected. Therefore it is anticipated that this component will expand at a rate close to 5% for the whole year.

On its side, the recovery of fixed capital investment would have continued to progress at a low pace. In the fourth quarter, this type of spending would have increased poorly in comparison with its historical average (about

Graph 14
Total energy demand^{a/}
(Seasonally adjusted series and annual growth)



a/ Excluding energy exports
Source: XM Compañía de Expertos en Mercados, Banco de la República calculations.

10%), though slightly higher than in the three previous months. This suggests some stagnation of expenditure destined for civil works.

The poor performance of investment in infrastructure would have been alleviated, in part, by investment destined to industry. Everything indicates that this spending, consisting in the purchase of assets used for the production of goods and services, had an outstanding performance, driven by the acquisition of machinery and transportation equipment. It is important to highlight not only the fact that the aforementioned asset purchases would have shown a significant imported component as well as considerable in the national production of this type of goods.

Exports would have exhibited a higher annual growth rate in the fourth quarter, due to a low comparison base. However, if compared to the previous quarters of 2010 this expansion is modest. This forecast assumes some acceleration in the sales of coffee and some other commodities of mining origin. With relation to imports, their growth rate in the fourth quarter would have registered an important deceleration in contrast to the July-September period, although their level is still at a historical maximum. Anyway, the increase in exports is widely overcome by the increment in imports in such a way that, for the fourth quarter, as well as for the total year, there would have been a widening of the trade deficit measured in constant pesos.

It is worth noting that foreign trade would have been struck as well by the intense rainfall period experienced at the end of last year. Particularly, the worst impact would have been associated with the closing of roads connecting ports to the main production and distribution centers in the central region of the country, and the flood affecting the Pacific free zone.

In the fourth quarter, the dynamics of the economy and especially of components, such as household, consumption would have been supported by various factors that favored the improvement in business and consumer confidence. Among them, it is worth highlighting: i) the strong stimulus given by the monetary policy, which resulted in historically low interest rates with positive effects on disposable income by reducing household's financial burden; ii) an inflation rate ending the year within the target range, thus preventing the deterioration of real income; iii) proper availability of

consumer credit; iv) a relatively low household indebtedness level¹, and v) growth of formal employment, particularly for the more educated.

To this point, the most recent forecast, which considers the predicted impact of the intense rainfall period, suggests that Colombian economy would have grown at an annual rate between 2.3% and 4.3% in the fourth quarter. According to this estimate, and assuming there are no significant revisions to the growth rate of the first three quarters of the year, the expansion of the GDP in 2010 would stand between 3.7% and 4.1%. This means that its dynamics in 2010 would have exhibited a recovery from the poor performance seen in 2009 (0,8%) due to the international crisis.

2. Salary costs and labor market

The information on the labor market in the fourth quarter shows that some precarious conditions still prevail, especially with respect to quality of employment. There has been some recovery on informal work, but not on salaried employment. This means low labor stability and low income for a large proportion of workers; for this reason, some secondary agents will continue to enter the market. However, formal employment involving high income for individuals with higher education levels has had a good performance and might be helping recover domestic consumption. In addition, despite the expansion of the labor supply, occupation has increased and led to the recent reduction of the unemployment rate (UR). For this reason, although this rate still stands at high levels, if this trend prevails it may show additional reductions, which may result in the acceleration of salary increases during 2011.

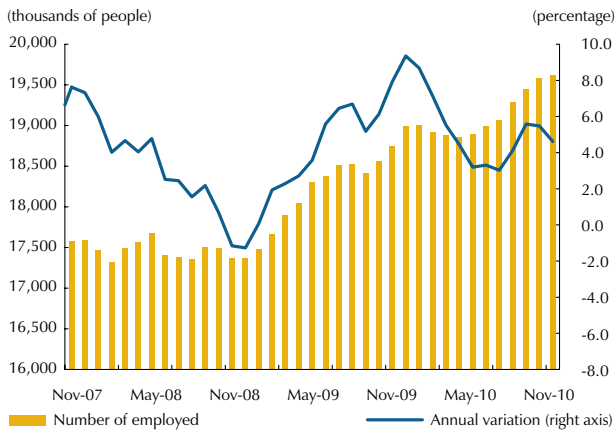
According to the Great Integrated Household Survey (GEIH), in the moving quarter ended in November, total employment continued to show the same dynamics of previous quarters and grew at an annual rate of 4.6% in the total national territory, and 5.5% in the thirteen main metropolitan areas. Besides, despite deceleration during October and November, the seasonally-adjusted series show that the number of employed stands at historically high levels, and the creation of jobs has been particularly intense in urban zones (Graph 15).

However, a good part of the expansion of employment is due to the creation of non-salaried jobs, which grew at an annual rate of 7.3%. On the other hand, salaried employment grew at an annual rate of 3.7%. Though not inconsiderable, this rhythm happens to be lower than in other boom periods (Graph 16). The above suggests that economic activity has not encouraged the demand for high quality employment. Besides, the incidence of sub-employment remains high and in November it stood at rates above its historical average.

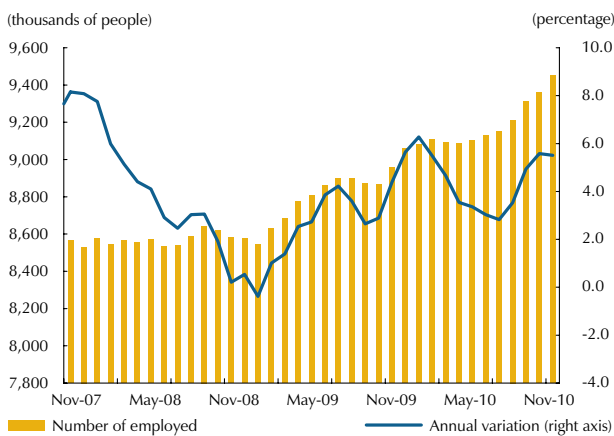
¹ See *Financial Stability Report* of September 2010.

Graph 15

A. Employed in the national total
(Seasonally adjusted moving quarter)

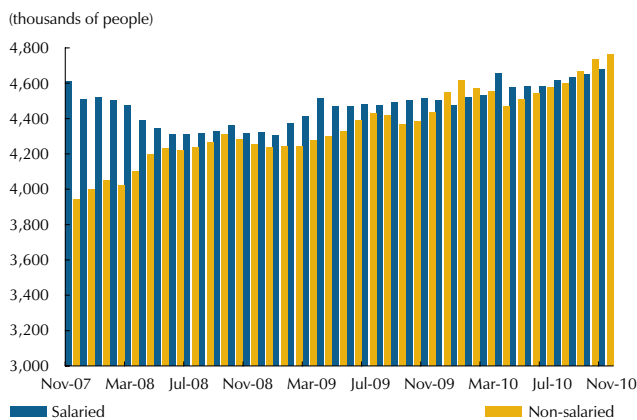


B. Employed in the 13 metropolitan areas
(Seasonally adjusted moving quarter)



Source: DANE (GEIH); calculations by Banco de la Republica.

Graph 16
Employed by type of employment
(13 areas, seasonally adjusted moving quarter)

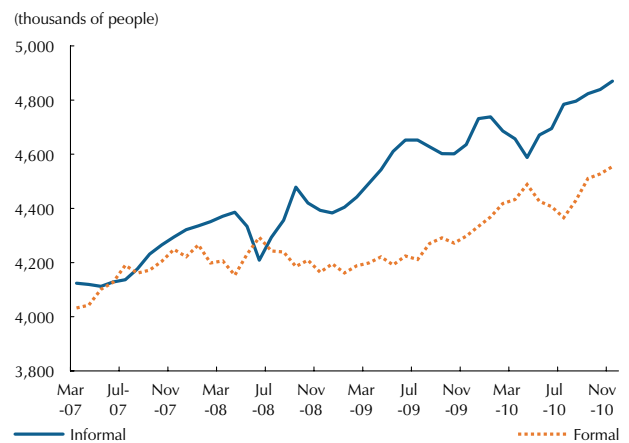


Source: DANE (GEIH); calculations by Banco de la Republica.

The behavior of non-salaried work is reflected on informal employment², which has outstripped formal jobs, despite the good dynamics shown in the second half of the year (Graph 17). If formal employment is disaggregated, it can be concluded that its growth has been exclusively explained by formal employees with higher education, while those with a poor education or are still at the level seen in early 2009 (Graph 18). The strength of formal employment for qualified individuals results in greater dynamism of their income. This, in part, may explain the recovery of domestic consumption.

Lack of demand for quality jobs for the non-qualified may be leading low-income households to keep informal or non-salaried employments, which are characterized by instability and poor earnings; for this reason, they would continue to add agents to the labor market. This reflects on the continuous expansion of labor supply, measured by the global participation rate which, in the fourth quarter, stood at its highest value since the introduction of the series (Graph 19).

Graph 17
Formal and informal employment
(13 areas, seasonally adjusted moving quarter)



Source: DANE (GEIH); calculations by Banco de la Republica.

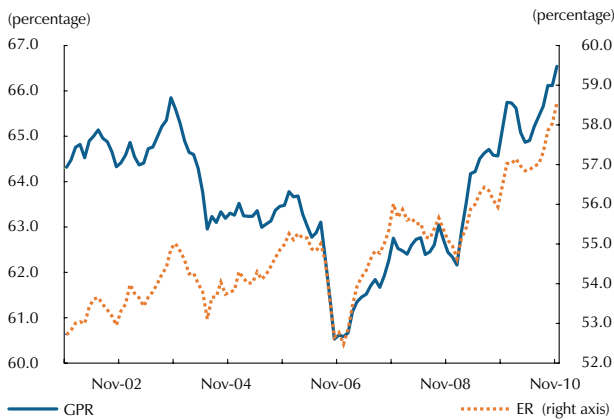
2 Informality, as defined by the DANE, is the group of employees and employers in enterprises with less than five workers, as well as those working on their own, independently with no professional education, domestic employees, and the non-remunerated workers.

Graph 18
 Formal and informal employment by qualification
 (13 areas, seasonally adjusted moving quarter)



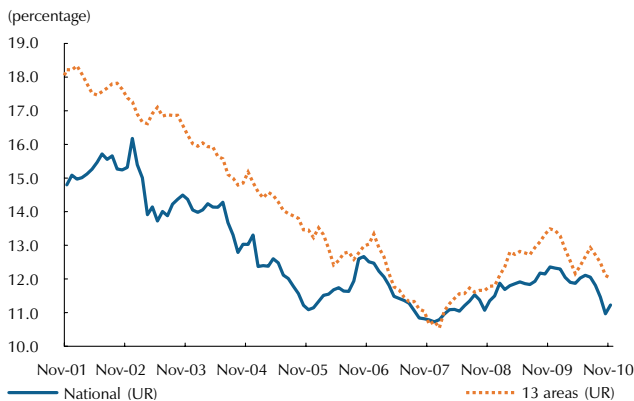
Source: DANE (GEIH); calculations by Banco de la Republica.

Graph 19
 Global participation rate (GPR) and employment rate (ER)
 (13 areas, deseasonalized mobile quarter)



Source: DANE (GEIH); calculations by Banco de la Republica.

Graph 20
 Unemployment rate UR
 (deseasonalized mobile quarter)



Source: DANE (GEIH); calculations by Banco de la Republica.

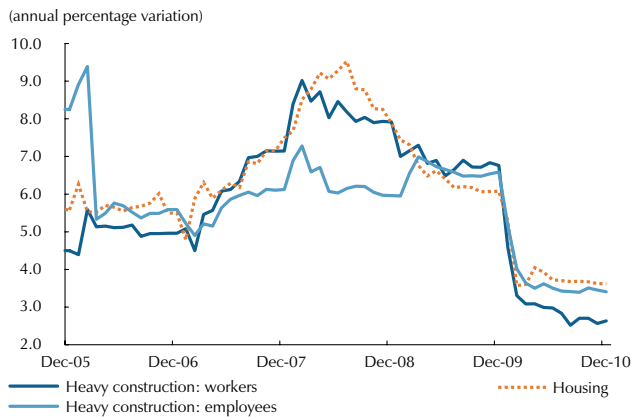
Along with the increment in labor supply, there was a greater expansion of the employment rate. Since demand for workers grew faster than labor supply, the unemployment rate fell in annual terms during the fourth quarter and the average between September and November was 10.5% for the national total and 11.1% for the thirteen main metropolitan areas. After adjusting the series for seasonality, it is seen that unemployment showed a downward trend in the last months of 2010 (Graph 20). Banco de la Republica econometric estimates indicate that this values are still above the unemployment rate that is consistent with a stable inflation (known as the *non-accelerating inflation rate of unemployment*, or Nairu), but they suggest that, should the recovery path continue, the closing of the gap between them would take place by the end of 2011.

However, because the labor market remained loose in the fourth quarter, pressures upon salaries were reduced, which was also possible due to controlled inflation expectations. All of this permitted salary increases for the last months of 2010, which were compatible with the long-term inflation targets.

Indeed, in December, the annual rhythm of nominal salary adjustment in construction stood between 2.6% and 3.6%, as compared with a 2.7% and 3.7% range in the third quarter (Graph 21). Likewise, the annual adjustments of wages in the industrial sector during October were of 3.9%, which compares to the average of the third quarter of 4.2%. Only in the case of commerce salary adjustments were over the target range of inflation, since the nominal salary in this branch grew 6.4% in October (Graph 22).

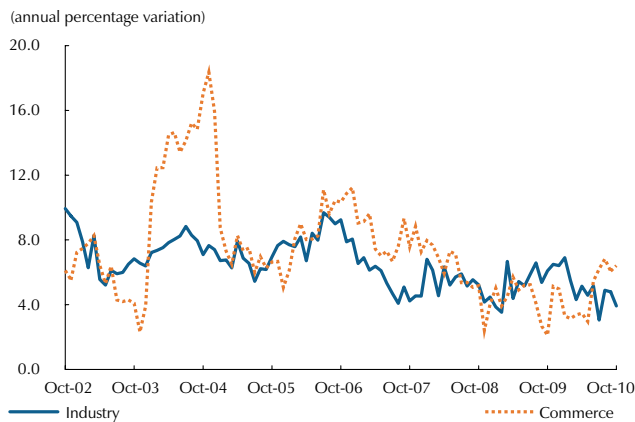
The uneven behaviors between trade and industry are explained by the nature of recovery in both sectors. On one hand, the commercial sector experienced an important increase in its real activity, and consequently the demand for employment grew stronger, as evidenced by the information obtained from the Monthly Retail Trade Sample. On the other, the recovery of the industrial sector was slow, and hence the demand for employment came to a halt until October, as shown by the Manufacturer's Monthly Sample.

Graph 21
Nominal Salary Index: heavy construction and housing



Note: Workers: Master builder, worker, officer, inspector, topographer/surveyor, and chainman Employees: Chief engineer, assistant engineer, storeman, accountant, guards, mechanics, and laboratory assistant.
 Source: DANE (ICCP*, ICCV**)
 *Heavy Construction Cost Index, **Housing Construction Cost Index

Graph 22
Nominal salary index: industry and commerce



Source: DANE (MMM* and MMCM**)
 *Monthly manufacturing sample, **Monthly Retail Commerce Sample

For the next quarters, there are some factors likely drive salary adjustments upwards. On the one hand, an increase in the demand for labor is expected, as well as a recovery in salaried work, along with the strengthening economic activity (discussed in the third chapter of this Report). The experience of late 2010 for trade and industry suggests that the performance of salaried employment in early 2011 will be essential to anticipate possible salary pressures. In addition, it could be expected that improved employment income, quality and stability may lead to a reduction in the growth rate of the labor supply, which has expanded for more than fifteen consecutive quarters. At this stage, the Bank's estimates indicate that the unemployment rate would reach its natural level (Nairu) by the end of 2011.

All this increases the likelihood of some salary pressures in the labor market, although they should not materialize before the second half of the year. However, the information available and the increase in the minimum wage (annual 4% for 2011) within the inflation target range suggest that salary adjustments will not jeopardize the fulfillment of the inflation target.

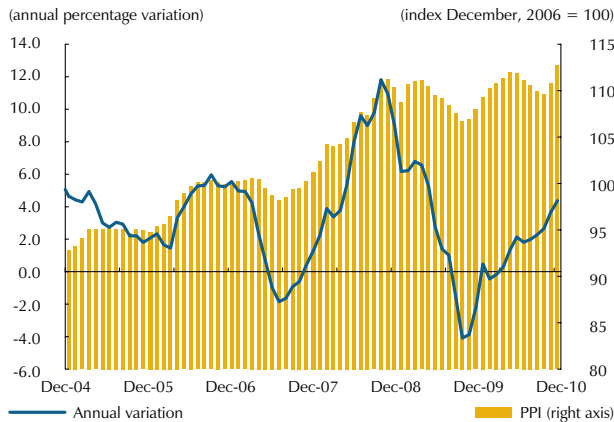
3. Other costs

In the fourth quarter, costs were affected by pressures that were unanticipated in previous reports. Significant increases were experienced by variations in annual producer prices and non-salary

costs for both national and imported goods. As a result, annual inflation, measured by the producer price index (PPI), accelerated from 2.3% in September to 4.4% in December (Graphic 23). The price level increased in the last months of the year after falling in the two previous quarters; besides, in December, the increment was significant (with a 1.6% monthly inflation) and represented the highest increase in that month since 1998.

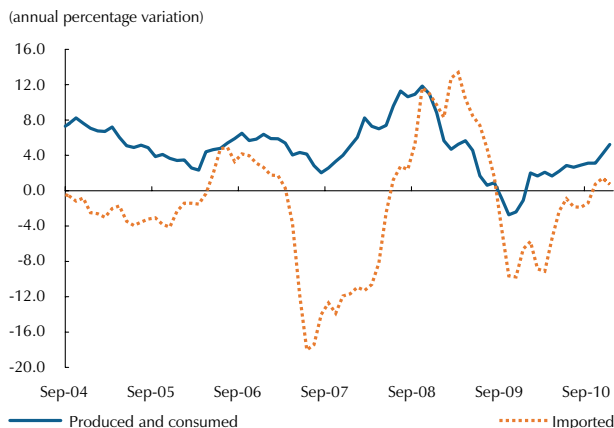
Disaggregating this variable by origin, producer prices of both national and imported goods exhibited annual increases, with the first contributing the most to the raise of the PPI. These trends led the national component to record an annual variation of 5.2% in December, which compares to the 3.1% in September. On its side, the imported component recorded a 0.7% rate against an annual rate of -1.4% in September. As a result, the first annual positive

Graph 23
Headline PPI



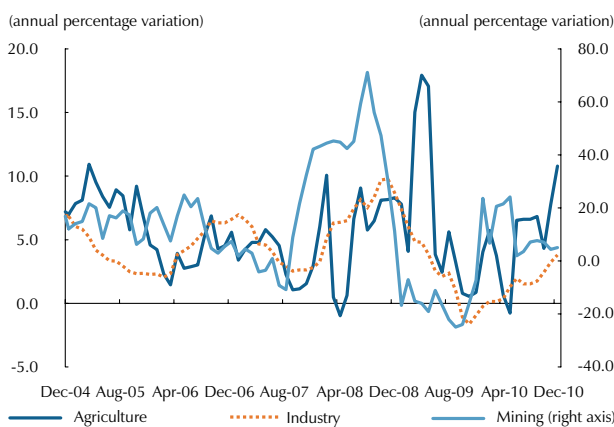
Source: DANE.

Graph 24
PPI by origin



Source: DANE.

Graph 25
Produced and consumed PPI by economic activity



Source: DANE; calculations by Banco de la Republica.

variation since August 2009 took place in the fourth quarter (Graph 24). Information available seems to suggest that this increment is in part related to the depreciation of the exchange rate in the quarter.

With respect to the PPI of produced and consumed goods, its acceleration was associated with the farming and industrial sectors. The annual growth rate of these sectors shifted from 6.8% and 1.8% in September to 10.8% and 3.8% in December, respectively; whereas a slight deceleration was observed the mining sector (Graph 25).

A more detailed analysis of the national production goods (in agriculture and industry) indicates that the increases in the fourth quarter were mainly caused by the raises in the prices of fuel and perishable food (Table 4). Some food prices, as in the case of fruits, meat and legumes, may have been affected by the intense rainfall period experienced in the end of 2010. Nevertheless, data show that the prices of marketable domestic production goods like rice, wheat, corn, oils, sugar, and gasoline, may have been pressured by international quotations.

Finally, from the PPI and other information sources like DANE monthly samples, the indexes of non-labor costs weighed with the social accounting matrix were estimated. In the fourth quarter, 295. these variables show an upward trend similar to the one observed in the PPI, and the national component rose to an annual 5.4% rate in December from a record of 3.6% in September, while the imported component reached a growth rate of 2.6% that compares to the 1.5% observed in the previous quarter (Graph 26).

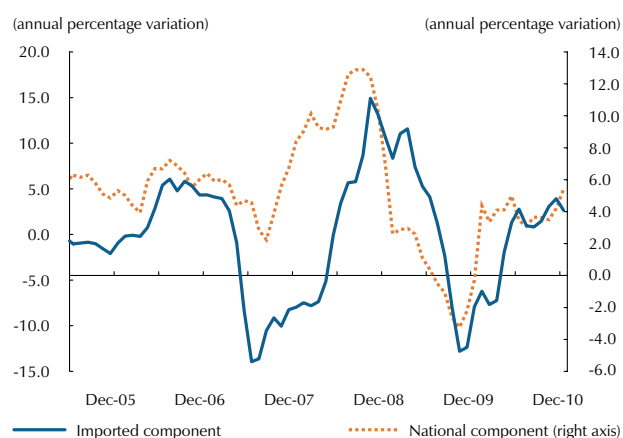
In conclusion, upward pressures to the PPI and to cost started to become evident in the fourth quarter in both the national and the imported component. The rise focused on foods and fuels, and an important part of these increases might be explained by the effect of the intense rains. Nonetheless, the available information suggests that there has been some direct pass-through of the high international prices to the nationally produced goods.

Table 4
 Producer price index (PPI)
 (Breakdown by subclasses)

	Annual inflation		Contribution to acceleration	Acceleration share IV Qtr.
	Sep-10	Dec-10		
Total PPI	2,3	4,4	2,1	100,0
Agriculture	7,0	11,4	0,7	34,3
Fresh or dried citric fruits	(45,0)	9,7	0,2	9,6
Live bovine cattle	(8,3)	3,7	0,2	9,0
Other fresh or refrigerated legumes	31,8	45,7	0,1	6,4
Paddy rice	11,4	23,7	0,1	5,3
Other fresh fruits	2,5	15,9	0,1	4,1
Wheat and meslin	(11,2)	20,7	0,1	3,7
Maize / Corn	(4,3)	7,4	0,1	3,3
Fresh plantains and bananas	2,5	12,2	0,1	3,1
Trite or green coffee	(0,4)	16,8	0,1	2,6
Industry	0,9	2,8	1,5	70,9
Fresh or refrigerated bovine cattle meat	(0,5)	9,8	0,2	7,6
Rice	(2,5)	7,9	0,1	6,0
Wheat flour	(9,2)	11,6	0,1	5,0
Palm oil and palm kernel	5,6	36,8	0,1	4,7
Unrefined sugar	17,0	29,1	0,1	4,7
Refined sugar	21,4	40,5	0,1	3,6
Diesel-type fuels	10,2	15,5	0,1	3,2
Refined oil	(12,1)	(3,7)	0,1	2,5
Gasoline for vehicles	12,8	16,3	0,0	2,2
Mines and quarries	7,4	4,9	(0,1)	(5,1)

Source: DANE; calculations by Banco de la Republica.

Graph 26
 Non-wage costs indices from the social accounting matrix



Source: Banco de la República.

Therefore, despite the fact that pressures upon costs may disappear to some degree in the course of 2011 due to their temporary nature, in this quarterly report it is deemed that they may continue to be present in this year, as explained mainly by commodity quotations abroad. Should the levels of these prices be maintained, these pressures may endure for a longer period.

4. Excess production capacity and demand side pressures

Excess production capacity – understood as the balance between production and potential output – is

one of the determining factors of inflationary pressures. During most part of 2010 there was a significant degree of excess production capacity, which gradually fell during the year, and consequently by the end of the year there was a greater use of the installed capacity than initially expected. However, thanks to the fact that pressures upon prices originating in demand continued to be low, core inflation remained at low levels.

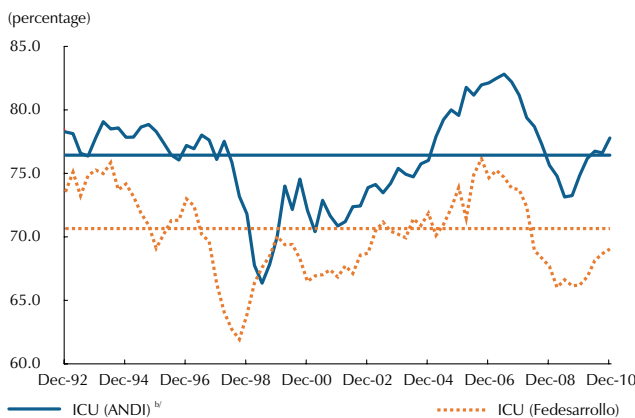
Certainly, during the fourth quarter of 2010, production capacity indicators continued on their growing path. This is particularly true for the installed capacity utilization indicator (ICU) of the National Association of Colombian Entrepreneurs (ANDI), which attained 78.6% in October 2010, namely 3.4 pp higher than the same month in 2008, and 2.2 p.p. above the series average. For the Fedesarrollo indicator, and although the trend towards recovery persists, the ICU is still below

its historical average (according to the aforementioned entity, this indicator reached 71.1% in the fourth quarter, which is higher by 3.0 pp than the record of the 2009 fourth quarter, and 0.02 pp lower than the series' average since the 90s). Generally speaking, as shown by an analysis of the seasonally adjusted installed capacity series for the two indicators, it is possible that some excess prevails, but on its way to exhaustion (Graph 27).

In addition, labor market conditions led the rate of reduction of unemployment to accelerate in the fourth quarter. The Bank's calculation show that although to this date the unemployment rate is still above the rate that is compatible with stable inflation (Nairu), during 2011 this situation should start changing and the labor market would no longer exhibit excess supply. In this way, both the reduction of excess production capacity and the possible closing of the labor market gap maybe increasing the probability of the emergence of demand side inflationary pressures in the next quarters,

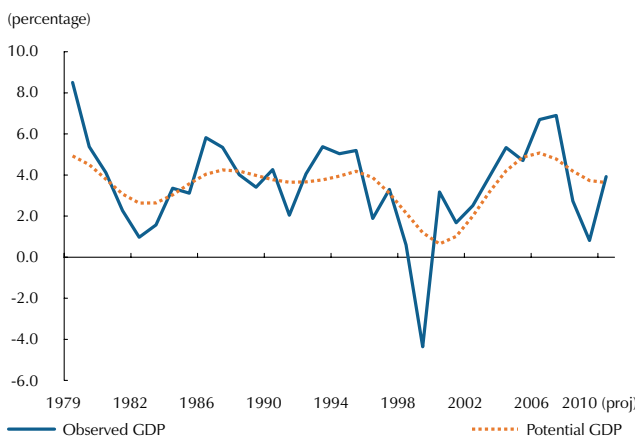
With respect to the growth of potential output, and just like in the former *Report*, estimates suggest that it stood in 2010 in a range between 3.5% and 4.0% (Graph 28). However, it is possible that the shocks suffered by the Colombian economy in the last part of the year, especially due to the intense rainfall period, may increase the likelihood of the potential output being close to the lower part of these range, particularly because, according to the information available ant the estimates made by the Bank, infrastructure destruction would have affected production capacity and multifactor productivity

Graph 27
Installed capacity utilization (ICU)^{a/}



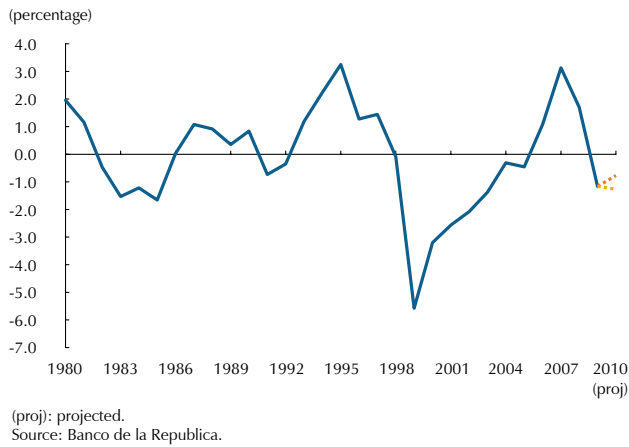
a/ Seasonally adjusted series series.
b/ The calculation of the ANDI's UCI is based on the arithmetic average.
Sources: ANDI and Fedesarrollo.

Graph 28
Annual GDP: observed and potential growth:
(annual average)



(proj): projected.
Source: DANE; calculations by Banco de la Republica.

Graph 29
Output gap
(annual average)



in 2010. Given the above, and considering the aforementioned growth forecasts for the year, the output gap would have registered for the year, the product gap may stand at -0.9% on average for 2010, closing slightly from the estimates of previous reports (Graph 29).

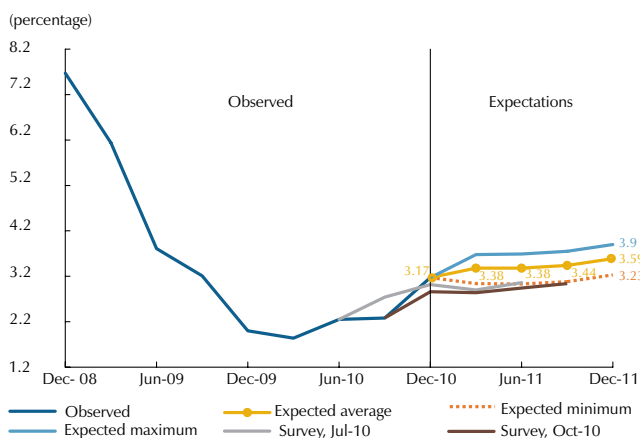
Towards 2011, some preliminary estimates indicate that the aforementioned shocks may as well have a small, though no insignificant impact on the growth of potential output.³ In this way, and given the economic activity acceleration expected for this year from a greater aggregated demand (as discussed in the third chapter of this Report), the Bank's preliminary calculations suggest that the output gap

will be closed sooner than expected and will probably be in positive terrain by the end of 2011.

5. Inflation expectations

Between September and December, economic agents slightly increased their inflation expectations. However, despite some exceptions, their projections remain anchored within the long-term target range (between 2% and 4%) defined by the Board of Directors of Banco de la República. In general terms, the different indicators show that inflation is expected to accelerate during the year, to reach 3.6% by the end of 2011.

Graph 30
Observed inflation and inflation expectations
(at three, six, nine and twelve months)
(annual inflation)



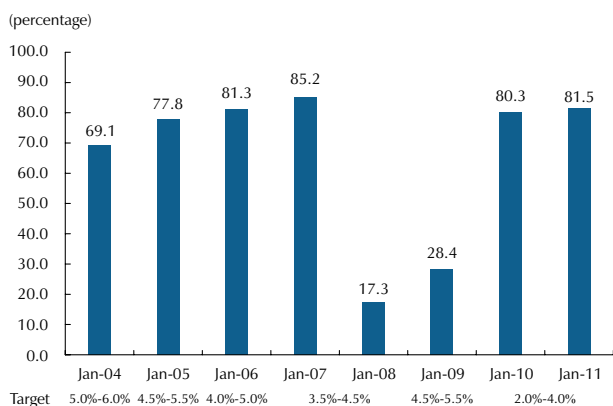
Source: Banco de la República.

According to the quarterly expectations survey of Banco de la República, applied to a wide range of agents and analysts in early January 2011, average inflation expected for March 2011 is 3.4% (as compared with 2.9% estimated in the October 2010 survey). Likewise, inflation predicted for December 2011 is 3.6% (Graph 30). In the same survey, nearly 82% of the surveyed expect inflation to stand within the target range by for end of the year, which is similar to the figure observed in January 2010 (Graph 31).

On its side, the monthly expectations survey, applied to financial market operators, shows that the expected headline inflation for December

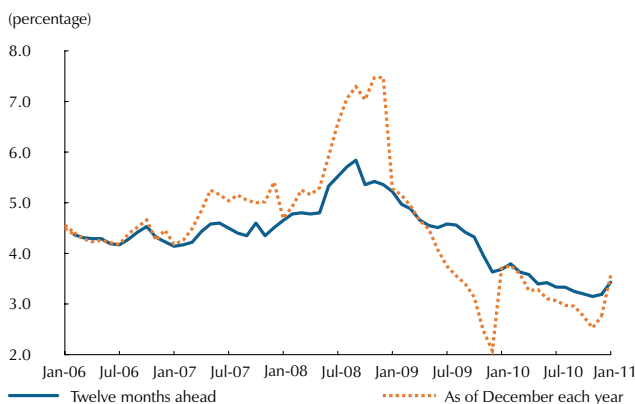
³ It is worth noting that the nature of this shock on output growth would be temporary, since the future increase of investment tends to offset the loss in production capacity and the capital net worth in a relatively fast way.

Graph 31
Percentage of inflation target credibility from 2004 to 2011 (survey conducted every year in January)



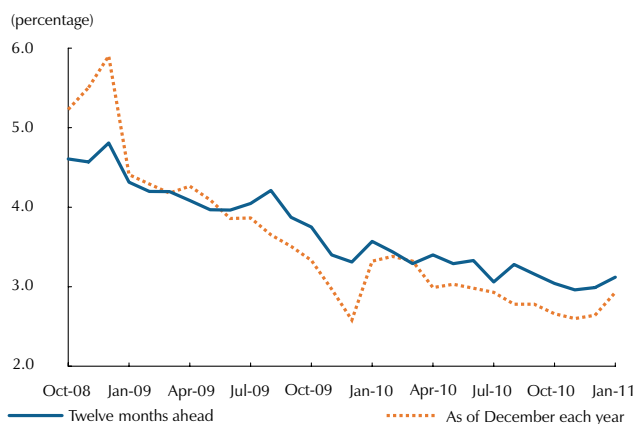
Source: Banco de la República.

Graph 32
Annual inflation forecast, according to banks and stock brokers



Source: Banco de la República.

Graph 33
Forecasts of annual inflation excluding food according to banks and stockbrokerage firms



Source: Banco de la República.

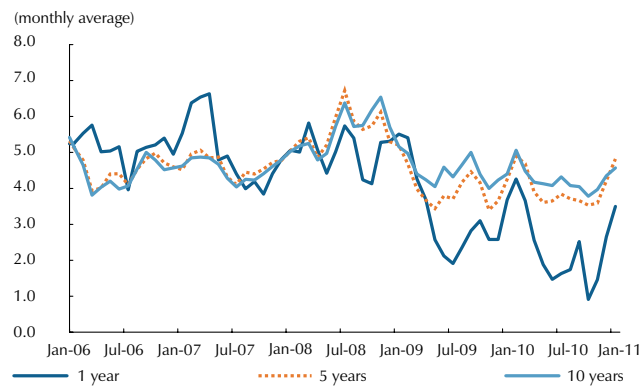
2011 is of 3.6%. Moreover, the twelve-month expectations (i.e., as of January 2012) grew by 24 bp with respect to the previous month, standing at 3.4% (Graph 32).

With regard to the CPI excluding foods in the same survey, financial system operators expect that inflation will be close to 2.9% in December 2011; which means a slight reduction from the 3.0% predicted for that month in the survey applied in December 2010. Finally, the inflation excluding foods shown by the survey is 3.1% for January 2012 (Graph 33). From the above it can be deduced that analysts are projecting a recovery in food inflation during the year, possibly as a result of lagged effects caused by the supply shock of the rainfall period and international price pressures.

Finally, average inflation expectations derived from the TES (public debt securities) —with preliminary January data— stand at 3.5%, 4.8% and 4.5% for 1, 5 and 10-years, respectively (Graph 34). These expectations exhibited an important increase since October 2010; although the one year indicator shows a record that is compatible with the long-term target, 5 and 10 year expectations stand above the inflation target range (from 2% to 4%). It has to be taken into account that these expected inflation indicators might be distorted by the liquidity premiums of fixed-rate and UVR (constant real value unit) securities, and by the inflation risk premium. In addition, these indicators tend to be more volatile than those being estimated in the surveys.

In general terms, the increment in inflation expectations seems to respond to the acceleration of the CPI by the end of 2010. For this reason, and given that the nature of this rebound may be transitory, it is necessary to keep monitoring inflation expectations in order to determine the response of agents 356. to the new available information.

Graph 34
One, five, and ten-year break-even inflation^{a/}



a/ Nelson & Siegel Methodology.
Source: Banco de la Republica.

Box 1 ELECTRICITY FEES AND INFLATION*

Ignacio Lozano
Hernan Rincon**

market amounted to US\$4,740 m: 69% were related to bilateral contracts, 26% to the stock market, and 5% through another type of transactions.

1. Introduction

In Colombia, electricity fees are regulated by the State. Four stages are involved in the provision of this service (generation, transmission, distribution, and commercialization), and the market structure of the different stages of the business go from competition to oligopoly. Fees are fixed based on the unit cost, which, to a certain degree, is adjusted to the main price indexes of the economy. This box stresses the importance of electricity fees in these indexes, describes the mechanisms used to trade electric power, details the formation process of the fees, characterizes its behavior, and compares it with the evolution of the consumer price index (CPI) of regulated items and inflation. Finally, it quantifies the annual inflationary impact of a shock on the fee.

2. Electricity fees and aggregate price indices

In the last few years, electric power charges have increased their share in both the group of State regulated prices and the total CPI basket. In the basket with 1998 as base year, weighting assigned to regulated good prices was 9.04% and, within this group, electricity fees had a 1.46% share. In the new 2008 basket, weighting increased to 15.26%, at the same time that the importance of electric power charges climbed to 2.86%. The largest weight of this product has increased the attention given to how these fees are formed, in order to monitor closely the aforementioned inflation of regulated items.

3. Energy transactions

In the energy wholesale market, electric power is traded through two mechanisms: the stock exchange, and bilateral contracts. For 2009, total transactions in this

The transaction mechanism in the stock exchange consists of three stages: one prior to the operation date, one on the operation date, and one after the operation. At the first stage, energy-generating companies announce the expected availability of power for each hour of the next day and a single supply price for that day. With this information, the market operator sells contracts for each hour of the following day, given an expected demand. At the second stage, the energy is traded according to the demand of the system. At the last stage, the price is determined; it will be the supply price of the marginal generating company; namely, the one that completes with its offer total demand.

In bilateral contracts, prices and quantities of power are agreed between marketers and generators. Mid and long-term contracts, namely those for delivery within terms longer than one day and a duration between one and four years are executed with the objective of preventing uncertainty associated with price changes, which tend to fluctuate very abruptly due to climatic phenomena or technical restrictions.

4. Electricity fees formation, and inflation

Electric power charges are regulated by the Energy and Gas Regulatory Committee (CREG) through resolutions that, in principle, are effective for five years. The unit cost (UC) of the supply of the service is the calculation base for the energy fees, which is defined in pesos per kilowatt-hour (\$/kWh), and taking into account whether energy consumption involved in each case is residential or industrial. In the residential consumption case, it is charge on a stratified basis, in such a way that a subsidy is discounted from the UC for strata 1, 2, and 3; stratum 4 is charged the UC, while a contribution is added to strata 5 and 6. On the other hand, the charge for regulated industrial users consists of UC plus a contribution (or surcharge). In the event of contributions not being sufficient to cover subsidies, resources from the Nation's general budget are used to meet the missing amount.

a. *The unit cost*

The UC of the electric power service supply is equal to the sum of the unit costs of generation (its share is 33% of the CU), transmission (8%), distribution (38%),

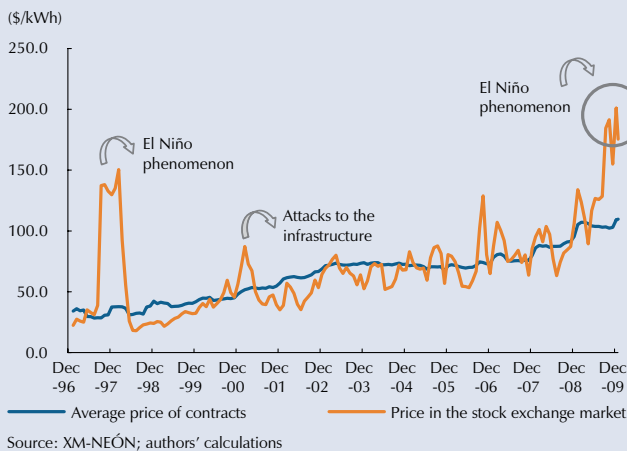
* Taken from the document titled "Formación de las tarifas eléctricas e inflación en Colombia" (literally: "Formation of electricity fees and inflation in Colombia") published in Borradores de Economía del Banco de la República, num. 634 of 2010.

** The authors are researchers of Banco de la Republica's Research Unit. The opinions expressed are exclusive responsibility of the authors do not involve Banco de la Republica nor its Board of Directors.

and variable component of its commercialization (12%), plus recognized losses (7%), and the usual restrictions to these activities (2%).

The cost of power generation which, in turn, is equal to the purchasing price of the commercialization companies, is determined by the free interaction of supply (electricity generators) and demand (marketing companies), thus, rigorously speaking, is the only UC component whose prices are set by the market mechanism. Demand is covered by bilateral contracts, and purchases at the energy stock market. Climatic seasonability changes, recurring El Niño events and attacks against the electric infrastructure have affected the historical exchange price which, because of its short-term nature, exhibits more volatility (Graph R1.1).

Graph B1,1
Price in the stock exchange market and the average price of contracts, 1997 to 2009



El Niño phenomenon in late 2009 and early 2010 was particularly intense and resulted in a reduction in water deposits, forcing the system to replace hydraulic generation with thermal generation. Since thermal plants are not able to supply the country's total energy demand, they confront excess costs which finally reflect on less power transactions in the energy exchange market and in higher costs per kilowatt generated.

Transmission and distribution costs correspond to a right fixed by the CREG for the use of transportation networks. These rights are fixed in order to cover the following: depreciation of assets of enterprises taking part in these business and their capital opportunity cost (or return rate), networks administration, operation and maintenance, payment to third parties for connection to the network system, and payment for services rendered by the dispatch centers in the regions. Among these items, the first two are predominant. Previous costs have been adjusted on a monthly basis in the past years with

the total national producer price index (PPI). Thus, the final electricity fees increases when the PPI rises, and then in passed-through to the CPI. For this reason, there is a transmission channel between the PPI, the transmission and distribution components and, finally, inflation.

The electric power commercialization variable cost is determined on the commercialization cost corresponding to the remuneration for reading, invoicing, and other costs pertaining to this activity, which varies according to electric energy sales or consumption. Finally, recognized losses constitute a CU component to the extent that costs become explicit for losses imputable to energy purchases and transportation.

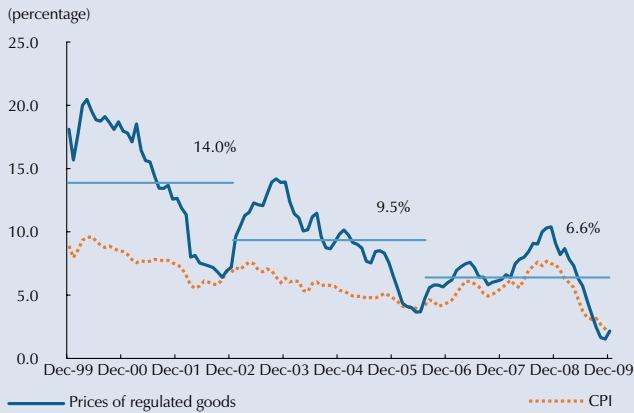
Between 1998 and 2007, the UC was estimated on a monthly basis; however, in order to avoid changes in the fees due to small UC oscillations, only an increase or reduction was applied if the calculated value of any cost happened to be different from the current one in more or less 3%. With these adjustment rules, an accumulated increase in the CPI above 3% affecting the commercialization cost, did not necessarily translate into a total UU increase, because it could be offset by the opposite evolution of other component's costs, or vice versa. For example, evidence shows that there were months with minimum variations in the PPI or the CPI; while other factors, such as attacks against the electric infrastructure and climatic changes, translated into an increase in the UC. For the charge period between 2008 and 2012, the CREG defined a new price index in order to adjust electric power unit costs in such a way that if any of the UC components exceed 3%; this cost is automatically adjusted in the equivalent percentage.

b. Fees, the CPI of regulated items, and inflation

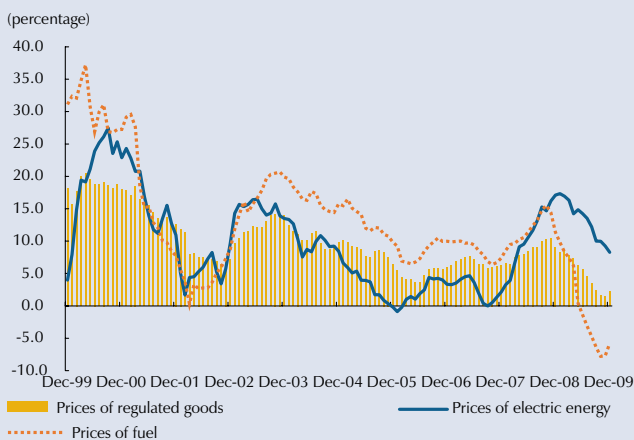
In the course of the past ten years, the annual change of the CPI of regulated items showed a downward trend with sharp fluctuations, and by the end of 2009 it stood below inflation (Graph R1.2, panel A). The evolution of electricity fees and the fuel price marked the dynamics of this group during the period (Graph R1.2, panel B). Between 2001 and 2002, the lower annual increases were determined by a reduction in the prices of fuels, associated with the evolution of the international oil price and a drop in the electric power charges. Later, two considerable upward and downward cycles were registered in the annual variation of the CPI of regulated items, driven again by fuels and electric power charges. The peak of the CPI of regulated items in 2008 was explained by both electricity fees (which increased 15%), due to higher generation costs confronted by the sector due to El Niño event, and to fuel prices, which did not decline with the fall of the international oil prices.

Graph B1.2
Inflation of the total CPI and of some regulated goods
(Annualized rate)

A. Inflation of the total CPI and of regulated goods



B. Inflation of regulated items, electricity fees and fuel



Source: DANE; authors' calculations.

c. *Rigidities and asymmetries of regulated item prices and electricity fees*

In the past decade, it was found that the main goods forming the CPI of regulated items (fuels, gas, electric power, and the water and sewer systems) recorded changes in their prices each month, and in a 0.9% magnitude. Fuels registered a higher average increase (1.1%), while electric power charges experienced the lower average increase (0.6%). With regard to the direction of changes, the presence of asymmetries favoring increases was found. In the case of electric power, 73.9% accounted for rises and 26.2% for reductions. With respect to the magnitude of the changes, monthly increases for electric power and fuels were, respectively, 0.76% and 1.1%.

d. *The inflationary impact of a shock to electric power charges*

Using the 2007 input-product matrix, the impact on annual CPI inflation of a sudden variation and for a single time of electric power charges was estimated. Estimations indicate that a 10% shock to power charges implies an additional annual inflation of 0.78 pp of the CPI.

Box 2

RETROSPECTIVE ANALYSIS OF COLOMBIAN ECONOMY DURING 2010, ACCORDING TO THE PATACON MODEL

Christian Bustamante
Andres Gonzalez
Diego Rodriguez*

This box offers a brief analysis of the Colombian economy during 2010 based on a dynamic stochastic general equilibrium model known as *Patacon*¹, under the responsibility of the Banco de la Republica's Macroeconomic Models Department. Particularly, the model is used to identify and quantify the shocks explaining the behavior of the GDP and of the inflation rate during 2010.

Given the model's structure, it is possible to explain the performances of the macroeconomic variables as an exogenous structural shock function. Thus, a variable value in a given period can be explained as a weighted average of shocks received by the economy until that moment. A shock is understood as an exogenous variable, whether observed or unobserved, that generates fluctuations in the economic cycle.

The overall set of external shocks consists of:

- Changes in the GDP of the main trading partners
- Movements of imported raw material prices
- Variations of prices of imported goods for consumption and investment.
- Variations of the relevant external interest rate for Colombia
- Transfers.

Internal shocks are:

- Monetary policy shocks identified by means of the interbank borrowing rate (IBR) and a policy rule. Then, if the IBR differs from what has been suggested by the model's policy rule, it is said that there is a monetary policy shock.
- Changes in consumer preferences reflected on consumption movements not being explained by the model. This unobserved shock may however reflect variation in the consumer confidence index, as well as exogenous movements of Government's consumption.

- Exogenous variations in the disposition to invest. Also this shock is unobservable, but even so it may be associated with the installed capacity indexes and business confidence indexes, as well as exogenous public investment movements.
- Variations in the inflation of food and regulated goods.
- Temporary and permanent productivity shocks. The latter is supposed to determine the economy's long-term growth rate.

1. Historical shock decomposition

The representation of the historical shock breakdown is a color bar graph superimposed over a series of time, where the sum of bars for each period is equal to the series value observed at that moment. Therefore, the size of the different color bars in each period indicates the shock's relative importance. Likewise, the bars located on the positive part show upward pressures, unlike what occurs with respect to the bars on the negative zone.

Shock decomposition is shown in terms of absolute deviations of the variables' long-term value. In this exercise, the long-term value for output growth is 4%, and for inflation it is the mid point of the target range.

It is important to highlight some features of the historical shock breakdown. First, the magnitude of the color bars is not necessarily associated with shocks received at a given moment; instead, it reflects the accumulated net effect of shocks received until this period. Secondly, the series value, explained by a specific shock, gathers direct and indirect effects. Finally, the maximum effect of a shock on the different variables may take place with some lags.

In order to carry out this exercise, the GDP series, total consumption; gross fixed capital formation; total exports and imports; imported raw materials; total regulated item and foods inflation; external interest rate; depreciation; salaries; transfers; interbank borrowing rate; price of imported raw-materials; price of imported consumer and investment goods, and external demand for exports. The latter is constructed from the GDP of Colombian economy's main commercial partners, as weighted by their share in total exports^{2[2]}.

* The authors are, in order, professional, director and head of the Macroeconomic Models Department. The opinions expressed are exclusive responsibility of the authors do not involve Banco de la Republica nor its Board of Directors.

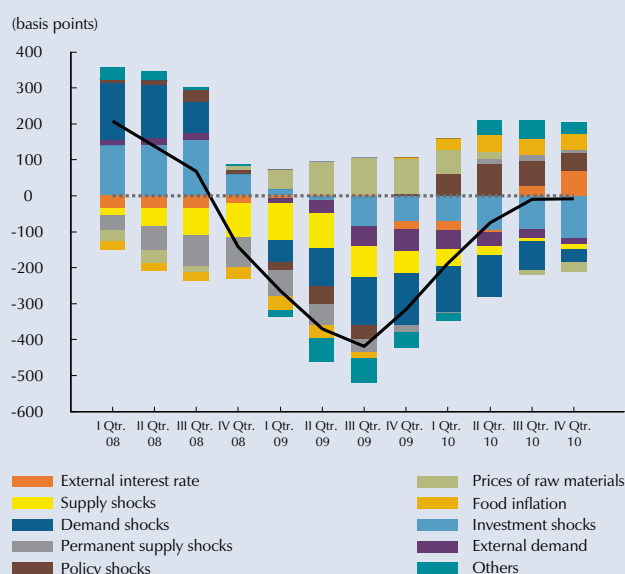
1 The meaning of the English acronym *Patacon* is *Policy Analysis Tool Applied to Colombian Needs*.

2 The series are obtained from the information reported by the DANE, Banco de la República, IAN, and the International Monetary Fund. All of them have a quarterly frequency going from the second quarter of 2001 up to the fourth quarter of 2010.

a. GDP growth in the 2008-2010 period

As shown in Graph R2.1, growth of the output above 4% was observed during the first quarters of 2008 (whole year), propelled mainly by positive demand shocks. From 2009 and until late 2010, it is seen that the demand shock affected GDP growth in a negative way, although its effect lost importance. This dynamics is close to the behavior seen in the consumer's confidence index and public consumption growth in that period (see Graph 11 of Chapter I). In addition, this result evidences that the sharp fall experienced by consumer demand in 2009, as well as its slow recovery in late 2010, continues to negatively affect output growth negatively, although less and less in the course of time.

Graph B2.1
Historical decomposition of shocks to GDP growth, 12 months



Source: Authors' calculations.

Something similar occurred with shocks to investment: during 2008, they explained an important part of GDP growth; but, from 2009 onwards, they had a negative effect on output growth, which matches the significant fall recorded by gross fixed capital formation in the national accounts. This result shows that, despite the investment opportunities exhibited by the country, they were not attractive enough for investors. For the whole period, the business confidence index shows a similar pattern.

The Patacon d also identified temporary and permanent supply shocks explaining to a great extent the deceleration of output growth between years 2008 and 2010. The same behavior is congruent with the total factors' productivity measures calculated by other models.

External demand is one of the shocks that affected GDP growth. Its effect gained more importance during 2009 and

part of 2010, the years in which these shocks affected output growth negatively. In this period, the main commercial partners' GDP recorded drops of up to 4.5%, with a negative impact on demand for Colombian exports.

Moreover, the shock to food inflation affected in a countercyclical way GDP behavior during the analysis period. In 2008, food inflation reached higher levels than 10%, which translated into negative effects on product expansion during this year and part of the next one. However, by late 2009 and early 2010, the foods price suffered some falls, in this way dynamizing 2010 GDP growth. This occurs because the lower price of foods has a positive income effect on consumers which increases their real salary and generates higher demand. In addition, the monetary policy reacted by accommodating reductions in inflation, and this finally resulted in lower interest rates and higher aggregate demand

The annual variation of the raw material price registered negative values between 2007 and 2008, which generated positive effects on the following year's production. Nevertheless, for 2009, raw material inflation returned to positive terrain and increased production costs, affecting GDP growth in a negative way in the second semester of 2010.

b. Annual Inflation between 2008 and 2010

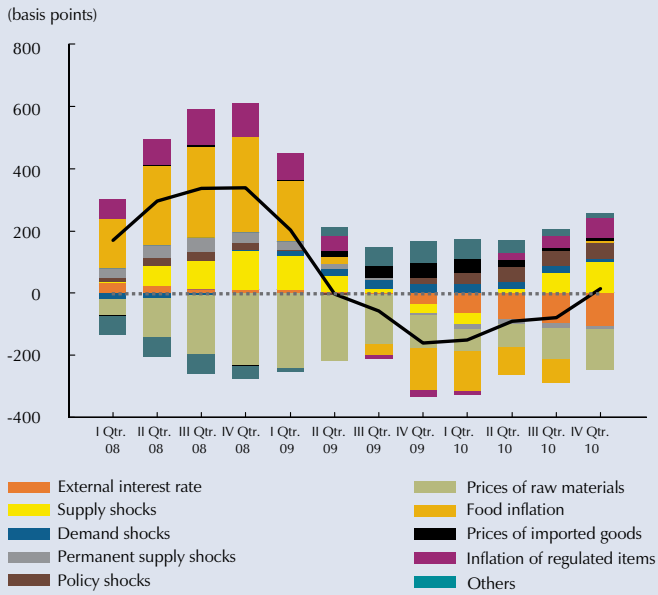
Shocks to the food and regulated item group affected inflation not only because of its share in the basket, but due to its effect on inflation expectations. The food price increase in 2008 propelled inflation above the target range. However, the fall in this group's prices, as registered in 2009 and part of 2010, generated downward inflation pressures inflation during this same year (Graph R2.2).

In most periods, the behavior of the CPI of regulated items caused upward inflation pressures. In contrast, only when the annual variation of the regulated item group stood below the annual inflation target, its effect on inflation was negative, just as it occurred in the period between 2009-III and 2010-I.

Another factor that generated downward pressure on inflation during the whole analysis period was the price of imported raw materials. The annual change of the PPI of imported items exhibited negative values between 2007 and 2008, with a recovery in 2009 and a subsequent fall in 2010. This behavior pattern is seen in the negative accumulated effect of this shock on inflation.

Added to this, and in line with the negative supply shock identified in the historical breakdown of output growth, it is seen that the supply shock caused upward pressures on inflation between 2008 and mid 2009. In addition, the low international interest rate helped to reduce inflation

Graph B2.2
Historical decomposition of shocks to annual inflation



Source: Authors' calculations.

in 2008 and 2009, which was indirectly reinforced by the appreciation of the exchange rate in late 2009 and most part of 2010.

Finally, the role of monetary policy considers the use of the interest rate to influence aggregate demand and, in this way, control pressures on inflation and channel it to its target range. In 2010, low interest rates had a dynamizing effect on aggregate demand, which allowed for higher GDP growth without deviating price increase from the target range.

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II. FINANCIAL MARKETS

In the fourth 2010 quarter, both volatility and risk perception in financial markets grew, particularly in the European economies.

In emerging economies, the end of 2010 was a period characterized by low valuation of financial assets, and even of reductions in of some stock indexes.

In the last quarter of 2010, there was an acceleration in credit in a context of historically low interest rates.

The prices of financial assets (TES securities and shares) fell, while the increase in housing prices continued.

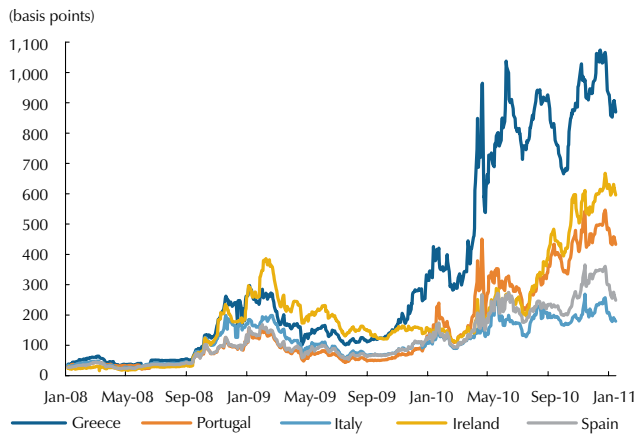
A. EXTERNAL MARKETS

Throughout the fourth quarter of 2010, both volatility and risk perception in financial markets grew, particularly in the European economies. The serious public debt situation experienced in some of these economies (i.e. Greece, Ireland, Portugal, Spain and Italy) kept generating upward pressures on both their mid and long-term, while theand credit default swaps (CDS) stood at higher levels than those that were recorded during the 2008 financial crisis (Graph 35, panel A).

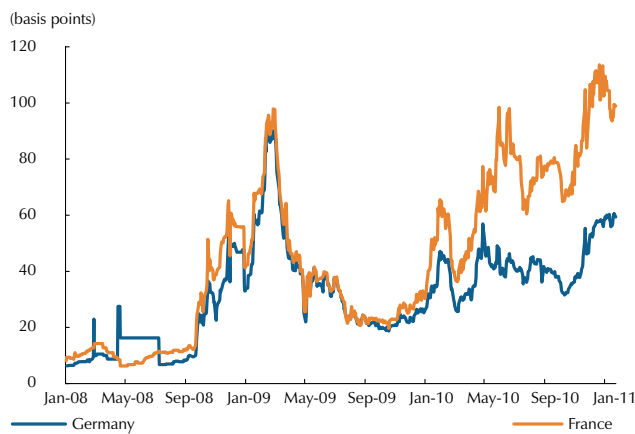
As a consequence of intense nervousness in the international markets, due to the doubts on to the sustainability of debt in Ireland, and in general of these five economies, in early November, and in order to reduce risk perception, the European Central Bank and the International Monetary Fund (IMF), as well as some other European economies, agreed on a financial rescue package with the Irish Government. However, the financial markets did not respond as expected and, in contrast, risk perception increased in the European economies.

Graph 35
5-year credit default swaps (CDS) in some European countries

A.

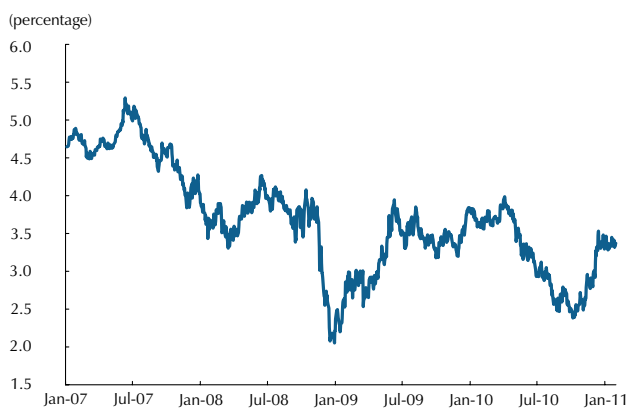


B.



Source: Bloomberg.

Graph 36
Returns of the 10-year sovereign debt securities of the United States



Source: Bloomberg.

By the end of last year, there was a slight improvement in the market's risk perception thanks to the successful placement of mid-tem (5 and 10-year) securities by Portugal, Spain, and Italy.

The events in Europe have been strongly felt throughout the region, even in the region's soundest economies: thus, Germany and France have seen their CDS increase to similar levels than those registered in 2008 (Graph 35, panel B). However, this phenomenon has remained contained within Europe, and there has not been further contagion of the nervousness to the United States, at least with regard to their CDS; but, in November, when problems sharpened in Ireland, there was a reversion of the weakening trend of the dollar with respect to the yen and the euro that was seen in September and October. This occurred even in spite of the initiation of a new liquidity injection strategy known as quantitative easing 2 (QE2).

Meanwhile, the monetary easing policy implemented by the Federal Reserve (Fed) of the United States has not caused the desired effects. The announcement of this new strategy intended to flatten the yield curve by further reducing the long-term rates. This occurred transitorily until the timeline and the composition of purchases to be made by the Fed were disclosed. The market punished this effort by significantly increasing the rates to even higher levels than those existing prior to the announcement (Graph 36). Moreover, this behavior could also be explained by better growth perspectives or higher inflation expectations.

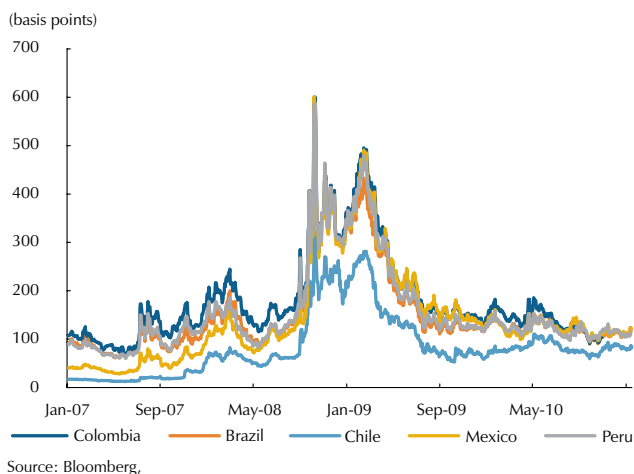
The above combined with the fact that no effects have been seen of the interest-rate stimulus in the United States in the short-term, several analysts have begun to question mid-term and long-term costs. In particular, they think that withdrawing the liquidity granted up to this date by the Fed would imply a negative shock with very serious effects on the economy. In addition, they consider that in an environment of critical financial turbulence, the Fed's policy has induced more *carry trade* operations towards the commodity market, with

the undesired consequence of an increase in commodity prices. Likewise, this last effects acts in detriment of short-term recovery, since higher prices of energy and foods raise inflation and reduce consumers' purchasing power.

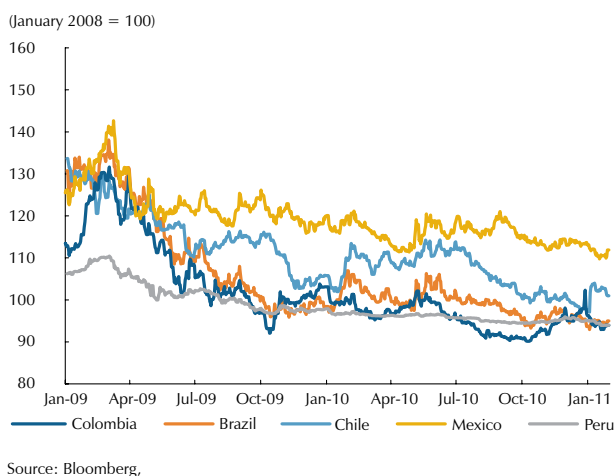
To this date, the Fed's monetary easing strategy has not translated into the reactivation of the credit channel in the United States. Both consumer credit and mortgage credit remain stagnant and show no signs of recovery. This may be explained by the failure of the labor market to reactivate, while unemployment continues to be at high levels, additional the fact that households are still trying to improve their balance sheets.

With respect to financial markets in emerging countries, risk perceptions remains at low levels, even despite the increasing European turbulence (Graph 37). This is due to their sound fundamentals and their high degree of decoupling from the developed economies. In Latin America, unlike many developed countries, the countercyclical policies introduced as a response to the financial crisis have not resulted in marked deterioration of fiscal balances, added to the fact that these economies have been lucky to count on a sound banking system with less exposure to the international financial problems. This has resulted in the effective transmission of the policies implemented by the monetary authorities to the productive sectors and to the households, and consequently succeeding to keep the economic activity marching at a satisfactory expansion rhythm.

Graph 37
Credit Default Swaps (CDS) in some Latin American countries



Graph 38
Exchange rate index in some Latin American countries



The last quarter of 2010 was characterized by apparent stability in the exchange rate of the emerging country's currencies. This can be explained, on one hand, by the increase in the market's nervousness due to the European turbulence, which would have helped to reduce the appreciation pressures; and, on the other, by the aggressive policies to control capital inflows and the exchange rate of the currencies (Graph 38). Nevertheless, with the partial relief of risk perception in Europe, the currencies of the emerging countries reassumed their appreciation trend. In turn, in most emerging economies, late 2010 was a low appreciation period for assets, particularly stocks. Even so, the latent risk of appreciation still exists, caused by an ample world liquidity and the local economic dynamics of each emerging economy.

International price increases for commodities of mineral and agricultural origin, as well as the strong dynamics of domestic demand in the emerging economies, have begun to generate changes in the monetary policy stance. In contrast, in the developed non-commodity exporting economies, short-term increases in the reference interest rates are not expected, since they have not yet consolidated their recovery, this, together with additional liquidity injections, might put further pressure on the currency appreciation in emerging countries in 2011.

B. DOMESTIC FINANCIAL MARKETS

Between the last quarter of 2010 and the first weeks of 2011, the acceleration of credit continued. With the exception of microcredit, all types of loans exhibited important increases that were higher than the nominal GDP estimated for the present year. The above occurred along in a context in which interest rates have stopped falling, but are still at historically low levels, in both nominal and real terms.

In this context, the good momentum of domestic demand has been driven by credit destined to the households. During 2010, the consumer loan portfolio was the most active one, followed by mortgage portfolio, which resulted in the increase of the families' indebtedness level. The commercial portfolio also register an increased annual expansion rate, in both foreign and national currency. The balance of bonds issued by companies also grew and accounted for an important percentage of the total corporate funding. The different credit supply and demand surveys show that the former trend will continue, and even that loan supply may further accelerate in certain sectors.

With respect to financial assets, between early November and late January, the general index of the Colombian Stock Exchange IGBC and the TES (Colombian sovereign debt securities) depreciated. With figures to September 2010, the real housing prices continued to increase and stand at levels similar to their historical maximums. In this chapter, an exercise including capital flows, credit, and asset prices is presented, whose results do not give any alert signs of factors that might be jeopardizing financial stability, in spite of the fact that the levels of these variables are higher than their historical averages.

Economic growth and observed inflation, as well as the analysis of their forecasts and expectations, together with the previous financial context, have been the basis for the Board of Directors or Banco de la Republica to keep their policy rate unaltered. Nevertheless, as pointed out by the Board in their press release of January 2011, *“if the economy continues the expansion path expected or if inflation expectations show any signs of deviating from the targets, then the proper conditions will be provided for*

a gradual withdrawal of the momentary stimulus, in order to reinforce the sustained growth of both output and employment”.

1. Credit

In the second half of 2010, credit accelerated, after a first semester of moderate recovery. The good household and business financing conditions propelled aggregate demand, which was reflected on the good performance of private consumption and investment in machinery and equipment.

On the demand side, the acceleration of the consumer loan portfolio could be partly explained by high confidence levels and, particularly, by a growing disposition to purchase goods requiring financing (like housing, cars, and durable goods⁴). Labor market recovery, reflected on the reduction of family heads' unemployment rate and better employment rates for workers with higher education, also had some influence on the acceleration of the households' demand for credit (DANE, GEIH). Likewise, opinion surveys suggest that entrepreneurs⁵ had boosted credit demand in order to meet the growing number of orders and sales. In fact, both industry and the transport and communications sectors consider that increasing investment is necessary⁶.

A factor that could affect the demand for credit is the deceleration observed in consumer and business confidence, in the last two months of 2010, although it is still too early to conclude that these observations should be interpreted as a change in trend.

On the supply side, last December's survey, applied to the banks, shows that these entities prefer to channel their excess liquidity towards credit, rather than purchase public debt securities, since they deem it to be more profitable. According to them, the sectors with better credit access are commerce, individuals (natural persons), services and, generally, enterprises engaged in producing for sales at the local market. Interest rates at historically low levels, as well as decline in credit risks, have been two key factors to explain the acceleration in credit portfolio disbursements.

In this Report, and including the examined information, the technical staff of Banco de la República built a better approximation to total credit, defined as the sum of: portfolio of credit establishments in national currency, external private sector financing⁷, and bonds issued by the enterprises. At the end of

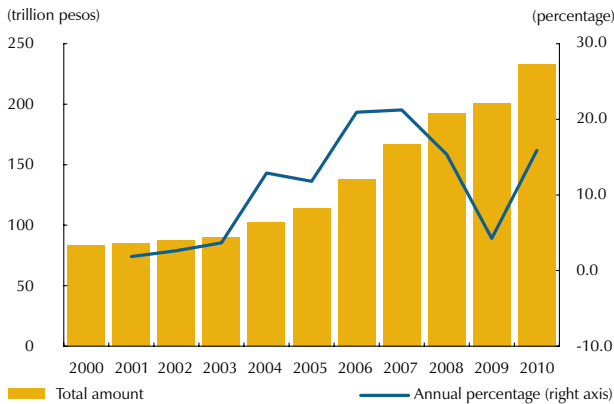
4 According to the Fedesarrollo monthly consumer opinion survey.

5 Fedesarrollo monthly (merchants and industrialists) opinion surveys.

6 Banco de la Republica monthly expectations survey.

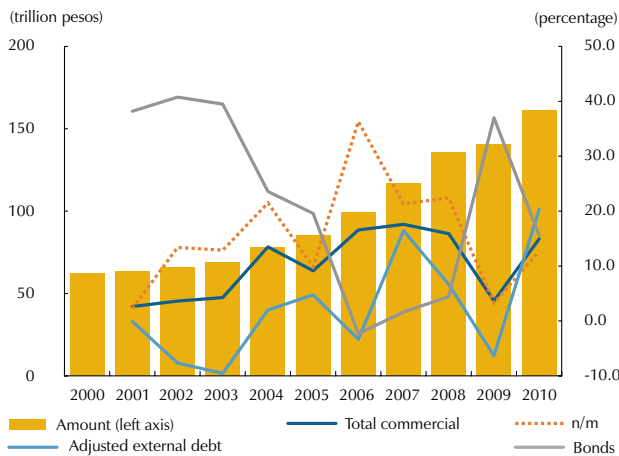
7 Includes credits in foreign currency with banks operating in Colombia or abroad, and direct financing with parent houses or suppliers.

Graph 39
Total credit ^{a/}



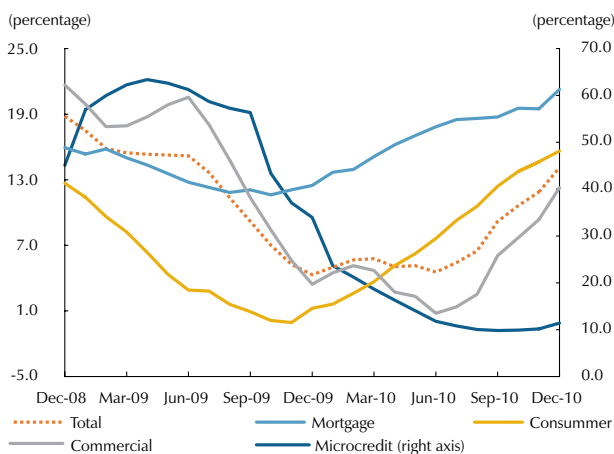
a/ Includes total bank credit, bonds from the real sector and external private debt. Sources: Financial Superintendence of Colombia, companies' balance sheets and, share issue prospects of the Stock Exchange of Colombia. Calculations by Banco de la República.

Graph 40
Commercial bank credit in national currency (n/c), real sector bonds and private sector's external debt



Sources: Financial Superintendence of Colombia, companies' balance sheets and, share issue prospects of the Stock Exchange of Colombia. Calculations by Banco de la República.

Graph 41
Bank credit in national currency, by type of credit



Sources: Bloomberg.

2010, this aggregate recorded a balance of COP233 trillion (t), and an annual growth of 15.9%, which largely exceeded the one registered in 2009 (4.6%) (Graph 39).

Out of the total credit registered in 2010 (COP32 t), loans by the banking system in national and foreign currency contributed with 87.3% (COP28 t). The above was followed by the net placement of bonds with 8.1% (COP2.6 t) and by direct external debt with 4.5% (COP1.5 t). Besides, the acceleration of the credit meant and increase from 40.0% to 43.2% as a share of the GDP.

Between 2009 and 2010, the annual growth rate of credit received by companies shifted from 3.7% to 14.9%, reaching an amount of COP161 (t). 62% of this credit is constituted by the commercial portfolio in national currency, 26% pertains to external financing, and 12.0% to the placement of corporate debt (bonds). With respect to their respective expansions, the external financing acceleration stood out by shifting in the same period (and in pesos) from -6.7% to 20.4%, followed by the commercial portfolio (from 4.2% to 14.9%). The growth rate of bonds dropped from 37.0% to 15.6% (Graph 40).

The outstanding annual increase of external financing was led by the foreign currency portfolio granted by credit intermediaries, which increased by US\$2.798 million (m) (122%). Part of these resources was destined for foreign trade financing, particularly drafts for payment of imports⁸. In August and October, the peso appreciation expectations also helped to increase the demand for foreign currency debt. The private sector's direct external debt remained stable⁹, with an increase of US\$718 m (5.2%).

In the second semester of 2010, the commercial loan portfolio in pesos accelerated, after being relatively stable during the first semester of the year. Hence,

8 27.8%, as reported by the foreign exchange balance.

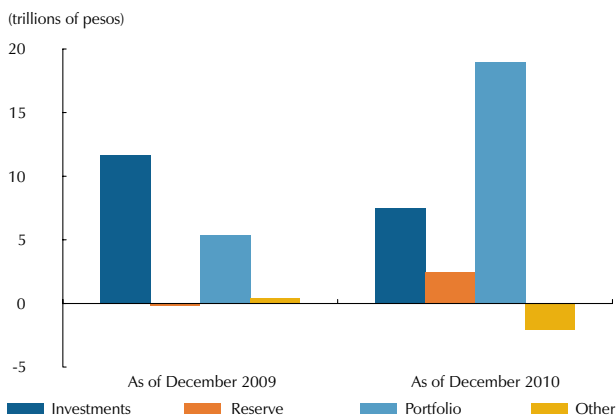
9 This excludes finance of subsidiary companies in other countries for investments abroad.

its annual growth was 0.8% in June, 6.1% in September, and 12.3% in the last quarter (Graph 41). This behavior occurred in a context in which the interest rates for this type of credit declined significantly.

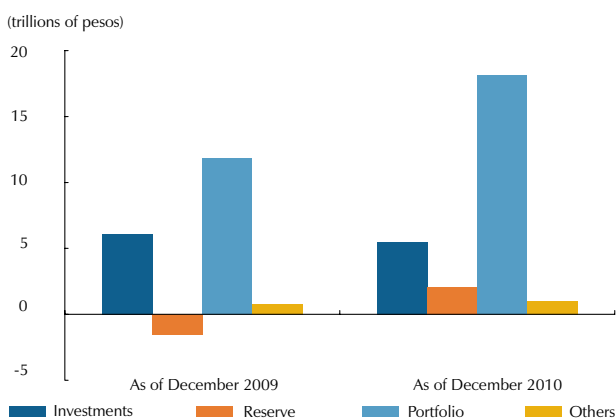
The lower external finance costs (between August and October), coupled with good commercial credit supply with historically low rates, explained in part the moderation of growth in bond issuance. Due to the international financial crisis, this last type of financing had been used in 2009 by enterprises to secure their resources and to reduce the rollover of short-term debts with the banks. In any case, the annual increase of bond issuance in 2010 was higher than the nominal GDP growth estimated for the current year.

Graph 42
Main assets and liabilities of the financial system
(variation in trillions of pesos)

A. Assets



B. Liabilities



Source: Financial Superintendence of Colombia; calculations by Banco de la Republica.

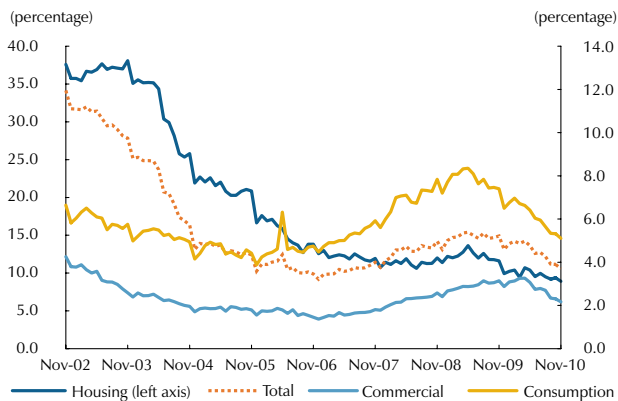
Throughout 2010, the most dynamic lines of credits of the banks were those destined to households, which by the end of the year reached a balance of COP67,4 t. Its annual growth rate was 18.1%, widely higher than the one registered in 2009 (4.5%). The increase in the amount of resources received was COP10,3 t, as distributed between consumer credit¹⁰ (COP6,9 t) and mortgage credit (COP3,4 t). In the consumer case, growth started from 1.2% in December 2009, then went up to 7.6% in June, and ended the year at 15.6%. On the same dates and in the same order, mortgage credit shifted from 12.3% to 17.8% and then to 21.3% (Graph 41).

The vast array of resources at the deposit market has as well contributed to the momentum of credit without adding pressures to the on interest rates. Demand deposits, savings, and current accounts account for the largest contributions to the banks' financing sources. Besides, there was a recomposition in favor of longer-term (bond) deposits, which allowed banks to increase the duration horizon of the loans granted. This way, with total deposits credit establishments met the increase of the loan portfolio, while own resources and repo operations were used as sources of investment funding (Graph 42).

The risk indicators of the loan portfolio (rating and default) kept their downward trend and, by the end of 2010, stood at levels close to their historical minimums (Graph 43), thus broadening the banks' confidence in credit granting. Likewise,

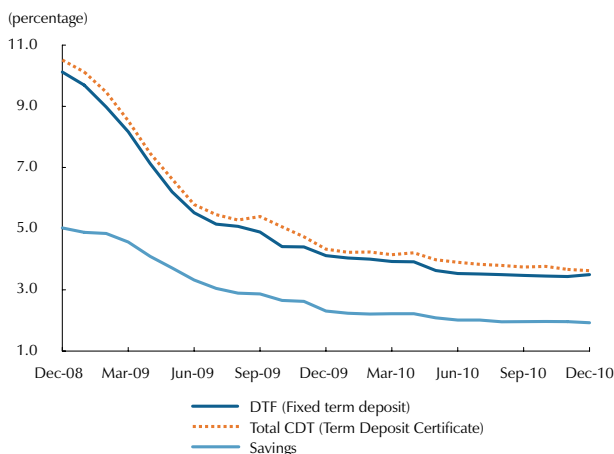
10 Includes credits granted through credit cards.

Graph 43
Default indicator of the loan portfolio
(Non-performing loan portfolio/total loan portfolio)



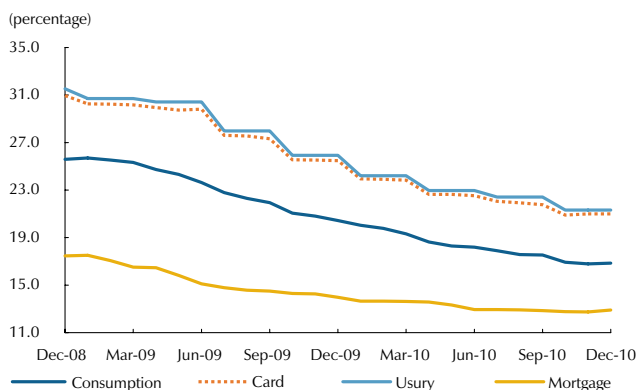
Source: Financial Superintendence of Colombia; calculations by Banco de la República.

Graph 44
Passive interest rates



Source: Financial Superintendence of Colombia; calculations by Banco de la República.

Graph 45
Interest rates for the household loan portfolio



Source: Financial Superintendence of Colombia; calculations by Banco de la República.

this reduced the need for provisions by nearly COP1,4 t, which is equivalent to 26% of the profits accumulated up to November (COP5,4 t) by the financial system.

2. Interest rates

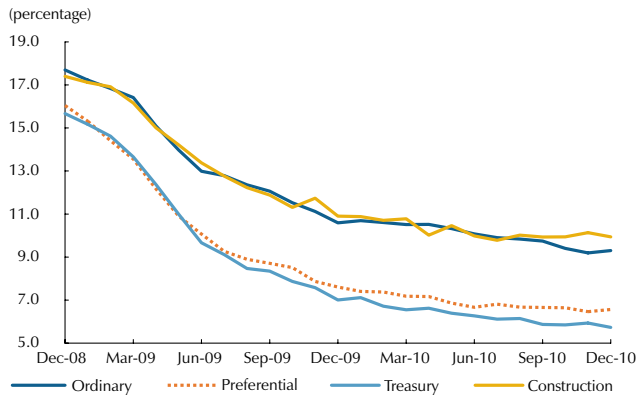
In the last quarter of 2010, a period in which the policy interest rate remained stable, passive interest rates exhibited similar behavior. On their side, active rates, which had been declining until the end of last year, showed a stabilization trend at historically low levels.

The money market interest rates, namely the interbank borrowing rate and the bank reference indicator, fluctuated around 3%, just like it had happened since May; while, passive rates tended to remain stable since June. In this last period, the 90-day money deposit, the DTF (fixed term deposit) fluctuated around 3.5%, and the savings deposit rate oscillated around 1.9% (Graph 44).

In the last quarter of 2010, the most remarkable decline in active interest rates was seen in credits granted to households. The reduction for credit-card interest rates was 77 bp, and 69 bp for consumer rates; as a result, they stood at 21.0% and 16.85% in December, respectively. Since June, the interest rate for mortgage credits was stable at nearly 12.9% (Graph 45). These figures remained unchanged during the first weeks of January; however, for credit cards and consumer, rates might increase due to the 210 bp rise in the rate ordered by the Financial Superintendence of Colombia (currently 23.42%).

Commercial credit interest rates went down in a more moderate manner, in part because of types of commercial credit in 2009 and until March 2010. In the fourth quarter of 2010, the different commercial credit methods showed the following rate reductions: 44 bp in ordinary credits, 14 bp in treasury credits, and 9 bp in preferential credits; in the same orders, their respective levels stood at 9.3%, 5.7%, and 6.6%. The interest rate for credits to constructors was the only one that remained stable around 9.9% since June (Graph 46).

Graph 46
Interest rates for the commercial loan portfolio



Source: Financial Superintendence of Colombia; calculations by Banco de la República.

In real terms, the interest rate for credit stood at levels that can be to be rated as historically low. In December 2010, the real interest rate for ordinary credits attained the lowest record of the series (6.3%). For the same date, the consumer rate arrived at 13.6%, 11 bp above its historical minimum. The remainder exceeded only by nearly 60 bp their respective minimums (Table 5).

3. Asset prices

In theory, the price of an asset can be split into two components: one being determined by the economic fundamentals, and the other reflecting speculative or irrational behaviors¹¹. In this context, both the

Table 5
Real interest rates
(with GDP excluding foods)

	Date of minimum	Minimum registered	Current Value Dec-10
(percentage)			
Commercial			
Ordinary	Dec-10	6,3	6,3
Preferential	Feb-00	3,1	3,6
Treasury	Sep-03	2,2	2,8
Construction	Aug-06	6,3	6,9
Households			
Consumption	Mar-00	13,5	13,6
Mortgage	Jan-07	9,2	9,8
Credit Card	Mar-00	14,0	17,7
DTF	Jul-92	(2,4)	0,7
Active	Dec-10	5,7	5,7

Source: Financial Superintendence of Colombia; calculations by Banco de la República.

monetary policy response and the instrument to be used may be different, according to the component that prevails on the movement of the asset price.

Some authors suggest that the “standard” monetary policy should respond only to movements that contain information about the future paths of inflation and output, but never to the asset prices by themselves. Others recommend a less

11 Glenn D. Redebusch (2005). “Monetary Policy and Asset Price Bubbles”, Economic Letter 2005, Federal Reserve Bank of San Francisco, num. 18, August 5.

orthodox policy that respond to the movements of the speculative component, in order to avoid possible bubbles and their negative impact on financial stability.¹².

In the case of developing countries, experience shows that in the presence of strong capital flows, the financial systems multiplies their effect on asset prices and aggregate demand, through significant increases in credit. This, apart from contributing to bubbles, rises the vulnerability of credit institutions. Hence the importance of keeping a constant and thorough analysis of the combined effect that the abrupt expansion of capital flows, credit, and asset prices may have on financial stability.

Tenjo and Lopez (2010), in their work applied to some Latin American countries¹³, found that, in 60% of the cases, detecting atypical capital flows helps to anticipate by one year financial crises. A similar percentage was obtained using the credit gap, but this variable presented a higher rate of false signs (alert is given, but the crisis does not occur).

The combination of these two variables had the greatest power to forecast financial crisis for a two-to-three-year horizon and, besides, it minimized the signal-to-noise ratio¹⁴.

For Colombia, the new information regarding asset prices shows that, in September 2010, the used house price index – UHPI¹⁵ continued to accelerate and approached its historical maximum reached in 1997. Likewise, the housing price indicator calculated by the National Planning Department (DNP) also exhibited a growing trend as of September, but still stands at a very low level as compared to its highest record seen in 1995 (Graph 47).

The general index of the Colombian stock market (IGBC), after showing an upward trend throughout 2010, in the last three months showed depreciations and remained far from its historical maximum (registered in early November

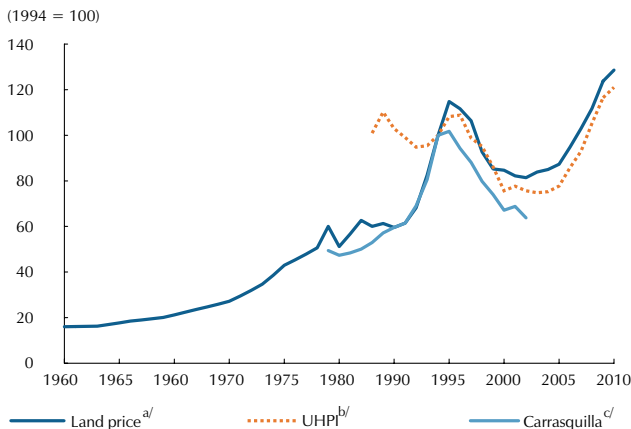
12 Frederic Mishkin (2008). “How should we respond to Asset Price Bubbles?”, speech given at the Wharton Financial Institution Center, Mayo 15, num. 7; Charles L. Evans (2009). “Should Monetary Policy Prevent Bubbles?”, speech given at a conference organized by the Banque de France (Bank of France) and the Federal Reserve Bank of Chicago, Paris, November 13; Nouriel Roubini (2006). “Why Central Banks Should Burst Bubbles”, *International Finance*, Blackwell Publishing, vol. 9, num. 1, pp. 87-107.

13 Fernando Tenjo Galarza and Martha Rosalba López Piñeros (2010). “Early Warning Indicators for Latin America”, *Borradores de Economía*, Banco de la Republica, num. 608, June. For developed countries, and with similar lag, the best combination was asset and credit price gaps. See C. Borio and M. Drehmann (2009a). “Towards an Operational Framework for Financial Stability: “fuzzy” Measurement and its Consequences,” *BIS Working Papers*, num. 284, Bank for International Settlements. Borio, C. y Drehmann, M. (2009b). “Assessing the Risk of Banking crises – revisited”, *BIS Quarterly Review*, Marzo, pp. 29-46. Bank for International Settlements.

14 Obtaining low percentages where it shows an alert but the crisis does not take place (noises), and high alert percentages together with a crisis that does take place (signal).

15 Source: Banco de la Republica

Graph 47
Prices of land and housing in Bogotá



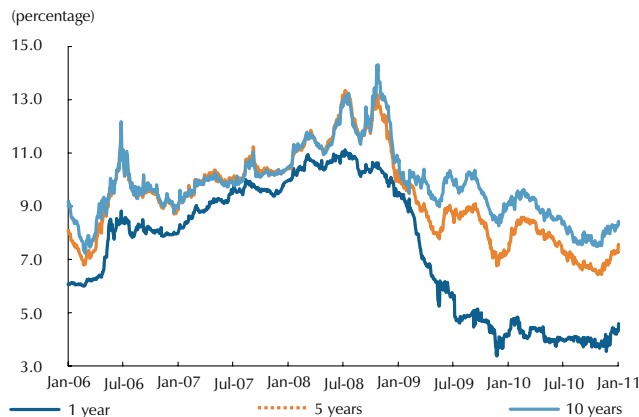
a/ Price of land in Bogotá
b/ Used housing price index
c/ New and used housing price index
Sources: Lonja de Bogotá; calculations by Banco de la Republica, and Carrasquilla, Galindo & Patron (1994) "Endeudamiento e inflación de activos en Colombia" (Literally: Indebtedness and asset inflation in Colombia). XIV Symposium on capital markets (Asobancaria – Banco de la Republica (Central Bank of Colombia)).

Graph 48
IGBC (General Colombian Stock Market Index)



Source: Bolsa de Valores de Colombia (Colombian Stock Exchange).

Graph 49
Zero coupon TES interest rates



Source: SEN (Negotiation Electronic System), and MEC (Colombian Electronic Market).

last year) (Graph 48). This change in trend can be explained to a great extent by the following factors: the perspective of an increase in the supply of shares¹⁶; the lower than expected economic growth; and increased international risk.

The above factors, together with the perception of higher public spending (generated, in part, by the Government's need to attend to damages caused by the intense rainfall period) also affected the return of the public debt securities (TES). The increase of inflation and its expectations also contributed to the depreciation of the TES (Graph 49).

After updating the work of Tenjo and López with the most recent available information, it can be seen that the combination of capital flow and credit gaps anticipated in 1997 the financial crisis in Colombia, which, finally occurred two years later. These variables created the same alert in 2007 but, seemingly, macroprudential policies, together with the effects of the international crisis in late 2008 led capital flows and credit to reduce their levels. The calculations do not show any early warning signals in 2010, despite the fact that variables exhibited, again, an upward trend.

In order to have a better estimation of the long-term trends, the Bank's technical staff analyzed longer series for credit and capital flows in Colombia. The price of land in Bogotá (1962-2008)¹⁷ was included, while the IGBC was discarded since, according to Tenjo and Lopez, this series generated a very high percentage of false signals. In order to identify the series' atypical data, in each one of them a confidence

16 By the end of 2010, the Government announced the sale of 10% of their Ecopetrol ownership in order to attend to road infrastructure works and damages in civil works caused by the rainfall period. Ecopetrol, on its side, informed that it would issue 10% of its shares to finance its investment projects.

17 Source: Lonja de Propiedad Raíz de Bogotá (Association of Realtors). A series built from the institution's historical documents. The index is chained, and was constructed by adding the different valuation zones according to each zone value (valuation price by area). Due to its high correlation with the UHPI (used house price index), years 2009 and 2010 were estimated with the variation of this last index..

interval was estimated, and the observations outside of that range were considered statistically high or low.

The statistical analysis shows that four years before the 1999 financial crisis, land prices in Bogota were already recording atypically high levels. Like in Tenjo and Lopez, capital flow and credit gaps also exhibited alert signals, but a year earlier (since 1996). With respect to last decade, this variables show high levels in 2007 but, unlike Tenjo and Lopez, they do not reach the range considered statistically atypical. The longer length in the series used and its effect on the used filter might be the source of said differences.

III. MACROECONOMIC OUTLOOK

World growth will continue to be considerable, due to the emerging countries' dynamism and an improvement in the performance of developed economies.

Commodity prices remain high, favoring elevated terms of trade

For 2011 it is anticipated that Colombian economy will grow between 3.5% y 5.5%, driven by the momentum of domestic demand.

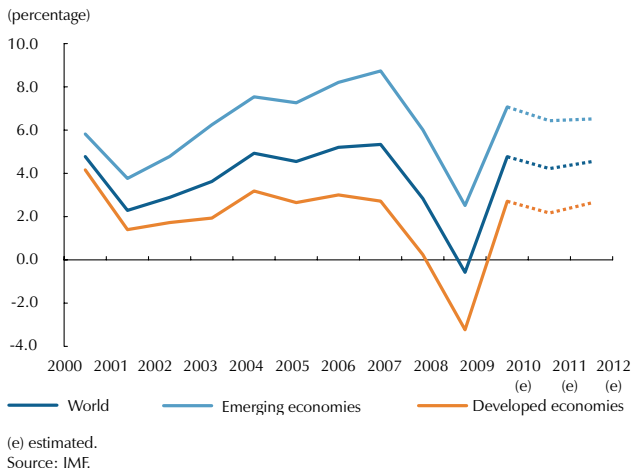
Despite the temporary shocks observed, the likelihood that consumer inflation remains within the target range in 2011 is high.

A. THE INTERNATIONAL CONTEXT

During the fourth quarter, economy worldwide showed more dynamism than in the third quarter. This behavior was driven by both developed and emerging economies. The best performance of developed economies came from a greater than expected expansion in the United States, thanks to considerable growth in household consumption. With regard to emerging economies, the best performance was originated in domestic demand, since it expanded at high rates. Even so, dynamics continue to be uneven between both groups.

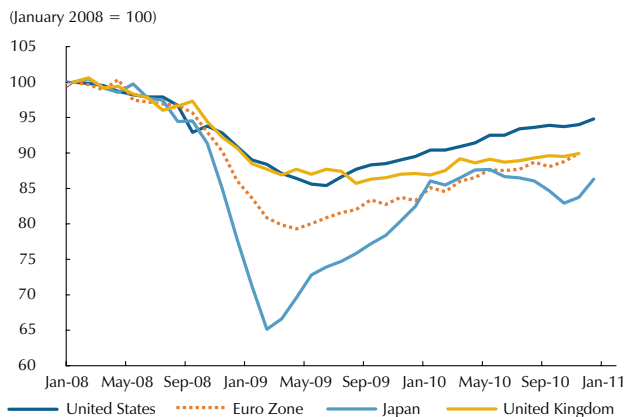
All the above permitted high predictions for 2010. In this year, according to the IMF, world growth would have been 5.0%, which is significantly higher than the 2009 record; while the expansion rate in 2011 is expected to be close to 4.4%. This projections are the result of economic growth of 6.5% among the emerging countries, against 2.5% among the developed ones (Graph 50).

Graph 50
World growth
(Annual variation)

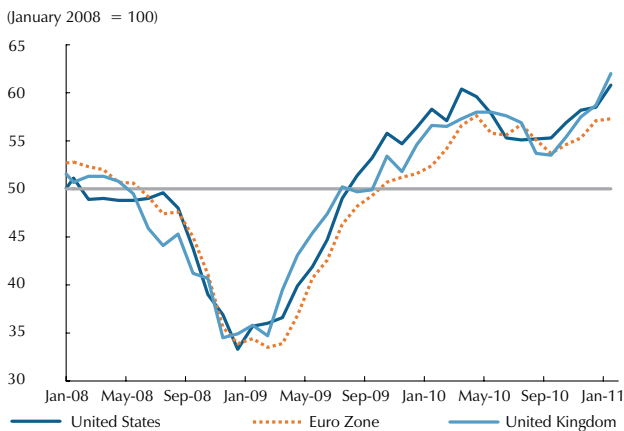


Graph 51

A. Industrial production index in some developed economies



B. PMI^{a/} for some developed economies



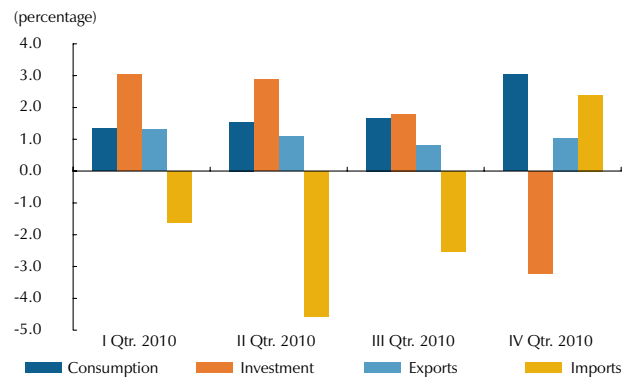
a/ PMI Purchasing Managers' Index.
Source: Bloomberg.

The IMF forecasts and those presented below consider that, as to December, the real activity indicators have improved, but still show some mixed signs. On the one hand, industrial production indicators have been growing for several months at a low rhythm, while, in the same period, the manufacturers' confidence indices have improved in a significant manner (Graph 51). In the case of commerce, both domestic and foreign, considerable reactivation has been seen, particularly in the United States and Germany.

So, with preliminary figures for the fourth quarter, the United States economy grew at a quarterly annualized rate (qar) of 3.2%, after growing 1.7% qar and 2.6% qar in the two previous quarters. The result for the end of the year was explained by consumer dynamism and by a significant improvement in external demand, with an increase in exports and a fall in imports (Graph 52). On the other hand, the contribution of investment in that period was negative, due to the fall in inventory accumulation, which had contributed to growth in the course of the year. For the whole year, the economy expanded at an annual 2.9% rate, which was above the market and the Bank's expectations.

On their side, the economies of the United Kingdom and of the Euro zone grew 1.7% and 1.8% in 2010, after registering -4.9% and -4.1% in 2009, respectively. Within the Euro Zone, the economic performance continues to be uneven: on

Graph 52
Contribution to growth of the main GDP components in the United States

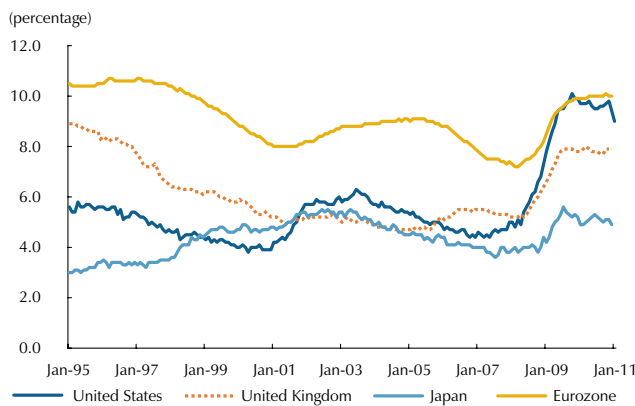


Source: Bloomberg.

one hand, Germany is showing a strong dynamism, with an annual growth rate of 3.6%; but, on the other the peripheral economies are recording a poor performance with stagnant production. For Japan, the record for 2010 would have been around 4.5%, although it is worth highlighting that the Japanese economy was the most affected of all the developed countries by the financial crisis, with a countries of 6.3% in 2009.

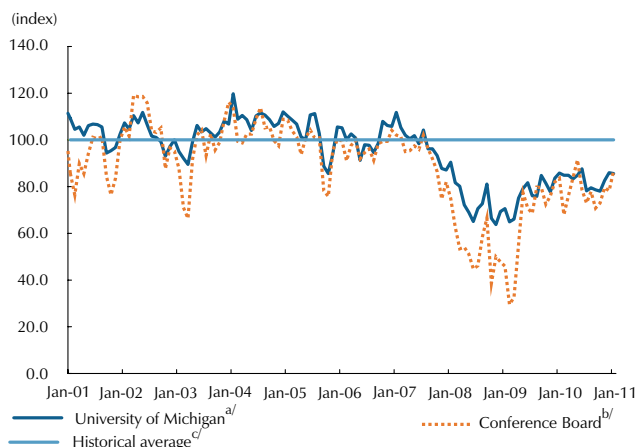
The recovery of these economies in 2010 took place at moderate rates, if the magnitude of the 2009 fall is considered. In part, this behavior would be associated with the recomposition of the balance sheets of households and enterprises, and the high level of debt of the government of developed economies. In addition, the labor market in these economies continues to be the main concern of the authorities and, generally, of consumers. The high unemployment rates resulting from the financial crisis do not drop and they have completed almost two years of stagnation at high levels.

Graph 53
Unemployment rate in developed economies



Source: Bloomberg.

Graph 54
United States consumers' sentiment and confidence



a/ Consumer's sentiment index

b/ Consumer's confidence index.

c/ Data were rescaled in order for its historical average be equal to 100.

Source: Bloomberg.

In the United States, for instance, the figures of the creation of employment, despite being positive for 2010, are hardly recording 8.000 new monthly employments on average, even after including the expansion in the first half of the year intended to cover the needs of the census performed. With these low employment-creation figures, the unemployment rate is still above 9%, and completed 23 months over 8% (Graph 53). Likewise, initial jobless claims continue to be high, exceeding 400,000 on a weekly average basis. All the above continues to affect consumers' sentiment and expectations, as seen in several confidence indicators, which have remained at levels that are below their historical averages (Graph 54).

Another factor that has increased the uncertainty uncertainty is the situation of sovereign debt in Europe. Although up to now the authorities have managed to confront this situation, if it complicates even further by involving a larger economy (as in the case of Spain or Italy), it is clear that the problem would acquire a greater dimension that could to endanger the region's stability and have adverse impacts worldwide. For the particular case of the United States, the situation is moderately less uncertain in 2011. In this economy, the authorities have implemented both monetary and fiscal programs that have helped to improve the expected performance for this year; however, mid and long-term effects on macroeconomic stability

cannot be ruled out once the Government is required to withdraw the stimulus given to the economy.

With regard to the emerging economies, these continue to lead world recovery. In 2010, they grew at a rate higher than 7%, led by annual expansions of 10.3% and 9.7% in China and India, respectively, added to a good performance in Latin America (Graph 50). In 2010, this behavior had been mostly explained by the recovery of exports and by the momentum of investment and consumption.

Given the above context, growth predictions for our commercial partners for 2011 were slightly increased. For the United States, the estimates of the previous report shifted from 2.0% to 2.7% in this one. This projection was the one that best fitted, and responds to the effects of fiscal policies carried out in the last months of 2010, as well as the dynamics the economy has lately been exhibiting. For Europe, the 1.4% forecast shifted to 1.5%. On the other hand, the projections for the emerging countries were not substantially modified, and they continue to show a better dynamic than developed economies. (Table 6).

Most commodity prices were raised in 2010, with important recoveries at the end of the year. This behavior can be attributed to three general causes: i) good growth observed, especially in the emerging countries; ii) a certain degree of speculation resulting from an increased risk perception, caused by the problems in Europe, and the abundant world liquidity (see Chapter II) concentrating mainly in oil and gold, and iii) the diverse supply shocks faced

Table 6
Commercial partners' growth projections

Partners' growth projections	2009	2010 projections		2011 projections	
		Lower growth scenario	Higher growth scenario	Lower growth scenario	Higher growth scenario
Main partners					
United States	(2,6)		2,9	2,2	3,2
China	9,1		10,3	8,5	9,5
Euro zone	(4,1)	1,6	1,8	1,2	2,0
Venezuela	(3,3)	(2,5)	(1,5)	0,5	2,5
Ecuador	0,4	2,0	2,6	2,0	3,4
Other partners					
Japan	(5,2)		4,3		1,5
Peru	0,9		8,3		6,0
Mexico	(6,5)		5,2		3,5
Chile	(1,5)		5,0		6,0
Argentina	0,9		7,5		4,0
Brazil	(0,2)		7,5		4,5
Developed countries	(3,2)		3,0		2,5
Developing countries	2,5		7,1		6,5
World total	(0,6)		5,0		4,4

Source: Datastream, Consensus Forecast, IMF and Banco de la República

Graph 55
International oil price WTI^{a/}



a/ WTI: West Texas Intermediate.
Source: Bloomberg.

by the world in the second half of the year, such as drought in Russia, floods in Asia, Latin America and Australia, and the strong winter registered in the northern hemisphere (Graph 55).

For 2011, the emerging economies' dynamism is expected to continue, while developed economies should exhibit greater soundness. These facts, together with the aforementioned supply restrictions (that would have effects this year) would push up the prices of Colombia's main exports. Therefore, in the most likely scenario, the average oil price of the West Texas Intermediate (WTI) is expected to stand at about US\$92 per barrel, which represents an increase of 15.9% from the 2010 record, with

a range between US\$87 and US\$97. A similar behavior is estimated for the prices of other products exported by Colombia (Table 7); this way, for 2011, the terms of trade for Colombia are expected to continue at high levels, and even to increase as from the 2010 records.

Table 7
Forecasts of the main commodities exported Colombia

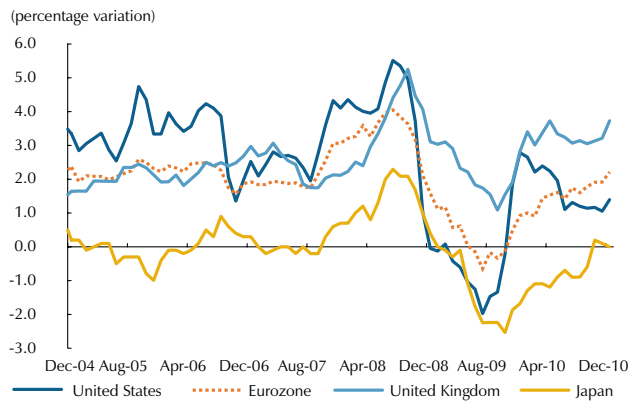
	2009	2010	2011 projections ^{a/}	
			Scenario A	Scenario B
Main commodities				
Coffee (ex dock) (US dollars per pound)	1,7	2,2	1,9	2,3
Oil WTI (US dollars per barrel)	62,0	79,4	87,0	97,0
Colombian oil (US dollars per barrel)	56,2	76,3	81,3	91,6
Coal (US dollars per ton)	80,2	86,0	92,0	102,0
Ferronickel (US dollars per pound)	1,9	2,2	2,2	2,6
Gold (US dollars per troy oz.)	929,0	1,225,0	1,300,0	1,500,0

a/ Scenarios A and B correspond, respectively, to the lower and higher parts of the forecast range.
Source: Banco de la República calculations.

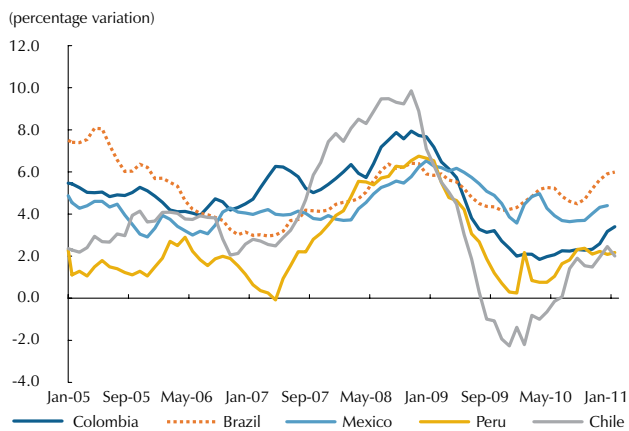
With respect to consumer inflation, 2010 ended with low records in most developed economies (Graph 56, panel A), even in spite of increases in international food and energy prices towards the second half of the year. In turn, core inflation also remained at low levels in most of these countries. In the case of the United States, deflation fears that arose in the course the year have vanished. In Asia and Latina America, inflation has begun to assume an important role in policy decisions (Graph 56, panel B), with pressures coming again from foods (like in 2007), and in the context of a domestic demand expanding at high rates.

Graph 56

A. Inflation in developed economies



B. Inflation in Latin America



Source: Bloomberg.

It is worth highlighting that the aforementioned growth predictions bear a significant degree of uncertainty and considerable downward risks, which would be associated with the problems of sovereign debt in Europe and the efficiency of both monetary and fiscal policies in the United States. Moreover, in the projections contained herein, the effects of political and social problems confronted by certain emerging Arab nations, likely to have significant impacts on the perception of global risk and also on international oil prices, have not been envisaged.

B. BALANCE OF PAYMENTS

The projection for the balance of payments for 2010 considers a widening of the current account deficit with respect to the estimation presented in the September *Inflation Report*. The new projection range of the deficit in current account for 2010 stands between 2.9% and 3.3% of the GDP. Indeed, deficit shifted from accounting 2.1% of the GDP during the first semester of the year to 4.6% in the third quarter.

The above was explained by a larger deficit of the goods trade balance, originating mainly in the acceleration of imports, which increased from an annual rate of 17.4% on average for the two first

quarters of 2010 to an annual 28% rate during the third quarter of the year (particularly because of purchases of capital goods). With respect to exports of goods, they exhibited a lower rhythm (annual 16%) in the third quarter with relation to the one observed on average (annual 23%) during the two previous quarters. This behavior was due to less coffee and coal exports, which were affected by the intense rains registered during this period.

This way, the 2010 the year's balance of payments recorded in the third quarter a current account deficit of US\$6,212 m (3.0% of the GDP accumulated as of September), higher than in the same period in 2009 (US\$3,426 m, 2.0% of the GDP). This increase was caused by higher current expenditures (US\$8,049 m), than current income (US\$5,263 m). The first were explained by an increase in the remittance of profits of companies with foreign investment in the country (annual 30.6%) and the annual growth of 21.2% of imports of goods and services. With regard to income, there was an increase in the exports of goods and services (20.4%) while net income obtained by current transfers fell 5.4%, due to the reduction of workers' remittances (annual -4.6%). Current deficit as

of September was largely financed with the resources of net external private and public debt and, to a lesser extent, with net revenues of net foreign direct investment (FDI), with a financial account surplus of US\$8,068 m (3.8% of the GDP as of September).

Apart from the above results, the following assumptions were considered for the projection of the 2010 balance of payments: i) growth rate of the Colombian economy between 3.7% and 4.1%; ii) a recovery of our commercial partners (between 3.0% and 3.4%); iii) higher international prices of the main exported products than those observed in the previous year; iv) income for current transfers¹⁸ that would grow between 3.8% and 4.8%; v) a gross FDI higher than in 2009, and vi) a net external public sector debt (excluding Ecopetrol) of about US\$3,200 m.

Thus, imports in dollars might grow between 22% and 23% in annual terms, and exports between 18.7% and 19.1%, depending on the recovery of sales to destinies other than Venezuela, and the behavior of commodity prices. In this way, it is expected that in 2010 the current account deficit widens from the level registered in 2009. In effect, it would shift from 2.1% of the GDP to a range between 2.9% and 3.3%, which is expected to be financed with FDI revenues and external resources from the private and the public sectors.

For 2011, several balance of payments scenarios are envisaged, depending on both the expected behavior of the international prices of exported products and the GDP of the United States, Venezuela and Colombia, among others. Likewise, net FDI is expected to be higher than the projections for 2010, as well as a public sector's external debt (excluding Ecopetrol) higher than in the previous year, taking into account the information contained in the 2011 *Financial Plan* of the Ministry of Finance and Public Credit.

With respect to the trade balance in 2011, the growth of exports and imports would be lower than the one projected 2010.

The current account deficit for 2011 might stand between 3.0% and 3.4% of the GDP, which would continue to be financed in great part by FDI inflows and by external resources of the public sector.

C. DOMESTIC GROWTH

For 2011, it is expected that, in general terms, the domestic and external conditions that favored the good performance of the Colombian economy in

¹⁸ The main components of current transfers are the workers' remittances, and their behavior during 2010 depends from the performance of the economies from which these resources originate (the United States, Venezuela, and Spain).

2010 will improve even further. In the foreign front, a better performance in the developed economies is expected, particularly in the United States, Colombia's major trading partner. Likewise, and despite the unevenness of European recovery, where the problems with sovereign debt still generate significant nervousness among the analysts, it is expected that countries like Germany and France will continue to tow region's growth. Simultaneously, although some emerging economies are expected to moderate their economic activity, their expansion rhythm will remain dynamic. Therefore, in a context where developed countries' growth reduce its dependence on government stimulus to rely on the momentum of the reactivation of their productive apparatus, the improvement in the performance of global economy would contribute to a great extent to the dynamization of demand for the emerging countries' export products, including Colombia. Likewise, increased demand will put upward pressures on commodity prices, thus boosting the income of the countries that export these goods. Therefore, it is foreseen that the country's terms of trade, even in the most pessimistic scenario, will remain above the levels observed in 2010, which can be deemed historically high.

On the domestic front, although external demand is expected to increase its dynamism, both consumption and investment will continue to be the main drivers of growth for this year. Particularly, the performance of private consumption will continue to be supported by a relatively level of consumer confidence, despite its late 2010 falls and, likewise, due to the proper availability of credit at interest rates remaining at low levels, together with the expected improvement at the labor market. Moreover, investment in fixed capital would expand more than last year, thanks to growing asset acquisition for industry, as a consequence of the reactivation of construction reactivation and of the constant increase of resources invested in the mining sector; but especially, thanks to the boost provided by the works in infrastructure considered in the reconstruction program after the period of intense rains.

As usual, this report contains forecasts for the growth of the Colombian economy in 2011, which considers in three scenarios the assumptions for the external variables mentioned in this and in previous sections. Additionally, the following assumptions were considered for civil works and Government consumption:

- *Lower growth scenario:* Government consumption in 2011 is assumed to expand at a rate close to 2.5%, while investment in civil works would grow at a rate of 3% approximately.
- *Base scenario:* in this case, Government spending would grow about 3.5%, similar to the series average since 2001; moreover, investment in civil works, would expand at a rate slightly higher than 5%.
- *Higher growth scenario:* Government consumption and investment in civil works would increase 4.5% and 7% respectively; i.e., higher than their averages before the 2009 crisis.

The main results are summarized below.

Household consumption, with the exception of the most pessimistic scenario, would show an acceleration in 2011 with respect to 2010. This way, this type of spending would continue to exhibit growth rates higher than its historical average. By components, it is worth highlighting the strong momentum that would be registered, for the second consecutive year, in the acquisition of durable goods, particularly automobiles. Additionally, private spending might be indirectly propelled by the Government program of attention and reconstruction of zones affected by the rainfall emergency, since this type of spending shocks in the short-term generate a multiplying effect on private demand.

Government spending, as already mentioned, would positively contribute to GDP growth for 2010 under the three scenarios envisaged. This encouragement will, on one hand, be associated with the attention and reconstruction plan designed by the Government, especially in its food, lodging and sanitation stage that should be implemented during the first semester of the year, and on the other to the political cycle relating to the completion of local mandates, which normally accelerates public spending.

On the other hand, for 2011, important dynamics are expected in fixed capital investment. This aggregate, which would accelerate its growth rate with respect to 2010, propelled, in a considerable extent, by investment performance in civil works. This way, an increase is expected in the construction of roads, bridges, tunnels, and water and power networks within the framework of the reconstruction and risk mitigation plan proposed by the Government.

As well, a good performance is projected in investment other than civil works. A further contribution of investment destined for building construction is foreseen, as a result of the advances in other stages of works already initiated in 2010, and of the tasks of relocation and reconstruction of flood-affected houses. Moreover, sustained expansions are expected, in investment destined for industry, though of lesser magnitude than in 2010, while investment directed to the oil sector will continue to increase at similar rates than those registered in 2010.

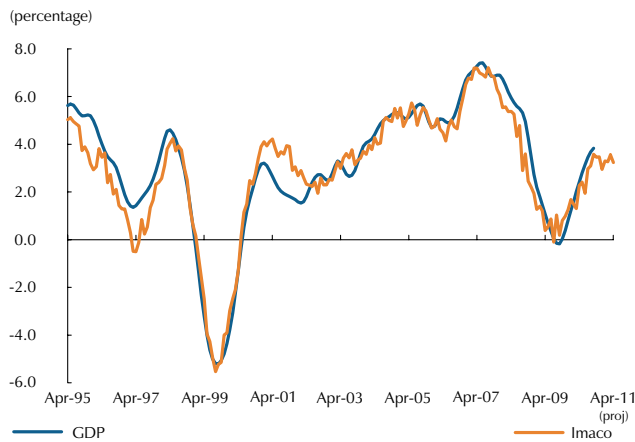
In the meantime, exports would show an annual growth similar to the average recorded before the crisis, after two years of rates that were or close to zero. The favorable performance of external sales would be explained mainly by the and, international demand improvement and, to a lesser extent, by the recomposition of trade destinations. Besides, the effects of the shock caused by the commercial breakup with Venezuela will not be felt this year, which had become a burden against exports growth in 2010. As a result, it is expected that exports will recover their pre-crisis levels by the end of the year. As per imports, they will continue to expand in line with domestic demand dynamics.

On the other hand, and taking into account the behavior of various sector indicators, the monthly leading index of Colombian economic activity (Imaco) has begun to anticipate a GDP growth for 2011 similar to that of the previous year (Graph 57). However, as mentioned in former reports, Imaco's dynamics may not consider different factors than potentially affect growth in a given

year, as in the case of the trade shock with Venezuela in 2010 or, in this occasion, the effect on GDP growth in 2011 of the Government's attention and reconstruction program.

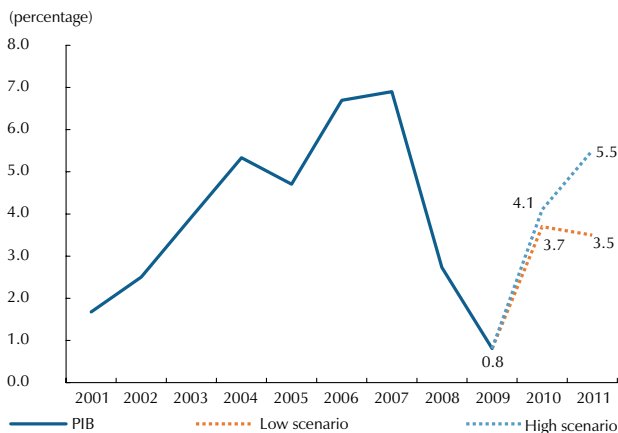
Based on these factors, it is estimated in this report that, for 2011, GDP growth would stand within the 3.5% and 5.5% range (Graph 58), the same as the one projected in the previous report. It is worth noticing that several forecast models that incorporate to some extent the multiplying effect of public spending indicate that, for this year, the economic dynamics may stand at the upper half of this interval, which may suggest certain upward bias in the estimates. Nevertheless, the uncertainty level is still high and, for this reason, the proposed interval is still dealing with a balanced probability distribution.

Graph 57
Imaco: five month GDP leading indicator



(proj): projected.
Source: calculations by Banco de la República.

Graph 58
GDP forecast range for 2010 and 2011



Source: DANE; Banco de la Republica forecasts.

D. INFLATION FORECASTS

1. Forecasts

In the fourth quarter of 2010, two of the upward risks on inflation identified in the September quarterly report began to materialize. The first risks relates to the raise of international fuel and foods prices above projections, and the second one is the impact of the La Niña event that affected agriculture and farming suooly with very intense precipitations and caused higher than expected increases on the prices of perishable food..

In principle, it is considered in this document that those shocks are of temporary nature and, therefore, their direct effect on prices will only extend over a few quarters. However, since they affect expectations, their indirect impact tends to carry on over time. Besides, in the case of international commodity prices, there is a possibility that rises may be longer than expected in this report, making it possible in practice that their effects on inflation become permanent, just like in the 2006-2008 period.

By taking into account these new circumstances, the central forecast paths for headline consumer inflation and for inflation excluding food rose from what was expressed in the previous report. Currently, this path is closer to the mid point of the long-term target range (between 2% and 4%), unlike three months ago at the time that consumer inflation remained at the lower part of this interval. Likewise, some rises are expected in total annual inflation during the first half of the year, likely to be reverted towards the second semester.

By CPI baskets, the most notorious change in forecasts occurred in the food basket, since it was and also because it was seriously underestimated in the past two months. In the new forecasting path, annual foods variation would tend to increase during the first half of the year, remaining above the ceiling of the target range at least until the third quarter; nevertheless, it should drop a little towards the fourth semester, and converge next year at the mid point of the interval, though always above what was projected in the September quarterly report.

The behavior of food prices would be explained by two factors: in the first place, a rise in the prices of perishable products or in their annual variations, due to a supply reduction with relation to the projected demand. Increases in these prices since the end of 2010 and during the first months of 2011 cannot be deemed totally unexpected, since the normal cycle of agricultural supply with low prices during a considerable part of last year pointed in that direction. But the intense precipitations caused by the La Niña during the fourth quarter together with the likelihood of this climatic event extending until June, did accentuate rises and increased the predictions.

Even so, in this report, the effects of La Niña are deemed temporary and their influence is not expected to extend beyond the second quarter of the year. After this period, the agricultural supply should go back to normal levels, resulting in a relief in price rises for the perishable products sub-basket.

The other factor relates to rises in the imported food prices, as a consequence of the projections of international prices that are higher in this report than in September. As already mentioned in the first chapter, pressures on external prices originate in three factors: the world's demand growth; the decline in supply due to climatic shocks in several countries, and a high risk perception worldwide. Although it is possible to expect that supply shocks will ease in the course of the year, demand pressures and high risk perception are not likely to vanish, which would keep external prices high.

Therefore, the inflation path presented in this report considers that international prices of foods and other commodities, including oil, will remain in 2011 at the high levels seen by the end of the year (see the first part of this chapter). Under this scenario, domestic prices of imported food, such as cereals and oils, will continue to register some rises that may extend to the second half of the year. Thus, the impact on consumer inflation of this circumstance would be longer than the one coming from the prices of perishable items, and higher than

estimated three months ago. It is worth adding that the 2006-2008 experience shows that the transmission of these international prices to domestic prices is slow in Colombia, and depends largely on the exchange rate behavior.

Another circumstance likely to affect the prices of food, both imported, and locally produced is the incidence that the high oil prices might have on transportation costs and on the prices of agricultural inputs, which especially affects products of low added value, like those of agricultural origin.

The highest international prices anticipated for oil and gas also had repercussions in the forecasts for the CPI of regulated items, though to a lesser extent. Possibly, the new levels will pass-through to the domestic of fuels and household gas, which would exceed the inflation target range and the predictions envisaged in the September report. Nevertheless, other components of the CPI of regulated items, such as electric power charges, might have few adjustments, due to a decline in the stock exchange price of this item in the second half of 2010 that would be slowly transferred to the cost structure of power generation and distribution companies.

For this reason, the projection for the whole regulated item basket was scarcely altered with respect to the scenario outlined in September. Its annual variation is still expected to decline at a slow pace in 2011, but remaining above the ceiling of the target range. For 2012, this trend would continue in similar way. The above provided that the exchange rate remains at similar levels than those observed in 2010.

A significant change in the forecasts occurred in the non-tradable CPI excluding food and regulated items. The path contemplated is now higher than in remaining longer at the upper half of the target range, though maintaining a declining trend. This is due to the fact that the prices on non-tradable goods show significant persistence and, besides, because they respond to changes in the output gap (as a demand pressure indicator) and inflation expectations. For this report, output gap estimations suggests that this variable would be closing at a faster rate than expected in the previous report, in such a way that, towards 2011, it would stand in positive terrain (see chapter I). This change, though it slightly raises forecasts, does not assume a substantial change in the perception that the economy will still have some spare production capacity and a relative loose market through a good part of 2011 and that, therefore, demand pressures on prices will be limited.

If the economy follows the predicted growth path, the occurrence of demand pressures would be more likely towards the end of 2011 or in early 2012.

On the contrary, the unexpected increase of inflation in the two months of 2010, and the anticipated shocks on food prices for the first semester of the year, though temporary, have meant increased inflation expectations as discussed in chapter I of this report. Besides, they may continue to rise in the course of the year since an

acceleration of consumer inflation cannot to be dismissed. The higher expectations, together with the persistence and activation of the indexing mechanisms, explain the most significant part of the increase in the forecasts of the non-tradable CPI, excluding food and regulated items. Anyway, the expectations remain aligned with the long-term targets.

Finally, the path of tradables excluding foods and regulated items, did not change much in this report, and its annual variation is still expected to remain in negative terrain in the beginning of the year, to then slowly enter in positive terrain, but with low adjustments. This prediction is supported in the stability foreseen for the exchange rate throughout 2011, although it must be mentioned and its that the highest expectations and the narrowest output gap have slightly biased upwards this prediction from the forecast obtained in the September report.

Then, in 2011 and 2012, demand side inflationary pressures will depend on GDP growth and its position within the range estimated for this variable (3.5%-5.5%).

In 2011, additionally, inflation in Colombia might continue to be affected by agricultural shocks and the high international prices of foods and fuels. Although in principle temporary, might permanently affect inflation as they are transferred to expectations, to then have an effect on price and salary negotiations by the different active indexation mechanisms.

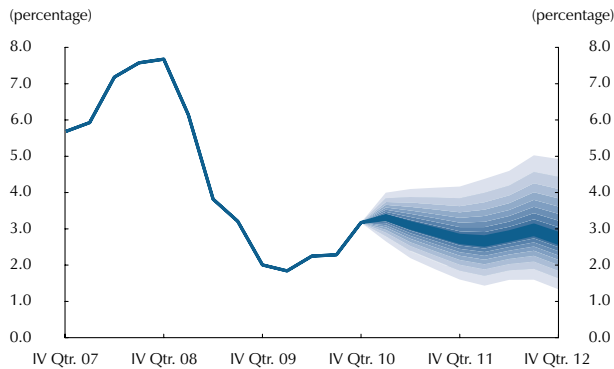
2. Balance of risks

The balance of risks estimated for headline inflation and inflation excluding foods is shown in the *Fan Charts* of Graphs 59 and 60. With respect to the previous report, the new analysis exhibits similar amplitude in the forecast range, which means the uncertainty level of the predictions has not changed, but still remains historically high. Moreover, the balance of risks is slightly more balanced in this occasion, though, again, with an upward bias. Several risks that were identified in the previous quarter have not changed, such as the remain a, for example, the likely inflationary effect of La Niña on food prices, or a higher than anticipated momentum in domestic spending. Likewise, in the external field, economic the current economic context and its outlook continue to be especially uncertain, due to a very complex combination of events, whose final outcome is hard to predict.

Particularly, the main upward risks contemplated in this report are:

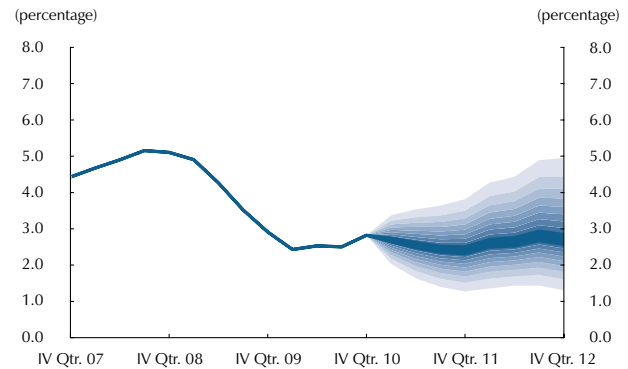
- *A higher than expected increase in the price of perishable food, due to the effect the unusually intense rains cause by La Niña weather phenomenon. Violent precipitations might extend over the second semester of 2011, according to the predictions of international experts*

Graph 60
Headline inflation Fan Chart ^{a/}



a/ Forecasts are built assuming a monetary policy seeking to meet the long-term inflation targets.
Source: calculations by Banco de la República.

Graph 60
Inflation excluding food Fan Chart ^{a/}



a/ Forecasts are built assuming a monetary policy seeking to meet the long-term inflation targets.
Source: calculations by Banco de la República.

in climatic phenomena. It is worth explaining that lack of sufficient historical information of other similar episodes is an obstacle for the proper incorporation of this shock in the short-term inflation models. Along with this impediment, the fact that the powerful distorting role of the climatic change in production cycles has been more and more notorious in the last decade, this complicates even more the interpretation of historical data. Nevertheless, the direct effect on prices of de La Niña will be temporary and would not extend beyond this year. Nonetheless, a permanent effect may last by increased inflation expectations and salary negotiations, particularly if price rises are significant.

- *Higher and more prolonged rises the international prices of oil, other commodities and food.* In the current international outlook, conditions are given for rises to carry on for a lengthened period: world supply of diverse commodities has been reduced by climatic shocks in several countries; favorable growth in emerging economies is foreseen and better expansion perspectives in the United States are being observed; and finally, both uncertainty and risk perception are still high, which tends to favor speculative behaviors in the markets. The most recent experience in several developing countries especially in the 2006 - 2008 period, including Colombia, shows that these external pressures may have a wide and lasting impact on domestic prices. These risks might become sharper if the expected stability of the exchange rate does not materialize.
- *A better performance of household and business expenditure than expected in the scenarios of domestic growth.* The information available does not rule out a higher dynamism in consumption because, among other reasons, a sharp increase of credit directed towards households is likely to continue, since their indebtedness level is still not high. Besides, the financial system has the capacity to keep expanding

their credit supply, even at a higher rate, in the eventuality of some recomposition of their investments portfolios. Moreover, it seems that public spending is likely to be more dynamic in 2011 than in 2010 as a result of assistance and reconstruction programs to attend the effects of intense rainy season. This way, a demand growth higher than expected might give origin to some upward pressures on non-tradable inflation, and on inflation expectations.

- *More pressures on domestic prices due to a rise in long-term inflation expectations, and to the duration still shown by indexation mechanisms in Colombia.* Shocks on food and fuel prices originating in both the country and abroad may be transferred to the long-term inflation expectation (as has occurred in the past), and thus jeopardize the fulfillment of inflation targets. The existence of a great number of indexation mechanisms stipulated in price and salary agreements would serve as a transmission mechanism. In this respect, the minimum wage adjustment for 2011, which occurred at a rate that stands in the top of the target range and that is over observed inflation in 2010 and of private analysts' expectations, might act against the moderation of expectations, and consequently, against inflation. Something similar is likely to occur with the rise in prices of certain regulated goods and services. It is worth mentioning that, for the time being, expectations are anchored and remain coherent with the Bank's long-term target.

The main downward risk is:

- *A more pronounced deceleration in the developed countries and its possible contagion on emerging economies.* The recent financial market volatility shows that debt problems are still a threat for the expansion of these economies, especially in a context of weakness in their labor markets. All of this could influence external demand weakness, with the resulting negative effect on national exports, terms of trade and finally on the national disposable income. This would imply lower dynamics and a slower closing of the output gap, as well as less pressures on domestic inflation. This would occur only if the above scenario does not have significant effects on the depreciation of the peso.

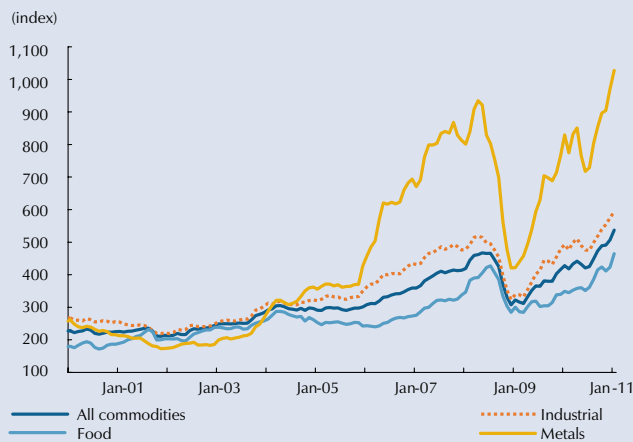
During 2010, Colombian economy reassumed a growth path close to its historical average, without jeopardizing the fulfillment of the inflation target. The forecasts shown in this Report suggest that the economy can preserve its expansion path in the future without affecting price stability in the previous report, risk analysis (or *Fan Chart*) indicates that the likelihood for inflation remaining in the long-term (2% a 4%) continues to be high, for both 2011 and 2012 (Graphs 59 and 60). It is worth adding that these results, like the central scenario, assume an active monetary policy where the policy rate is adjusted to guarantee the fulfillment of the long-term target.

Box 3 COMMODITY PRICES PERSPECTIVE

Joan Camilo Granados.*

Commodity prices have increased very sharply during the first stages of the economic recovery (2010). To a great extent, this has been due to the outstanding growth of Asia, mainly China, and of other emerging countries; their demand for industrial raw materials in 2010 has propelled the aggregated indices of these products (Graph B3.1).

Graph B3.1
Commodity price indices



Source: Bloomberg,

The increases in commodity prices during 2010 were also due to a heightened risk perception and to the search for profitability by investors in a context characterized by broad liquidity and low interest rates. This speculative phenomenon had already been seen in 2008.

Therefore, dollar weakness, flexible monetary policies, the emerging countries' demand, and the adverse climatic conditions in both Europe and commodities production centers, have helped sustain price increases very firmly until early 2011.

In this context, towards 2011, China's change in its monetary policy stance becomes fundamental to explain price dynamics. For instance, *The Economist's Intelligence Unit* (EIU) hopes that the commodity demand growth

will be positive, but lower than in 2010. This idea is supported by the expected behavior of the US dollar which, according to this institution, would strengthen by the end of 2011.

The aforementioned factors would not only affect the fundamentals of those goods, but also their demand for speculative reasons; this is why analysts' forecasts coincide in expecting that their annual price increase would be positive for 2011, though with less strength than in 2010. The EIU says that these predictions are based on the assumption that economic growth in the United States will be 2.2% for 2011, and China's growth expectations continue to be high, despite having changed its monetary policy stance.

So, for 2011 and 2012, the prices of these products are expected to keep rising, based on the demand from emerging economies. Nevertheless, for products of industrial origin, price increase would be moderate with respect to the variations recorded in 2010. This hypothesis is supported by changes in monetary policy stances and in these products' inventory level, currently at its historical average levels.

On the side of food, and according to the United States Department of Agriculture, prices would rise in 2011, thus reaching or exceeding the historical maximums of 2008¹. Inventory forecasts are low, with some recovery only by the end of 2011 and the first quarters of 2012, though still below historical levels. This is explained by production that stood at lower levels than in 2009², and this is why it was necessary to resort to inventories in order to meet demand.

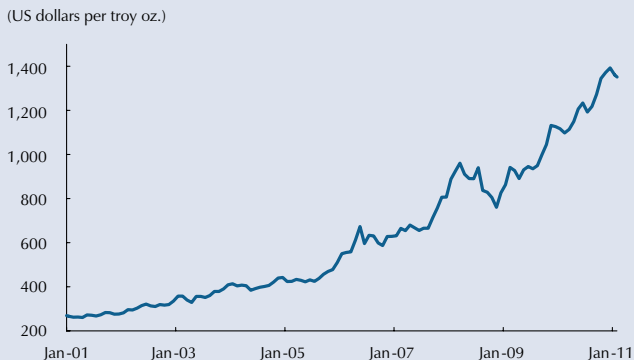
In the case of gold, and for speculative reasons, its demand is usually higher than for other products, particularly because gold is deemed to be an alternative reserve value when major currencies are weakening. For this reason, and due to a higher risk perception caused by sovereign debt problems in Europe, gold demand is expected to keep growing in 2011, as well as its price, which tends to remain in maximum historical levels. (Graph B3.2).

1. The author is professional of the Programming and Inflation Department of the Economic Studies Division. The opinions expressed are the exclusive responsibility of the author and do not necessarily reflect the views of Banco de la República or its Board of Directors.

1 Institutions like FAO have mentioned that in December commodity price indexes relating to food have exceeded their historical levels.

2 United States Department of Agriculture (USDA) (2010). *Annual Production Report*.

Graph B3.2
Price of gold
(monthly average)



Source: Bloomberg.

1. Oil

The EIU revised upwards the estimates of growth of oil consumption for 2011, placing it at 3.2% (formerly 2.4%), while, for 2011, the forecast for global consumption growth stood at 2.2%³. It is worth mentioning that the emerging countries will be the main drivers of this increase, while those belonging to the Organization for Economic Cooperation and Development (OECD) will maintain their consumption at levels similar to those recorded in the past two years.

Consumption increase forecast from China (which accounts for nearly a half of the countries not belonging to the OECD) stands at 10.5% for 2010, and 6.6% for 2011 and 2012. These estimations are due to the efforts expected from China to fight inflationary pressures, which means positive economic growth, but lower than in previous periods⁴.

With regard to supply, for 2011 the EIA is expecting production growth by states not making part of the Organization of Petroleum Exporting Countries (OPEC) to be very low (about 1%)⁵. Thus, rising consumption would be met by inventories and likely increases in the OPEC production. Therefore, inventories would drop to levels close to the past five years' average. Even so, the OPEC has shown some reluctance to supply more oil to the market, since it fears price falls, as it thinks that the recent price

dynamics is also due to speculative reasons and not only to movements in the fundamentals.

So, considering prices are supported by China's still robust consumption by the positive impact of monetary and fiscal stimulus and by persistent restrictions in the OPEC production, prices are expected to remain in their increasing path during the first quarters of the year (so the WTI quotation would be maintained over US\$90 per barrel). However, by the end of 2011, prices would weaken at the time of perceiving a strengthening of the US dollar, together with the effects of a less lax monetary policy capable of reducing investors' flows towards the oil market.

2. Foods

For 2011, as compared with 2010, the EIU foresees a stronger rise of food commodity prices. This is due, among other reasons, to restrictions on supply owed to the badly affected grain harvest in Russia, excessive precipitations in Canada and Pakistan, and wheat harvests hurt by floods in Queensland (Australia).

The fact that harvests were poorer than expected significantly reduced these products' inventories, with the resulting upward pressure on prices. This predicted increase caused by the fundamentals would become sharper, due to the demand of speculative investors. The USDA insists that, from the change expected in economic and climatic conditions, higher inventory accumulations would be generated for the end of 2011 and the first quarters of 2012.

One of the causes allowing for inventory accumulation would be the low interest rates to be maintained during the first quarters of 2011, since they are positively associated with the cost of keeping stocks of these merchandises⁶.

In addition, due to the application of tighter monetary policies, distortions in investors' speculative activities on commodities are expected; therefore, some weakening of foods prices in 2012 would be seen.

3 This is the same prediction reported by the United States Energy Information Agency – EIA (2011).

4 EIU (2011). "World Commodity Forecasts: Industrial Raw Materials", February.

5 For further information in this respect, see EIA (2011). "Short Term Energy Outlook", February.

6 With respect to this matter, see L. E. Arango, F. Arias, and A. Florez (2008). "Trends, Fluctuations, and Determinants of Commodity Prices", Borradores de Economía, num. 521, Banco de la Republica.

Box 4 FOOD INFLATION AND MONETARY POLICY RESPONSE

Edgar Caicedo
Andres Gonzalez
Sergio Ocampo
Diego Rodriguez*

This work intends to establish the incidence of a supply shock resulting from climatic events on the monetary policy stance. For this purpose, the effect of El Niño weather phenomenon on the food and non-food CPI, in the absence of any other shock or disequilibrium, is estimated. Therefore, at the time the rise of food prices begins, the economy is assumed to be in its stationary state and no other perturbation is taken into account.¹ Therefore, the monetary policy response obtained in this exercise is not comparable with the one required in the current context where different variables are far from their long-term levels².

Using the Oceanic Niño Index³ (ONI), the initiation month was identified, as well as the duration of El Niño weather phenomena, and the behavior of food CPI and of total inflation was observed during these events. It was observed that those with stronger incidence on prices were identified between 1980 and 2010⁴, and that the mean duration of those that were detected was thirteen months.

* The authors are, in order, professional expert of the Programming and Inflation Department and director, professional and head of the Macroeconomic Models Department. The opinions expressed are the exclusive responsibility of the author and do not necessarily reflect the views of Banco de la República or its Board of Directors.

1 Perturbations such as changes in external demand, international interest rate alterations, internal demand pressure, among others, are not taken into account in the exercises.

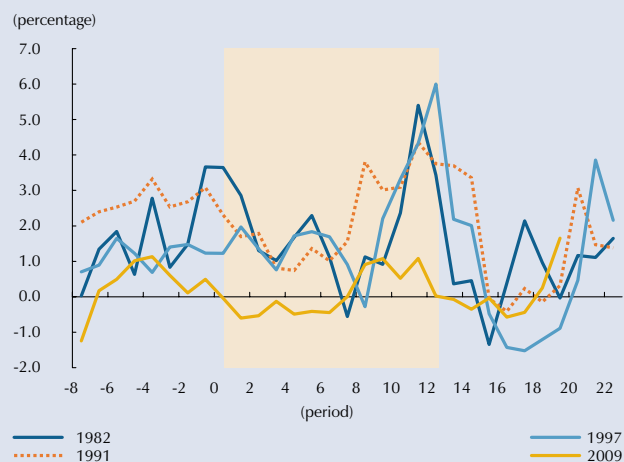
2 For example, the output gap is negative, and interest rates are historically low.

3 The index is published by the National Oceanic and Atmospheric Administration (NOAA), a US government agency in charge of climate and ocean monitoring.

4 The events used in the study are: May-82 to June-83, May-91 to Jun-92, May-97 to April-98, and Jun-09 to April-10. La Niña events are not taken into account since, historically speaking, they have had no effect on price dynamics in Colombia, with the exception of the current event for which no sufficient data are available.

In order to characterize the response of the food CPI to the climatic shock, the behavior of this index was observed for fifteen months before and after the month signaled as the El Niño center (Graph B4.1).

Graph B4.1
Food CPI: monthly change



a/ The series correspond to the monthly change of food CPI.
Source: DANE.

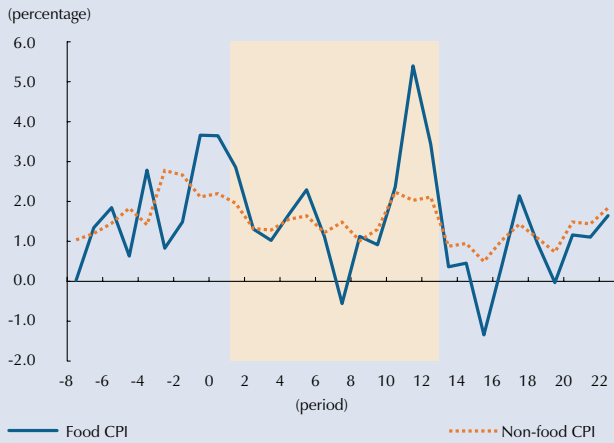
The zero on the horizontal axis represents the beginning of this phenomenon. As it can be seen, inflation is relatively stable in the initial periods of this climatic event; it begins to increase between periods 6 and 7, until it reaches its maximum point between periods 11 and 12. El Niño then declines during 4 or 5 months, down to levels even lower than those recorded before its initiation.

In the analyzed periods, it is seen that once the effects of El Niño begin to act on the food group (at the midpoint of the climatic shock), the CPI excluding food begins to increase, although the magnitude is different depending on the phenomenon (Graph B4.2). After the rises phase, the variations of the group excluding food tend to return to the rates that were registered prior to the climatic perturbation, while the changes in the food CPI fall beyond the rates recorded before El Niño.

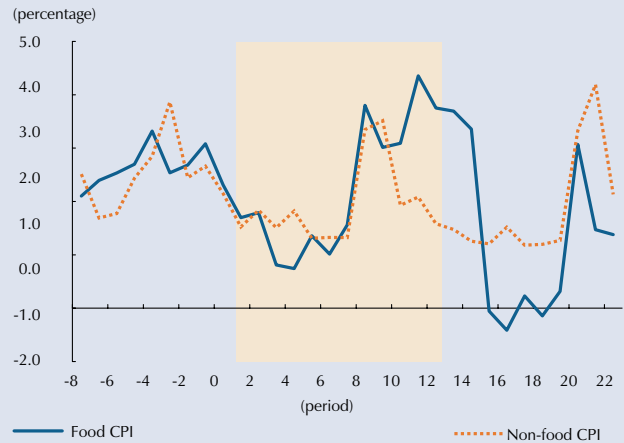
In the next step, the response of headline CPI, CPI excluding food, and the nominal interest rate face to a shock like the one described, were simulated. A neo-Keynesian dynamic general equilibrium model was used, with quarterly series analyzed and reported as deviations from their respective long-term levels.

Graph B4.2
Food and non-food CPI: monthly changes

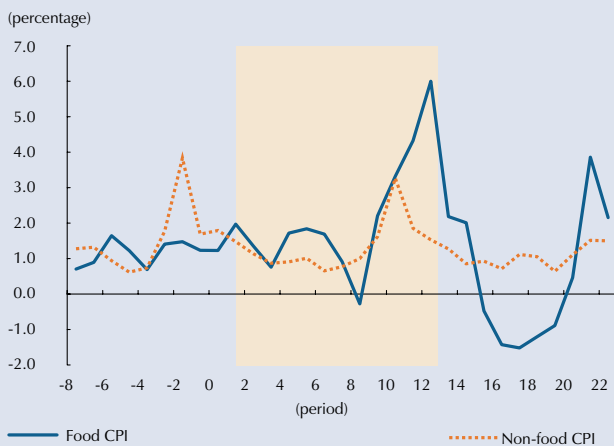
A. El Niño weather phenomenon in 1982



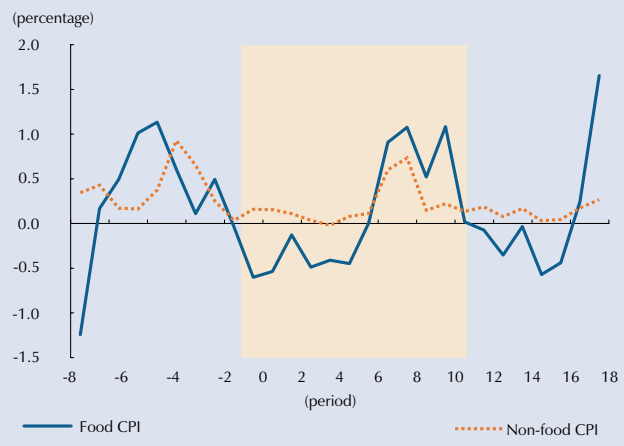
B. El Niño weather phenomenon in 1991



C. El Niño weather phenomenon in 1997



D. El Niño weather phenomenon in 2009



Source: DANE.

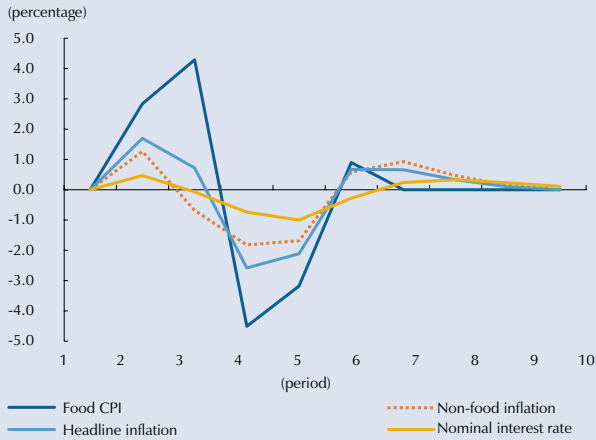
The maximum variation value in the simulation of the food CPI was 429 bp (occurring in the second period), while the minimum (achieved in period 3) was 451 bp below its long-term level. Likewise, the model was calibrated in order to obtain the dynamic of the CPI excluding food, in line with the average response presented by this variable in the event described. The simulation result was an increase of 125 bp in the CPI excluding food as a response to this type of shock, which generated a rise of 170 bp in headline inflation. With regard to the policy rate, the calibration implies that it should increase 46 bp, and then decline to stand 100 bp below its long-term level (Graph B4.3).

In the previous exercise, private agents do not modify their expectations substantially because they perceive the price shock as temporary. Thus, the monetary authority is not required to react energetically before or

after the climatic event to ensure that inflation goes back to its long-run level. Nevertheless, if the food CPI lacked the typical reversion it has once the shock has vanished, the monetary policy shock should be stronger. Likewise, the food inflation increase would be higher and longer in the absence of such reversion.

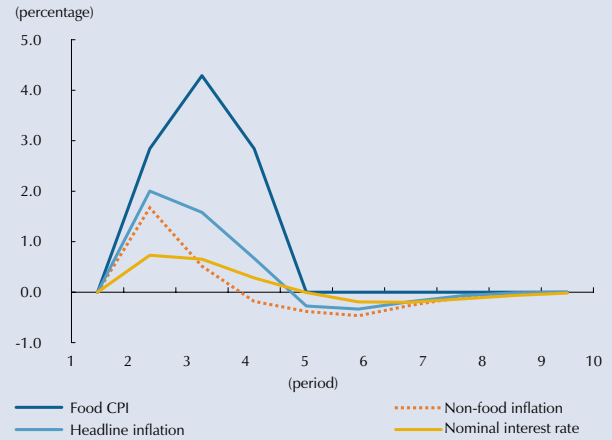
To verify this argument, a simulation took place of the model's response to a climatic shock that increases the monthly variation of the food CPI but, after attaining its maximum point, goes back to its long-term level in two periods, instead of becoming negative. Both the monthly variation of the CPI excluding food and the policy rate react more strongly (Graph B4.4). The initial response of the change in the CPI excluding food is 167 bp. Now the policy rate increases 73 bp due to the shock, and remains above its long-run level for various periods.

Graph B4.3
Simulation of a supply shock



Note: The periods are quarters.
The series, except for the interest rates, correspond to the quarterly annualized change of each series.
The series of the nominal interest rate is the quarterly annualized interest rate.
Source: authors' calculators.

Graph B4.4
Simulation of a permanent supply shock



Note: The periods are quarters.
The series, except for the interest rates, correspond to the quarterly annualized change of each series.
The series of the nominal interest rate is the quarterly annualized interest rate.
Source: authors' calculators.

The change in the dynamic of annual inflation and in the policy rate can be explained by the adjustment in the price makers' expectations. Since the first increases in the food CPI are not offset with subsequent price drops (it does not go back to negative terrain), the agents react to the perspective of higher price levels and incorporate them in their decisions. Consequently, the response of the monetary authority to higher inflation expectations is adopting a tighter monetary stance, in order to ensure the fulfillment of the proposed target and bring annual inflation back to its long-term level.

Due to the above, it is worth highlighting that a risk for monetary policy is that agents wrongly interpret temporary shocks as permanent ones. This might occur if the higher inflation originating in a temporary increase in foods prices is incorporated in the expectations of price and salary fixers. This may create persistence and increases in inflation.

ANNEX

MACROECONOMIC PROJECTIONS BY LOCAL AND FOREIGN ANALYSTS

This Annex presents a summary of the most recent projections by local and foreign analysts of the main economic variables for 2011 and 2012. At the time of consultation, the analysts had the information available to the last week of January 2011.

Projections for 2011

On average, economic growth expected by local analysts is 4.7%, which compares to the 4.5% recorded in the previous Inflation Report. On their

Table A1
Projections for 2011

	Real GDP growth (percentage)	CPI inflation	Nominal exchange rate End of	Nominal DTF (percentage)	Fiscal deficit (share of the GDP)	Unemployment rate in the 13 main cities (percentage)
Local analysts						
Alianza Valores	4,7	3,8	1.900	4,5	(4,2)	10,5
Anif	4,5	3,8	n.a.	5,0	(4,1)	11,7
Banco de Bogotá	4,5	3,6	1.800	4,8	(3,1)	10,0
Banco Santander	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bancolombia	4,1	3,4	1.845	4,6	(4,2)	9,4
BBVA Colombia ^{a/}	5,0	3,4	1.825	4,8	(4,1)	10,5
Corficolombiana	5,0	3,5	1.775	5,3	(3,9)	11,3
Corredores Asociados	5,5	3,4	1.720	4,3	(4,1)	10,6
Correval	4,5	3,6	1.870	4,1	(4,3)	10,5
Davienda ^{a/}	4,2	3,9	1.954	4,4	(4,8)	11,9
Fedesarrollo	4,6	3,8	1.699	n.a.	n.a.	11,1
Average	4,7	3,6	1.821	4,6	(4,1)	10,8
Foreign analysts						
Citi ^{a/}	4,4	3,6	1.850	5,1	(4,5)	10,3
Deutsche Bank	4,5	3,7	1.810	n.a.	(4,0)	10,2
Goldman Sachs	4,6	3,9	1.850	n.a.	(3,3)	n,d,
JP Morgan	4,5	3,6	1.850	n.a.	n.a.	n,d,
Average	4,5	3,7	1.840	5,1	(3,9)	10,3

n.a. not available

a/ Projections of the deficit correspond to the one of the central national government.

Source: Banco de la República (electronic survey).

Table A2
Projections for 2012

	Real GDP growth (percentage)	CPI Inflation	CPI inflation End of
Local analysts			
Alianza Valores	4,4	4,2	1.750
Anif	4,3	4,0	n.a.
Banco de Bogotá	4,5	3,0	1.827
Banco Santander	n.a.	n.a.	n.a.
Bancolombia	4,2	3,6	1.770
BBVA Colombia	5,5	3,7	1.825
Corficolombiana	5,3	3,5	1.802
Corredores Asociados	5,7	3,7	1.850
Correval	5,3	3,7	1.900
Davivienda	4,6	3,5	n.a.
Fedesarrollo	5,7	3,3	1.761
Average	5,0	3,6	1.810
Foreign analysts			
Citi	4,7	4,0	1.900
Deutsche Bank	5,0	3,4	1.800
Goldman Sachs	4,5	3,0	1.900
JP Morgan	4,0	n,d	1.917
Average	4,6	3,5	1.879

n.a. not available
Source: Banco de la República (electronic survey)

side, the foreign entities consulted are expecting an average GDP growth of 4.5%

As per inflation projections, local analysts forecast a 3.6% increase in prices by the end of the year, while foreign ones expect 3.7% on average. These values are within the target range (between 2.0% and 4.0% fixed by Banco de la República Board of Directors for 2011).

With respect to the exchange rate, national analysts expect that the TRM (the market representative rate) will end at COP1.824 on average, which compares to the COP1.892 expected in the previous report survey. As projected by the foreign analysts, the TRM for the end of the year would be near COP1.824 on average.

For the DTF (fixed term deposit) rate, local analysts have projected 4.6% values. Moreover, the unemployment rate is expected to register 10.8%, according to the national analysts consulted.

Projections for 2012

For 2011, national analysts foresee a 5.0% growth against 4.6% predicted by foreign analysts. With respect to inflation, local and foreign analysts' projections are 3.6% and 3.5%, respectively. As per the exchange rate, the national and foreign analysts are expecting COP1,810 and COP1,879, respectively.

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. Printing was coordinated by the Bank's Document Management Department.

Impreso por Editora Géminis Ltda,

February 2011