INFLATION REPORT

June 2008

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Banco de la República
CENTRAL BANK OF COLOMBIA
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The Inflation Targeting Strategy in Colombia

OBJECTIVES

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

HORIZON AND IMPLEMENTATION

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

THE DECISION-MAKING PROCESS

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.

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Annual consumer inflation was up again in June 2008, having reached 7.18%. This is 125 basis points (bp) more than the rate observed the quarter before and 268 bp over the top of the target range for inflation this year (between 3.5% and 4.5%). As in recent months, the build-up in inflation during the second quarter was due primarily to the increase in food prices (11.98% in June), which accounted for 89% of total inflation.

Annual non-food inflation (4.90%), which climbed 23 bp during the second quarter, was responsible for the other 11% of the build-up in the total consumer price index (CPI). The momentum in this group was explained largely by higher prices for regulated goods and services, which went from an annual increase of 7.7% in March to 8.8% in June. The prices of non-tradables also contributed to the increase in inflation of this type, although less so, by rising 18 bp in the second quarter and ending June with a 12-month variation of 5.3%. Despite revaluation of the peso, the annual variation in the price of tradable goods, excluding food and regulated prices, declined by only 18 bp to 2.2%.

The three core inflation indicators published traditionally by the Central Bank of Colombia rose slowly but steadily in the last six months, averaging 5.05% in June (37 bp above the average reported last quarter). A fourth indicator, which is inflation excluding food and regulated prices, remained stable at a level slightly under 4%.

As a result of these rates, coupled with annual inflation during the first half of 2008 (6.0%), none of those surveyed quarterly by the Central Bank of Colombia believe the inflation target for 2008 will be met. Moreover, the different measurements of inflation expectations at one year remain high; in fact, they were above 5.5% towards mid-July. In the last three months, inflation expectations at five and ten years, derived from local government bonds, have increased from 4.7% and 4.4%, respectively, to 6.3% and 6.1%, in that order.

Production costs for companies are up. By June, producer inflation measured by the total producer price index (PPI) continued to climb and was 8.0%. The outcome for the last quarter reflects a sharp rise in local and imported raw material prices in the industrial sector. In June, inflation in imported raw materials emerged from negative terrain, where it had been for a year, while the PPI for produced and consumed commodities continued to growth at high rates (9.6%). As to wages, the available indicators show no uniform trend by sectors. While average wages in the construction sector had increased by June, registering high readjustments, the annual wage increases in industry and commerce remain stable at respective rates near 5.3% and 7.5%.

Average nominal interest rates on deposits and lending increased slightly in June to respective rates of 9.7% (DTF) and 17.1% (Central Bank's methodology). Even so, these are similar to the levels registered last April. In real terms, the average lending rate has declined since October 2007, interrupted only in April of this year, and is now below the historical average calculated since 1986. The decline in the real rate on ordinary loans is primarily responsible for this latest tendency; the lower real rate of interest on retail loans is also a factor, although not as much.

As to economic growth, the figures on the annual increase in gross domestic product (GDP) for the first quarter of this year (4.1%) showed a bit more of a slowdown than expected. This reduced momentum was the result of several factors related to both supply and demand, not all of which are easily quantified or necessarily generated by the change in the stance of monetary policy. The following are some of the reasons for this outcome, in addition to others that point to a slowdown in 2008:

- *A base of comparison that is high and possibly unsustainable in the long term.* The Colombian economy averaged 7% growth in the last three years, a figure not witnessed since the period from 1944 to 1946. A GDP increase like the one in 2007 (8.2%) is comparable only to those observed in 1978 (8.2%) and 1949 (8.7%). At times when growth has been this high, the increase in GDP for the coming year is very likely to be under its historic average.

- *Supply shocks.* To begin with, more holidays during the first quarter of 2008 meant less growth in sectors such as transport, industry and exports. The labor strike at Cerromatoso was a factor as well and prevented the company from operating throughout the month of March. Finally, as is customary in Colombia, the execution of public civil works is delayed when a new local administration takes office; this is because of the time it takes for mayors and governors to plan their infrastructure projects. Coupled with a high base of comparison established in the first quarter of 2007, this contributed to a 25% decline in civil works. If civil works are excluded from GDP, annual growth during the first quarter of 2008 comes to 5.1%.

- *The sharp rise in food and fuel prices.* This affects available household income, reduces spending on other goods and services and, therefore, slows total consumption. On the other hand, the increase in national and imported raw materials of agricultural, petroleum and other mining origin narrows company profit margins, discourages investment and, as a result, can end up generating higher prices now and in the future, in addition to less economic growth.

- *High consumption levels and a possible cutback in credit supply.* On this occasion, household debt (consumption, plus housing, as a percentage of GDP), which is similar to the levels registered in 1997, was concentrated in consumption. If the retail loan portfolio continues to deteriorate, the credit supply could tighten, which would affect the pace of household spending.

- Growth in foreign sales is expected to decline as a result of less demand worldwide, higher international interest rates and appreciation of the Colombian peso. The new figures for the United States suggest a less pronounced (but longer) slowdown in that country's economy, together with growing inflationary expectations. Accordingly, the United States Federal Reserve Bank (the Fed) is expected to raise its interest rate on at least one occasion during the second half of the year. The euro zone is expected to see less growth as well, accompanied by inflationary pressures. The European Central Bank has reacted to those pressures by raising its interest rates. As to the emerging economies, Venezuela, which is one of Colombia's most important trading partners, has experienced a sharp slowdown in economic growth this year, as well as sizeable increases in inflation. Given the growth in CPI and inflationary pressures in countries such as China, Chile, Peru, Brazil, Mexico and Turkey, the central banks in those countries raised their interest rates.

- Finally, the changes in monetary policy begun in April 2006 would be expected to help slow the increase in demand. This channel is necessary to reduce inflationary pressures and to achieve sustainable long-term growth.

In view of the foregoing and given the information available at June, the macroeconomic outlook can be described as follows:

- Economic growth in the first half of 2008 will probably be about half of what it was for all of 2007. This slowdown, which is more than was forecast, occurred from a higher level. In fact, the economic growth accumulated in the last three years was the highest witnessed in the past sixty years.

- High inflation, well above target for 2008, continues to influence agents' expectations of price growth in the near and intermediate future. This is coupled with virtually no confidence in the inflation target for this year.

- The forecasts for food and regulated price inflation exceed those estimated last quarter and could end up tainting other groups in the CPI basket. By the same token, the annual increase in some of the core inflation indicators has yet to slow.

- Further appreciation of the exchange rate might imply less of an increase in the prices of tradable goods. However, so far this year, peso appreciation has not been enough to offset the rise in international prices for raw materials, as reflected in the PPI.

- Real interest rates on lending and deposits have declined and are below their historic averages.

- The international context has deteriorated compared to last quarter. This situation is accompanied by favorable terms of trade and a world interest rate that is expected to be higher in the future.

In short, reduced prospects for growth this year in Colombia and worldwide suggest there will be no change in intervention interest rates. However, the increase in inflation, the outlook for inflation next year and the importance of tying expectations to a downward path for inflation indicate in the intervention interest rate should be raised. Low and stable inflation helps to maximize economic growth in the long run.

The Board of Directors adopted two monetary policy decisions in view of these circumstances.

- At a meeting in June, it decided to accumulate US$20 million daily in international reserves, as of the 20th of that month. The goal is to make the economy less vulnerable to external shocks and is being accomplished through direct purchase auctions. To offset the direct effects of that intervention, among other measures, the Board changed the bank reserve requirements by eliminating the marginal reserve and increasing the ordinary reserve.

- To anchor inflation expectations to the long-term targets and, particularly given the risk posed by the collateral effects of international food and fuel prices, the Board also agreed to raise the Central Bank's intervention rate from 9.75% to 10%. This decision was adopted at a meeting on July 25 of this year. The idea is to avoid having to take stronger action in the future in response to price and wage hikes that go beyond the targets set by the Central Bank.

The Board will continue to carefully monitor the international situation and the behavior and forecasts for inflation and growth. It reiterated that monetary policy in the future will depend on whatever new information becomes available.

Board of Directors
Central Bank of Colombia

INFLATION REPORT

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I. Recent Developments in Inflation

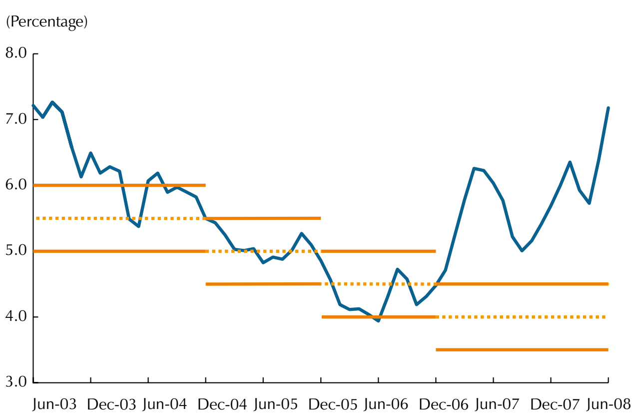
The surge in annual inflation during the second half of the year was more than the market expected and went beyond the forecast published in the previous edition of this report. Most of the pressure came from food and fuel price hikes and the indexation of other regulated prices.

Companies faced rising costs during the second quarter, consistent with the behavior of producer prices.

Annual GDP growth during the first quarter of the year was less than anticipated. The biggest slowdown was generated, in part, by exogenous supply shocks.

There was less surplus use of the economy's productive capacity during the first and second quarters.

Graph 1
Annual Consumer Inflation

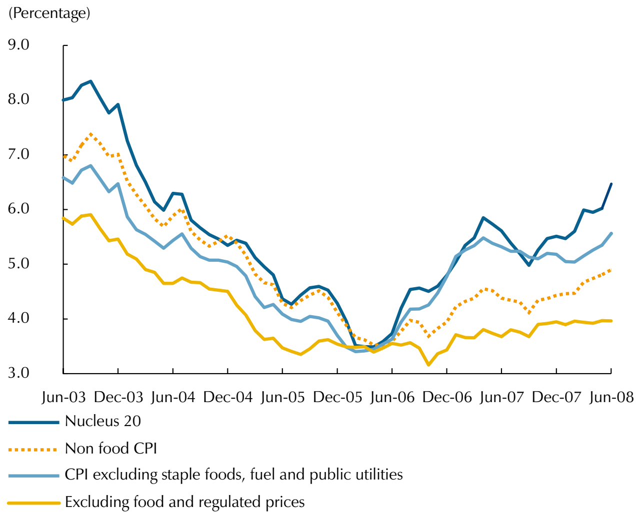


Source: DANE; Calculations by the Central Bank of Colombia

Consumer inflation registered a significant increase during the first six months of 2008, having gone from 5.7% in December 2007 to 7.2% in June 2008. This outpaced the expectations of the Central Bank and the market in general. The second-quarter build-up was particularly sharp and, as in previous quarters, was attributed to food, both perishables and processed, as well as fuel. Non-food inflation was up as well, but less so, having gone from 4.4% to 4.9% during the same period (Graphs 1 and 2).

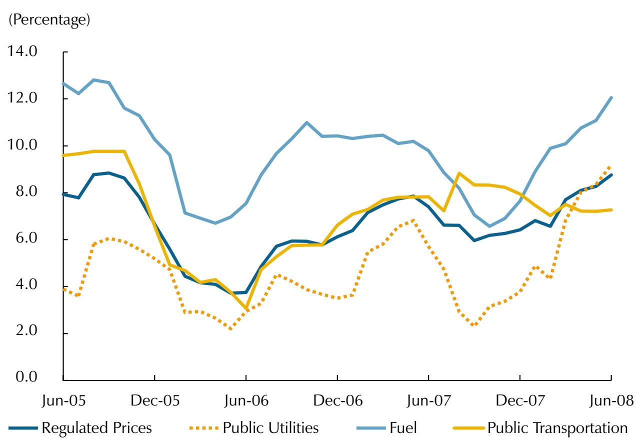
Like Colombia, a number of developed and emerging economies saw inflation rise, with most of the pressure also stemming from food and fuel

Graph 2
Annual Core Inflation Indicators



Source: DANE; Calculations by the Central Bank of Colombia

Graph 3
Annual Regulated Price Inflation and by Components



Source: DANE; Calculations by the Central Bank of Colombia

(See pg. 48). As was explained in past editions of this report, the rise in food prices throughout the world is tied to the sharp increases in the price of oil, which have raised the cost of agricultural production and marketing. Certain commodities are being used to produce bio-fuels. Food prices also have been affected by the spike in demand originating with emerging economies such as China and India, where consumption is up as a result of better income in recent years. As to Colombia, the hikes observed during the second quarter also were the result of local factors associated with the agricultural and livestock production cycle and with poor weather.

In most countries that operate with a monetary policy similar to Colombia's, the recent escalation in consumer inflation has substantially raised the risk of not meeting the inflation targets for this year.

A. CORE INFLATION

All the core inflation indicators calculated by the Central Bank increased during the year to June. The three indicators that are monitored regularly averaged 5.6% by June. This figure is above the target range for 2008 and represents an increase of 60 basis points (bp) with respect to December 2007 and 40 bp with respect to the figure reported in March of this year. As to the consumer price index (CPI), excluding food, the increase was concentrated in regulated prices, which account for nearly 9% of the entire basket of goods and services. A fourth indicator, which excludes food and regulated prices, has been more stable and was 4.0% in June, compared to 3.9% in March. By June, average core inflation was 5.2%, following 4.9% in March and 4.8% in December 2007 (Graph 2).

Regulated prices have been hard hit since 2007 by the rise in international oil prices, which has been only partly offset by peso appreciation. The largest adjustments were in fuel prices, which clocked in an annual variation of 12.1% by June. The fuel price hikes have affected the rates charged for public transportation and public utilities (such as natural gas for residential use and electricity) (Graph 3 and Table 1).

Table 1
Inflation Breakdown by Upward Pressures at June 2008

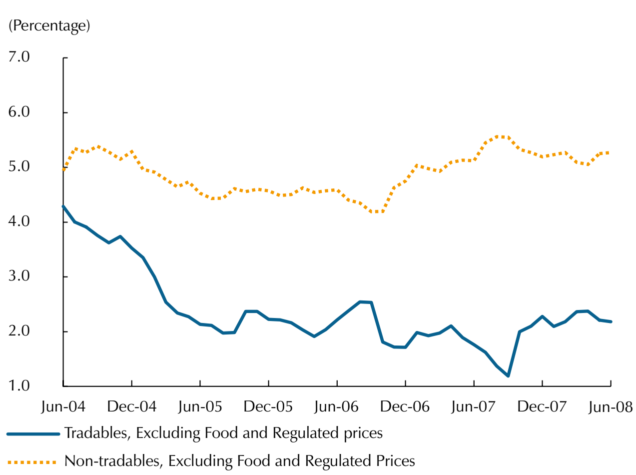
Description	Weight	Annual Growth				Participation in the Build-up	
		Dec-07	Mar-08	May-08	Jun-08	During the Month	Year to Date
Inflation							
Total	100.00	5.69	5.93	6.39	7.18	100.00	100.00
Non-food	70.49	4.43	4.67	4.81	4.90	8.37	18.12
Tradables	24.67	2.28	2.36	2.21	2.18	(0.84)	(2.50)
Non-tradables	36.77	5.19	5.09	5.25	5.27	0.97	0.47
Regulated	9.04	6.42	7.71	8.27	8.76	8.25	20.15
Food	29.51	8.51	8.61	9.73	11.98	91.63	81.88
Vegetables, fruits, tubers and milk	7.15	6.66	6.59	15.45	22.22	74.33	95.91
Cereals, oils and others	5.35	9.12	11.13	13.25	15.71	19.20	26.49
Food Outside the Home and Others	9.52	7.65	6.77	6.93	7.01	1.12	(3.59)
Beef and substitutes	7.48	11.12	11.36	3.95	3.65	(3.01)	(36.93)

Source: DANE; Calculations by the Central Bank of Colombia

There also were major adjustments in public utility rates as a result of increases in other costs and the indexing of public utility rates. By regulation, public utility rates are partly linked to the behavior of the producer price index (PPI), which – as illustrated later in this report – increased considerably between January and June. On the other hand, the recent build-up in total inflation led to the authorization of several increases in public utility rates during the first half of the year. Moreover, rate hikes in the public transportation sub-group continued to exceed the inflation target (Graph 3).

Non-tradable inflation, excluding food and regulated prices, rose slightly to 5.3% (having been 5.1% in March). Despite the relative stability of this indicator throughout the year, it is high in relation to the target range set by the Central Bank (Graph 4 and Table 1). As part of this sub-basket, rentals have exhibited growing increases since the fourth quarter of 2007, registering an annual rate of 4.7% in June compared to 4.4% in March. This tendency has been offset by prices for the other components; as a whole, annual inflation in those prices decline during the last quarter, going from 6.0% in March to 5.8% in June (Graph 5).

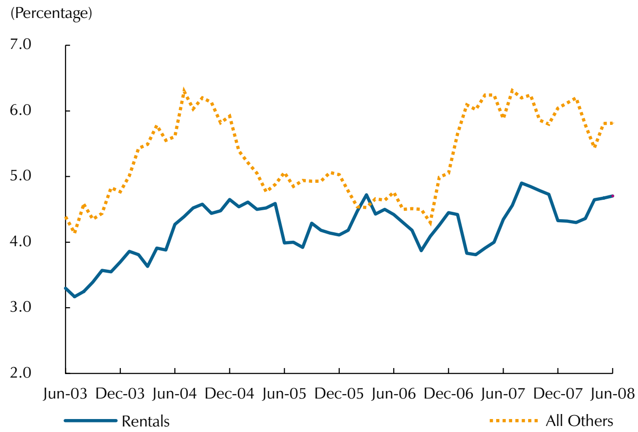
Graph 4
Annual Inflation in Tradables and Non-tradables, Excluding Food and Regulated Prices



Source: DANE, Calculations by the Central Bank of Colombia.

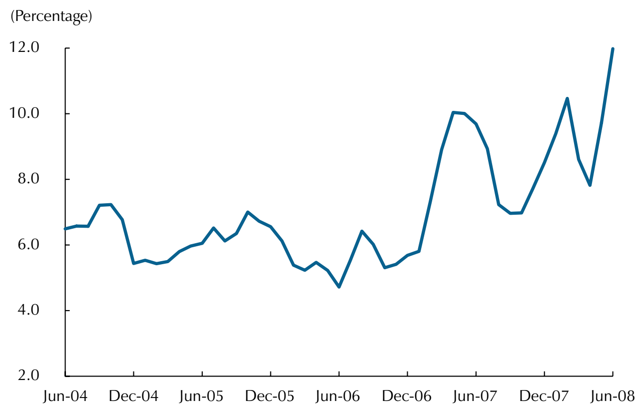
Contrary to inflation in the aforementioned sub-baskets, tradable inflation, excluding food and regulated prices, remained within the target range for 2008 and registered a slight drop in June (2.2%), compared to March (2.4%) (Graph 4). Even so,

Graph 5
Annual Inflation in Non-tradables: Rentals and All Others



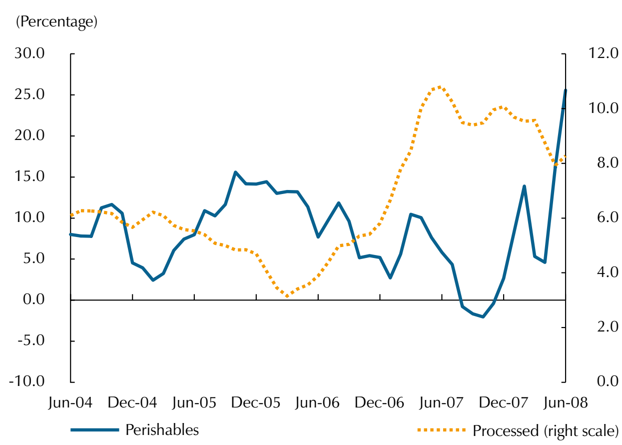
Source: DANE; Calculations by the Central Bank of Colombia.

Graph 6
Annual Food Inflation



Source: DANE; Calculations by the Central Bank of Colombia.

Graph 7
Annual Perishable and Processed Food Inflation, Excluding Food and Regulated Prices



Source: DANE; Calculations by the Central Bank of Colombia.

transmission of the exchange rate to local consumer prices has been less this year than on other occasions, particularly considering the amount of appreciation accumulated since the start of 2008. This appears to be due, in part, to pressures exerted by the prices of raw materials, which have compensated for peso appreciation. Furthermore, prices for a number of imported finished goods are no longer falling, as they were several quarters back, and have even increased.

B. FOOD INFLATION

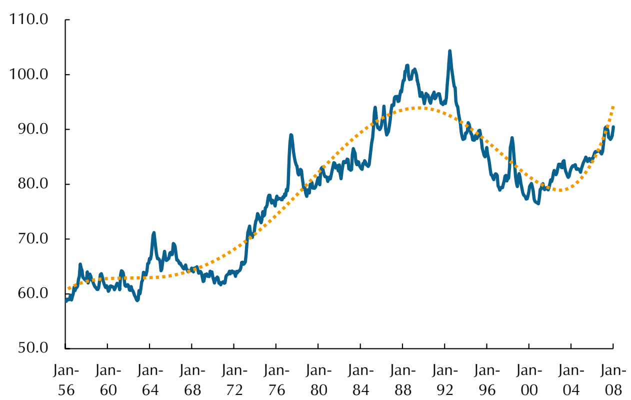
Food played a leading role in the general behavior of the CPI during 2007, as it has so far this year, due to price hikes that exceed the inflation targets set by the Bank. The current level (12%) is well above the rate in March (8.6%) and is the highest registered for this basket since February 1999 (Graph 6).

As to product type, the build-up last quarter is explained primarily by perishables, predominantly potatoes, although June also witnessed higher prices for fruits and vegetables (Graph 7 and Table 1). There also were major increases in processed food prices, although less than for perishables. Rice is one processed food that saw sharp price hikes in the last two months. Adjustments in the prices of other processed foods have been high as well, in response to rising international food prices. Other cereals, oils and fats are an example (Graph 7 and Table 1).

Milk, beef and beef substitutes are the main exception. The recent price increases for these products have been slim, compared to the major hikes witnessed during the same period last year. This tendency may be the results of a larger supply, thanks to abundant rainfall, but also to less demand-pulled pressure, both internal and external.

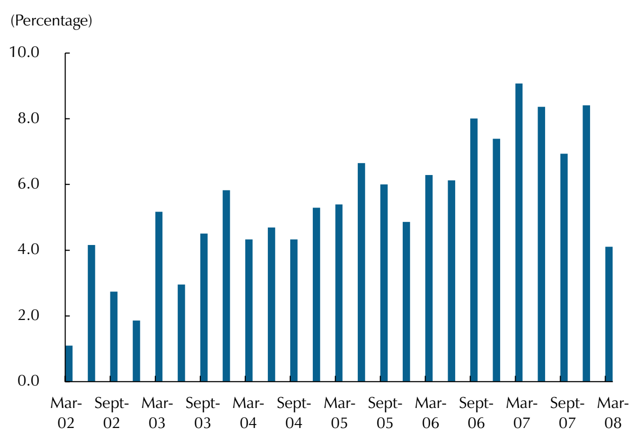
As indicated, the behavior of food prices is a worldwide phenomenon associated with sharp external demand and higher oil prices. This situation is mirrored in Colombia in an upward trend in

Graph 8
Relative Food Price Index



Source: DANE; Calculations by the Central Bank of Colombia.

Graph 9
Real Annual GDP Growth



Source: DANE; Calculations by the Central Bank of Colombia.

relative food prices linked to growing costs, which began in 2002, but gained force this year (Graph 8). Relative food prices tend to exhibit fluctuations around long-lasting trends; this heralds limited nominal price reductions in the coming months and, in general, upward pressure more towards the long term. In short, it does not respond to agricultural supply. Something similar happened in the 1970s and 1980s, when the last major upward cycle in relative food prices occurred.

C. FACTORS THAT DETERMINE INFLATION

1. Aggregate Demand

The slowdown in gross domestic product (GDP) during the first quarter of 2008 was faster than anticipated in earlier reports and more than most economic analysts expected. According to figures released by Colombia's National Bureau of Statistics (DANE), growth (excluding illicit crops) during the first three months of 2008 increased to 4.1%. This figure that contrasts with the sharp expansion witnessed during the fourth quarter (8.4%) (Graph 9).

DANE released a new GDP series that introduces several methodological changes[1] and uses the year 2000 as the basis for calculation. Given this new information, the increase in GDP registered between 2005 and 2007 (7.0% on average) was the highest in the last six decades, and the variation registered for all of 2007 (8.2%) is comparable only to the growth observed in 1978 (8.2%) and 1949 (8.7%).

The moderation in local demand was the factor during the first quarter of the year that contributed the most to the slowdown in growth. This aggregate went from 9.5% in December 2007 to 5.4% in March 2008. Even so, it is still above the respective historic average (4.6% since 1926).

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1 See Box 2 in the July 2008 edition of the *Report to Congress by the Board of Directors* (pg. 42) for a detailed presentation on the new national accounts calculated on the basis of the year 2000.

Household consumption slowed considerably during the first quarter of 2008, having gone 5.6% growth in the fourth quarter of 2007 to 3.9% in the first quarter of 2008.

Within local demand, the sharpest slowdown was in gross fixed capital formation (Table 2). This would be associated with the decline in investment in civil works executed by the public sector, as opposed to a significant cutback in private investment. Judging by the sizeable growth in dollars registered for imports of capital goods for industry (24.9% during the year to March), the healthy momentum in private investment would have continued.

Table 2
Real Annual GDP Growth by Type of Expenditure
(Percentage)

	2006	Mar-07	Jun-07	Sept-07	Dec-07	Mar-08
Final Consumption	6.8	8.1	5.8	6.0	5.5	3.8
Households	7.8	9.5	6.2	5.8	5.6	3.9
Government	3.5	3.1	4.0	6.4	5.4	3.5
Gross Capital Formation	16.8	27.2	24.2	18.5	23.0	10.3
Local demand	8.9	12.0	9.8	8.8	9.5	5.4
Total exports	9.4	8.0	7.5	11.4	21.4	15.0
Total imports	17.3	21.3	13.8	17.4	21.2	15.9
GDP	7.0	9.1	8.4	6.9	8.4	4.1

Source: DANE, Calculations by the Central Bank of Colombia

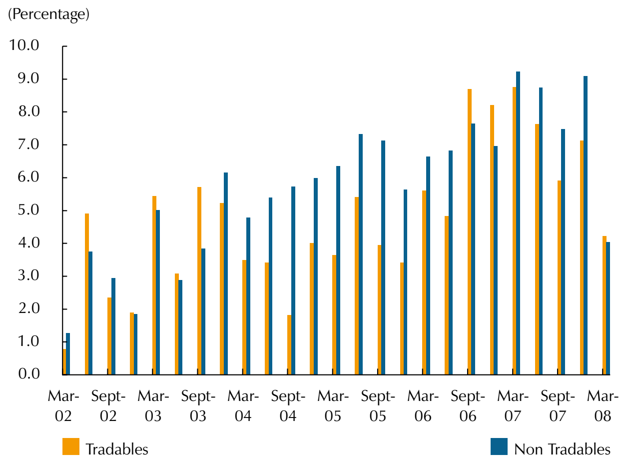
Household consumption also slowed considerably, having gone from 5.6% growth in the fourth quarter of 2007 to 3.9% in the first quarter of 2008. According to the new series (2000 base), the increase in consumption would have begun to slow as of the second quarter of 2007 (Table 2). This contrasts with earlier information, which revealed no deceleration in this aggregate during 2007.

The good momentum in real exports in pesos continued, despite appreciation in the exchange rate. Although less than in previous quarters, the annual increase by the first quarter (15%) still exceeds local demand and the average so far during the current decade (5.9%). For 2007 as a whole, the new national accounts indicate this variable grew by 12.2% (Table 2). The expansion in 2007 and early 2008 was possible, in part, thanks to strong demand from Venezuela for manufactured products and food, coupled with the increased output of mining products such as oil.

The good momentum in real exports in pesos continued during the first quarter of 2008 and was up by an annual rate of 15%.

As to supply, output in the tradable and non-tradable sectors showed less momentum. The annual growth in tradables came to 4.2% by the first quarter, which is 2.9 percentage points (pp) less compared to the fourth quarter of 2007 (Graph 10 and Table 3). Industrial manufacturing and agriculture were

Graph 10
Annual GDP Growth in Tradables and Non-tradables



Source: DANE, Calculations by the Central Bank of Colombia.

primarily responsible for the slowdown. In industry, the sectors affected the most were textiles, wood products and transport equipment. The annual increase in non-tradables was 4.0%, as opposed to 9.1% the quarter before. The decline in momentum was particularly sharp in civil works construction and commerce (Graph 10 and Table 3).

The slowdown in growth between the fourth quarter of 2007 and the first quarter of 2008 was the result of supply and demand factors, not all of which are easily quantified or necessarily induced by monetary policy Table 4 contains an estimate of the impact of the shocks that can be measured easily and have a negative impact on growth.

Table 3
Real Annual GDP Growth by Sectors
(Percentage)

	2006	2007	IV Qtr-07	I Qtr-08
Agriculture, forestry, hunting and fishing	3.6	4.5	4.8	3.8
Mining and quarries	2.2	2.3	5.6	5.2
Manufacturing industry	8.5	10.2	8.1	2.1
Electricity, gas and water	2.6	3.1	2.9	0.6
Construction	9.9	20.0	22.9	(5.7)
Buildings	7.5	1.2	5.6	25.4
Civil works	11.8	33.8	34.9	(24.5)
Commerce, repairs, restaurants & hotels	9.1	10.3	8.7	3.1
Transport, storage & communication	9.8	9.0	11.2	7.4
Financial, insurance, real estate and business service companies	5.9	6.6	7.4	7.5
Social, community and personal services	4.3	3.8	4.7	3.3
Financial intermediation, measured indirectly	6.4	7.5	7.8	3.7
Sub-total: Aggregate value	13.5	15.3	14.7	8.0
GDP	**7.0**	**8.2**	**8.4**	**4.1**
Tradables [a/]	6.8	7.3	7.1	4.2
Non-tradables	7.0	8.6	9.1	4.0

a/ It is assumed the tradable sectors include agriculture, mining and manufacturing; air, water, complementary and auxiliary transport services, and certain private services rendered to companies.
Source: DANE, Calculations by the Central Bank of Colombia

The most important of these factors is the direct effect of the decline in civil works. It may have been caused by the change in local and regional

Table 4
Estimate of Supply Shocks to First-quarter Growth in 2008

Type of Shock	Percentage
Working Days	
Maximum	0.56
Mean	0.42
Minimum	0.28
Cerromatoso	**0.10**
Civil Works	**0.75**
Export of transport material to Venezuela	**0.16**
Total effect with maximum working days	**1.57**
Total effect with mean working days	**1.43**
Total effect with minimum working days	**1.29**

Source: Calculations by the Central Bank of Colombia.

administrations, which would explain 0.75 pp of the reduction in growth.[2] A second factor was the number of working days (two) during the quarter, which was less as a result of the Easter holiday in March. In this case, the maximum direct effect would be 0.56 pp. The Cerromatoso strike was another supply shock and would have had a direct impact on GDP with 0.1 pp less growth. The other 0.16 pp would be explained by the decline in automobile sales to Venezuela.

In short, had these events not occurred, the annual variation during the first quarter would have been between 5.4% and 5.7%. It is important to point out that the four factors mentioned above have indirect effects on growth, through the spending multiplier; however, they were not estimated in the exercise.

In addition to these shocks, the Colombian economy, like the world economy, faced a major rise in production and transport costs during several quarters, thanks to sharply higher prices for oil and a number of raw materials. Such circumstances usually pertain to a negative shock to output that is often accompanied by a rise in prices (Box 1).

The reduction in civil works, fewer working days, the slowdown in exports to Venezuela and the Cerromatoso strike lowered growth by at least 1.3 pp.

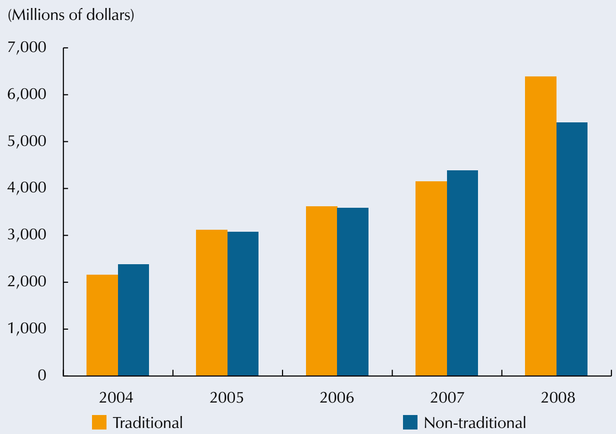
By the same token, from the standpoint of demand, the increase in food and fuel prices might be having an effect on real available household income, curbing consumption now and in the future, with the latter being due, in particular, to a loss of consumer confidence. However, this analysis does not consider the fact that higher external prices for the products Colombia exports have a positive impact on real available income.

There is also the effect of monetary policy, given the accumulated increase in interest rates and the changes in reserve requirements. The impact of monetary policy effect has been important, as concluded from the slowdown in credit, which was mentioned in Chapter II.

2 Another way to measure the impact of less spending on works is to exclude that component of the GDP, in which case, the annual variation in GDP without civil works, was 5.1% in the first quarter. In other words, when analyzed this way, the shock produced by civil works could have a 1 pp negative impact on production.

Total exports measured in dollars accelerated during the first four months of the year. In fact, their annual increase in January-April 2008 was 38%, which is more than during all of 2007 (23%). Traditional exports, which include coal, oil, ferronickel and coffee, have seen more momentum, partly because of higher international prices, which were up by an annual rate of 53.6%. Non-traditional exports also performed well, having registered 23.2% annual growth by April. This is slightly below the figure registered for all of 2007 (25.6%) (Graph A).

Graph A
Traditional and Non-traditional Exports during the Year to April



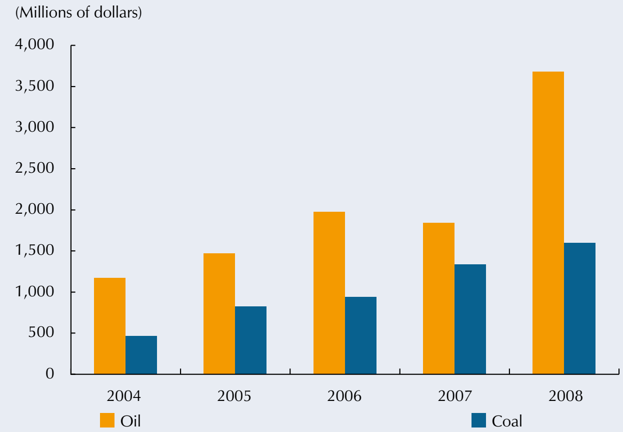
Source: DANE; Calculations by the Central Bank of Colombia

Oil has been one of the most important traditional exports, having registered an annual increase of 99.3% between January and April 2008 due to prices, but also because of an increase in the volumes being produced. Coffee sales continue to grow (38.9%), also due to higher prices and larger volumes. Coal exports were up by 20% in dollars during the period, basically as a result of better export prices (Graph B).

As to non-traditional exports, the top-performing sectors were thread, yarn and woven fabrics (81%), clothing (50%) and the chemical industry (31.7%). Transport material, which is the sector that accounts for nearly 4% of non-traditional exports, suffered a decline of almost 40% during the first quarter of the year due to the restriction on vehicle imports into Venezuela as of January 2008.

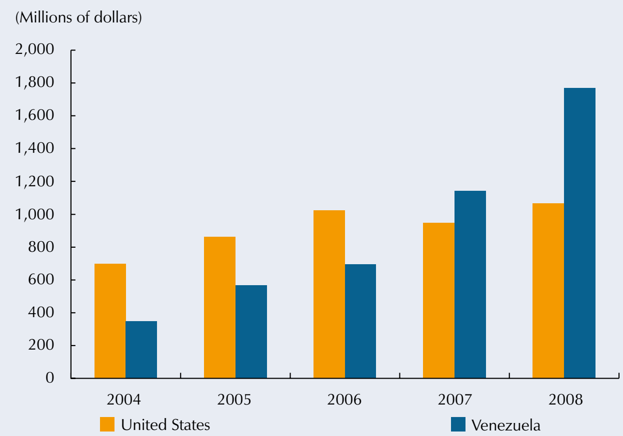
With respect to the destination of non-traditional exports, those going to the United States regained ground, after falling during several quarters. Their annual growth rate during January-April was 12.3%; transport material and machinery and equipment were the highlights. Non-traditional sales to Venezuela (which account for 32.8% of all non-traditional Colombian exports) also experienced a great deal of growth (54.9% annual), but less than was observed throughout 2007 (93%). The main sources of the increase in exports to Venezuela were yarn, thread and woven fabric (206%), clothing (173%) and the chemical industry (44%) (Graph C).

Graph B
Oil and Coal Exports during the Year to April



Source: DANE; Calculations by the Central Bank of Colombia

Graph C
Non-traditional Exports to the United States and Venezuela during the Year to April



Source: DANE; Calculations by the Central Bank of Colombia

Although the job market ceased to narrow, there are still upward risks to future wage hikes.

This being the case, much of the reduced growth at the start of the year would be due to a variety of transitory shocks. Yet, even when those shocks are discounted, growth appears to have been less than expected, possibly because of exogenous factors associated with high oil and food prices on the international market.

2. Wage Costs and the Job Market

By the second half of the year, the employment indicators suggest the job market is no longer narrowing. This could ease pressure on wages in the future. However, there is a serious risk that wages might continue to rise because of inflation expectations and the possible activation of indexing mechanisms.

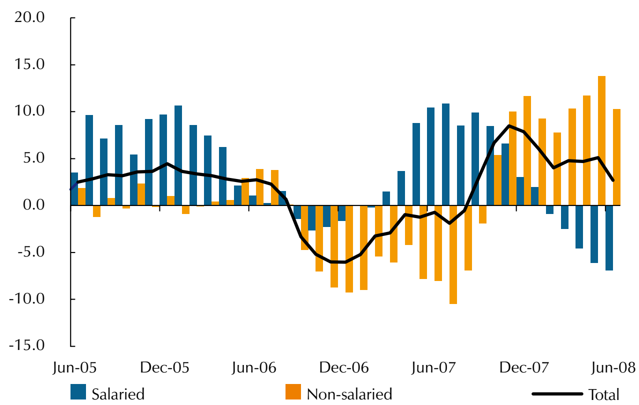
Figures from the DANE Comprehensive Household Survey (GEIH) show a continued decline in nationwide unemployment rates for the rural and municipal areas during the second quarter of the year, although not as much as in previous quarters. However, the unemployment rate for the thirteen major cities was up slightly (Table 5). At the municipal level nationwide, one sees important increases in the supply of labor measured by the global participation rate (GPR). Yet, they were less than the employment rate increases, thereby allowing for less unemployment. As to the thirteen major cities, the increase in the GPR exceeded the rise in the employment rate (Table 5).

Table 5
Job Market Indicators

	Quarter (April-May-June)						Diff. Previous Quarter 2007 and 2008
	2004	2005	2006	2007	2008	Diff. 2007 and 2008	
Global participation rate							
National	61.1	59.9	59.9	58.2	58.6	0.5	1.1
Rural area	59.0	57.1	57.3	52.1	51.4	(0.7)	2.1
Municipal areas	61.8	60.8	60.7	60.1	60.9	0.8	0.7
Thirteen Cities	62.5	62.7	62.7	61.7	62.4	0.7	0.9
Employment rate							
National	52.5	52.7	53.0	51.6	52.2	0.5	1.4
Rural area	52.9	53.1	53.6	48.1	47.5	(0.5)	2.0
Municipal areas	52.3	52.6	52.8	52.8	53.6	0.8	1.2
Thirteen cities	52.7	53.8	54.7	54.6	55.2	0.6	1.4
Unemployment rate							
National	14.1	12.0	11.5	11.2	11.1	(0.1)	(0.8)
Rural area	10.4	7.0	6.6	7.7	7.6	(0.2)	(0.1)
Municipal areas	15.3	13.5	13.0	12.2	12.0	(0.2)	(1.0)
Thirteen cities	15.7	14.1	12.8	11.5	11.6	0.1	(0.9)

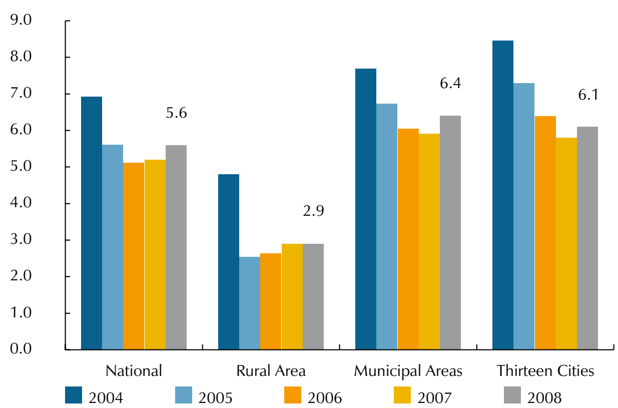
Source: DANE; Calculations by the Central Bank of Colombia.

Graph 11
Job Creation
(National Total – Third Order Moving Average)



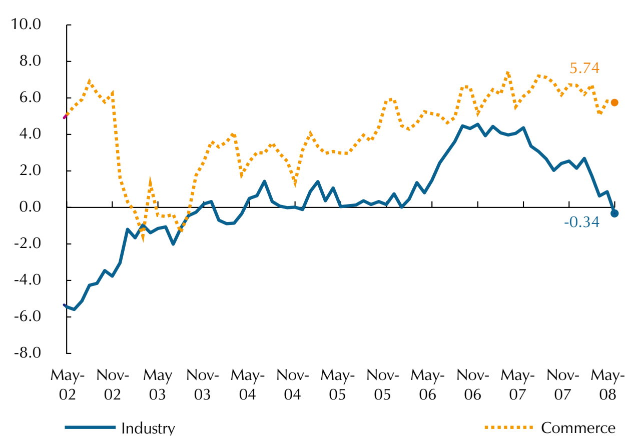
Source: DANE; Calculations by the Central Bank of Colombia.

Graph 12
Unemployment Rate (Heads of Households): April-May-June



Source: DANE; Calculations by the Central Bank of Colombia.

Graph 13
Employment in Industry and Commerce
(Annual Percentage Variation)



Source: DANE, Calculations by the Central Bank of Colombia.

The economy continued to create rural jobs during the second quarter, although not as quickly as at the end of last year and the start of 2008. The number of employed in the thirteen major cities rose at an annual rate of 3% during the period from April to June, which means approximately five hundred thousand new jobs would have been created compared to the same period in 2007. Nevertheless, it is important to note that the increase is explained entirely by the momentum in "self employment," which registered 20.6% annual growth, while salaried employment (employees in the private and public sectors) was down by 6.9% (Graph 11). This descending trend in salaried employment was also evident in the rural zones and in the intermediate municipal areas. Part of the high "self employment" rate may be the result of a correction in levels, following the methodological changes in the DANE survey as of July 2006.

Employed heads of household, which is the segment least affected by the change in method, is a clearer reflection of the moderation in pressure on the job market. The "head-of-household" unemployment rate ceased to decline and rose slightly, on average, during the last two quarters (Graph 12). The growth in unemployment was not because the labor supply increased more than the need for manpower (as in the case of the total population of the thirteen cities), but because of less employment. "Head-of-household" employment declined at an annual rate of 1% during the first half of the year; to some extent, this would reflect the slowdown in economic activity.

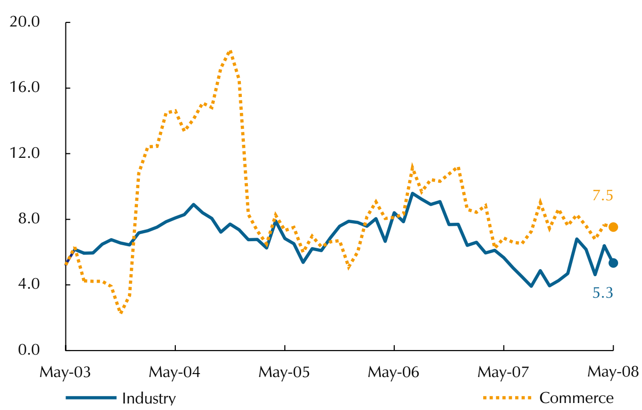
The figures from the sector surveys also show less momentum in job creation, although not as clearly as the GEIH data. The Monthly Manufacturing Sample indicates the annual increase in industrial salaried employment has slowed and registers a negative figure in May (-0.3%) for the first time in three years. Although employment in commerce continues to expand at a good rate (above 4%), it is slightly less than the growth rate in past quarters (Graph 13). On the other hand, the figures for social protection show important increases in the number of people who are now part of the social security system (Table 6). However, given the new means being used to collect information, together with added incentives to join the system, these figures may present distortions.

Table 6
Indicators of Social Security in the National Total

Subsystems	2007	2008	Cutoff Dates	Variation 2007-2008	
				Absolute	Percentage
Workers Affiliated with Family Subsidy Funds	5,041,117	5,487,373	May	446,256	8.9
Professional Risk Management Affiliates	5,796,531	6,111,187	April	314,656	5.4
Active Pension Fund Contributors (ISS + AFP)	4,985,475	5,430,056	April	444,581	8.9
ISS Pension Contributors	1,850,388	1,850,210	April	(178)	0.0
Mandatory Pension Fund Contributors	3,135,087	3,579,846	April	444,759	14.2

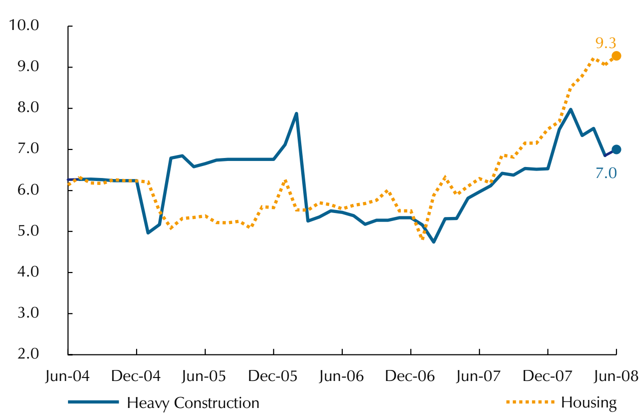
Source: Ministry of Social Protection, with data from the ISS, the Superintendent of Finance and the Family Subsidy Superintendent

Graph 14
Nominal Wage Indexes by Sector
(Annual Percentage of Growth)



Source: DANE - MMCM - MM

Graph 15
Nominal Wage Index: Heavy Construction and Housing
(Annual Variation)



Source: DANE, Calculations by the Central Bank of Colombia.

Wage growth in industry and commerce has remained relatively stable, with respective annual increases of around 5.3% and 7.5% by May (Graph 14). In contrast, wages in the construction sector continued to accelerate, particularly in the area related to home building (9.3% by June) (Graph 15). It is important to point out that wages in all these sectors are increasing at rates that exceed the inflation target for this year.

As to the rest of 2008 and particularly the early part of 2009, wages are quite likely to exert inflationary pressure, given the possibility of their being raised at high rates in response to the build-up in inflation and inflation expectations. As analyzed later in this report, the chance of businessmen passing on wage hikes to customers in the form of higher prices increases in a situation where all production costs are rising.

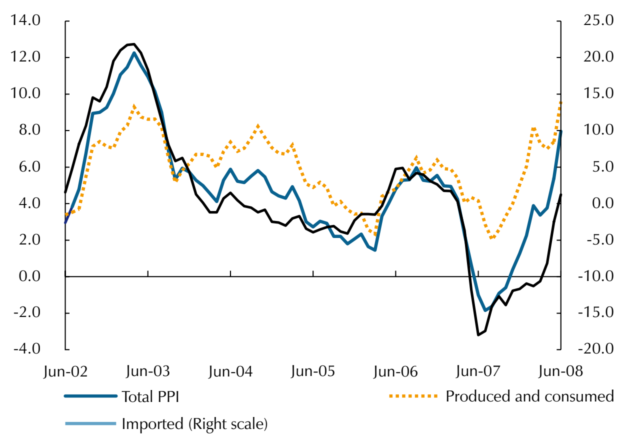
3. Other Costs

The way the PPI and other indexes have behaved suggests a significant increase in non-wage cost pressure during the second quarter of the year. Raw materials are a case in point, both national and imported, and have exerted a great deal of pressure even though the peso has appreciated.

Producer inflation (measured by the total PPI) continued to rise between April and June, reaching 8.0% in June, which is the highest it has been since August 2003 (Graph 16). A breakdown of the PPI, by origin, shows that inflation in both imported and locally produced and consumed commodities was considerably higher during the second quarter (Graph 16). Until recently, inflation in imported commodities was anchored to the low rates for total inflation resulting from the effect of the exchange rate. However, it began to contribute to the build-up in PPI inflation in recent months and, by June, registered positive annual variations for the first time since March 2007. On the other side and despite a more moderate pace, the PPI for locally produced and consumed commodities continued to accelerate and to register high increases.

A look at the PPI based on the different branches of economic activity shows the recent rise in producer inflation is due to a build-up in the industrial and agricultural PPI. The mining PPI has been stable, but does show high annual increases (above 40%) (Graph 17). The build-up in the industrial PPI, which now rounds out three consecutive quarters, is troubling because of the weight it carries in construction of the total index (77.5%).

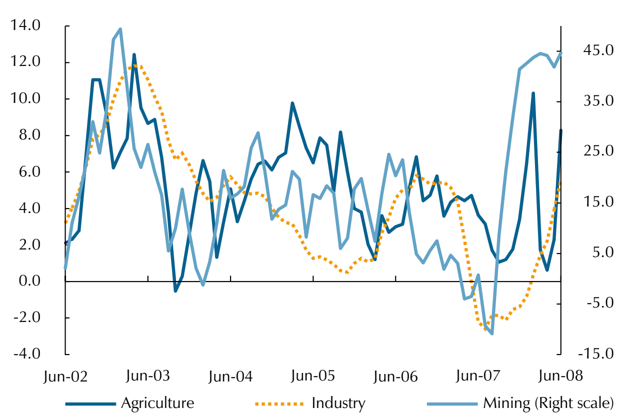
Graph 16
Total PPI and by Origin
(Annual Variation)



Source: DANE; Calculations by the Central Bank of Colombia.

A breakdown of the industrial PPI shows the higher prices in recent months have been concentrated in imported products, particularly those for intermediate consumption or raw materials (Table 7). The divisions within this group that contributed the most to quarterly industrial PPI inflation, according to the International Uniform Industrial Codes Classification (IIUCC), were the manufacture of chemical substances and products (17%) and the production of foods and beverages (11%).

Graph 17
PPI by Branches
(Annual Variation)



Source: DANE; Calculations by the Central Bank of Colombia.

The non-wage cost indexes, which are based on the PPI and other variables, and consider a weight derived from the social accounting matrices, also reflect an upward tendency in the national and imported cost components. The index that includes national cost pressures, without wages, had increased at an annual rate of 9.4% by May; the imported cost pressure index showed an annual increase of 0%, but the latest entries denote a sharp acceleration (Graph 18).

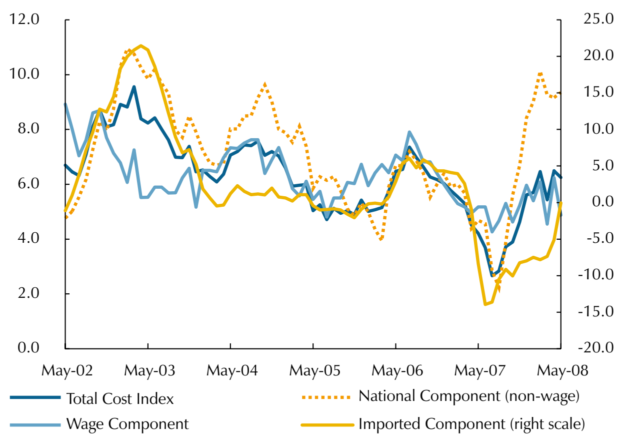
As to total costs (wage and non-wage) by production sectors, the largest increases were in public utilities

Table 7
Breakdown of the Quarterly Build-up in Industrial PPI, by Origin and Destination
(Percentage)

Description	Weight	Annual Inflation			Share in the Quarterly Build-up	
		Dec-07	Mar-08	Jun-08	At Mar-08	At Jun-08
Industrial PPI	100.0	(1.4)	1.5	5.5	100.0	100.0
Industrial PPI: produced and consumed goods	27.9	3.1	6.6	7.6	95.6	26.1
Finished consumer goods	48.7	4.5	8.1	8.8	57.4	15.2
Intermediate goods	49.5	1.7	5.4	6.5	37.7	10.8
Capital goods	1.9	1.2	2.3	2.2	0.5	0.1
Industrial PPI: imported goods	72.1	(12.9)	(12.3)	(0.7)	4.4	73.9
Finished consumer goods	24.5	(14.1)	(13.0)	(2.0)	2.0	17.2
Intermediate goods	56.4	(12.2)	(11.5)	0.7	2.9	44.2
Capital goods	19.1	(13.5)	(13.8)	(3.1)	(0.4)	12.6

Source: DANE; Calculations by the Central Bank of Colombia

Graph 18
Cost Index Based on the Social Accounting Matrix (SAM)
(Annual Variation)



Source: DANE; Calculations by the Central Bank of Colombia

and mining. Yet, there were pronounced build-ups in the other branches as well.

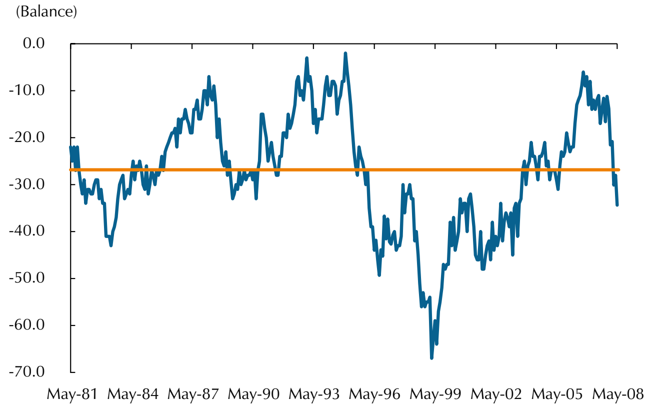
For the most part, the high cost of raw materials has not occasioned a major increase in total costs (6.2% at May, Graph 18). This is because wage hikes have been relatively stable and moderate up to now: between 5% and 7% in nominal terms for the economy as a whole.

4. Surplus Production Capacity and Demand-pulled Pressures

The tendency so far this year has been for idle production capacity in the economy to increase. Demand-pulled pressures have not continued to grow, and might even be declining. The percentage of businessmen who believe their installed capacity is insufficient in light of the demand anticipated for the next 12 months has declined since the second half of last year and is now below its historic average (Graph 19). The situation with installed capacity utilization (ICU), as measured by both the National Industrial Association (ANDI) and Fedesarrollo, is similar. According to both variables, the levels reached during the second quarter of the year are slightly above the historic averages.

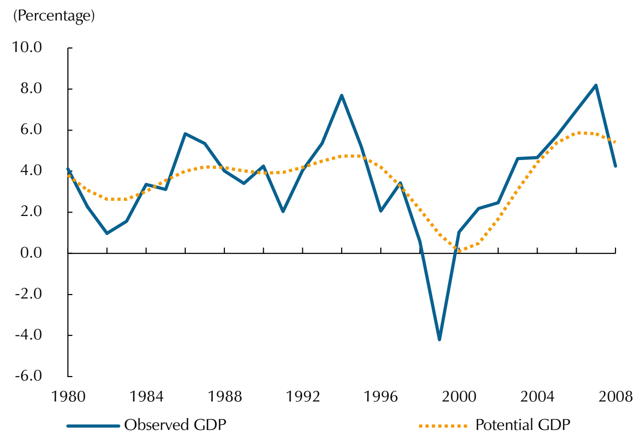
As to the job market, the halt in the downturn in the unemployment rate and the drop in salaried employment could mean less pressure on this front during

Graph 19
Installed Capacity Versus Expected Demand



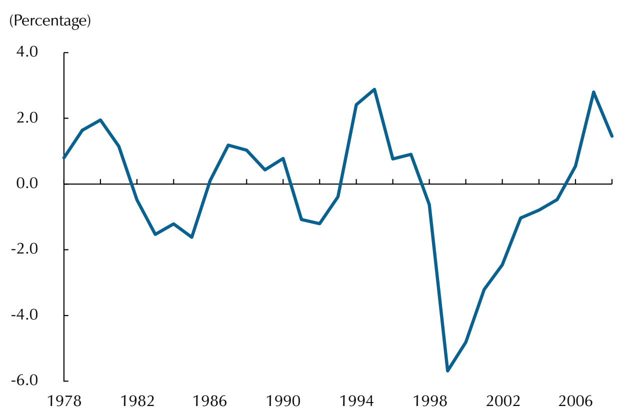
Source: Fedesarrollo.

Graph 20
Observed and Potential GDP Growth



Source: Central Bank of Colombia.

Graph 21
Output Gap



Source: Central Bank of Colombia.

the remainder of the year. Even so, by June, total employment was still on the rise and inflation expectations remained high (as will be illustrated later). This is why continuing to closely monitor the developments in these variables, labor costs and their impact on production is so important.

As suggested in the last quarterly inflation report, our central scenario shows a change in the tendency of surplus production capacity as of late 2007. The new GDP series, based on 2000, show more accumulated growth so far this decade than the series based on 1994.

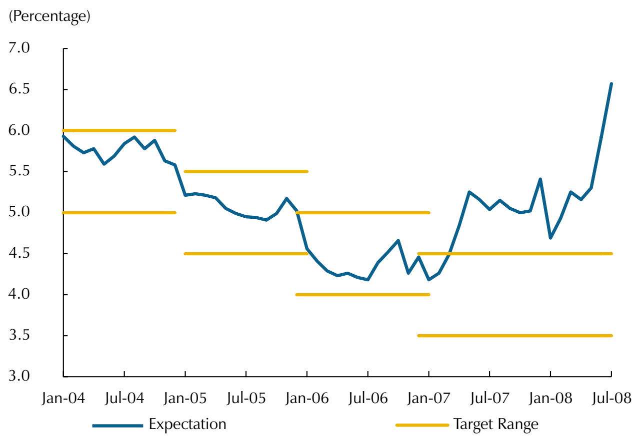
In view of the foregoing, the estimate for potential output growth during 2008 is between 5.5% and 6.0% (Graph 20), which is similar to the range contemplated in the March report. At any rate, one must not forget the Colombian economy was subjected to several supply shocks during the first quarter (strikes, fewer working days, bad weather). These would have had a negative, although temporary impact on potential growth. Based on these arguments and the latest calculations, the output gap is expected to narrow during the year, but will remain positive (Graph 21).

5. Inflation Expectations

The last few months have seen inflation expectations continue to build, pursuant to the trend in consumer inflation. Expectations for December 2008, calculated on the basis of the Central Bank's monthly survey, were for 6.7% at the start of July, which is 147 bp above the figure reported with the survey one quarter ago (Graph 22). This is more than the increase registered for total inflation during the same period (125 bp). In the case of inflation expectations with a one-year horizon, the latest figure is 5.5%, which is 70 bp more than was reported last quarter.

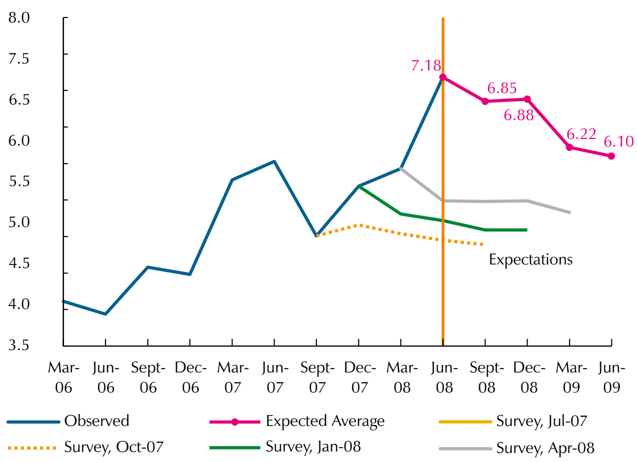
The quarterly survey done at the start of July, with a larger sample, shows inflation is expected to be 6.9% by December 2008. The expectation in the

Graph 22
Expectations of Inflation at December



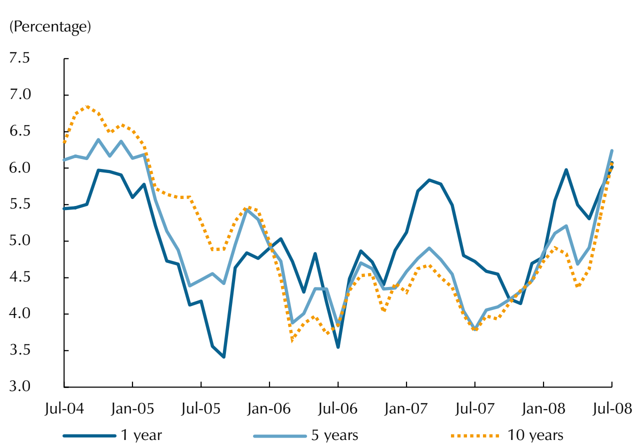
Source: Central Bank of Colombia

Graph 23
Observed and Expected Inflation (at Three, Six, Nine and Twelve Months)
(Annual Inflation)



Source: Central Bank of Colombia.

Graph 24
Breakeven Inflation at 1, 5 and 10 Years (Monthly Average)



Source: Central Bank of Colombia

April survey was 5.5%. Expected inflation for a 12-month horizon is 6.1%, compared to 5.3% a quarter ago (Graph 23). On this occasion, those surveyed believe the likelihood of being on target this year is 0.0%: it was 6.5% last quarter.

Expectations derived from the rates on fixed-rate TES and real value units (RVU) (breakeven inflation) rose again between April and until early July for securities at five and ten years. They are now above 6% (Graph 24).

In the long run, the increase in expectations is one of the biggest risks to the stability of inflation in Colombia. It can push prices increases beyond the Bank's targets during the remainder of the year and at the start of 2009, particularly if monetary policy is not entirely credible, as seems to be the case according to the surveys. This risk is greater in Colombia, since a number of formal and informal indexing mechanisms are still in effect.

High expectations and indexation can combine to prolong increases in inflation that were initially considered temporary, or were the result of relative price hikes. Negotiations on wages, especially the minimum wage (which has broad coverage in Colombia) can have an upward and permanent impact on inflation if conducted on the basis of actual inflation or expectations of inflation for the end of the year. Under those circumstances, the cost of making sure inflation converges towards the long-term targets announced by the monetary authority can increase significantly.

Box 1
HOW EXTENSIVE ARE THE MACROECONOMIC SERIES REVISIONS IN COLOMBIA?

By José David Pulido*

Monetary policy usually is developed and managed in an atmosphere of uncertainty that tends to shape the decisions taken by central banks. That context can stem from different sources, such as ignorance of the true structure of the economy, possible errors in the parametric estimates of the models, the presence of unobservable variables (e.g. expectations, output gap, etc.), and the quality of the statistical data at hand (See BIS, 2000). Moreover, when statistics bureaus announce the latest figure for any macroeconomic series, they usually revise the previously-released figures. This can change earlier analyses, thereby introducing a new source of uncertainty.

Revisions of statistical series do not mean the supplied information and the method used to process it are unreliable. Statistical series are revised to improve the quality of the data by attempting, among other things, to include better sources of data, to improve the procedures used to process it, to introduce new methods consistent with updated international standards and to correct past errors. Many countries now make it a priority to follow a revision policy that outlines best practices on the subject, as part of an effort to manage official statistics transparently (See Carson *et al.*, 2004). The purpose of this article is to estimate just how significant the revisions of Colombia's principal macroeconomic series are and to compare their magnitude to that of other countries.

In formal terms, a revision (R_t) is defined as the difference between the latest (U_t) and the first (P_t) statistic published for a particular period (*t*); that is:

$$R_t = U_t - P_t \qquad \text{(R1.1)}$$

On the basis of this definition, a variety of statistical criteria can be applied to assess and compare the magnitude of a revision. This article presents the results obtained with one such criterion: mean revision, which is given by the simple arithmetic average of the revisions for a specific number (*h*) of periods ahead; that is:[1]

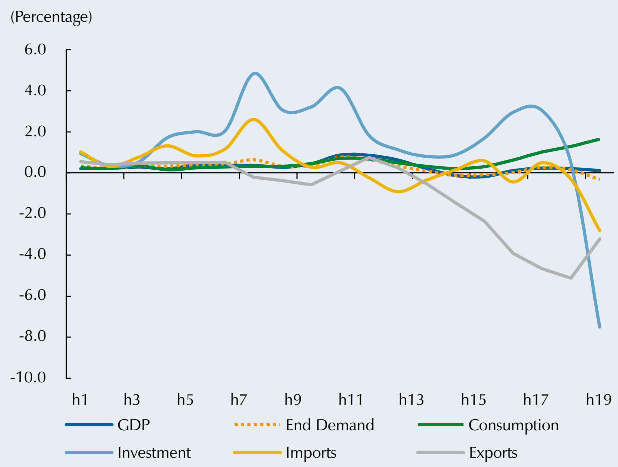
$$\text{Mean Revision (MR)} = \frac{1}{n}\sum_{t=1}^{n}(U_t - P_t) = \frac{1}{n}\sum_{t=1}^{n} R_t \qquad \text{(R1.2)}$$

where *n* is the number of observations.

The revisions of GDP and GDP components, in DANE's quarterly publications, were assessed, on both the supply and demand side, with data published from 2002 to 2007 on the aforementioned series since the first quarter of 1994.[2] Several different growth rates were considered (annual 12-month cumulative, annualized quarterly, annual year-to-date). However, due to space, only the results of means revisions with regard to annual growth are reported here.

Graph B1.1 shows the evolution of mean revisions with regard to annual growth for the six series that comprise the demand-side of GDP, pursuant to the *h* number of periods ahead in which it is estimated. For example, *h*1 is the simple arithmetic average of the one-quarter-ahead revisions; that is, the average difference between the announced growth rates and those listed in the publication immediately thereafter, while *h*4 indicates the same average difference, but one year after the series is published. As illustrated, the se-

Graph B1.1
Mean Revision for Annual Growth:
GDP by Demand



Source: DANE; author's calculations.

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1 This statistic, together with several others that were also assessed, but the results are not shown (mean absolute revision, root mean square revision, relative mean absolute revision and relative root mean square revision), are commonly used to assess forecast errors. They are applied in this context to quantify the extent of the revisions.

2 This does not include the revisions done as a result of changes in the GDP base, since the period in question is the same.

ries with the most significant revisions in terms of growth is the one for investment, followed by exports and imports. In contrast, the series with the least extensive revisions is that of GDP, together with end demand.

The values for the one-quarter-ahead MR and the one, two and three years ahead MR for these series are listed in Table B1.1. For example, at one quarter, the GDP tends to be revised upward or downward by 0.21 pp, on average, with respect to the value announced initially. At two years, the revision is 0.27 pp. In general, the figures show the investment and GDP series are the ones with the most and least variation, in that order, at one and two years after publication. We can see this arrangement is maintained, for the most part, regardless of the growth rate being assessed or with any other statistic that quantifies the magnitude of the revisions.[3]

Table B1.1
MR Values for Different *h*

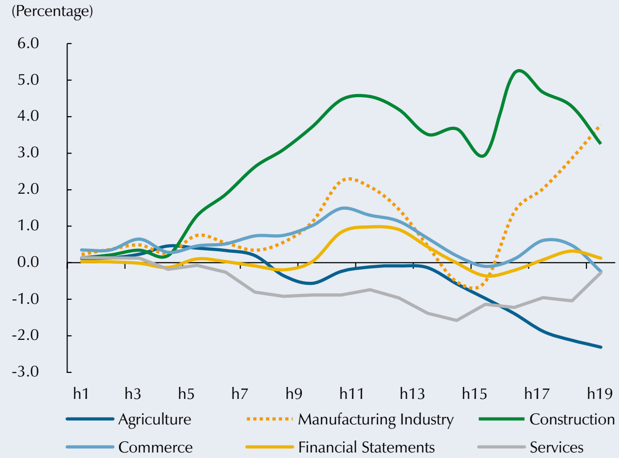
Serie	*h* = 1	*h* = 4	*h* = 8	*h* = 12
GDP	0.21	0.19	0.27	0.62
End Demand	0.33	0.33	0.33	0.34
Consumption	0.25	0.16	0.32	0.48
Investment	0.94	1.71	3.07	1.13
Imports	1.01	1.31	1.08	-0.92
Exports	0.54	0.49	-0.38	0.25

Source: DANE; author's calculations

It also is possible to demonstrate that annual 12-month cumulative growth for the series analyzed is the least revised indicator, while annualized quarterly growth is the one that would vary the most, as new publications appear. This assessment is important when attempting to determine which of the annual growth rates is most reliable.

The same analysis was done for the series comprising the supply-side of GDP. Graph B1.2 shows the evolution of mean revisions with respect to annual growth for the series analyzed, while Table B1.2 shows the values for the horizons in question. On average, the GDP series for the construction sector display the largest revisions and financial GDP, the least. (This is not surprising, as the financial GDP series are constructed with financial data and information from bank balance sheets, which are not revised). The conclusion is the same when any other annual growth rate or statistic is used. Again, it is possible to verify that the least revised growth rate for all these series, and with the different statistics, is the 12-month cumulative rate

Graph B1.2
Mean Revision for Annual Growth: Supply-side GDP



Source: DANE; author's calculations

Table B1.2
MR Values for Different *h*

Serie	*h* = 1	*h* = 4	*h* = 8	*h* = 12
Agriculture	0.11	0.46	-0.35	-0.09
Manufacturing Industry	0.23	0.26	0.56	1.46
Construction	0.13	0.20	3.10	4.20
Commerce	0.35	0.29	0.75	1.14
Financial Statements	0.03	-0.13	-0.19	0.91
Services	0.14	-0.18	-0.92	-0.96

Source: DANE; author's calculations

For a better understanding of the magnitude of these revisions, in contrast to those of other countries, Graph B1.3 offers a comparison between the Colombian mean revisions and those of several industrialized countries for the most and least revised series in Colombia (investment and GDP, respectively), along with a comparison of the mean spectrum of revisions (consumption) for one, four and eight quarters ahead.[4]

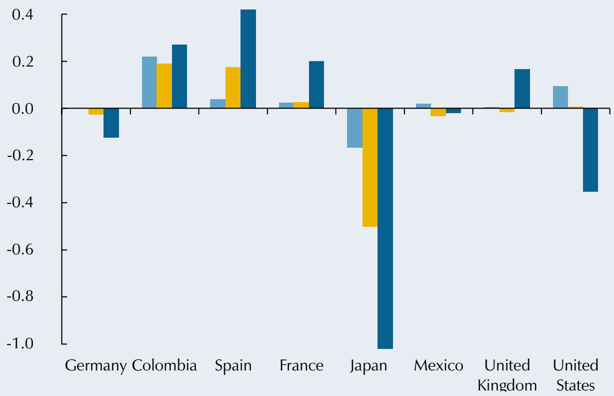
The revisions of the Colombian GDP and consumption series were found to be similar in magnitude to those of the world's major economies. In the case of GDP, the Colombian revisions after two years are of less magnitude than those of the statistics bureaus in Japan, Spain and the United States. As to consumption, the adjustments in Colombia are less than those of the statistics bureaus in Germany, Spain, Japan and Mexico, after the same time period. It should be noted that,

3 Readers may contact the author at jpulidpi@banrep.gov.co to request a copy of the calculations.

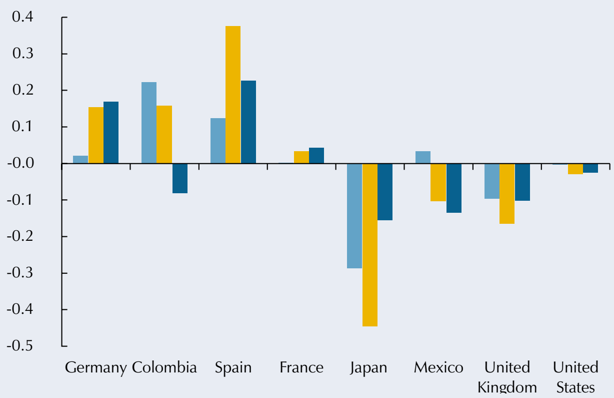
4 For these comparisons, the author used the database "Main Economic Indicators Original Release Data and Revisions Database" of the Organization for Economic Cooperation and Development (OECD) and its revision assessment software (see Mckensie, 2006).

Graph B1.3
MR Values for:

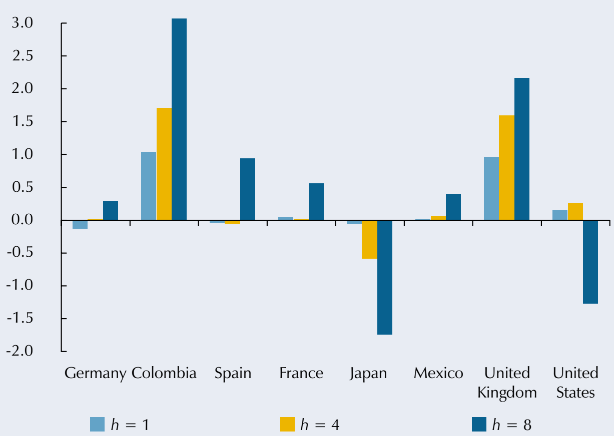
A. GDP According to Different Periods Ahead



B. Consumption According to Different Periods Ahead



C. Investment According to Different Periods Ahead



Note: *h*: quarters ahead
Sources: DANE and OECD; author's calculations

after one-quarter ahead, the Colombian revisions are larger than those of the countries to which they are compared. On the other hand, the most revised Colombian series (i.e. investment) also has larger revisions than those of the countries analyzed, regardless of the number of quarters examined ahead.

In conclusion, in the Colombian macroeconomic series with relatively low revisions (e.g. GDP and consumption), the average magnitude of those revisions is similar to those of the major international statistics bureaus. In contrast, those that do change to a significant degree as new publications appear (e.g. investment), undergo more extensive revisions than those of other countries.

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Carson, C., S. Khawaja and T. Morrison. T. "Revisions of Policy for Official Statistics: A Matter of Governance." Working Document No. 87, International Monetary Fund, 2004.

Mckensie, R. "Performing Revisions and Real-time Data Analysis." *Statistics Brief* No.12, OCDE, 2006.

II. FINANCIAL MARKETS

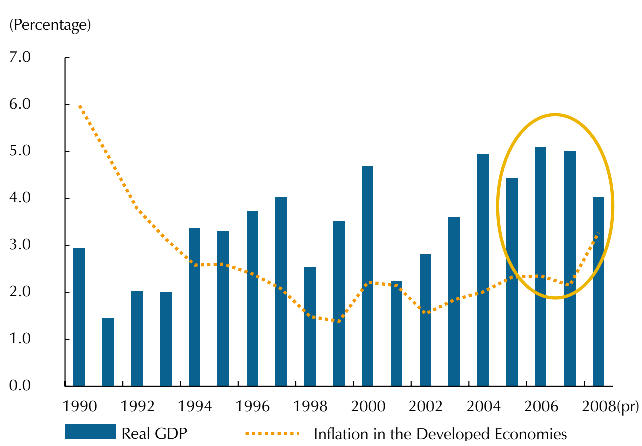
The capital markets are still volatile, due to the sharp slowdown in output in the developed countries, accompanied by higher world inflation.

Although emerging risk premiums increased last quarter, their reaction was less than during previous episodes of financial stress.

A number of central banks in emerging market economies raised their benchmark interest rates in response to inflationary pressures.

In Colombia, interest rates in the banking system have stabilized since April. Simultaneously, credit continued to slow, but at an increasingly reduced speed.

Graph 25
Real Growth in World GDP and Inflation in the Developed Economies



(pr) Preliminary
Source: WEO-IMF

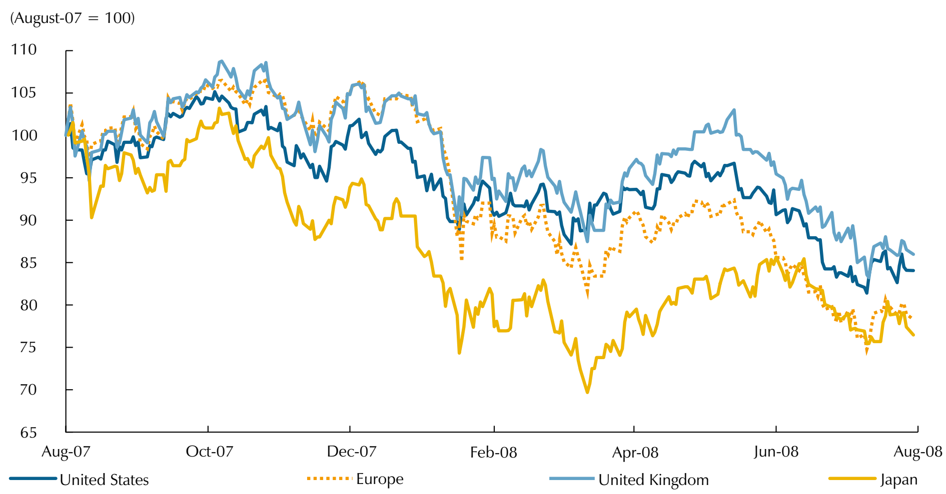
A. THE INTERNATIONAL CONTEXT

The recent situation with respect to international capital markets is linked to the dilemma posed by a more pronounced global economic slowdown than was forecast in recent quarters, coupled with a sharp rise in inflation the world over. For most countries, the results for the first quarter show a level of economic activity that is less than in 2007 and below the average for the last few years (Graph 25). Even so, a number of central banks have begun to tighten their monetary policies in view of the inflationary pressures that have emerged, primarily as a result of higher food and energy prices on the international market.

Although financial conditions improved a bit during the second quarter, thanks to the liquidity provided by the Fed, this trend was not fully consolidated.

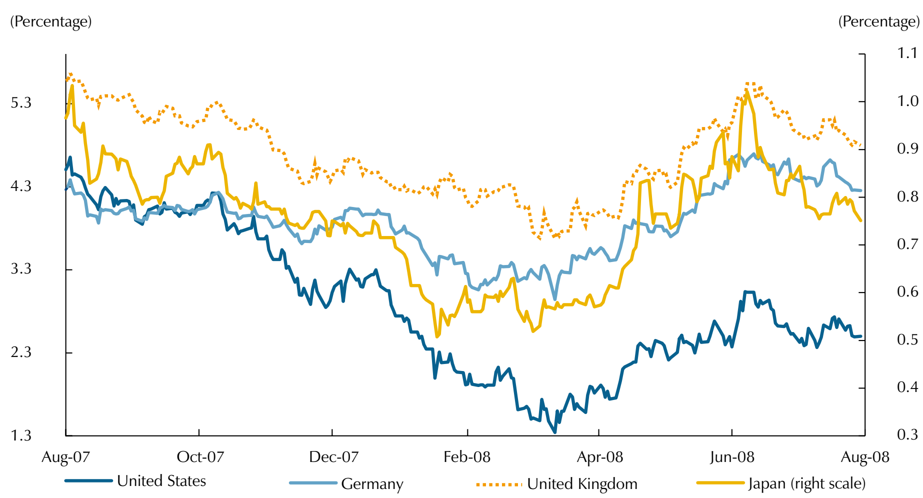
This situation has substantially lowered prices for traditional high-yield assets the world over, such as corporate stocks and bonds, given fears about the financial system's stability and due to reductions in economic activity (Graph 26). Low risk, low yield assets such as the short-term sovereign bonds of the various developed economies have lost value as well, owing to expectations that central banks will raise interest rates in response to increased inflationary pressures. There was a tendency for the rates on these bonds to rise during the second quarter of the year, when those pressures became more evident (Graph 27). These short-term sovereign assets usually maintain their value during times of limited economic growth.

Graph 26
Stock Market Indexes in Developed Countries



Source: Bloomberg.

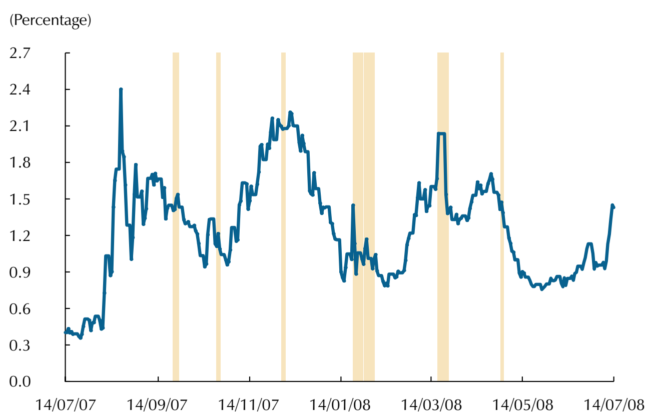
Graph 27
Rates on Two-year Bonds in the Developed Countries



Source: Bloomberg.

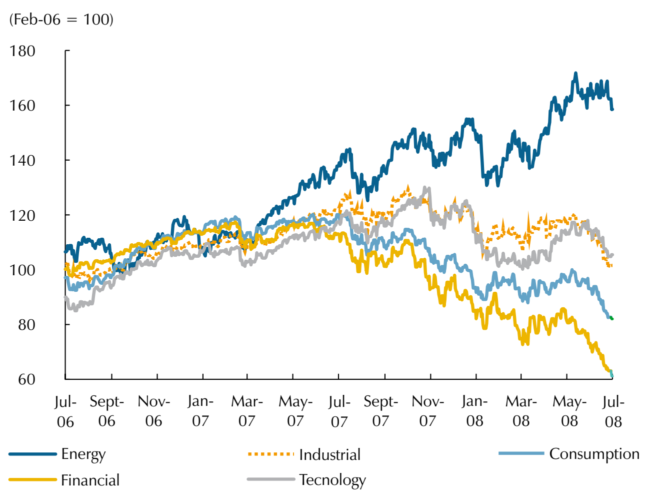
Although financial conditions in the United States improved slightly during the second quarter, thanks to liquidity provided by the US Federal Reserve Bank (the Fed), this tendency was not fully consolidated. At the time this report was written, financial institutions continued to be battered by the mortgage crisis, which has affected the two largest government-backed institutions serving the home loan market in the United States (Fannie Mae and Freddie Mac). These institutions, which issue mortgage-backed securities, currently guarantee 50% of the residential mortgage portfolio in that country.

Graph 28
Interbank Market, Libor Rates Compared to the Three-month Treasury Bill



Sources: United States Federal Reserve Bank and Bloomberg

Graph 29
Industrial Groups in the United States
(MSCI Stock Price Index)



Source: Bloomberg.

These problems have sparked new liquidity pressures in the US interbank market, as indicated by the growing difference between the cost of borrowing from the Treasury and from commercial banks (Graph 28). Stock indexes are down sharply as well, with reductions that extend beyond financials and into to the productive sector (except for energy stocks) (Graph 29). The explanation can be found in declining corporate earnings amid an atmosphere marked by rising costs for input, tighter credit and falling demand.

The slowdown in economic growth in the industrialized countries[3] has affected emerging financial markets to different degrees. As in the more developed countries, inflationary pressures also have influenced the stance of most central banks in emerging market economies.

A look at the behavior of sovereign credit default swaps (CDS)[4] is one way to analyze how assets in emerging market economies are responding to the current shocks. These credit derivative products suggest an increase in the risk of default on government bonds in Latin America; however, that risk is still low compared to what it was during periods of financial stress in years past, such as 2004 (Graph 30).

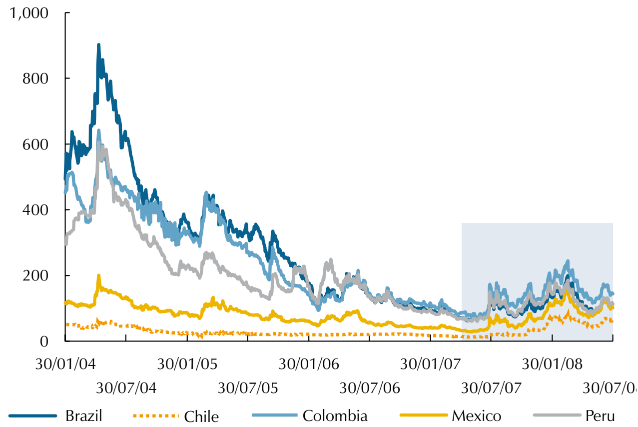
In the case of Colombia, the increase in the sovereign risk premium associated with CDS during the past year is more than it has been for other countries, such as Peru and Brazil. Part of the explanation might be the fact that those countries have seen their long-tern external debt raised to investment grade.

3 Discussed further in the next chapter.

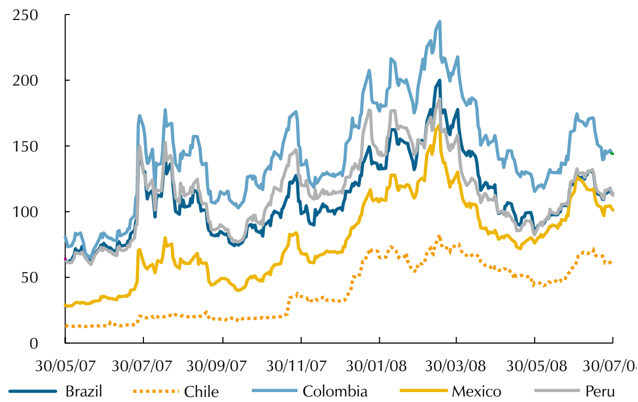
4 This instrument guarantees payment to the buyer, if the bond issuer defaults.

Graph 30
Risk Premium for Latin America

A. CDS at five years, Latin America, 2004-2008

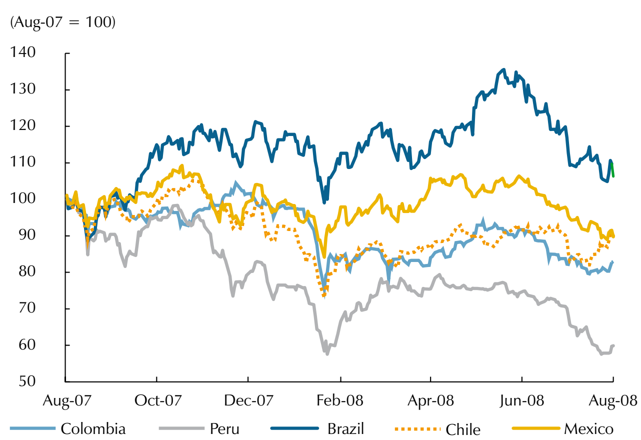


B. CDS at five years, Latin America, May-07 to Jul-08



Source: Bloomberg.

Graph 31
The Stock Market in Latin America



Source: Bloomberg.

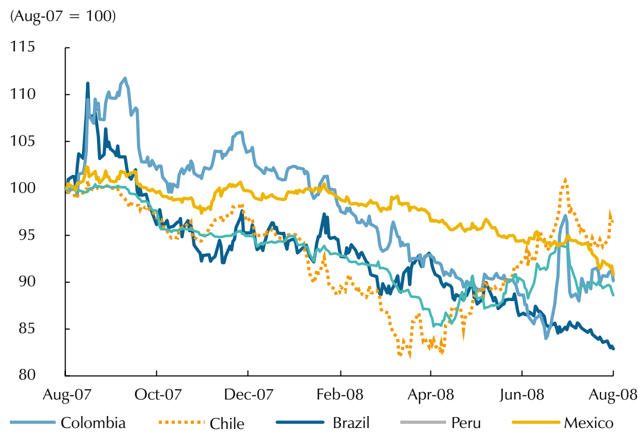
This has not happened to the Colombian debt. As to the variable income market in Latin America, the major stock exchanges have been volatile and show no definite trend. (Graph 31). Sharp drops were observed in Brazil and Peru between April and the first weeks of July, but they came on the heels of historically high levels during earlier quarters.

With respect to US dollar exchange rates, the trend towards appreciation in recent years was partly reversed during the last few months. Some of the turn around is due to the international reserves accumulated by a number of the region's central banks, as is the case in Chile, Peru and Colombia. Another contributing factor, according to some analysts, is the growing uncertainty sparked by some of the other policy measures central banks have implemented with respect foreign exchange. The increase in exchange rate volatility is a reflection of that situation. However, the region's currencies remain strong. This fact continues to be related to higher prices for raw materials and their impact on foreign direct investment, coupled with a weaker dollar worldwide.

In the Colombian case, the Central Bank has purchased US$963 million (m) in foreign currency so far this year, including US$513 m in call options and US$450 m in put options. Moreover, at the end of June, it announced a new exchange-market intervention mechanism by ordering the daily accumulation of US$20 m through direct purchase auctions to be conducted during the remainder of the year.[5] As a result, the US dollar exchange rate in Colombia has not appreciated since mid-June and has been fluctuating at around Col$1.780 per dollar (Graph32). Accordingly, nominal annual appreciation between the average at December 2007 and the average at June of this year rose to 13.1%.

5 US$2.4 billion will be accumulated this way between July and December, bringing the total purchase of foreign currency to nearly US$3.5 billion for the year as a whole.

Graph 32
US Dollar Exchange Rate in Latin America



Source: Bloomberg.

B. LOCAL FINANCIAL VARIABLES

In a situation with inflation-targeting, where the central bank's benchmark rate is the monetary policy instrument, all other financial variables, such as monetary aggregates, loans and market interest rates, tend to reflect the monetary policy stance taken by the central bank. In other words, any increase (reduction) in the central bank's interest rate affects interest rates on the market, in which case agents tend to rearrange the composition of their investment portfolios in favor of short (long) term assets with more yield and to reduce (increase) their demand for credit.

The Central Bank of Colombia has raised the one-day repo interest rate nineteen times (25 bp each) since April 2006. This has created a number of consequences, such as higher interest rates on the market and less growth in the major monetary aggregates and credit. However, during the second quarter of this year, which saw no change in the benchmark rate, borrowing and deposit rates were relatively stable and even declined in real terms, due to higher inflation. Loan portfolio growth continued to slow during that period, although not as quickly, while the annual increase in M3 was relatively stable at levels above the increase in nominal GDP estimated for this year.

Three internal events could feasibly affect the performance of financial variables by the third quarter of 2008. One is the benchmark interest rate hike in July, which would be passed on to market lending and deposit rates. Another factor is the usury rate reduction decreed by the Superintendent of Finance,[6] which will create a bottom limit on credit card interest rates.[7] Finally, the elimination of marginal reserve requirements and the increase in ordinary reserve requirements, together with new provisions on the accumulation of international reserves, may end up generating a shift in the financial system's liabilities towards those with lower reserve requirements.

2. Monetary Aggregates and Deposits

Base money, which is the source of primary liquidity in the economy, declined by Col$3,302 billion (b) between January and June. At June, this implied 15.1%

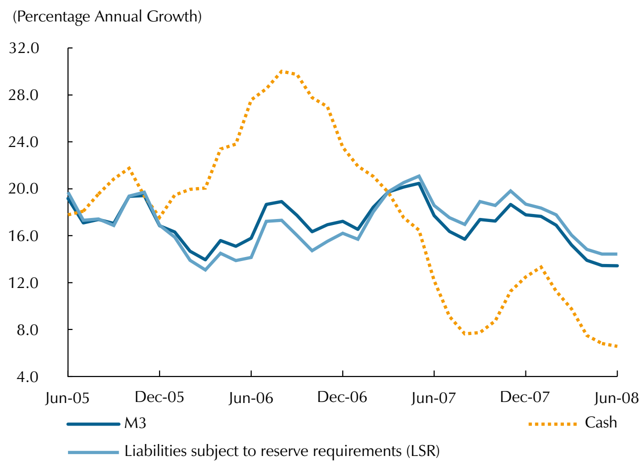
6 The rate will drop 62 bp next quarter from 32.88% to 32.27%. See External Circular No. 1011 released by the National Office of the Superintendent of Financial Institutions on June 27, 2008.

7 The new limit might not affect the retail rate, as the margin between it and the usury rate has grown in recent months.

annual growth, which is equivalent to 8.4% in real terms. The contraction in base money during the first half of the year was mainly due to larger government deposits (Col$5,331 billion), fewer repos (Col$837 billion) and TES sales and maturities (Col$1,128 billion). Those operations were offset, in part, by the added supply of liquidity originating with the purchase of foreign currency by the Central Bank (Col$1,851 billion) and with profits transferred to the government (Col$1,415 billion).[8]

The demand for cash, which is dependent upon the amount of money private citizens and companies decide to use in their commercial transactions, continued to decline, registering an annual growth rate of 6.8% by June, as opposed to 10.6% a year earlier (Graph 33). Factors such as the increase in interest rates and inflation, which raise the opportunity cost of keeping money in cash, contributed to the slowdown.

Graph 33
Monetary Aggregates and Deposits



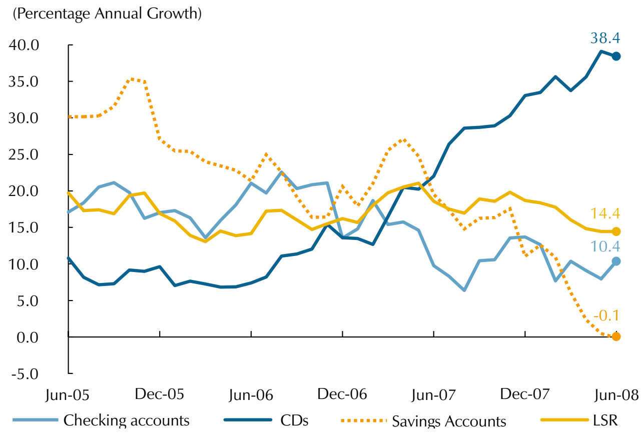
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

The annual increase in bank reserves, which are the other component of base money, was 10.3% by June, having been 10.6% a year ago. As explained in past editions of this report, there has been a build-up in these reserves since mid-2007, primarily due to the imposition of marginal reserve requirements. However, in recent months, their increase has slowed.

Deposits, or bank liabilities subject to reserve requirements (LSR), were the major source of funding for credit institutions during the past year, but now demonstrate signs of deceleration. Their annual increase in May and June came to 14.4%, following 16.0% in March. Owing to the difference in reserve requirements generated by the introduction of a marginal reserve (in May 2007), financial institutions have been more aggressive in seeking deposits with lower reserve requirements (CDs and bonds) compared to those with higher ones (savings and current accounts). Accordingly, the annual increase in CDs was 38.4% by June, while saving deposits registered negative growth (-0.11%) (Graphs 33 and 34). The tendency in M3 was determined by the behavior of cash and LSR, which grew at the same annual rate (13.4%) between May and June.

8 Another Col$729 billion in expansionary operations were associated with fewer debt deposits, external portfolio investments and other movement generated by the Central Bank's income balance.

Graph 34
Total Deposits and Their Principal Components



Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

On June 20 of this year, the Board of Directors of the Central Bank of Colombia (BDBR) eliminated the marginal reserve requirement and raised the ordinary reserve requirement to compensate for the permanent liquidity that would be generated by the decision to accumulate international reserves during the second quarter of 2008 (Table 8). In fact, to reduce the country's external vulnerability, the BDBR decided the Central Bank would purchase US$20 million daily until the end of the year, through competitive auctions. It also agreed to suspend monthly purchases of US$150 million through options auctions.

Table 8
Change in Reserve Requirements
(Percentage)

	Current Reserve Requirements		Reserve Requirements Effective as of September 2008	
	Ordinary	Marginal	Ordinario	Marginal
Checking Accounts	8.3	27.0	11.5	0.0
Savings Accounts	8.3	27.0	11.5	0.0
Other Sight Deposits	8.3	27.0	11.5	0.0
CDs under 18 Months	2.5	5.0	6.0	0.0
Bonds under 18 Months	2.5	5.0	6.0	0.0
CDs over 18 Months	0.0	0.0	0.0	0.0
Bonds over 18 Months	0.0	0.0	0.0	0.0

Source: Central Bank of Colombia

3. Credit

Loan portfolio growth in domestic currency continued to slow last quarter. The annual increase by June (19.6%) was 2.3 pp less than by March. However, as indicated in the last edition of this report, the tendency towards a lower growth rate has become less pronounced (Table 9).

Table 9
Total Gross Portfolio with Leasing

	Annual Variation	Change (Basis Points)
Mar-07	37.21	114
Jun-07	32.89	(432)
Sept-07	28.16	(472)
Dic-07	24.61	(355)
Mar-08	21.88	(273)
Jun-08	19.57	(231)

Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

As to the different types of loans, retail credit continued to experience the biggest reduction in growth, having increased at an annual rate of 20.6% by June, which is 5.5 pp less than the quarter before. The commercial loan portfolio also slowed during the quarter, but not as much, registering an annual increase of 19.7%. Growth in the mortgage loan portfolio seems to have stabilized at an annual rate of 16% (Table 10).

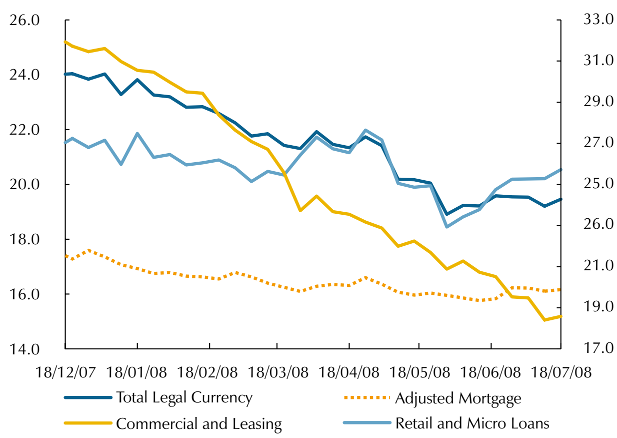
Table 10
Local Currency Loan Portfolio, by Use

	Retail and Micro Credit		Commercial and leasing		Mortgage Loans	
	Annual Variation	Change (basis points)	Annual Variation	Change (basis points)	Annual Variation	Change (basis points)
Mar-07	47.02	(105)	38.08	77	13.49	488
Jun-07	44.27	(275)	30.83	(724)	17.25	376
Sept-07	39.41	(487)	24.67	(616)	19.04	178
Dic-07	32.56	(685)	22.12	(255)	17.73	(130)
Mar-08	26.14	(642)	20.74	(138)	16.74	(100)
Jun-08	20.64	(550)	19.67	(107)	16.12	(62)

Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia.

Graph 35
Gross Portfolio in Local Currency with Leasing

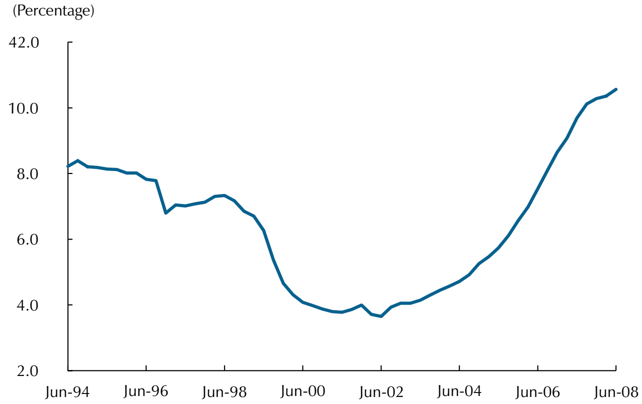
(Annual Variations in Weekly Data)



Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

Graph 36
Retail and Micro Loan Portfolio as a Share of GDP

(Percentage)



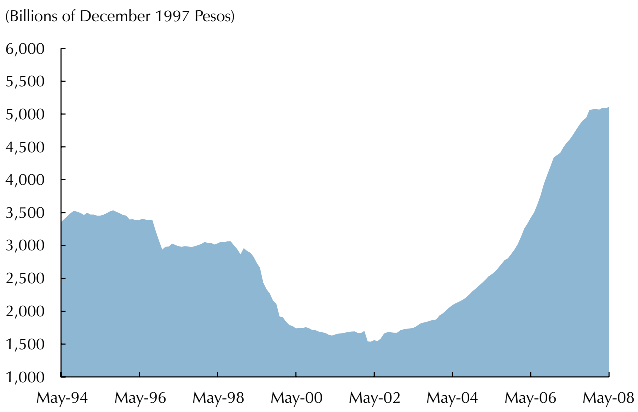
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

The latest information, which includes the first two weeks of July, suggests the slowdown in total gross loan portfolio growth could be interrupted, judging by what happened with the commercial and mortgage loan portfolios. There was a six-week acceleration cumulative in the commercial loan portfolio, which raised its annual growth rate from 18.4% to 20.5%. The same was true of the mortgage loan portfolio as of mid-June, which went from an increase of 15.8% to 16.2%. The retail loan portfolio continued to see 19.0% growth. As a result of these trends, there has been a slight build-up in the total gross loan portfolio, which registered 19.5% annual growth at mid-July as opposed to 19% at the end of May (Graph 35).

The various econometric exercises used to extract the tendency in the total gross loan portfolio suggest this variable might stabilize towards the second half of the year, at annual growth rates near 18%. The figure is similar (18%) when it is assumed the pace of disbursements during the second quarter with respect to the different types of loans will continue throughout the remainder of the year. Retail loan portfolio growth, in particular, would be 16.5%.

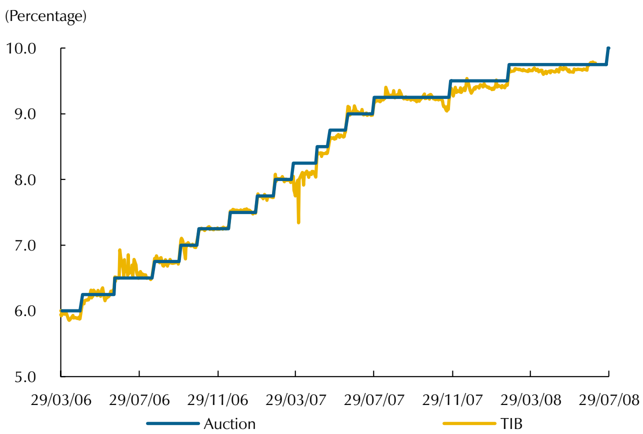
Finally, as in past editions, this report also draws attention to the extensive levels of financing for consumption. The outstanding retail loan portfolio accounts for 10.6% of GDP, which is 2.2 pp more than the highest share on record during the past decade,

Graph 37
Real Retail and Micro-Loan Portfolio Per Capita Relative to the Number of Employed



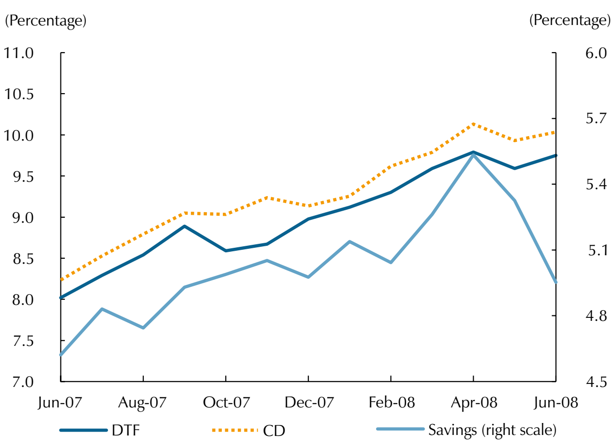
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

Graph 38
Central Bank Repo Auction and Interbank Interest Rates (TIB), 2006-2008 [a/]



a/ The figures pertain to data on working days. The last figure is for July 29, 2008.
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

Graph 39
CDT, DTF and Savings



Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

when there was considerable growth in lending (Graph 36). Consumer lending relative to the number of employed shows a level of indebtedness superior (by 70%) to the high point witnessed during the pre-crisis years in the nineties (Graph 37). Accompanying these levels is an increase in arrears, which came to 7.1% of the retail loan portfolio extended in April; the proportion a year earlier was 5%.

3. Interest Rates

The intervention rate set by the Central Bank of Colombia was held steady at 9.75% during the second quarter of 2008. Later, on July 25, the BDBR ruled a new 25 bp hike, placing the intervention rate at 10%. This last increase brings the accumulated rate hike to 400 bp since April 2008, when the Bank began to change the stance of its monetary policy.[9]

As expected, the interbank rate (TIB) has followed developments in the policy rate with respect to magnitude, degree and pause, accumulating a variation similar to that of the benchmark rate (Graph 38). Interest rates on deposits and lending in the banking system remained relative stable last quarter and were down in real terms, due to higher inflation.

Monthly average interest rates on deposits in April reached a high for the year: total certificates of deposit, 10.13%, DTF, 9.79% and savings deposits, 5.53%. The first two fluctuated around these levels between May and June, with 18 bp and 15 bp respective average volatility, while the interest rate on savings deposits accumulated a drop of 58 bp during the same period (Graph 39).

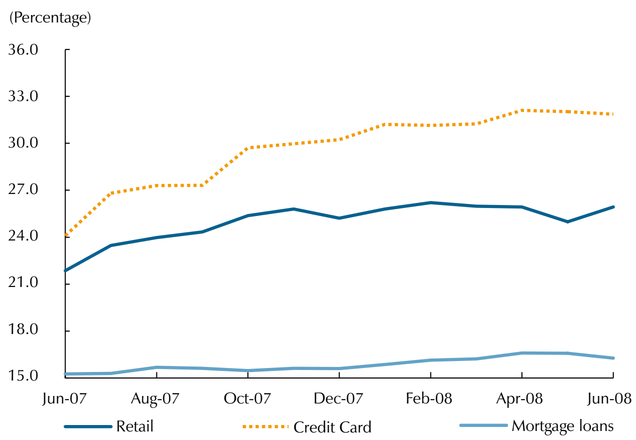
As to lending rates, some reached their highest levels for the year in March; others did so in April: credit card lending, 32.11% (April), retail loans, 25.98% (March), ordinary loans, 17.78% (April), mortgage loans, 16.59% (April), preferential loans, 14.69% (March)

9 There have been sixteen rate hikes of 25 points each.

and treasury loans, 13.64% (April). The rates on retail and preferential loans were the most volatile (64 bp and 42 bp, respectively) (Graphs 40 and 41).

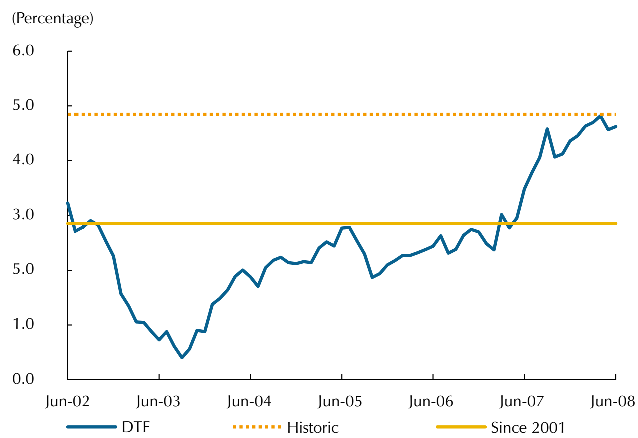
The relative stability witnessed in nominal lending and deposit rates over the last three months and the increase in inflation during the same period resulted in a drop in real interest rates. The average lending rate calculated by the Central Bank of Colombia[10] for the period between April and June was down by 67 bp (from 12.29% to 11.61%), which is below the historic average calculated since 1986 (12.42%). The DTF met a similar fate. It dropped 20 bp during the period from April to June (from 4.82% to 4.62%) and also fell below its historic average (4.85%) (Graphs 42 and 43).

Graph 40
Interest Rates on the Household Loan Portfolio



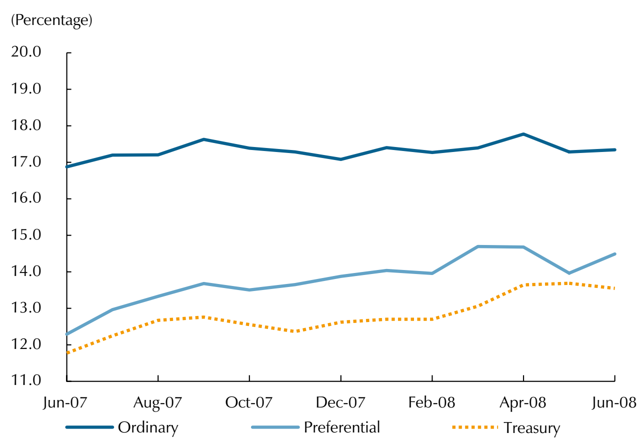
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

Graph 42
Real DTF



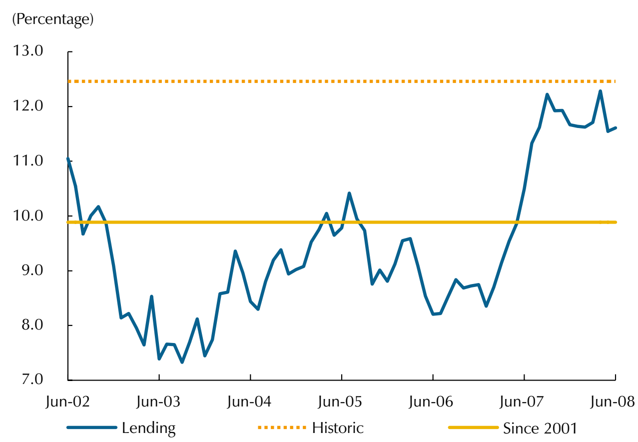
Note: Non-food CPI deflated
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

Graph 41
Interest Rates on the Commercial Loan Portfolio



Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

Graph 43
Interest Rates on Deposits



Note: Non-food CPI deflated
Source: National Office of the Superintendent of Financial Institutions; Calculations by the Central Bank of Colombia

10 This includes commercial and retail loans. The former are part of ordinary, preferential and treasury loans. The latter are weighed at 1/5 of their value, because their turnover is greater.

III. Macroeconomic Prospects

Prospects for the world economy during the remainder of 2008 and in 2009 continue to deteriorate, and this downturn could be accompanied by inflationary pressures.

The United States economy is likely to enter a phase of extremely low growth during the second half of 2008, which would extend into 2009.

The slowdown in the Colombian economy during 2008 would be more pronounced than was forecast in earlier inflation reports. However, terms of trade will remain relatively high.

The build-up in inflationary expectations is the biggest risk to future compliance with the inflation targets set by the Central Bank of Colombia.

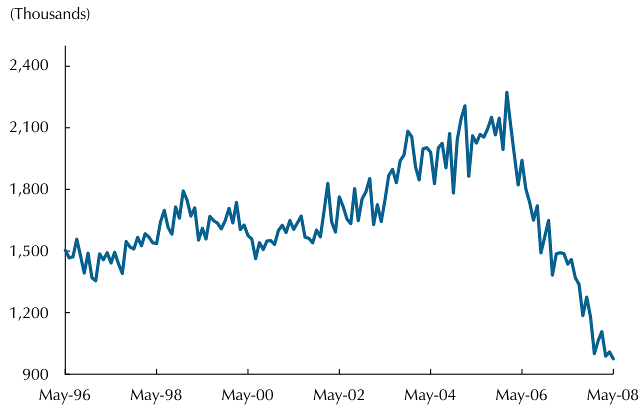
A. THE INTERNATIONAL SITUATION

The world economy has showed signs of weakening in 2008. The tendency towards less growth, which has been evident in the United States since the start of the year, spread recently to other major economies and with more intensity that was forecast in earlier editions of this report.

The tendency towards less growth, which was observed initially in the United States, has spread to other developed economies, particularly those in Europe.

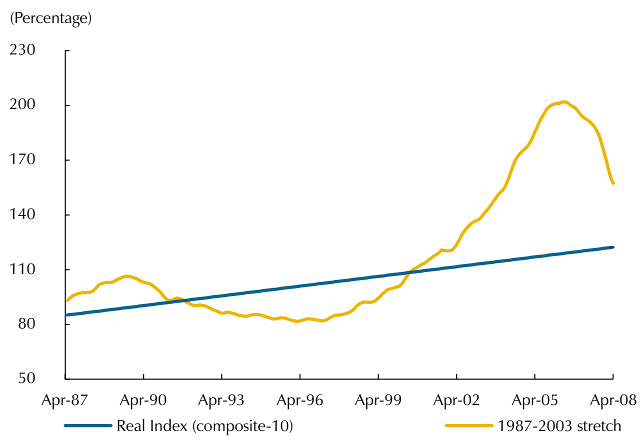
The slowdown in growth worldwide could be explained by two factors. One is demand, as relates to the loss of confidence in the United States, to sharp restrictions on credit (similar to a credit crunch), to the mortgage crisis in a number of countries, to the decline in wealth and, in general, to weaker consumption in the developed economies. The other is a supply factor that originates with high commodity prices, particularly for oil, which appear to be lasting and could be the equivalent of a permanent supply shock (less potential growth).

Graph 44
Housing Starts and Building Permits in the United States



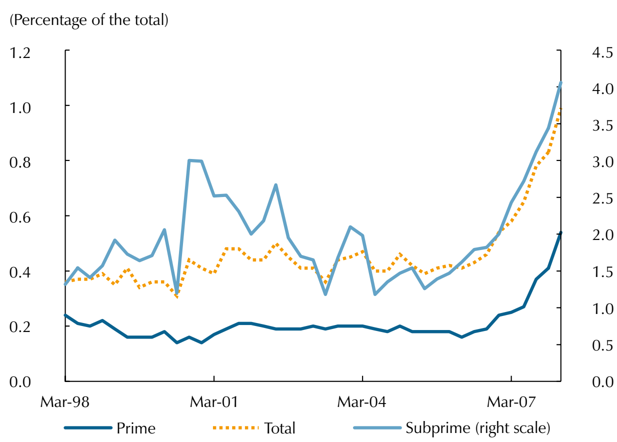
Source: Datastream.

Graph 45
Real Housing Price Index (S&P)



Source: Datastream; Calculations by the Central Bank of Colombia

Graph 46
Foreclosures



Source: Datastream

The job indicators in the United States continued to weaken, particularly during the last few months. Employment remained on a downward course during June and July, which indicates that productive activity would be in a very fragile state of affairs.

At the same time, the housing sector shows no signs of recovery. In fact, it seems to be worsening. Housing starts and building permits continue to decline and home inventories are up, which could undermine the price of these assets in the next few quarters (Graphs 44 and 45).

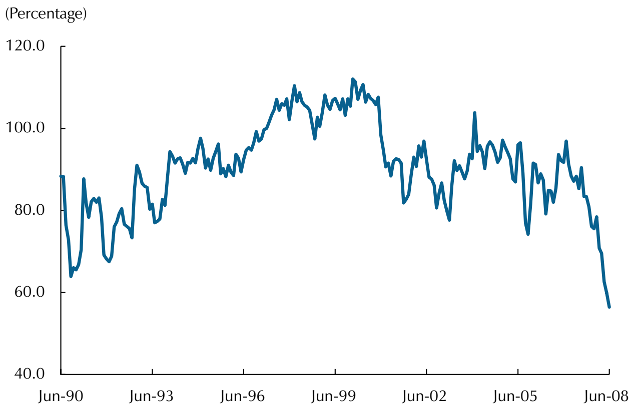
There also has been a major increase in arrears; it began originally in the subprime portfolio but has spread to better quality loans. The result has been a steady rise in home foreclosures by banks. This, in turn, has affected the performance of financial institutions (as mentioned in Chapter II of this report) (Graph 46).

Figures on industry and commerce in the United State economy continue to show poor performance in those sectors, with a high likelihood of decline. On the other hand, consumers' perception of their own economic situation– both current and anticipated – has been hurt and is at historically low levels (Graph 47).

Given this scenario and the possibility that the present growth in household consumption in the United States is only temporary and due to the tax incentives, this report does not modify the forecast for growth in that country. Broadly speaking, it is believed that the world's largest economy has entered a period of low growth that could last for several quarters and will result in no more than 0.8% growth during 2008 (as indicated in earlier editions of this report) and 1.0% for 2009.

Other developed and emerging economies, besides the United States, have lost economic momentum as well. Europe is the most obvious example, having experienced a major decline already in consumer and business confidence. Several emerging market economies in Latin America, such as Venezuela, Ecuador, Chile and México, also witnessed a

Graph 47
Michigan Consumer Sentiment Index



a/ The figures correspond to data on working days. The last figure is for July 29, 2008.
Source: National Office of the Superintendent of Financial Institutions; calculations by the Central Bank of Colombia

Table 11
Developments in Forecasts for Real Growth among Colombia's Major Trading Partners

	Observed			Projections	
	2005	2006	2007	2008	2009
Main Partners					
United States	3,1	2,9	2,2	0,8	1,0
Euro Zone	1,6	2,8	2,6	1,7	1,5
Venezuela	10,3	10,3	8,6	5,8	4,0
Ecuador	6,0	3,9	2,0	2,5	2,5
Other Partners					
Japan	1,9	2,4	2,1	1,4	1,5
China	9,9	10,4	11,2	10,0	9,5
Peru	6,6	7,6	9,0	7,8	6,5
Mexico	3,2	4,8	3,2	2,6	3,1
Chile	5,6	4,3	5,1	4,0	4,6
Argentina	9,2	8,5	8,7	6,3	4,3
Brazil	3,2	3,8	5,4	4,8	3,9
Bolivia	4,4	4,8	4,6	4,6	4,5
Developed Countries	**2,6**	**3,0**	**2,7**	**1,6**	**1,4**
Developing Countries	**7,1**	**7,9**	**8,0**	**7,0**	**6,8**
World Total	**4,4**	**5,1**	**5,0**	**4,0**	**3,9**

Source: Datastream, Consensus, IMF and the Central Bank of Colombia

slowdown in the first quarter. Even so, the economic growth rate for the region, as a whole, is still relatively high.

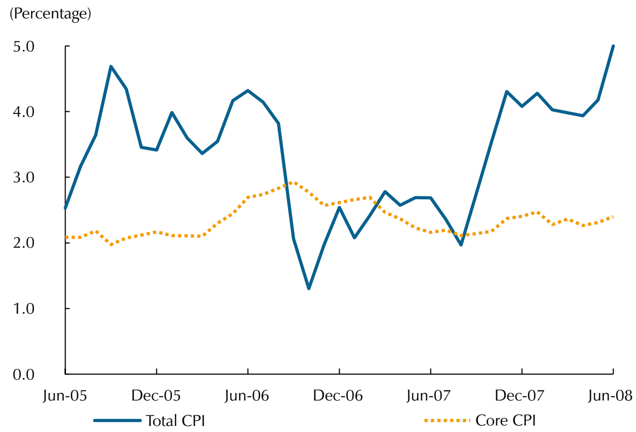
First-quarter growth in Venezuela was 4.8%, which is less than in 2007 (8.5%). Internal demand lost momentum due to a sharp slowdown in consumption and private investment. Accordingly, our projections are for 5.8% growth in 2008 and 4.0% in 2009. Nevertheless, this will depend largely on what is in store for oil prices. In the case of Ecuador, our forecasts for 2008 remain relatively stable compared to those in the last edition of this report, with an estimate of 2.5%. As mentioned in the past, Colombian exports to Venezuela and Ecuador will continue to depend more on the behavior of internal demand than on GDP.

In general, the complications in the economic outlook for the United States will imply less growth in other developed economies compared to what was forecast previously. Likewise, the risk posed by poorer performance in the emerging market economies is now greater than was anticipated in previous editions of this report (Table 11).

International commodity prices, particularly for oil, remained high despite less momentum in the US economy and that of other countries. As a result, they keep on fueling inflation. For example, total consumer inflation in the United States continued to rise and was 5% by June. This exceeds analysts' forecasts; they anticipated a rate close to 4.5% (Graph 48).

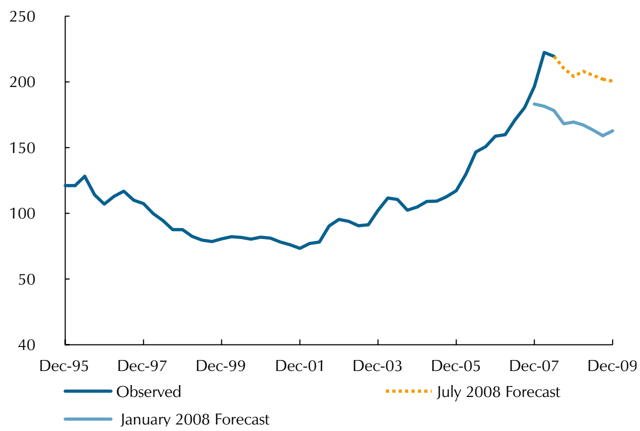
Commodity prices are expected to remain high during the months ahead, although some decline cannot be ruled out, if world demand falls off. According to The Economist Intelligence Unit, the second half of the year is expected see commodity prices, without energy, that are similar, on average, to those observed during the first quarter. For that reason, commodity prices would only begin to decline as of next year, provided world demand actually weakens (Graph 49).

Graph 48
Annual Consumer Inflation in the United States



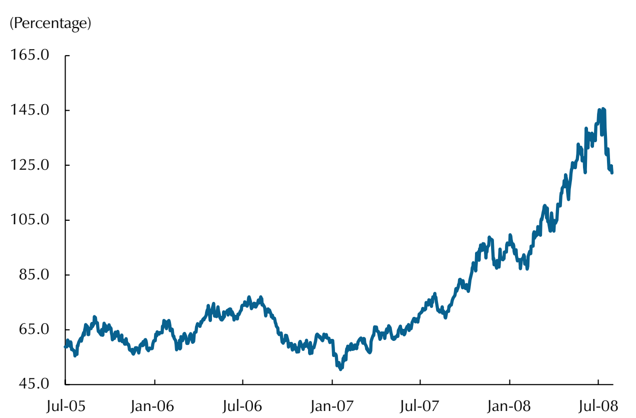
Source: Datastream.

Graph 49
Total Commodity Price Index, Excluding Oil (WCF)



Source: Economist Intelligence Unit

Graph 50
Price of Oil (WTI) – New York Stock Exchange



Source: National Office of the Superintendent of Financial Institutions; calculations by the Central Bank of Colombia

Although a certain amount of speculative behavior seems to have contributed to the recent price hikes, fundamental factors related to the balance between supply and demand are likely to have been the main reason. While world demand has grown considerably in the last few years, supply has tended to remain at a standstill, particularly in the case of oil. There are a variety of explanations; however, the main reason is the limited response to rising oil prices in terms of real investment, at least up until 2006. As a result, oil and food inventories are low. Amid an upward tendency, this has made prices much more volatile (Graph 50).

Under these conditions, a major turnaround in the price of raw materials and oil is conceivable only if world demand slows dramatically and by more than what the market expects. Our forecasts indicate the price of oil exported by Colombia would average US$118.3 in 2008,[11] which is higher than the forecast in the March edition of this report. The average price of coal in 2008 also is expected to be slightly above what was anticipated three months ago (Table 12).

With respect to monetary policy in the United States and in the other developed and emerging economies, this could mean the cost of fighting inflation is on the rise. If so, the possibility that the Fed might raise its benchmark interest rates towards the end of the year cannot be ruled out despite the risk the United States faces in terms of growth. At the time this report was written, the interest rate futures market indicated the probability of a 25 bp increase in the Fed's rate by December 2008 was relatively high (50%). However, the likelihood of no change in rates throughout the remainder of the year has increased of late, given the news of continued deterioration in the US economy.

11 It is assumed the price of crude (WTI), per barrel, will average US$125 in 2008.

INFLATION, INTEREST RATES AND ECONOMIC GROWTH IN SEVERAL DEVELOPED AND EMERGING COUNTRIES

As illustrated in Table A, economic growth in a number of developed and emerging countries has lost momentum, and growth for 2008 is expected to fall below the average for the last four years.[1] Even so, recent quarters have seen international prices for food and raw materials increase considerably. This phenomenon is not restricted to relative price hikes and has raised total inflation as well. Table A also shows the sharp increase in food prices so far this year, in both the developing and developed countries, and the ensuing impact on consumer inflation indicators. The result has been a failure to comply with the price targets in a number of inflation- targeting countries. This, in turn, has raised short-term inflationary expectations, which are common in volatile price scenarios. However, it also has affected longer term expectations,[2] placing them above target.

The situation described above implies a change in the risk balance for many central banks, which are now leaning towards inflationary risk. Most authorities have restricted liquidity by raising their benchmark rates, or at least suspending rate reductions. The latter is the case of the United States, the United Kingdom and Canada, where economic activity has declined sharply.

Real benchmark interest rates in all the economies under consideration have fallen (Table A), despite monetary-policy efforts. Moreover, in some countries, those rates are near zero or negative. Consequently, one cannot rule out the possibility of benchmark rate increases at the global level the coming quarters.

Table A
Inflation, Real Interest Rates and Economic Growth in Several Countries

Countries	Target a/	Inflation						Real BC rate c/		Economic Growth	
		2007 (Dec)		2008 (Jun)							
		Food	Total	Food	Total	Expectations 2008 b/	Expectations 2009 b/	Jun-08	Average 2006-08	Average 2004-07	Projections 2008 b/
United States	n.a.	4.8	4.1	5.2	5.0	4.3	2.8	-2.2 d/	1.3	2.6	1.5
Euro Zone	<2	4.8	3.1	6.4 d/	4.0	3.6	2.4	0.2 d/	1.1	2.3	1.7
Canada	2.0 (+/-1)	1.6	2.4	1.9 d/	3.1	2.4	2.1	0.8 d/	2.1	2.9	1.2
Colombia	4.0 (+/-0.5)	8.5	5.7	12.0	7.2	6.2	4.9	2.6	2.9	6.0	5.0
Brazil	4.5 (+/-2)	10.8	4.5	15.8	6.1	6.5	5.0	6.2	9.0	4.5	4.4
Chile	3.0 (+/-1)	15.2	7.8	19.5	9.5	7.4	4.5	-2.8	0.6	5.3	4.2
Venezuela	n.a.	30.9	22.5	49.6	32.2	30.5	28.5	-11.5	-1.3	11.8	6.1
Mexico	3.0 (+/-1)	6.0	3.8	9.3	5.3	4.9	3.9	2.5	3.4	3.8	2.5
Peru	2.0 (+/-1)	6.0	3.9	9.8	5.7	5.3	4.4	0.0	2.1	7.1	7.7
Israel	2.0 (+/-1)	6.3	3.4	13.4	4.8	4.0	2.6	-1.9 d/	2.6	5.5	3.5
South Africa	4.5 (+/-1.5)	13.5	9.0	17.0 d/	11.7 d/	9.6	6.6	-0.2 d/	2.4	5.1	3.7
Turkey	4.0 (+/-2)	12.0	8.4	14.0	10.6	10.5	8.2	5.6	7.0	7.2	3.8
Indonesia	4.5 (+/-1)	11.3	6.6	19.1	11.0	10.1	7.9	-2.1 d/	-2.7	5.6	5.8

a/ Target for 2007 and 2008.
b/ Source: Bloomberg. The rest of the data was taken from each central bank's website.
c/ Total inflation-deflated nominal rate.
d/ Figure for May 2008.

1 It is important to point out that real growth in the world economy during that period was the highest it had been since the first half of the seventies.

2 The risk of second-round effects originating with this inflationary outlook has increased as well.

Table 12
International Prices

Product	2005	2006	2007	Forecasts for 2008	
				Current [a/]	Previous [b/]
Coffee (*ex dock*) (dollars per pound)	1.2	1.2	1.3	1.4	1.4
Oil (dollars per barrel) [c/]	49.8	58.3	66.2	118.3	90.2
Coal (dollars per ton)	47.8	48.0	50.8	73.2	69.6
Ferronickel (dollars per pound)	2.4	3.6	5.5	3.7	4.2
Gold (dollars per troy ounce)	445.0	604.6	696.9	911.7	960.4

a/ Balance of payments estimated in July 2008
b/ Balance of payments estimated in April 2008.
c/ Average price of crude exported by Colombia, based on an average assumed WTI price of US$125 in 2008.
Source: The Central Bank of Colombia

The central banks of the emerging market economies might raise their benchmark rates. To date, several countries in the region, such as Brazil, Chile, Peru, Mexico and Colombia, have made adjustments in that direction. However, no reductions are expected in the case of the European Central Bank. Its rates are at 4.25%, which is relatively high given the signs of economic weakening.

In short, the central scenario for this report continues to envision a moderate economic slowdown in the United States and in other developed countries. Less growth is anticipated in number of emerging countries as well, some of which are important trading partners for Colombia. Even so, the consideration in this report is that inflationary risks have increased the world over. It is important to continue to assess the economic performance of countries such as India and China, which have become huge sources of demand for raw materials at the global level.

B. BALANCE OF PAYMENTS

Thanks to export-commodity price increases during the first half of the year, the forecasts for Colombia's trade balance are better in this report than they were in the March edition. In fact, the actual figures show a sizeable correction in the current account deficit for the first quarter, which was 2.4% of GDP, as opposed to 5.1% for the same period in 2007. During the remainder of the year, better terms of trade could offset a reduction in external demand brought on by less economic growth for our trading partners, primarily the United States. All these factors are considered when the forecasts for the major items in the balance of payments are prepared.

According to estimates, revenue in dollars from the country's merchandise exports could rise by as much as 36% in annual terms during 2008, while the increase with respect to imports would be around 24%. Import growth would be associated with investment projects (some of which were begun last year)

Thanks to good performance in the external sector during the first part of the year, the current account deficit is expected to be around 2.3% of GDP in 2008.

and with the purchase of weapons and military equipment, the value of which would be equivalent to 0.6% of GDP.[12]

Given all these factors, and considering the uncertainty about the extent of the slowdown in the United States and how it might affect world growth and international commodity prices, Colombia's current account deficit could be around 2.3% of GDP.

As to capital flows, the Bank's central scenario assumes the decisions taken by foreign investors with respect to ongoing projects will not be affected by the uncertainty surrounding the recession in the United States. Foreign direct investment (FDI) levels are similar to what they were in 2007.

Risk scenarios with respect to performance of the country's current account would be determined, on the one hand, by the changes in international prices for crude oil. They could remain high, but have been extremely volatile in recent months. On the other hand, what happens to the external demand for Colombian products, specifically in Venezuela and the United States, is also an important factor. Sales to Venezuela slowed during the first four months of the year, despite maintaining high growth rates (55.8%), while those to the United States have recovered to the extent that their annual rate of increase, without Puerto Rico, is now 53.6%.

C. INTERNAL GROWTH

As noted in Chapter I, the introduction of a new base (the year 2000) for DANE national accounts has implied a major revision of GDP growth figures for the current decade. For example, in 2007 the economy grew by 8.2%, which is a higher rate than the one reported last quarter, using the old base (1994). This revision also changed the trends of certain aggregates, mainly household consumption. The new dynamics and more growth in output during 2007 even affected the forecasts for 2008.

Several real indicators available during the second quarter suggest a slightly lower growth rate compared to the first quarter. In the case of industry, DANE figures show 2.5% average growth for April and May, following 2.9% in the first quarter, and a clear slowdown compared to the figure at mid-2007 (12.7%) (Graph 51). The same was true of the monthly retail trade sample, which exhibited an annual variation of 0.4% for the April-May average, versus 2.8% in the first quarter (Graph 52).

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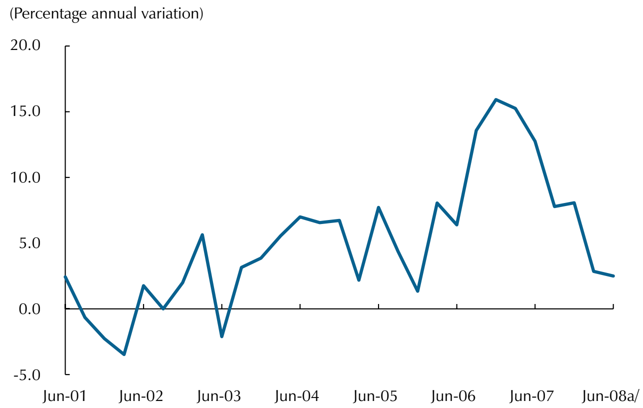
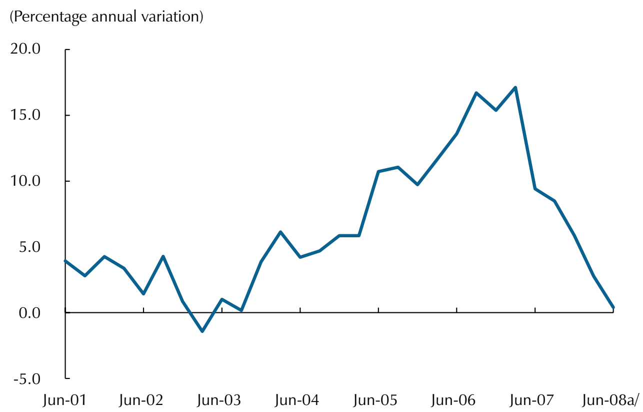
12 Growth in imports would come to 21.6%, if the purchase of military equipment is not taken into account.

Graph 51
Monthly Manufacturing Sample – Average Quarterly Data



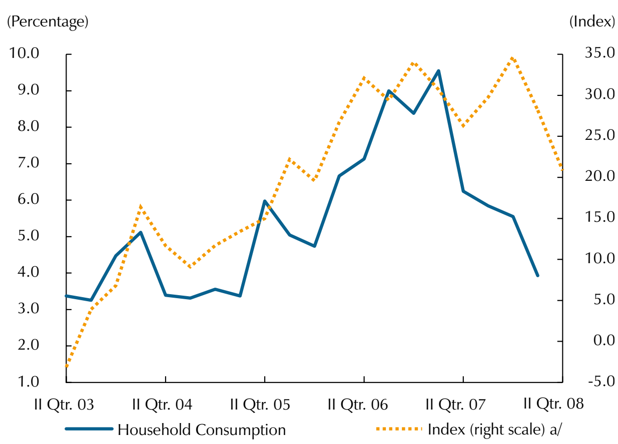
a/ Pertains to the months of April and May
Source: DANE.

Graph 52
Retail Trade Sample – Average Quarterly Data



a/ Pertains to the months of April and May
Source: DANE.

Graph 53
Household Consumption and the Fedesarrollo Consumer Survey



a/ Average of the Consumer Confidence Index (CCI), the Consumption Expectation Index (CEI) and Index of Economic Conditions (IEC).
Source: Fedesarrollo and DANE; calculations by the Central Bank of Colombia

On the demand side, the Fedesarrollo consumption indicator also dropped during the second quarter, primarily because of expectations about the economic situation and, to some extent, due to less willingness to purchase durable and semi-durable goods (Graph 53). With the new data from DANE, this indicator has lost part of the relationship with household consumption.

Considering all these factors, the forecast in this report for growth during the second quarter and for all of 2008 is lower in than what was estimated three months ago. The reduction in growth is explained by weaker household consumption, a fiscal adjustment announced recently for the second half of the year, and by less favorable export performance. The factors that have hampered growth so far this year are expected to continue. The following are some examples.

- Policy measures adopted by the Central Bank during the last two years should allow for moderate growth in credit and private spending throughout the remainder of 2008. In the case of retail loans, as mentioned in Chapter II, the rate is expected to be lower than in 2007 (around 16.5% in nominal terms).

- The weakening of the economy worldwide, primarily in the developed economies and in a number of emerging markets, could mean less growth in the country's real exports, particularly non-traditional ones. Traditional exports also would be affected by price reductions; although, if they were to occur, they would be moderate and would be reflected in the final figures for the year.

- The decline in prospects for growth in the Venezuelan economy comes at a time when oil prices are high, which could mean a more structural and permanent shock is to blame. Added to this are the trade restrictions in some areas, such as the automotive sector, which will remain in place for the rest of the year.

This report contemplates a reduction in the forecasts for growth of the Colombian economy during 2008, which is expected to be between 3.3% and 5.3%.

- The increase in food and regulated prices would continue to affect the availability of household income by keeping growth in private consumption below what it was during the last two years. In the first quarter, this factor had more of an impact that was foreseen in past reports, largely because prices rose more than expected.

- The momentum in public investment will be limited until local and regional development plans are launched. This situation could continue until well into the second half of the year.

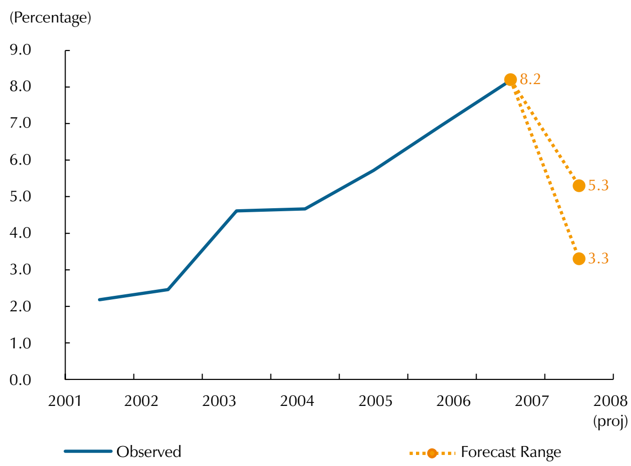
A number of these factors, which were identified in Chapter I when explaining the slowdown in growth during the first quarter, were not taken fully into account in past reports. At that time, the assumption was that performance of the Colombian economy in 2008 would be determined largely by developments in the external situation and by the adjustments in the country's monetary policy. However, what happened in the first and second quarters suggests that growth also will be affected by other supply and demand shocks of internal origin that are divorced from monetary policy and would be in play for the remainder of the year. Including these shocks in the current outlook meant a reduction in the forecasts for growth during 2008 as a whole.

Considering the foregoing, three scenarios are examined in this report to forecast economic growth in Colombia for 2008. They depend on different elements in connection with the way public investment and exports perform. For example, there is a great deal of uncertainty surrounding public investment in 2008. During 2004, which was the last year there was a change in local and regional administrations, public investment (concentrated largely in civil works) experienced a temporary setback, which lasted throughout the first half of that year. On that occasion, growth in investment in civil works recovered during the second half of the year, as soon as the regional development plans were approved. However, for 2008, it could take longer than usual to execute those plans, which would curb this segment of spending. Moreover, the national government and the Bogotá municipal administration have announced the start of a number of important infrastructure projects. If carried out, they could compensate for the reduction in local spending.

High food and regulated prices would affect available income more than expected.

This being the case, the Bank's models indicate the Colombian economy could grow between 3.3% and 5.3% in 2008 (Graph 54), which is less than the ranges predicted in the report at March 2008 (between 4% and 6%) and the one at December 2007 (between 3.7% and 5.7%). Most likely, growth will be close to 4.3%, which is 0.9 pp less than the forecast published last quarter. The risk assessment in the March 2008 inflation report indicated the most feasible scenario was slightly biased towards the upper half of the range. However, on this occasion, the risks are more balanced.

Graph 54
GDP Growth Forecasts for 2008



(proj) Projected.
Sources: DANE and the Central Bank of Colombia.

Table 13
Annual Variation in GDP by Type of Expenditure

	2007	2008 (proj)
End consumption	**6.3**	**4.0**
Household Consumption	6.8	4.3
Government Consumption	4.7	2.8
Gross capital formation	**23.0**	**10.2**
End Internal Demand	**10.0**	**5.5**
Total exports	**12.2**	**9.1**
Total imports	**18.4**	**12.0**
Gross Domestic Product	**8.2**	**4.3**

Source: DANE, calculations by the Central Bank of Colombia

The forecasts by type of spending for the most likely projection are presented in Table 13. A slowdown is expected for all the aggregates compared to the figures on record for 2007.

On the other hand, the make-up of private consumption is expected to shift towards services and away from durable goods. This is associated more with the behavior of interest rates and can end up being affected more by the drop in purchasing power of income. As to investment, despite a clearly inferior variation with respect to past years, it will continue to be one of the driving forces of growth.

Finally, the central forecast assumes a slowdown in imports, mainly because of less growth in investment and household consumption. Exports also are expected to decelerate, but not as much, primarily due to the force of mining and oil. It is important to point out that these forecasts, above all the one for exports, are highly uncertain because of the unusual performance of the Venezuelan economy and the risks facing world growth.

D. THE OUTLOOK FOR INFLATION

The prospects for inflation during the remainder of the year, and particularly during 2009, will be determined by two forces that work in opposite directions. On the one hand, there is growing external inflation fueled by high international prices for raw materials. On the other hand, there are the effects of monetary policy, which tend to curb demand-pulled inflationary pressures. Added to this is the risk of rising inflation expectations in Colombia, which are moving away from the targets set by the Central Bank. Coupled with the presence of highly extended indexing mechanisms, this could bolster external pressures and generate second-round wage and price hikes.

As mentioned in the previous chapters of this report, these symptoms have been present so far this year and, above all, during the second quarter, when the upward trends originating with higher international prices for fuel and food were preponderate. Added to this are the various internal supply shocks (temporary, in principle) that pushed food prices even higher, mainly the price of perishables.

The inflation forecasts assume that oil prices will average US$125 a barrel (WTI) in 2008.

1. External Pressures

Although international price reductions for food and raw materials, as a result of weaker world demand, cannot be ruled out, there is no expectation they will be substantial compared to the averages witnessed in the first half of the year, at least for the remainder of 2008. As mentioned, the prediction in this report is that oil will average US$125 per barrel (West Texas Intermediate, WTI) in 2008. This would imply a reduction of US$10 to US$15 for the second half of the year compared to the historic highs witnessed in June and early July, but slightly more than the level registered in the first half of the year (US$110).

With oil at these prices and with similar reductions in international food prices, no significant relief is in sight for local prices during the rest of 2008, although price hikes are likely to be less extensive and less frequent. In general, the forecasts for 2008 presented in this report assume we can expect some transfer of external inflation in commodities to internal prices, provided the exchange rate stays close to what it was in June and July. This means that annual inflation in the CPI components most affected by international shocks (imported foods, transport and public utilities) will tend to remain high during the next two quarters.

The next few months are expected to see the price of raw materials decline somewhat...

The international situation towards 2009 is highly uncertain, although it should be more favorable than 2008 with respect to inflation. In particular, less momentum in world demand, coupled with a recovery in supply in a number of countries, is likely to encourage a more pronounced and permanent decline in international fuel and food prices, alleviating some of the pressure they exert on local prices. This would allow for a significant reduction in imported food and regulated price inflation during 2009. A favorable situation with respect to perishables, the supply of which would be fueled by currently high prices, would be a contributing factor.

Nevertheless, the external risks remain high. The world economy is now faced with generalized inflation owing to a profound imbalance between supply and demand. The return to equilibrium may take time and might require a more pronounced slowdown in world demand than the markets have anticipated. Under those circumstances, international prices for raw materials, including oil and food, could remain relatively high for several quarters. If there are reductions, they might not be significant. Moreover, if external inflation does not give way quickly and expands to a larger spectrum of goods (such as manufactured items), the pressure could filter down to local prices.

...however, any such reductions would not have a major impact on inflation in Colombia during the remainder of 2008.

2. The Role of Monetary Policy and Second-round Effects

The downward pressures originating with the monetary-policy adjustments adopted as of mid-2006 began to be felt in 2008. This is demonstrated by less

Food inflation should decline gradually in 2009, thanks to less external pressure, among other factors.

growth in retail loans and, to some extent, in household spending. The result, with respect to prices, has been high non-tradable inflation, without food and regulated prices; however, it has been relatively stable during the last four quarters.

Accordingly, the expectation in this report is that the current stance of monetary policy will continue to ease demand-pulled pressures during the remainder of 2008 and particularly in 2009, thus facilitating convergence towards the long-term target for inflation. Whether or not that happens will depend on other factors that affect inflation, one of the most important being inflation expectations. As analyzed in previous sections of this report, these expectations have increased repeatedly and have moved away from the targets set by the Central Bank. The change in production costs is another element. Both factors can unleash second-round effects on prices that would offset the downward impact of cooling demand.

Expectations of rising inflation, amid in an environment where the target lacks credibility, such as the environment at present, can affect inflation in a number of ways. One is through workers' demands for higher wages, because increased inflation has reduced the purchasing power of their earnings. Another is through price hikes by companies themselves to offset rising costs in the future or due to the increases expected in the prices charged by their competitors.

The wage hikes were moderate up until mid-year, adjusting to the needs of the country's monetary policy. However, the sharp rise in inflation during the last few months, coupled with only limited faith in the target, may serve as an incentive to wage hikes that exceed the growth in labor productivity, bringing pressure to bear on costs and prices, and affecting production and employment. This risk will be particularly high at the start of 2009, when a high percentage of work contracts are scheduled to be renegotiated and the minimum wage will be set.

Rising expectations and their departure from the inflation targets may prompt companies to raise prices more and more, particularly in an atmosphere of growing costs, such as the one at present. As noted earlier in this report, recent months have seen a sharp rise in producer inflation and in other raw-material cost indicators. This has begun to produce second-round effects on consumer inflation, particularly in the case of food and certain goods affected by prices that are tied to the current market price of petroleum derivatives. These pressures could be important at the start of next year, if rising costs are not curbed quickly.

Demand-pulled pressures will continue to be curbed by the current stance of monetary policy.

In a context such as one described above, a slowdown in demand due to a less expansionary monetary policy can take more time to produce results in terms of lowering inflation. Therefore, the expectation in this report is that

The rise in inflation could prompt wage and cost increases that would affect production, employment and future inflation.

a reduction in non-tradable inflation, excluding food and regulated prices, will take more time than was anticipated in earlier editions. According to the Bank's model, that indicator will remain above 5% for several more quarters, showing a clear downward tendency only after mid-2009.

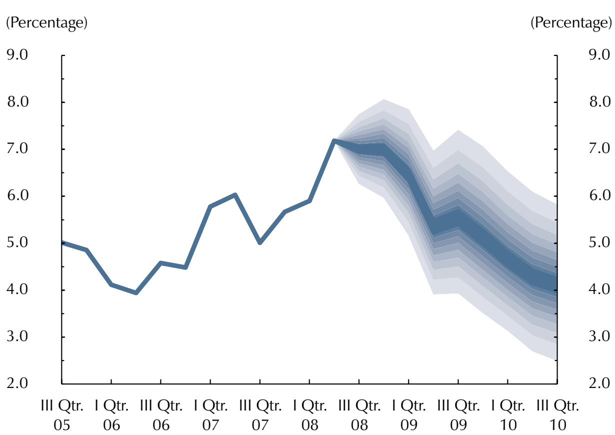
Moreover, in a market economy, it is important to remember that long-term inflation declines because expectations remain anchored to the targets, and this happens because the monetary policy is credible. In that sense, the Central Bank's forecasts in this report assume the monetary policy will gradually manage to restore confidence in the targets, thus allowing expectations to decline and inflation along with them.

3. Inflation Tendencies in the Next Two Years and Their Risk Balance

The inflation forecasts and the range of uncertainty surrounding them increased for the second half of 2008 and for 2009 compared to what was presented in the March edition of this report (Graph 55). Total consumer inflation would tend to remain high for the rest of 2008, although some reduction is expected as of September or October, due to lower food price increases. The latter would be due to some relief from external pressures, but also to lower prices for a number of products produced locally (rice, potatoes and dairy products). Their supply would be stimulated by the high prices witnessed in the first half of the year.

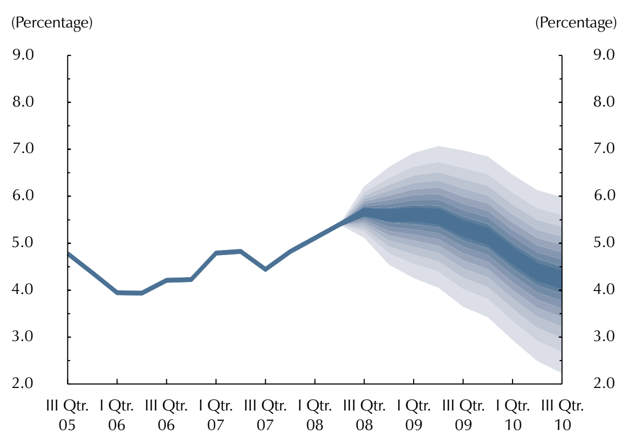
During the remainder of the year, non-food inflation will continue to be affected by major rate hikes for public utilities, fuel and transport, which could raise the figure on record compared to June. There should be no major changes in tradable and non-tradable inflation, without food and regulated prices, compared to the rates at mid-year (Graph 56).

Graph 55
Total Inflation Fan Chart [a/]



a/ The forecasts are based on a monetary policy that is designed to ensure compliance with the long-term targets for inflation.
Source: Calculations by the Central Bank of Colombia

Graph 56
Non-food Inflation Fan Chart [a/]



a/ The forecasts are based on a monetary policy that is designed to ensure compliance with the long-term targets for inflation.
Source: Calculations by the Central Bank of Colombia

A more pronounced reduction in annual inflation is expected for 2009 and early 2010 (Graph 55). External pressures will have subsided to a large extent; that is, international prices will not increase and will even decline, which means annual inflation in food, public utilities, transport and other imported goods and their local substitutes will fall off gradually, converging towards rates that are more consistent with the long-term targets. In addition, the upswing in the agricultural supply of perishables, which began in the second half of 2008, is expected to continue during the first six months of next year, in which case prices will continue to exhibit small hikes or even reductions. All of this will help to achieve less annual inflation in food and regulated prices, and less total annual inflation.

As to non-tradable inflation, excluding food and regulated prices, aggregate demand with moderate growth, plus declining expectations, should curb additional increases and allow for a gradual reduction in 2009. Tradable inflation excluding food and regulated prices should remain low to the extent that there are no major leaps in the exchange rate, as is assumed in this report.

This being the case, total inflation would tend to decline in 2009 and 2010 towards the levels witnessed prior to the exogenous shocks that have occurred as of mid-2007. Something similar will happen with non-food inflation, although the reduction would be slower due to the effects of price and wage indexing. These dynamics are compatible with a permanent but one-time-only increase in the level of relative prices for food, fuel and transport.

The risk balances (Fan Chart) for total and non-food inflation are now wider than those outlined in the March edition of this report, having shifted and adopted an upward bias. This estimate takes into account the increased volatility exhibited in recent months by the variables that are contemplated in the analysis, such as oil and food prices, as well as economic growth locally and worldwide (Graphs 55 and 56).

The upward bias obeys the fact that the pressures on internal food prices could continue to be important, even after taking into account certain reductions in external prices and better conditions with respect to supply. Production and transport costs in the agricultural-livestock sector are rising quickly and might demand larger hikes in the price of final products. The increase in relative prices observed for several quarters is a signal in that direction. According to the history of the series, these upward cycles are long lasting.

The tendency will be for total inflation to decline in 2009 and 2010 to the levels witnessed prior to the exogenous shocks that have occurred as of mid-2007.

While it is true that a sharper slowdown in the United States and in the world economy in general can deflate international prices faster than anticipated, including oil prices, it is unclear if this would also promptly reduce pressure on internal prices. A slowdown in the demand for the manufactured goods Colombia exports would tend to alleviate inflationary pressures on that front.

Food inflation could remain high during the rest of 2008, even if there are some external price reductions.

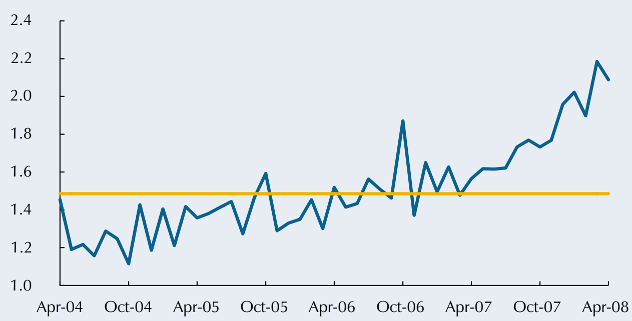
However, an external economy that is more vulnerable would also imply lower terms of trade and less influx of capital into emerging economies that are exporters of raw materials, such as Colombia. This, in turn, can affect confidence in the Colombian economy and heighten pressure towards depreciation of the exchange rate, which would have an inflationary impact, pursuant to the magnitude and duration of these tendencies.

Box 2
THE EFFECT ON THE ECONOMY OF PRICE INCREASES FOR IMPORTED RAW MATERIALS

By Pietro Bonaldi
Andrés González
Diego Rodríguez*

The country has seen the price of imported raw materials gradually increase during the last four years (Graph B2.1), coupled with a respective rise in production costs. In this case, when raw materials become more expensive, the economy is affected through two channels. Inflationary pressures are created, on the one hand, since part of the cost increase is passed on to the price of end goods. On the other, it slows production by discouraging the demand for input. Any such situation poses a dilemma for the monetary authority, whose primary objective is to control inflation and to strive for growth in output. Another strategy to determine what would be the most appropriate policy for a central bank proposes using an economic model to explain the monetary-policy transmission mechanisms.

Graph B2.1
Price Index for Raw Materials Imported by Colombia (in dollars)
Household Loan Portfolio Interest Rate



Source: DIAN

In accordance with that proposal, the Central Bank of Colombia recently developed a dynamic stochastic general equilibrium model with rational expectations to analyze monetary policy and, eventually, to develop short-term forecasts on the performance of the Colombian economy. The model involves an open economy with nominal price and wage fixing rigidities, together with real rigidities such as adjustment costs for investment and use of the capital variable. It also features a monetary authority that sets nominal interest rates pursuant to a rule that considers the deviations in inflation with respect to its long-term level, as well as the variations in output. The model has been calibrated for the Colombian economy to describe the relationship between different macroeconomic variables, such as the interest rate, inflation, output, the exchange rate and the components of aggregate demand.[1]

The gross output of the economy described by the model requires input such as labor, capital and imported raw materials, and is intended to satisfy the demand for consumption, investment, exports and distribution services. Those distribution services are used by the sectors that produce final goods suitable for consumption and investment, regardless of whether they are produced on the basis of gross output or imported from outside the country. Likewise, the exports need those services to reach the ports and to be sent to other countries.

As is customary with models of this type, households make optimum decisions that directly determine their demand for goods for consumption and investment, as well as the labor supply. Their income depends on labor compensation, capital yield, share of corporate benefits, remittances from abroad and the external debt. To assess the impact of an increase in production costs due to higher international prices for imported raw materials, an impulse-response exercise was done using the described model to analyze the economic consequences of an unexpected and temporary increase in such prices. However, it is important to point out that this is only a partial analysis, as it ignores the added revenue that could enter the country from the export of raw materials at higher prices.[2]

For the most part, in response to a semi-annual increase of 20% in the price of imported raw materials, the model predicts an increase of 38 bp in inflation, accompanied by a drop of 0.65% in real GDP, together with 39 bp nominal appreciation in the impact and less aggregate demand. (Graph B2.2). The central bank responds to the increase in

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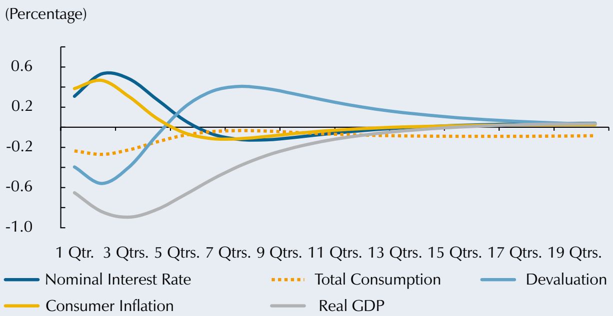
1 A preliminary version of the model can be obtained by contacting dmm@banrep.gov.co. This is a model in the making; therefore, its structure is subject to change. Comments and suggestions on the model may be sent to the same email address.

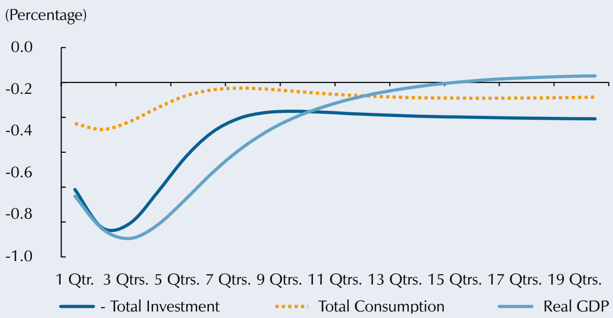
2 This income effect originating with terms of trade can increase the demand for both local and imported goods, which can offset part of the drop in output associated with higher costs, but reinforces the impact on inflation.

Graph B2.2
Impulse-Response: General Results



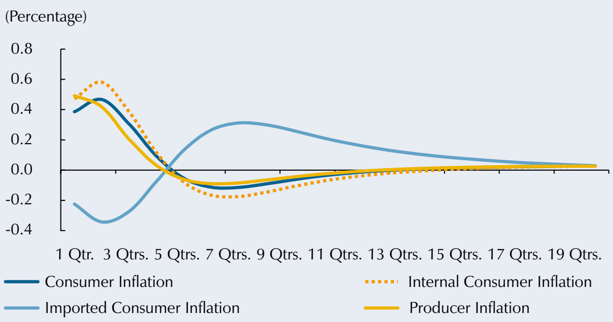
Source: Central Bank of Colombia.

Graph B2.3
Impulse-Response: Aggregate Demand



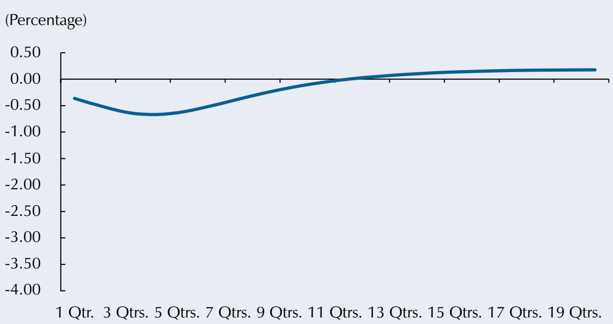
Source: Central Bank of Colombia.

Graph B2.4
Impulse-Response: Inflation



Source: Central Bank of Colombia.

Graph B2.5
Impulse-Response: Trade Balance in Dollars



Source: Central Bank of Colombia.

inflation by raising its policy interest rate, and, despite the decline in output, this increase translates into a 30 bp rise in the interest rate.

The increase in prices for raw materials has a direct effect on the marginal cost of output, which reacts by registering an increase of approximately 0.75%. As a result, companies might decide to reduce the quantities they produce. The drop in output represents, in turn, less income for households, who respond by reducing their demand for consumer goods and investment. This effect is reinforced by the real interest rate hike. However, the decline in the demand for consumer goods (0.24%) is less than the drop in real GDP and the cutback in investment, which is close to 0.6% (Graph B2.3). It is worth noting that the reduced volatility of consumption, compared to investment and GDP, is a prediction of the model that reflects a stylized fact of the Colombian economy.[3]

The increase in the marginal cost of output is passed on to the consumer goods produced within the country, generating inflationary pressures that are reflected in prices for those goods that are 0.47% higher (Graph R2.4). For this reason, one also sees an increase of 0.38% in the price of the aggregate basket of consumer goods and services, despite appreciation and the respective decline in the price of imported goods for household consumption.

The drop in the exchange rate negatively affects exports. Consequently, although the demand for raw materials declines as a result of their increase in price, the trade deficit in the aggregate increases (Graph B2.5)

In short, the model makes it possible to identify and quantify the means whereby an increase in the price of imported raw materials, such as the one observed recently in Colombia, generates inflation and slows output.

3 See Juan Carlos Parra (2008). "Hechos estilizados de la economía colombiana: fundamentos empíricos para la construcción de un modelo DSGE". *Borradores de Economía*, No. 509, Central Bank of Colombia, Bogotá.

Box 3
THE IMPACT OF INTEREST RATES ON INFLATION

By Javier Guillermo Gómez
Hernán Rincón*

According to economic theory and empirical evidence, an increase in the interest rate lowers inflation. This article offers theoretical and empirical elements to support that assertion. The relationship between interest rates and inflation has become an issue of recent public debate, with the argument being that an interest rate hike raises inflation due to the impact of higher financial costs on the prices set by companies.

There are five sections in this article. The first is a review of several examples found in international literature, specifically ones that claim an increase in interest rates lowers inflation. Several international studies that consider the impact of interest rates on production costs and prices are reported as well. The second section looks at how inflation responds to interest rates, according to the forecast and analysis models used by the Central Bank of Colombia. Financial costs, as a share of the total cost to Colombian companies, are quantified in the third section, while the results of an estimate of the relationship between interest rates, inflation and output for the Colombian case are presented in the fourth. Conclusions are offered in the fifth section.

1. The Impact of Interest Rates on Inflation. What is the conclusion in international literature?

During the last fifteen years, monetary theory and monetary-policy management at the central banks have converged in a prevailing paradigm. According to the theoretical framework of that paradigm, an increase in interest rates lowers inflation. The Keynesian and monetarist theories have lost ground to what has become known as the new neoclassical synthesis, in which monetary policy has an impact on short-term output and inflation is determined by the extent or level of aggregate demand. Hence, an increase in interest rates would reduce aggregate demand and lower inflation.

Probably the most important reference on the prevailing paradigm in the case of a closed economy is Woodford (2003), who shows how interest rates would respond to a rise in inflation (Ibid., Graphs 4.3 and 4.3, pp. 267 and 268). The rise in interest rates should be more than the increase in inflation; this behavior is known as the Taylor principle. A reduction in interest rates in response to a rise in inflation would imply entry into a cycle of higher inflation, lower real interest rates, more demand and growing inflation.

In an open economy, the prevailing paradigm has become known as the "new the open economy macroeconomics" (NOEM). Here again, monetary policy has an impact on aggregate demand and, through aggregate demand, affects inflation. There also are exchange rate channels that act in the same direction as the aggregate demand channel. Accordingly, an increase in interest rates reduces the increase in prices. For example, Clarida, Galí and Gertler (2001) demonstrate that the problem of monetary policy in an open economy is an extension of the case of a closed economy put forth by Woodford. The Taylor principle is, therefore, applicable in both contexts: in response to an increase in inflation, the central bank should raise interest rates to a degree that exceeds the increase in inflation.

Some models incorporate the effect of interest rates on the cost (marginal) of production (cost channel of monetary policy). In their model, Christiano, Eichembaum and Evans (2001) assume that businessmen are obliged to finance their payrolls with loans, which means the interest rate has an effect on the marginal cost of production and prices. A decline in interest rates lowers inflation in the short term, but increases it after fifteen quarters (Ibid., Figure 1, p. 43). Gaiotti and Secchi (2004) found that a 100 bp increase in the interest rate elevates prices by 10 to 30 bp. In short, the conclusion they derived, when analyzing the cost channel of monetary policy, is that the cost channel of the nominal rate has a small and short-term effect on inflation.

2. What the Literature Says About the Impact of Interest Rates on Inflation in the Colombian Case

For the Colombian case, the central model used by the Central Bank of Colombia (Gómez, Uribe and Vargas, 2000) shows that an increase in interest rates lowers inflation (Ibid., Figure 15, p. 42). The Bank updates its basic model regularly, pursuant to empirical estimates. Graph B3.1 shows how inflation responds to the latest version of the model; namely, the effect of an increase in the interbank interest rate after eight quarters is to reduce inflation.

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* The authors are researchers who work with the Research Unit of the Technical Management Department at the Central Bank of Colombia. They wish to thank Norberto Rodríguez, Juan David Prada, Paola Morales and Alejandro Reyes for their collaboration. The opinions expressed in this article are solely the responsibility of the authors and imply no commitment on the part of the Central Bank of Colombia or its Board of Directors.

The general equilibrium analysis model of the Central Bank of Colombia (which is under construction) includes the financial cost channel, as do Christiano, Eichembaum and Evans (2001), and Ravenna and Walsh (2004). Graph B3.2 shows the inflation response to an interbank interest rate hike, on the basis of this model. As illustrated, even when the financial cost channel is included, an increase in the interest rate reduces inflation.

3. The Cost Structure of Colombian Companies

A simple and illustrative way to clarify the extent to which interest rates affect the production costs of Colombian companies and, hence, their prices, is to study the cost structure of those companies. As shown in Table B3.1, financial costs in most of the nation's productive sectors account for less than 6% of the total costs they incur. Therefore, the indication is that businessmen should be more concerned about what happens to other costs, especially labor costs, which quickly become a source of pressure when inflation or inflation expectations rise.

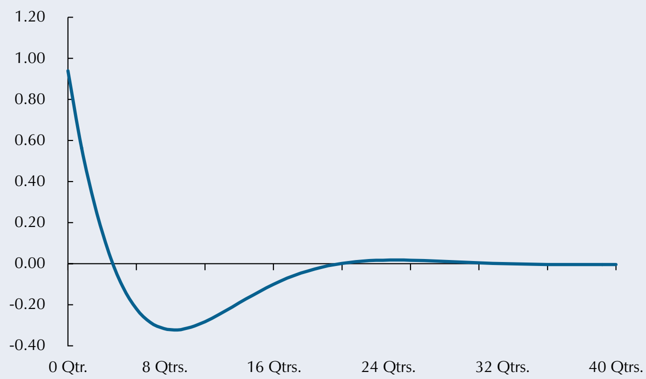
Moreover, there is not necessarily a proportional and simultaneous transmission between the increase in financial costs and the price at which companies sell their products. This will depend on a variety of elements, such as the company's price-fixing strategy, the prices charged by its competitors, its perception of the nature of the changes in interest rates (temporary versus permanent) and, particularly, on what happens to demand. As shown in the following section, by means of an estimate, inflation declines when the intervention interest rate increases.

4. Econometric Estimate

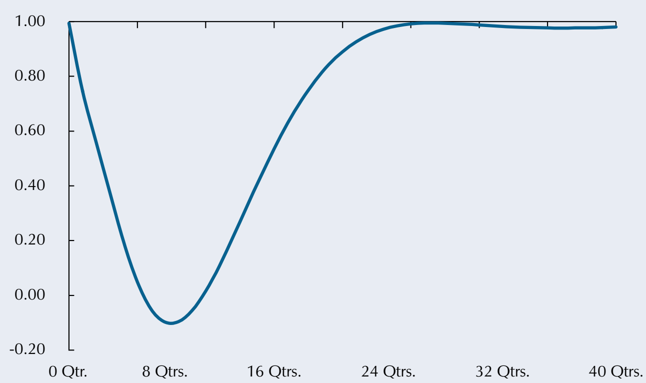
As indicated by the results of a series of econometric exercises on impulse response, which were produced by the technical team at the Central Bank of Colombia, and are part

Graph B3.1
Inflation Response to an Interest Rate Increase in the Basic Model Used by the Central Bank of Colombia

A. Interbank Rate



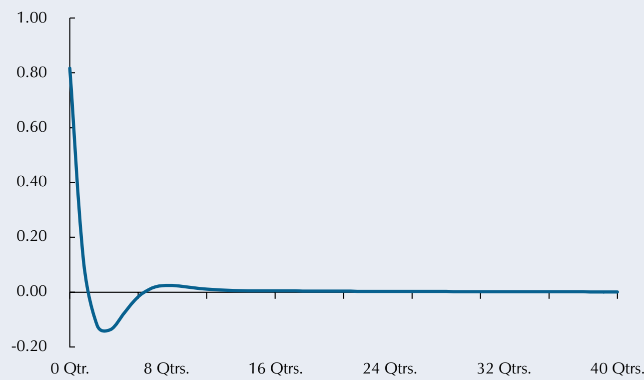
B. Inflation Response to an Interbank Rate Shock



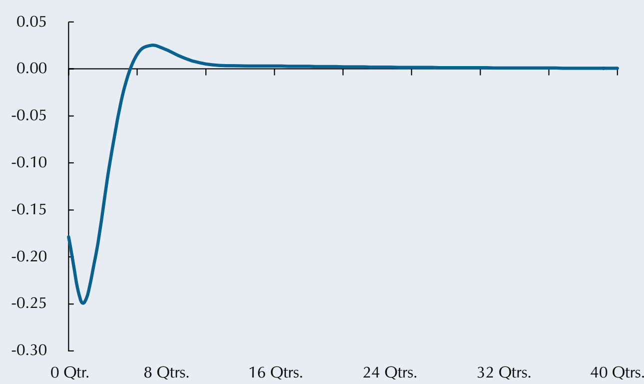
Source: The authors' calculations

Graph B3.2
Inflation Response to an Interest Rate Increase in the Analysis Model Used by the Central Bank of Colombia

A. Interbank Rate



B. Inflation Response to an Interbank Rate Shock



Source: The authors' calculations

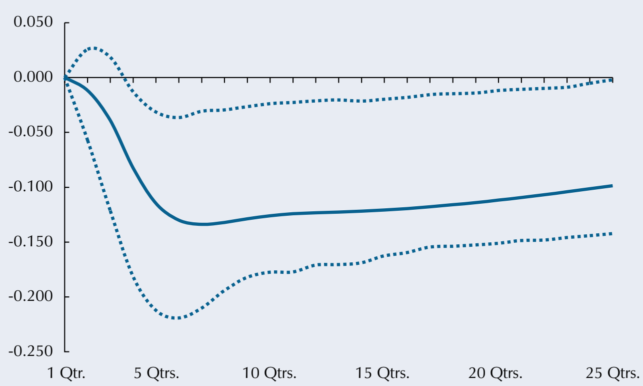
Table B3.1
Production Cost Components, by Sector

Sector	Costs			
	Labor	Raw Materials	Financial Costs [a/]	Others [b/]
Agriculture, cattle-raising, hunting and forestry	43.0	51.6	5.4	0.0
Fishing	27.5	37.83	7.4	27.3
Mining and quarries	14.5	4.8	4.2	76.5
Manufacturing industries	17.5	26.0	3.0	53.5
Construction	17.3	24.7	2.9	55.1
Commerce	18.3	7.3	4.0	70.5
Hotels and restaurants	27.9	35.0	2.6	33.7
Real estate activities, business and leasing	47.8	17.7	5.6	29.0

a/ Pertains to bank costs, commissions, interest, exchange differentials and other financial expenses.
b/ Taxes, rentals, contributions and memberships, insurance, maintenance and repairs, and depreciation.
c/ The" other" costs of the "Agriculture, cattle-raising, hunting and forestry" sector were adjusted downward, so the sum of the costs would be equivalent to the "total costs" reported by the Office of the Superintendent of Companies.
Source: Office of the Superintendent of Companies. The average costs of each sector were used. Own calculations based on the data compiled by Paola Morales, an expert who works with the Financial Stability Department at the Central Bank of Colombia.

of the material its uses for monetary-policy decisions, an increase of 100 bp in the intervention interest rate (TIB) for just one quarter lowers prices substantially as of the third quarter in which the measure is applied (Graph B3.3).[1] The empirical evidence shows the assumption that intervention interest rate hikes raise inflation is invalid.

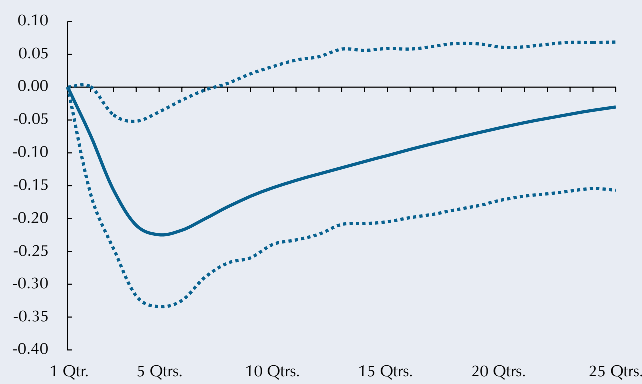
Graph B3.3
The Effect of an Interest Rate Hike on Prices



Source: The authors' calculations

The rise in interest rates reduces the GDP in a way that is quicker and more pronounced (Graph B3.4). This supports the hypothesis that the policy interest rate has a more direct, faster and far-reaching impact on demand than on costs and the prices at which companies sell their products.

Graph B3.4
The Effect of an Interest Rate Hike on GDP



Source: The authors' calculations

5. Conclusion

According to international literature, the Central Bank of Colombia's forecast and analysis models, and empirical evidence, the effect of an increase in interest rates is to reduce inflation. Available studies - both theoretical and empirical - indicate the impact of interest rates exert on inflation, through the financial costs incurred by companies, is small and short lived.

1 The exercise was developed by Norberto Rodríguez, an econometrist who works with the Macroeconomic Models Department of the Economic Studies Division at the Central Bank of Colombia.

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Attachment

Macroeconomic Forecasts by Local and Foreign Analysts

The following is a summary of the latest forecasts by local and foreign analysts for Colombia's main economic variables in 2008 and 2009. When consulted, the analysts had access to data at June 2008.

1. FORECASTS FOR 2008

The local analysts expect the economy to grow by 4.9%, on average. This is 50 bp less than the forecast published in the March edition of this report. The foreign firms consulted for this report expect GDP growth to average 5.1%. The analysts revised their forecasts compared to the March report, after learning the outcome for first-quarter GDP and the results of several indicators of supply and demand in April and May.

As to the forecasts for inflation, the local analysts expect an increase of 6.7% in prices by the end of the year, while the foreign analysts anticipate 6.0%, on average. This figure is above the target range for 2008 (between 3.5% and 4.5%), as was the case in recent editions of this report. The exchange rate continues to decline significantly in terms of the value forecasts by analysts for the representative market rate of exchange (TRM in Spanish) by the end of the year, compared to what was announced in earlier reports. Local analysts expect the TRM to average Col$1,831 by the end of the year, compared to Col$1,910 forecast in April. Foreign analysts expected the TRM to close out the year at Col1,919. Even so, in both cases, they continue to expect a slight amount of depreciation during the second half of the year with respect to the data observed in June.

The local analysts continue to raise their expectations for the country's benchmark DTF rate (by 20 bp in this report and 70 bp in the March edition). As a result, the local firms consulted expect the DTF to end the year at 9.9%; the foreign analysts anticipate 10.0%. The forecast for unemployment in the thirteen major cities is 10.6%, according to the local analysts; the foreign analysts predict 10.4%.

2. FORECASTS FOR 2009

There are no substantial changes in the forecasts for 2009 compared to those presented three months ago, with the exception of the inflation forecast by the local analysts. They expect 4.5% economic growth, while the foreign analysts anticipate 4.9%. As to inflation, the local analysts expect more inflation than the international analysts: 5.1% compared to 4.4%. Three months ago, the local analysts predicted 4.4% inflation. The exchange rate is expected to average Col$1,960, according to the local analysts, while the foreign analysts predict an average of Col$2,062. It is important to point out that all the analysts consulted for this report expect inflation to decline sharply in 2009.

Table A1
Forecasts for 2008

	Real GDP Growth (Percentage)	Inflation: CPI (Percentage)	Nominal Exchange Rate End of	Nominal DTF (Percentage)	Fiscal Deficit (percentage of GDP)	Unemployment Rate for the Thirteen Major Cities
Local Analysts						
Alianza Valores	4.6	6.7	1,675	9.5	0.5	11.5
ANIF	4.7	7.2	1,880	9.7	1.0	11.0
Banco de Bogotá	5.0	6.8	1,800	9.8	1.5	10.5
Banco Santander	5.0	6.5	1,850	10.0	1.0	10.3
Bancolombia-Suvalor	4.6	6.3	1,868	9.5	1.0	11.0
BBVA Colombia	5.0	7.2	1,920	10.1	1.0	9.5
Corficolombiana-Corfivalle	5.2	6.2	1,852	10.0	n.a.	n.a.
Fedesarrollo	5.1	6.8	1,800	10.3	(1.4)	n.a.
Average	**4.9**	**6.7**	**1,831**	**9.9**	**0.7**	**10.6**
Foreign Analysts						
Citi Bank	5.0	6.5	1,750	10.0	(1.1)	10.2
Deutsche Bank	5.4	5.6	2,055	n.a.	n.d	10.5
Goldman Sachs	5.1	6.3	2,020	n.a.	(1.4)	n.a.
JP Morgan	5.0	5.6	1,850	n.a.	(1.6)	n.a.
Average	**5.1**	**6.0**	**1,919**	**10.0**	**(1.4)**	**10.4**

n.a. Not Available.
Source: Central Bank of Colombia, based on electronically supplied data

Table A2
Forecasts for 2009

	Real GDP Growth (Percentage)	Inflation: CPI (Percentage)	Nominal Exchange Rate End of:
Local Analysts			
Alianza Valores	n.a.	n.a.	n.a.
ANIF	4,3	5,0	2,038
Banco de Bogotá	4.5	5.5	1,900
Banco Santander	4.5	5.0	1,924
Bancolombia-Suvalor	4.5	5.2	1,849
BBVA Colombia	4.4	4.8	2,046
Corficolombiana-Corfivalle	4.8	5.0	2,000
Fedesarrollo	4.7	5.2	n.a.
Average	4.5	5.1	1,960
Foreign Analysts			
Citi Bank	4.5	5.0	1,900
Deutsche Bank	5.5	4.4	2,199
Goldman Sachs	4.6	4.0	2,100
JP Morgan	5.0	4.0	2,050
Average	4.9	4.4	2,062

n.a. Not Available,
Source: Central Bank of Colombia, based on electronically supplied data