



# INFLATION REPORT

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BANCO DE LA REPÚBLICA

CENTRAL BANK OF COLOMBIA

BOGOTÁ, D.C., COLOMBIA

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## INFLATION AT DECEMBER AND THE OUTLOOK

- Consumer inflation was 4.85% in 2005. This is within the target range for annual inflation (4.5% to 5.5%) and 65 basis points (bp) below inflation in 2004. The drop in non-food inflation, which offset the rise in food inflation, explains the reduction with respect to 2004. The other core inflation indicators were down as well. Within the Consumer Price Index (CPI), both tradable and non-tradable inflation declined.
- The bulk of the reduction in annual inflation occurred during the first half of the year. In the second half, it remained stable despite a temporary rise in food inflation, which reversed itself in November and December.
- External conditions continued to be favorable for the Colombian economy. The country's trading partners reported good growth. Moreover, terms of trade remained high and international liquidity kept the country-risk coefficients down. In this context, the Colombian economy should have grown by almost 5% in 2005. Domestic demand was the driving force of economic growth. The acceleration in household consumption, coupled with continued growth in investments, both public and private, were the high points in this respect. The Colombian economy now has completed three consecutive years of growth above 4%.
- According to various indicators, the use of production capacity continued to rise during the third and fourth quarters of 2005. Also, most of these indicators are back at their long-term levels or slightly above. This suggests there was increasingly less surplus capacity in the economy.
- No major changes in global economic growth trends are anticipated for 2006. A moderate rise in interest rates the world over is expected, and international commodity prices should remain high. In this context, favorable conditions for growth above 4.5% during 2006 continue to persist. The low level of real interest rates compared to historical averages contributes to this outcome, as does growth in productivity and continued confidence on the part of economic agents.
- The trend in core inflation during the next four to eight quarters will be determined primarily by changes in the exchange rate, the existence of surplus capacity, inflationary expectations

and the presence or absence of inflationary pressures on costs and wages. The following are the principal tendencies anticipated in this respect:

- No increase in tradable inflation is anticipated for 2006, although conditions might be different in 2007.
- In 2006, surplus production capacity should contribute less to containing demand-pull inflationary pressures than in earlier years.
- Surveys show that inflationary expectations are more consistent with the target than in past years. This favors inflation performance.
- Recent wage hikes, including a higher minimum wage, could begin to exert pressure on costs, although this will depend on the extent and continuity of gains in productivity.
- During 2006, inflation in regulated goods and utilities is expected to be similar to what it was at the end of 2005 (around 6%).
- With respect to food inflation, the forecasts show a significant decline as of the first quarter of 2006 compared to late 2005 (6.5%). This confirms the temporary nature of the food-price shocks observed in the final quarter of 2005. However, these predictions are highly uncertain, particularly in terms of how big the changes will be, even in the short-term.
- Considering these factors and the extreme likelihood that the 2006 inflation target will be met, the Board of Directors of Banco de la República (BDBR) agreed to leave the interest rate on expansion repos at 6%. This decision was taken at a BDBR meeting on January 27, 2006. Furthermore, based on an assessment of the exchange situation and balance-of-payment projections, the Board of Directors agreed to continue its discretionary intervention in the exchange market.

Board of Directors  
Banco de la República  
(Central Bank of Colombia)

# INFLATION REPORT

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# I. THE CURRENT ECONOMIC SITUATION

*The acceleration in economic growth produced more of a decline in surplus production capacity than was anticipated in earlier editions of this report.*

In the final months of 2005, high oil prices continued to have no apparent effect on the world economy. Low growth in the United States at the end of the year did not signal a change in medium and long-term trends, and eventually was offset by added growth in other industrialized and emerging economies. With relatively stable inflation in the United States, the U.S. Federal Reserve Bank (the Fed) continued to increase its interest rates gradually and, by the end of the year, they were close to what could be considered neutral levels. Even so, long-term rates remained low, encouraging capital flows towards the emerging economies.

The Colombian economy continued to benefit from this external context. Terms of trade remained at historically high levels and the growth experienced by the country's trading partners guaranteed more external demand. Domestic demand rose during the second half of the year, thanks to the renewed force of private consumption and intense investment activity. All these factors accelerated economic growth beyond what was anticipated in earlier reports. At the same time, a variety of indicators showed a sizeable decline in surplus production capacity, suggesting additional closure of the output gap compared to the level at September.

However, 2005 exhibited no evidence of demand-pull inflationary pressure. Coupled with the effect of accumulated appreciation and fewer inflationary expectations, this allowed for considerably less inflation and for compliance with the target set by Banco de la República.

*Coupled with the effect of accumulated appreciation and fewer inflationary expectations, this allowed for considerably less inflation and for compliance with the target set by Banco de la República.*

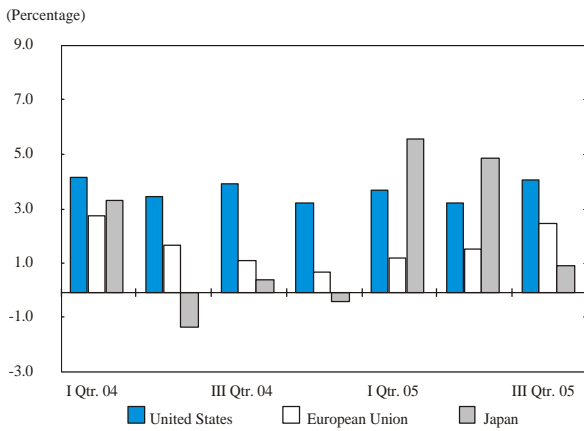
## A. THE EXTERNAL CONTEXT AND THE EXCHANGE RATE

### 1. General Aspects

World economic growth in 2005 was better than anticipated at the start of that year, although less than in 2004. Despite high oil prices and natural disasters,

**GRAPH 1**

**ANNUALIZED QUARTERLY GDP GROWTH IN THE UNITED STATES THE EURO ZONE AND JAPAN**



Source: Datastream.

the U.S and Chinese economies continued to lead this global expansion. On the other hand, the Euro zone and Japan have made an excellent recovery, consistent with what was expected at the beginning of 2005.

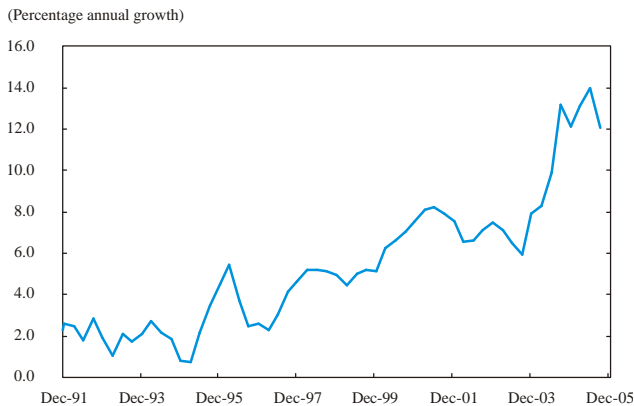
In the third quarter, despite negative shocks caused by the hurricane season, the U.S. economy registered 4.2% growth (annualized quarterly), following a second-quarter increase of 3.3% (Graph 1). Once again, this outcome was backed by domestic demand, investment included.

At the time this report was prepared, fourth-quarter growth was known to have been below market expectations (1.1% vs. 2.8%). Nearly 18 months of rising interest rates and higher oil prices may have begun to take their toll on private spending. However, most analysts agree this slowdown is temporary and largely due to the delayed effects of the third-quarter supply shock to the U.S. economy.

This interpretation is supported by the positive performance mirrored in the various indicators associated with the mid-term trend in private consumption. The consumer confidence index stayed at the high levels observed in the third quarter, and the unemployment rate continued to drop. It was 4.9% at December. Although there has begun to be some correction in the housing market, following the boom in recent years, it appears to be moderate, as suggested by the latest information on prices (Graph 2) and the number of units sold.

**GRAPH 2**

**USED HOUSING PRICES IN THE UNITED STATES**



Source: Datastream, Ofheo Index.

The Japanese economy improved considerably in 2005. Growth accelerated up until the third quarter, thanks to rising domestic demand. This was made possible by better conditions on the job market, more investment and good export performance. Although some slowdown was observed as of the third quarter (1.0% annualized quarterly, as opposed to 5% the quarter before), it seems to have been the result of temporary, seasonal factors and is within the bounds anticipated by the markets (Graph 1). As to the fourth quarter, the business confidence indicators continued to improve, indicating the Japanese economy had entered an upswing in its business cycle.

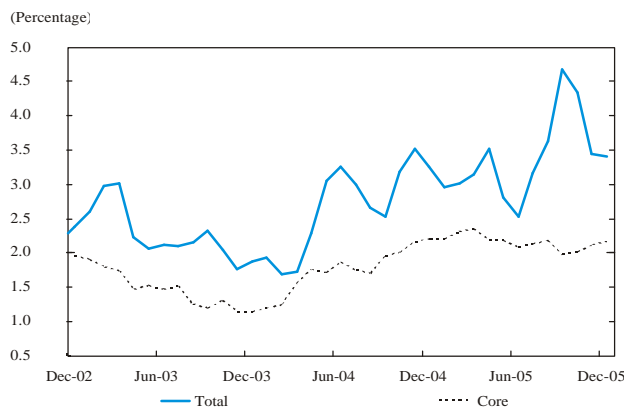
The assessment for the Euro zone is not much different. Europe’s economic growth in the third quarter (2.6% annualized quarterly) was more than in previous quarters (Graph 1). In this case, the impetus came from an improvement in exports and investment. Private consumption also was a factor, but less so. The latest indicators continue to show a build-up in business and consumer confidence.

Inflation remained in check, despite better performance by the leading developed economies and high oil prices. In general terms, the broader inflation indicators closely follow the oil price hikes. The jump in the price of oil during September 2005 explains the hike in consumer inflation in Europe and the United States at about the same time. However, these increases have been temporary and, by the end of the year, had yet to be reflected in the core inflation indicators. At December, core inflation was 2.2% in the United States and 1.3% in the Euro zone. These are low, stable levels that denote no risk of future pressure (Graphs 3 and 4).

In the case of the United States, the fact that core inflation has remained stable at low levels could be due, in part, to the positive performance of labor productivity. The rate at which it increased in 2005 exceeds the recent historical average (2.7% between 1995 and 2005) (Graph 5). This kept unitary labor costs (nominal) from spilling over. By the third quarter, these costs had risen at an annual rate of just 1.8%. During the previous quarters, this rate was about 3% less than the increase registered at the end of the nineties and at the start of the present decade.

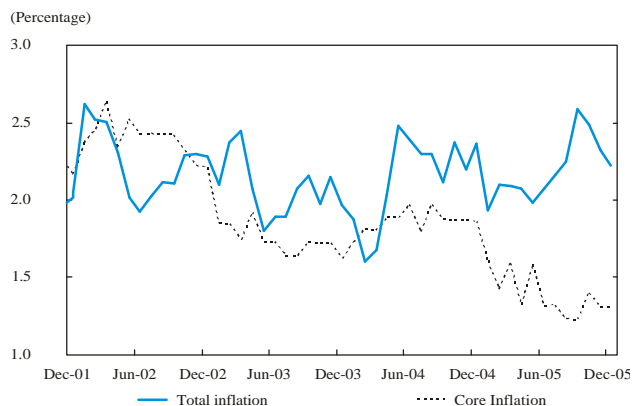
Thanks to stable inflation, the leading central banks continued to adjust their interest rates gradually. During the last quarter, the Fed raised its reference interest rate by 50 bp to 4.25% at December, while the European Central Bank (ECB) elevated its reference rate by 25 bp (2.25%) for the first time since June 2003. Although the accumulated ECB increase is well below that of the United States Federal Reserve Bank, this latest movement is clearly a sign that Europe’s monetary authorities are keeping an eye out for possible inflationary pressures in the

ANNUAL CONSUMER INFLATION IN THE UNITED STATES



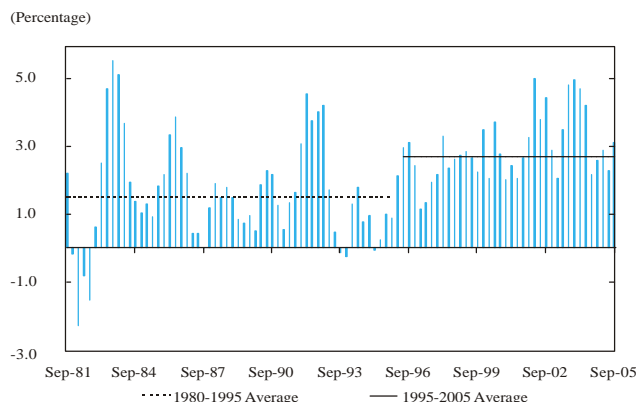
Source: Datastream.

ANNUAL CONSUMER INFLATION IN THE EURO ZONE



Source: Datastream.

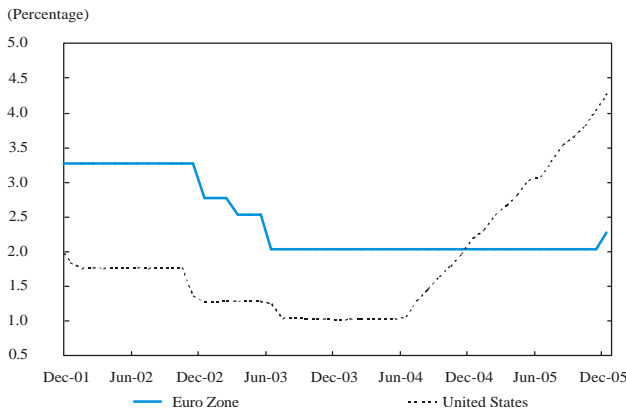
GROWTH IN U.S. PRODUCTIVITY (Y/L)



Source: Bureau of Labor Statistics.

**GRAPH 6**

**MONETARY POLICY RATE IN THE UNITED STATES AND THE EURO ZONE**



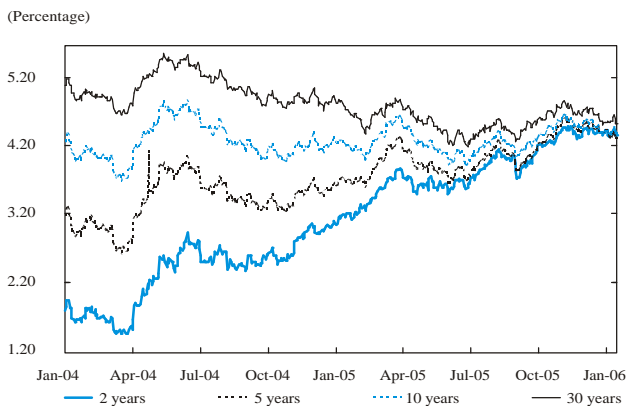
Source: Central European Bank and Datastream.

months ahead (Graph 6). The market anticipated the changes made by both the Fed and the ECB, as forecast in earlier reports.

However, at December, these increases had yet to be reflected in higher long-term interest rates, at least to the degree expected by the market (Graph 7). As a result, the yield curve continued to level out and maintained the trend observed for more than a year. As indicated in past editions of this report, the low long-term interest rates in the United States are the product of an abundant demand for U.S. securities, which seems immune to that country's growing macroeconomic imbalances, particularly its current account deficit.

**GRAPH 7**

**INTEREST RATE OF U.S. TREASURY BONDS**



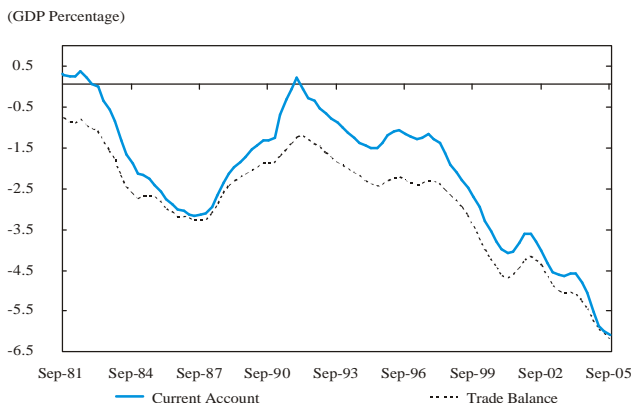
Source: Datastream.

This added demand is a reflection of the external-savings surplus that has been financing the United States economy. By the third quarter, the U.S. current account deficit had climbed to 6.1% of gross domestic product (GDP), one percentage point above what it was a year earlier (5.1%). Yet, contrary to what is expected in a context of this sort, the dollar continued to appreciate throughout the year (Graph 8).

During 2005, the dollar appreciated by 14% against the yen and by 13% against the euro. However, these currencies have continued to gain strength since December, backed by better prospects for economic growth in Japan and Europe, which would mark a breaking point in the trend in exchange rates (Graph 9).

**GRAPH 8**

**BALANCE EN CUENTA CORRIENTE Y COMERCIAL DE LOS ESTADOS UNIDOS**

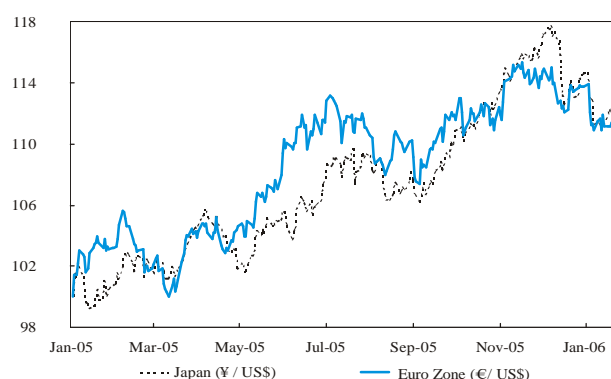


Source: Bureau of Economic Analysis.

**2. External Imbalance in the United States**

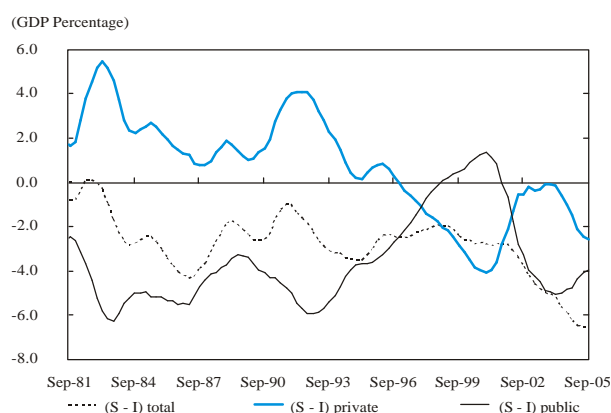
Growth in the current account (or external savings) deficit in the United States economy during 2005 was accompanied by a drop in private savings, largely of the personal variety. Towards the third quarter, personal savings were down to just 0.15% of GDP, due to soaring consumption and higher prices for fuel. However, thanks to the recovery in public revenue

**NOMINAL EXCHANGE RATES IN JAPAN AND THE EURO ZONE  
(JANUARY 2005 INDEX = 100)**



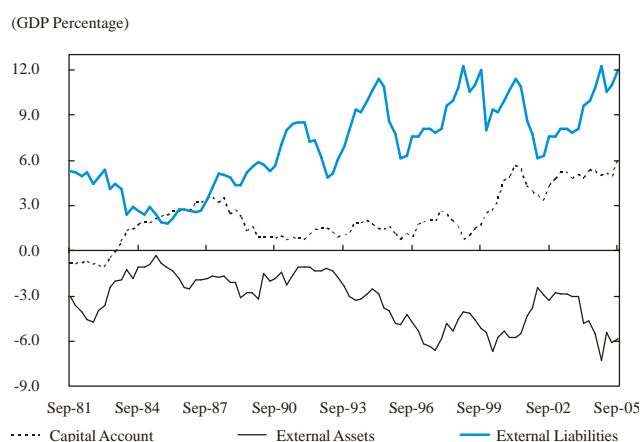
Source: Datastream.

**UNITED STATES SAVINGS (S) - INVESTMENT (I)  
BALANCE**



Source: Bureau of Economic Analysis.

**U.S. CAPITAL ACCOUNT  
COMPOSITION**



Source: Bureau of Labor Statistics.

(Graph 10), part of the slump in private savings was offset by a reduction in the public deficit (-4.0% as opposed to -5.0% at March 2004).

Capital markets remain willing to finance the macroeconomic imbalances in the United States, despite their continued growth. One demonstration of this is the abundance of resources that had come into the country by the third quarter of 2005. At that time, the gross influx of capital into the United States accounted for 12% of GDP, which is twice the U.S. trade deficit (6%). This surplus allows U.S. residents to accumulate gross assets abroad in an amount equivalent to the difference; that is, 6% of GDP. Moreover, net foreign direct investment (FDI) was 0%, which means the entire current account deficit was financed through borrowing (Graph 11).

This broad funding of the U.S. deficit prevented devaluation of the dollar against the euro and the yen, as well as a sharp rise in long-term interest rates. Up until the end of 2004, it was thought that most of these resources originated with central banks in other parts of the world (particularly Asia, with Japan and China in the lead), which had accumulated enormous amounts of international reserves in the form of securities issued in dollars. This was done to prevent their currencies from appreciating. However, these purchases seem to have dropped off a bit in 2005, while those of private agents increased. This change in origin could support the theory that a growing portion of this financing might come from the surplus savings of oil-producing companies and countries.

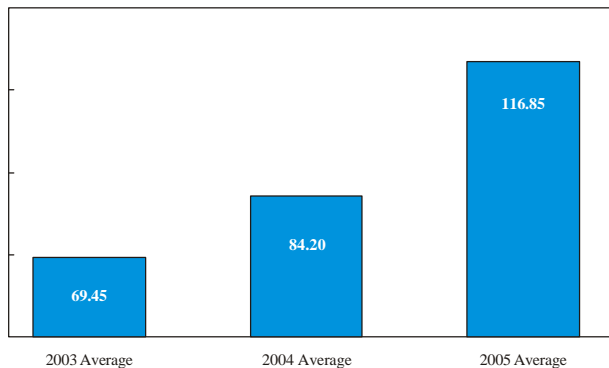
### 3. The Emerging Economies

Like the industrialized countries, the emerging economies also reported excellent growth during 2005. In the case of the Asian economies, exports continued to be the main source of demand, followed recently by more domestic spending.

GRAPH 12

INTERNATIONAL PRICE OF COFFEE

(US\$ cents/pound)

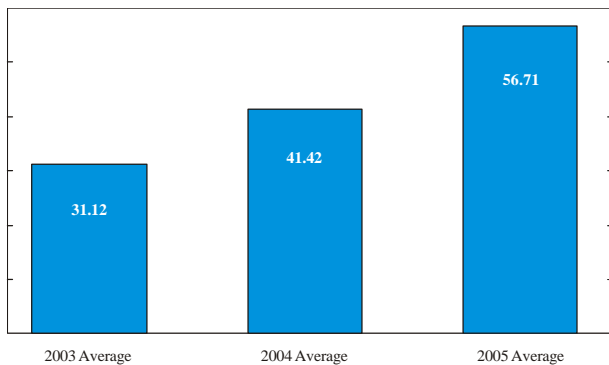


Source: Datastream.

GRAPH 13

INTERNATIONAL PRICE OF OIL - WTI

(Dollars/Barrel)



Source: Bloomberg.

The Chinese economy continued to expand at a particularly vigorous pace. By the third quarter, China's annual growth rate (taking into account the re-estimated GDP) was 9.8%. By the fourth quarter, it was 9.9%. Accordingly, growth in 2005 would be 9.9%<sup>1</sup>. Although exports remained the driving force behind this growth, they increased at a slower rate in 2005 than in 2004. In part, this seems to be due to 10% real appreciation in the yuan (nominal appreciation was only 2.6%). The slowdown in exports was offset by an important rise in domestic demand, particularly increased investment.

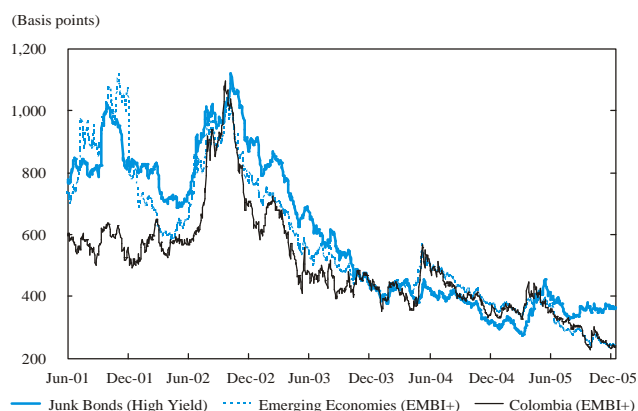
In the case of the Latin American economies, growth in 2005 continued to benefit from strong external demand, broad international liquidity and relatively high prices for basic export commodities. Colombia, in particular, saw its terms of trade improve with respect to 2004. The largest hikes in international prices during the past year were for coffee and oil (39% and 37%, respectively, compared to the average levels in 2004) (Graphs 12 and 13). Moreover, prices for commodities such as gold and nickel were up by 9% and 7%, respectively. The country's terms of trade also benefited from lower prices for certain imported commodities such as corn, sorghum and wheat (12%, 12.4% and 1%, respectively, compared to the average level in 2004).

Given this context, the country-risk premiums of the emerging economies continued to decline throughout 2005, including the fourth quarter. As of April, following a slight upswing, this risk premium declined gradually and, by December 2005, was 150 bp less than in December 2004. Colombia's country-risk premium dropped by more than 200 bp. These reductions exceeded the drop in U.S. junk bonds (high yield) (Graph 14). All of the foregoing helped to maintain the tendency of Latin America's currencies to appreciate against the dollar in 2005<sup>2</sup> (Graph 15).

<sup>1</sup> The same re-estimate placed growth in 2004 at 10.1% and at 9.9% for the period between 1993 and 2004 (as opposed to the initial estimates of 9.5% and 9.4%).

<sup>2</sup> Shortly before this report was published, the Peruvian sol appreciated sharply, apparently because of strong speculation on the market and less uncertainty about the country's political situation. This was after four months of devaluation against the dollar.

**RISK PREMIUM  
EMBI + AND JUNK BOND SPREAD (HIGH YIELD)**



Source: Bloomberg.

## B. THE DOMESTIC SITUATION

### 1. Growth in the First Three Quarters of 2005

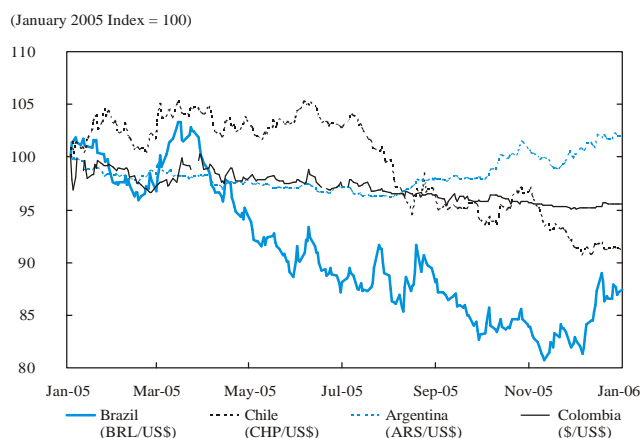
The latest official figures on growth confirm the acceleration in the economy during 2005 compared to 2004 and 2003. With the figure released by the National Bureau of Statistics (DANE) for the third quarter of 2005 (5.7%), economic growth during the first three-quarters of the year came to 5.1%. Not since the mid-nineties has the economy grown so quickly (Graph 16).

When it published the figures for September 2005, DANE raised the growth rate for the first and second quarters of the year (by 0.1% and 0.3%, respectively) compared to what was reported earlier. It also adjusted the figure for 2003 (from 4.3% to 4.1%).

The momentum in the third quarter surprised most analysts, who had predicted a slowdown in the economy. In the September 2005 *Inflation Report*, Banco de la República anticipated a slight acceleration in the third quarter, similar to what actually occurred.

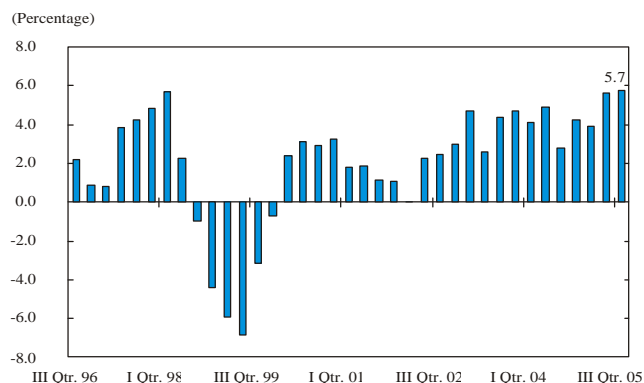
The economy continued to benefit from the external context and from better conditions on the domestic front. As mentioned in the preceding section, exports were favored by good growth for the country's trading partners, coupled with good terms of trade. In addition, capital flows increased during 2005, especially in the form of direct foreign investment. Between January and September, these investments came to US\$3,330 million (m), which is 39.1% more than during the same period in 2004.

**DIFFERENT LATIN AMERICAN EXCHANGE RATES AGAINST THE DOLLAR**



Source: Datastream.

**REAL ANNUAL GDP GROWTH**



Source: DANE. Calculations by Banco de la República.

*The latest official figures on growth confirm the acceleration in the economy during 2005 compared to 2004 and 2003.*

Added consumer and investor confidence in the country's economic performance, improvements in employment and productivity, and loose monetary and fiscal policies characterized the situation on the domestic front. These factors allowed for a broad supply of liquidity and important increases in expenditure by the territorial entities (departments and municipalities) and, to a lesser extent, by the central government.

The figures published by DANE showed no change in the tendency towards an increase in the different spending items compared to earlier quarters (Table 1). This being the case, until the third quarter of 2005, the economy continued to be propelled by private domestic demand. This includes both household consumption and gross capital formation, without civil works.

Private consumption was the spending component that contributed the most to growth (Table 1). A highlight with respect to the growth in household spending was the change in non-durable consumption, which rose from 2.4% average growth during the last 36 months to 4.5% in the last quarter. During this same period, the momentum in durable goods consumption remained

**TABLE 1**

**GDP PER TYPE OF EXPENSE  
(PERCENTAGE)**

	2004	2005		III Qtr. 2005		Accumulated I, II & III Qtrs. 2005	
		I Qtr.	II Qtr.	Percentage of Growth	Contribution to Growth	Percentage of Growth	Contribution to Growth
<b>End Consumption</b>	<b>3.89</b>	<b>3.74</b>	<b>6.27</b>	<b>5.24</b>	<b>4.34</b>	<b>5.09</b>	<b>4.21</b>
Household	4.09	3.77	5.69	5.21	3.25	4.89	3.05
Government	3.26	3.66	8.03	5.32	1.09	5.67	1.17
<b>Gross Capital Formation</b>	<b>11.66</b>	<b>15.66</b>	<b>23.53</b>	<b>32.47</b>	<b>6.19</b>	<b>24.10</b>	<b>4.46</b>
Gross Fixed Capital Formation (GFCF)	12.81	17.07	21.65	23.20	4.01	20.71	3.43
GFCF without Civil Works	21.86	12.44	24.89	20.51	2.99	19.29	2.70
Civil Works	(19.13)	44.46	5.04	37.90	1.01	28.52	0.73
<b>Change in Stock</b>	<b>3.10</b>	<b>2.64</b>	<b>36.50</b>	<b>122.32</b>	<b>2.18</b>	<b>52.65</b>	<b>1.03</b>
<b>Domestic Demand</b>	<b>5.26</b>	<b>5.85</b>	<b>9.44</b>	<b>10.33</b>	<b>10.53</b>	<b>8.56</b>	<b>8.67</b>
<b>Total Exports</b>	<b>10.39</b>	<b>13.37</b>	<b>10.16</b>	<b>2.30</b>	<b>0.46</b>	<b>8.44</b>	<b>1.61</b>
<b>Total Imports</b>	<b>16.86</b>	<b>22.81</b>	<b>29.18</b>	<b>24.06</b>	<b>(5.24)</b>	<b>25.34</b>	<b>(5.18)</b>
<b>Gross Domestic Product</b>	<b>4.01</b>	<b>3.93</b>	<b>5.62</b>	<b>5.75</b>	<b>5.75</b>	<b>5.10</b>	<b>5.10</b>

Source: DANE. Calculations by Banco de la República.



high, with annual growth rates near 20% (in real terms), while consumption of semi-durables and services accelerated.

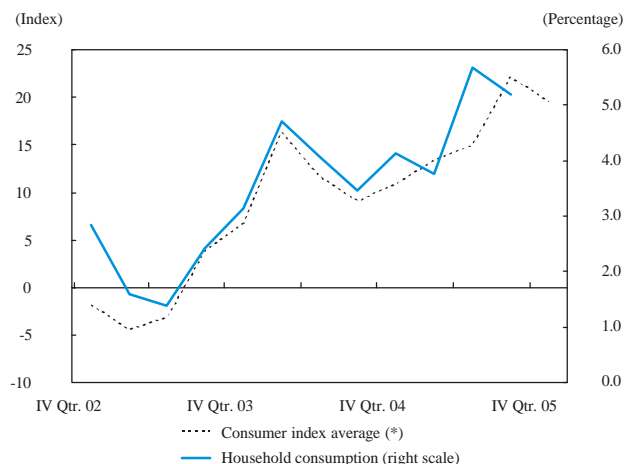
The rise in household consumption is explained by better employment conditions, more consumer confidence (Graph 17), the real increase in the economy, and expansive monetary and fiscal policy conditions.

As to the main components of spending, investment was the one that continued to exhibit the most growth during the third quarter. During this period, gross fixed capital formation, without civil works (an approximation to private investment) continued to grow at rates near 20%. Once again, the most dynamic items were investment in machinery (36.5%) and transport equipment (37.3%). The increase in investment in construction and buildings was less (6.3%) than in previous quarters, and growth in investment in agriculture and livestock was minimal (0.6%).

The trend in private investment is associated with the rise in imports of capital goods, as illustrated in Graph 18 (Panel 1). Peso appreciation and confidence among investors could explain part of the current rise in private investment (FBCF without civil works). In the third quarter of 2005, this aggregate accounted for 18.7% of GDP (in real terms), which is relatively high compared to the historical average (15.7% in the 1977-2005 period).

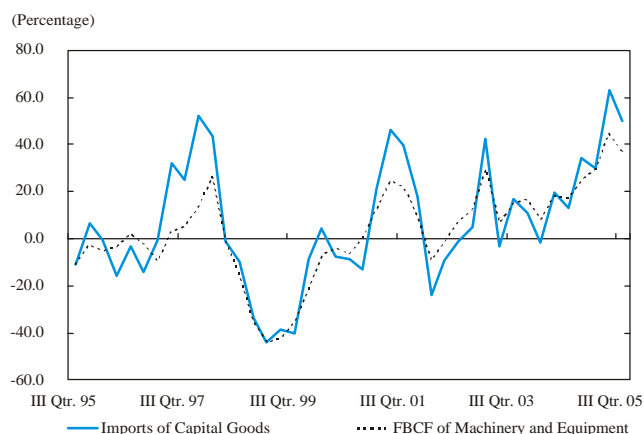
Real consumption by the public sector grew at an annual rate of 5.3% in the third quarter of 2005. This was due to more spending on the part of regional and local governments and, to a lesser extent, to central government spending. Investment in civil works continued to recover at the same time, after performing poorly in 2004. In fact, it increased by 37.9%. As to the accumulated figure for the first three quarters of 2005, the public sector contributed nearly two percentage points (pp) to GDP growth, which was 5.1% during that period. This is a much larger contribution than in recent years, which was near 1.0%, on average.

**REAL ANNUAL GROWTH IN HOUSEHOLD CONSUMPTION AND THE FEDESARROLLO CONSUMPTION INDEX**



(\*) Average of the consumer confidence index (CCI), the consumer expectation index (CEI) and the index of economic conditions (IEC).  
Source: Fedesarrollo. Calculations by Banco de la República.

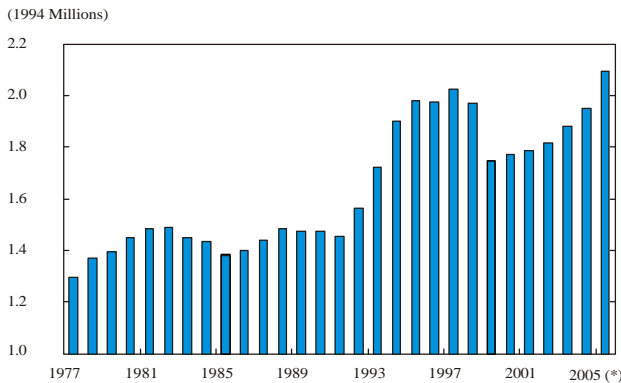
**GROWTH IN CAPITAL GOODS IMPORTS AND MACHINERY AND EQUIPMENT INVESTMENTS**



Source: Dane. Calculations by Banco de la República.

**GRAPH 19**

**REAL DOMESTIC DEMAND PER CAPITA**

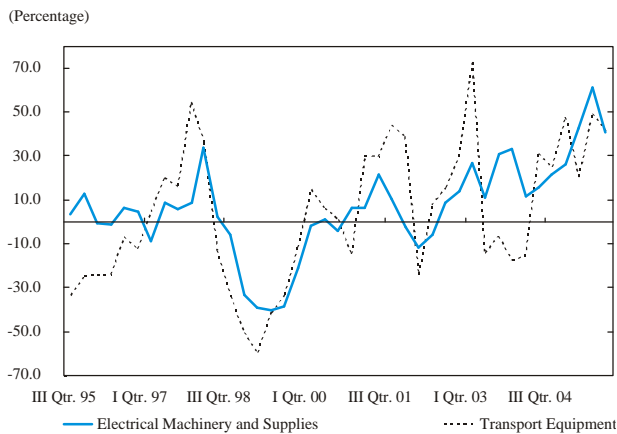


(\*) Accumulated up to the third quarter.  
Source: DANE, DNP and Banco de la República.

In short, the accumulated growth in domestic demand came to 8.7% by the third quarter, exceeding GDP and its historical average. From a per capita standpoint, this would surpass the levels seen prior to the crisis at the end of the nineties (Graph 19). Generally speaking, the positive trend in domestic demand has been marked by a recovery in household consumption, particularly durable goods (which were affected the most by the crisis), and in gross fixed capital formation in machinery and equipment (more than in housing and building construction). After being stable, in per capita terms, for eight years, public demand began to grow as of 2005. This new trend probably is associated with more consumption by public administrations and with the gross formation of capital represented by civil-works construction.

**GRAPH 20**

**GROWTH IN REAL IMPORTS OF CERTAIN CAPITAL GOODS**



Source: DANE. Calculations by Banco de la República.

Contrary to domestic demand, net external demand stayed in negative terrain up to the third quarter of 2005. This is explained by the sizeable rise in imports, particularly imports of intermediate goods, capital goods (Graph 20) and consumer durables, and by ambivalent export performance, with major real increases in some products, but a standstill or negative growth in others.

Several export items registered a good deal of real growth at the third quarter of 2005. These include coffee (12.8%), bananas (51.3%), plantains (30.8%), printed matter (11.9%), rubber and plastic products (20.9%), glass and products thereof (21.6%), and furniture and other moveable goods (48.1%). Those that performed poorly were coal (-2.6%), petroleum (3.6%), meat (-30.6%),

unrefined sugar (-42.5%), yarn and thread and textile weaves (-2.2%), knits (-8.6%), leather and products thereof (-11.5%) and transport equipment (0.6%).

Despite poor export performance in the third quarter (2.3%), in real terms, performance during the year was generally better (8.4%). During 2005, the export sectors benefited from good external demand and particularly from high terms of trade. This allowed for a major increase in exports in current dollars, for both traditional and non-traditional exports (Graph 21 and 22).

There continue to be concerns about the competition facing Colombian exports in markets such as the United States and Ecuador. The last few months have witnessed a standstill in sales of non-traditional exports to those destinations. On the other hand, in the final months of 2005, Venezuela became the principal market for Colombia's non-traditional exports, particularly industrial exports.

## 2. Growth in the Tradable and Non-tradable Sectors

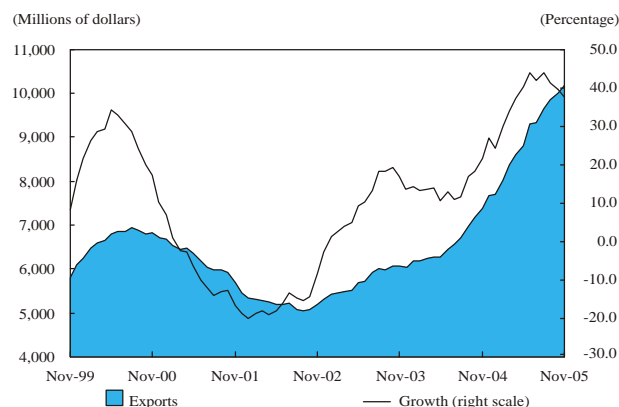
The third quarter of 2005 saw a slight acceleration in gross domestic product in the tradable sectors (agriculture/livestock, mining, industrial manufacturing, air, maritime and special transport, and private services for companies). This came on the heels of a steady decline since mid-2004. The growth in this aggregate during the third quarter is estimated at 3.9%, which is less than the total increase in GDP (Graph 23).

Poor industrial manufacturing performance had a major impact on aggregate growth in tradables as a whole. It is, however, likely that the industrial growth figure reported by DANE for 2005 will be revised upward in the coming months, particularly with respect to the sectors dedicated largely to exports<sup>3</sup>. The acceleration in tradables during the third quarter of 2005 is attributed to the increased output of agricultural products, particularly coffee.

During the third quarter, the non-tradable sectors (household services, construction, commerce, repairs, restaurants and hotels, land transport and

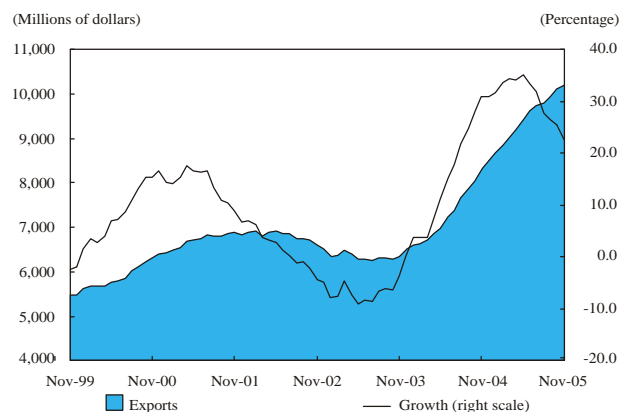
<sup>3</sup> DANE is in the process of assessing the method used to calculate industrial production. The results of this evaluation are due to be announced sometime towards the end of the first quarter of 2006.

TRADITIONAL EXPORTS  
(ACCUMULATED IN 12 MONTHS)



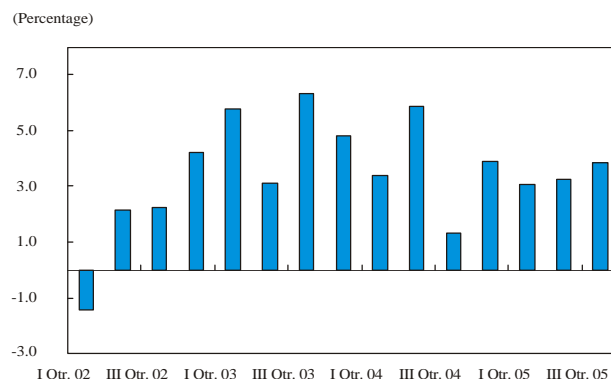
Source: DANE. Calculations by Banco de la República.

NON-TRADITIONAL EXPORTS  
(ACCUMULATED IN 12 MONTHS)



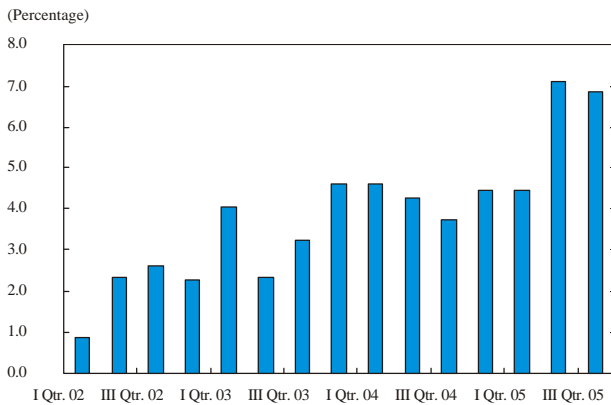
Source: DANE. Calculations by Banco de la República.

REAL ANNUAL GDP GROWTH IN TRADABLES



Source: DANE. Calculations by Banco de la República.

**REAL ANNUAL GDP GROWTH  
IN NON-TRADABLES**



Source: DANE. Calculations by Banco de la República.

communications, financial establishments, insurance, real estate and communal and personal social services) continued to be the most dynamic. For the second consecutive quarter, growth non-tradables was close to 7.0% (Graph 24). This expansion is related closely to the strength in domestic demand and the good conditions accompanying it. Among others, these include the availability of credit and an improvement in employment.

Performance in the private non-tradable sectors was extremely positive, with 6.1% growth. The public non-tradable sectors fared even better, with an annual increase of 9.0% (civil works construction and government services). The commercial sector was a high point during this period (9.0%). Its expansion is related to the trend

in imports and to the favorable domestic conditions mentioned earlier.

Housing construction was another high point in the non-tradable group, having continued to grow at a good pace (6.7%). Aside from a temporary slowdown on several occasions, the momentum in housing construction has remained strong for nearly four years running. Even so, in per capita terms, this activity has yet to reach the production levels seen before the crisis at the end of the nineties.

**3. Economic Growth in the Fourth Quarter of 2005**

The annual tendencies in growth are expected to remain the same during the fourth quarter of 2005, although a slowdown with respect to the figure reported by DANE for the second and third quarters cannot be ruled out. This is because the basis of comparison will be higher in the fourth quarter, particularly for certain non-tradable sectors such as commerce and civil works construction, and for tradable sectors such as coffee and industrial manufacturing.

According to the short-term models used by Banco de la República, GDP should increase by an annual rate of 4.4% during this period, placing growth for 2005 at 4.9% (Table 2). Once again, the non-tradable sectors of the economy would be the most dynamic (4.9%). The projection for growth in the tradable sectors is 3.5%, slightly up from the average for the year. If these forecasts prove to be true, the Colombian economy will have completed three consecutive years of 4.0% growth, or more. During this time, domestic demand has risen at an average annual rate of 6.3%.

*The Colombian economy will have completed three consecutive years of 4.0% growth, or more, with an average annual increase of more than 6% in domestic demand.*

**REAL GDP GROWTH BY SECTORS  
(PERCENTAGE)**

	2004	2005				Year
		I Qtr.	II Qtr.	III Qtr.	IV Qtr.	
Agriculture, forestry, hunting and fishing	2.5	2.9	2.6	3.1	2.8	2.9
Mining and quarrying	2.2	5.3	2.1	3.1	3.5	3.5
Electricity, gas and water	2.8	0.6	4.7	4.9	3.5	3.4
Manufacturing industry	4.8	(0.8)	5.0	3.0	1.6	2.2
Construction	9.7	10.7	7.5	16.1	5.8	10.0
Buildings	30.3	(2.2)	8.7	6.7	2.0	3.7
Civil works	(19.2)	44.7	5.0	37.9	13.5	24.2
Commerce, repairs, restaurants and hotels	5.8	7.8	11.1	8.9	7.5	8.8
Transport, storage and communication	5.1	3.9	5.3	5.9	6.4	5.4
Financial establishments, insurance, real estate and company services	4.3	(2.5)	9.9	4.9	2.6	3.6
Servicios sociales, comunales y personales	2.7	3.1	6.5	4.3	3.0	4.2
Financial brokerage services measured indirectly	12.2	(13.4)	50.7	12.1	4.5	9.9
Subtotal: Aggregate value	3.8	3.3	4.9	4.9	3.7	4.2
GDP	4.0	3.9	5.6	5.7	4.4	4.9
Taxes minus subsidies	6.9	12.0	15.2	16.6	13.6	14.4
Net SIFMI (*) financial services	1.9	1.9	(0.3)	2.3	1.8	1.4
Tradables	3.6	3.1	3.2	3.9	3.5	3.4
Non-tradables	4.3	4.4	7.1	6.9	4.9	5.8

(\*) Financial brokerage services measured indirectly.  
Source: DANE. Calculations by Banco de la República.

## C. MONETARY AGGREGATES, CREDIT AND INTEREST RATES

### 1. Monetary Aggregates

Banco de la República left its intervention rates unchanged during the final quarter of 2005 and kept the repo contraction windows closed. It also decided not to deliver long-term liquidity (repos at 90 and 120 days), as had become customary during the final months of each year. Instead, liquidity was made available primarily through discretionary exchange intervention, was the case throughout the year.

The sources of expansion and contraction in primary liquidity during 2005 are summarized in Table 3. The principal expansionary effects were concentrated in discretionary intervention (Col\$10.8 trillion (t)) and in the purchase of public debt securities (TES) (Col\$5.2 t). On the contrary, the contraction in liquidity was primarily through sales of TES (Col\$ 4 t) and foreign currency to the government (Col\$7.5 t). The end result was an increase of more than Col\$3.5 t in base money. This is equivalent to an annual growth rate of 20.8%.

*Banco de la República left its intervention rates unchanged during the final quarter of 2005 and kept the repo contraction windows closed.*

TABLE 3

**SOURCES OF BASE MONEY**  
(BILLIONS OF PESOS)

	Annual Variation		
	Dec-03	Dec-04	Dec-05
<b>I. Government</b>	914	(236)	(2,636)
Profits transferred <sup>1/</sup>	830	803	0
Pesos	830	803	0
Deposits with Banco de la República	83	(1,039)	(2,636)
<b>II. TES Regulation</b>	568	(2,524)	897
Definitive purchases	893	1,023	5,230
Definitive sales		(2,972)	(4,000)
Maturity	(325)	(575)	(334)
<b>III. Repos</b>	1,492	(1,058)	1,539
Expansion <sup>2/</sup>	1,386	(1,086)	1,539
Contraction	106	28	0
<b>IV. Foreign Exchange</b>	(703)	6,194	3,239
Put options	(703)	4,183	0
Discretionary intervention	0	3,264	10,757
Sale of foreign exchange to the government	0	(1,252)	(7,519)
<b>V. Others <sup>3/</sup></b>	239	272	505
<b>Total variation in base money</b>	2,510	2,647	3,543
<b>Base money balance</b>	16,615	19,262	22,805

<sup>1/</sup> Col\$1,483 million in profits were transferred to the government in 2003. Col\$651 billion (US\$220 million) of this amount was in foreign currency, meaning there was no expansionary effect. Similarly, in 2005, all profits turned over to the government (Col\$454 billion or US\$195.9 million) were in dollars.

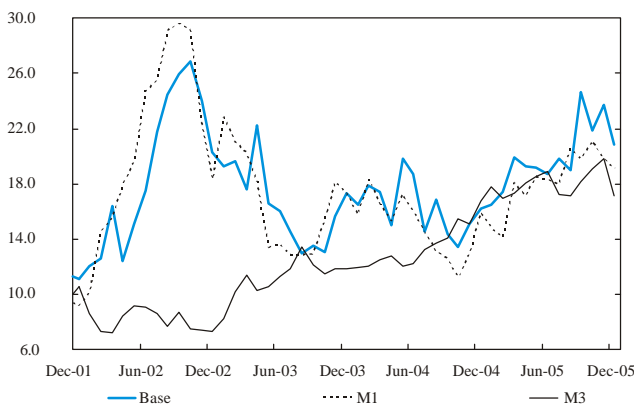
<sup>2/</sup> Includes one-day, overnight and medium-term repos.

<sup>3/</sup> Among other factors, this includes, the monetary impact of Banco de la República P&L, TES A maturities, portfolio recovery and its investments.

Source: Banco de la República.

GRAPH 25

**MONETARY AGGREGATES, ANNUAL GROWTH IN THE MONTHLY AVERAGE**



Source: Banco de la República.

With this injection of liquidity, the monetary aggregates had a propensity to accelerate throughout the year, although this tendency has slowed somewhat in recent months (Graph 25). Base money was the aggregate that experienced the most growth and acceleration in the last 12 months; M3, the least. The momentum in M3 is explained primarily by private financial savings, which registered an annual increase of 22.0% by November. At the same time, public M3 was up by 10.7%. The make-up of M3 continued to change during 2005, moving in the direction of savings accounts and away from time certificates of deposit (CD). This has been the trend since the year 2000.

## 2. Credit

The nominal gross portfolio (in Colombian pesos) moved in two different directions during the course of 2005. It accelerated in the first half of the year, from an increase of 9.9% at December 2004 to 14.3% at June 2005. However, this inclination reversed itself during the second half of the year, closing out 2005 with 11.2% growth (Graph 26). The portfolio in foreign currency registered an annual increase of 37.1% at December 2005, down from the rate a year earlier (53.9%).

Portfolio performance by type of credit was extremely varied. Commercial credit lost momentum, particularly during the second half of the year, while consumer and micro-credit exhibited strong growth. Mortgage loans continued to decline, although less so<sup>4</sup> (Graph 26). Accordingly, the commercial portfolio, with almost 56% of the gross portfolio, was largely responsible for the increase in the total portfolio. The growth in consumer credit during the last 18 months is closely related to the recovery in private consumption and the sizeable drop in interest on loans of this type<sup>5</sup>.

Surprisingly, at a time when the economy is showing a good deal of momentum, the commercial portfolio is experiencing a slowdown and is growing well below average. As summarized in the last edition of the *Inflation Report*, bank credit appears to have lost ground to other alternatives as a source of financing for business spending and investment. This has been the tendency for several quarters. During the first nine months of 2005, the financial liabilities of non-financial entities, as a share of their total liabilities, declined from 46.3% in the first quarter to nearly 40% in the third (Table 4). This space has been occupied in part by commercial paper issue, direct credit with suppliers and the reinvestment of profits.

*Deposit and lending rates continued to fall below their historical averages, in both nominal and real terms.*

## 3. Interest Rates

Even though Banco de la República did not lower its intervention rates during the last quarter (the official rate was left at 6%), deposit and lending rates

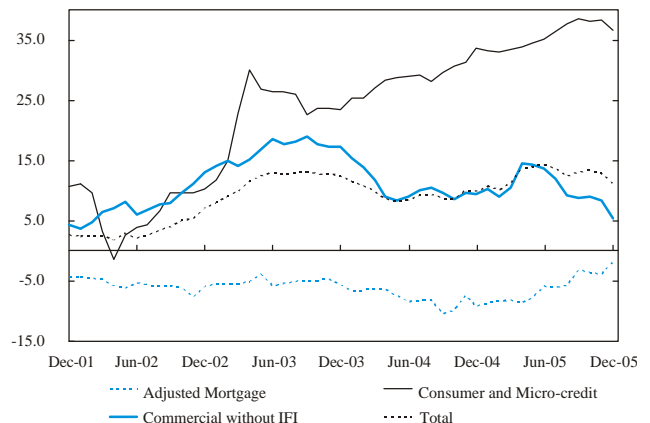
<sup>4</sup> The indication seems to be that potential home buyers continue to shy away from mortgages and prefer other sources of funding, such as their own resources, transfers from abroad, soft credit from cooperatives, employee funds and even residential leasing, which lately has become more prevalent.

<sup>5</sup> See the following section.

GRAPH 26

### GROSS PORTFOLIO (COLOMBIAN PESOS)

(Percentage annual growth)



Source: Colombian Superintendent of Financial Institutions. Calculations by Banco de la República.

TABLE 4

**SOURCES OF FUNDING FOR NON-FINANCIAL ENTITIES, AS A PERCENTAGE OF THE AGGREGATE**

	2005		
	I Qtr.	II Qtr.	III Qtr.
Total Financial Liabilities	46.33	43.08	40.28
Other Sources of Financing	53.67	56.92	59.72
Total Bonds and Commercial Paper	36.59	39.01	36.76
Suppliers	12.88	13.23	13.16
Reinvestment of Profits	4.20	4.68	9.80

Source: Colombian Superintendent of Financial Institutions. Calculations by Banco de la República.

continued to decline in nominal terms. In effect, the fixed-term deposit rate was 6.3% at December 2005, which is 54 bp less than at September and 146 bp below the rate at December 2004. The inter-bank rate (TIB) was 5.6% at December 2005, down from September (6.0%) and December the year before (6.7%). The TIB has remained below the minimum expansion rate ever since the last change in the Central Bank's intervention rates (September 16, 2005) (Graph 27).

The decline in nominal rates prompted reductions in real rates throughout 2005, placing them well below the historical averages. Accordingly, the real rate on fixed-term deposits at December was 1.4% as opposed to a historical average of 5.2% between 1986 and 2005.

A similar situation, although more so, occurred with nominal and real lending rates. The lending rate calculated by Banco de la República fell by 132 bp in

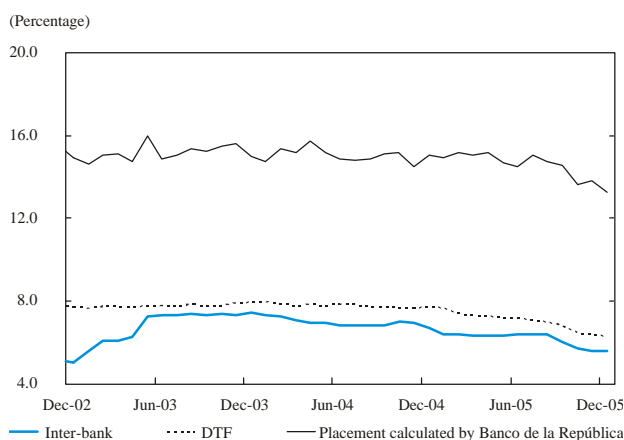
nominal terms during the past year. At December, its nominal and real levels were 13.3% and 8.0%, respectively. In the case of consumer credit, for example, the nominal reduction in 2005 was 228 bp and the real reduction was 144 bp. The current rate, in real terms, is 17.0%, as opposed to a historical average of 21.2% between 1998 and 2005.

#### 4. Market for the Domestic Debt and Other Assets

As with the other market rates, interest on government bonds declined during the first nine months of 2005. This trend was interrupted by short rebounds (Graph 28). Even so, the domestic market for government bonds was extremely volatile in the last

GRAPH 27

#### NOMINAL INTEREST RATES



Source: Colombian Superintendent of Financial Institutions. Calculations by Banco de la República.



quarter of the year, due to growing fears about the possibility of tighter monetary policies in Europe and the United States. However, this volatility tended to be neutralized by the good inflation results in Colombia and by the positive performance of the economy in general.

The TES yield curve flattened out during the past year. There was more of a dip in long-term interest than in short-term rates. The flattening was more pronounced during the last two months, given a slight rebound in rates on the short-term segment of the curve. The yield on 2014 TES dropped by 400 bp during 2005, while the bond rate for maturity in July 2006 declined by only 290 bp. At mid-January, the rate on the first of these securities was 8.13%, which is the lowest level on record since the start of long-term bond issues<sup>6</sup>.

In the last two years, Colombia has become one of the world's most dynamic stock markets. The General Index of the Colombian Stock Exchange (GICSE) rose 85.6% in value during 2004 and 115.2% in 2005<sup>7</sup>. The greatest amount of appreciation occurred during final quarter of 2005 (32.5%). So far this year, the GICSE has continued to grow, breaking the 10,000-point mark on January 12 and appreciating by an additional 2% during the first two weeks of 2006.

This tremendous performance is associated, in particular, with multiple company purchases and mergers that have spurred the market. Another contributing factor is the increased confidence derived from an improvement in the security situation and the increase in business profits, thanks to good economic performance.

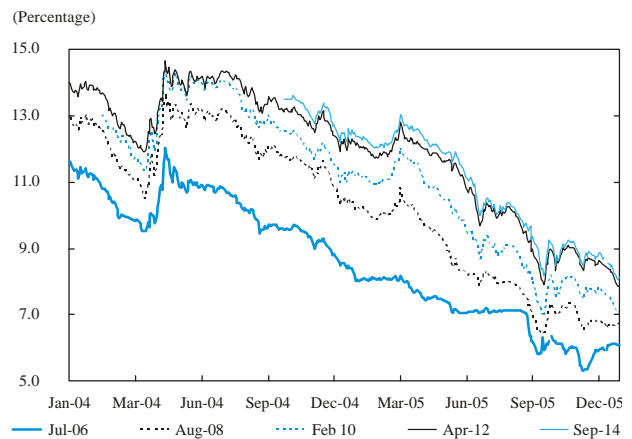
Several indicators suggest the rise in stock prices is reaching its limit. One example is Tobin's Q ratio

<sup>6</sup> The flattening trend in the TES yield curve became more pronounced in the first half of January. The rate on bonds maturing in September 2014 reached 8.1% on the secondary market. The short-term rate for June 2006 (6.1%) continued to rebound and moved away from its lowest level, which was 5.31% on November 28, 2005.

<sup>7</sup> Stock market profitability in 2004 and 2005 was not the highest on record. Between 1991 and 1992, the Bogota Stock market appreciated at an annual rate above 200% for several months.

GRAPH 28

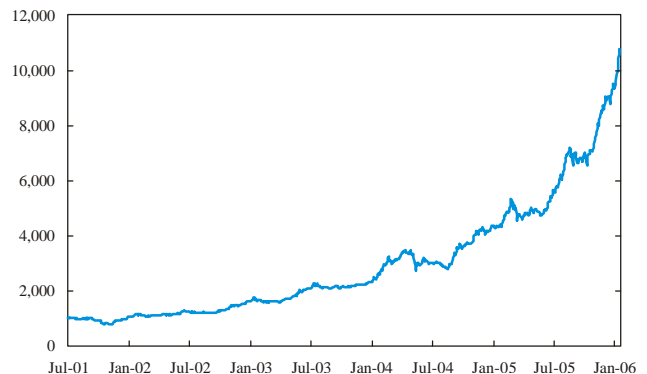
**NOMINAL TES (\*) INTEREST RATES ON THE SECONDARY MARKET**



(\*) Figures at January 17, 2006  
Source: SEN, Banco de la República.

GRAPH 29

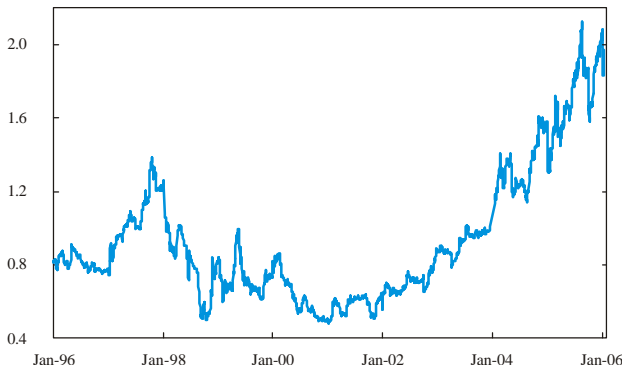
**GENERAL INDEX OF THE COLOMBIAN STOCK EXCHANGE (\*) (JULY 3, 2001 BASE = 1,000)**



(\*) Figures at January 18, 2006.  
Source: Colombian Stock Exchange.

GRAPH 30

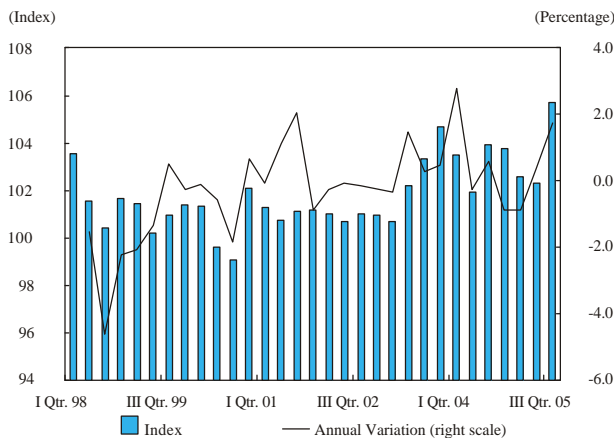
TOBIN'S Q RATIO (\*)



(\*) Data at January 13, 2006.  
Source: Corfinsura.

GRAPH 31

MOVEMENT IN THE PRICE OF NEW HOUSING



Source: DANE.

(market value/equity value) (Graph 30). It shows the stock value is twice the book value.

The housing market has not performed as well, or at least not in a generalized way, as suggested by DANE's new housing price indicator for the 23 major cities. Prices had risen by an annual rate of only 2.2% at October 2005 (Graph 31). In real terms, this spells negative performance. The various housing price series developed by the National Department of Planning (DNP) in Bogotá and Medellín show similar results.

#### D. WORK FACTOR INTENSITY AND THE LABOR MARKET

The trend in productivity is a crucial variable when assessing non-inflationary growth and surplus production capacity in the economy. As discussed at length in the previous edition of the *Inflation Report*, this is no easy task and can be accomplished only indirectly, through the use of other variables.

Output per worker is a measure cited often in international literature as an indicator of this fundamental variable. However, it is not an adequate gauge, as variations in output per worker are not due to changes in productivity alone. For example, an increase in output per worker can be explained by added use of the work factor (persons working more

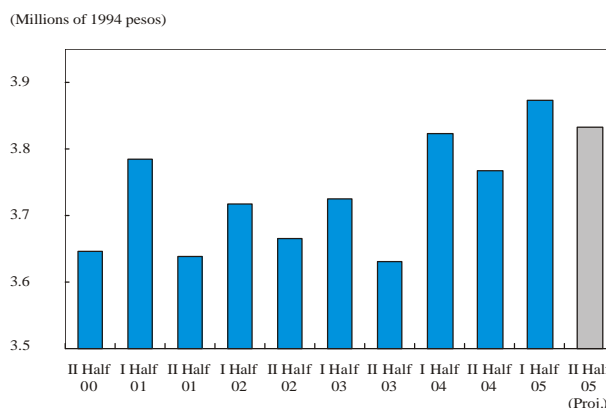
hours per week). To avoid this sort of imprecision, and pursuant to the strategy outlined in the September edition of this report, output per hour worked was selected as the measure of productivity.

### 1. The Recent Trend in Output per Worker and Productivity in Colombia

Output per worker at national and urban level, excluding government services<sup>8</sup>, is calculated with the data contained in the national accounts and in the continuous household survey (CHS). The information registered at the third quarter of

<sup>8</sup> National output per worker is defined as GDP without government services. It takes into account the working or economically active population nationwide, with the exception of

OUTPUT PER URBAN WORKER (\*)

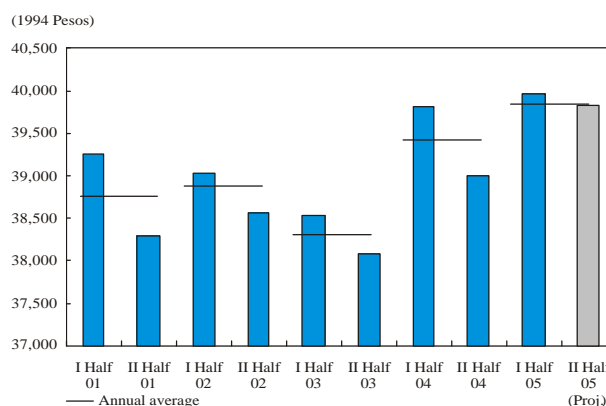


(\*) GDP does not include government services, agriculture and mining. Projection by Banco de la República.  
Source: DANE. Calculations by Banco de la República.

2005 is presented in Graph 32, together with a projection for the last three months of the year<sup>9</sup>. It shows the work factor has been used more intensively since 2004, a tendency that was expected to continue during the second half of 2005.

The assumed increase in labor productivity was examined to explain the increase in output per worker. Information from the national accounts and the CHS shows a rise in urban productivity per hour worked<sup>10</sup> as of 2004, suggesting higher productivity (Graph 33). During the first half of the year, output per hour worked was up by an annual rate of 0.4%. Given actual data at the third quarter of the year (6.6% growth in urban GDP and 3.4% in hours worked), plus the forecast for GDP growth in the fourth quarter of 2005 (4.9% annual rate), Banco de la República expects to see an increase of 2.4% in productivity during the second half of 2005. Accordingly, urban output per hour worked should be up 1.2% compared to the increase calculated for 2004.

URBAN OUTPUT PER HOUR WORKED (\*)

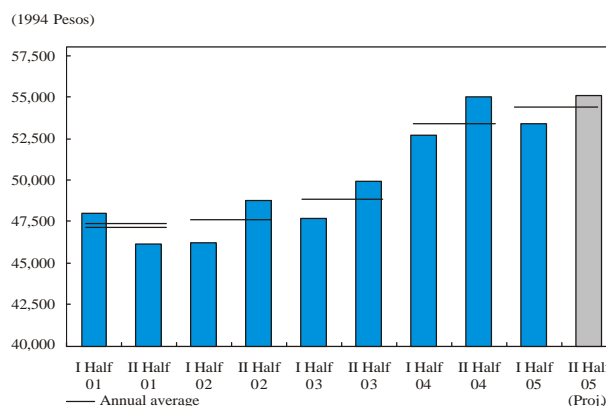


(\*) GDP does not include government services, agriculture and mining. Projection by Banco de la República.  
Source: DANE. Calculations by Banco de la República.

The sectoral indicators suggest labor productivity has increased in non-tradable sectors as well. With the data available at September 2005 and the fourth-quarter growth forecast, a 0.7% increase in productivity in the construction sector (Graph 34) was forecast for 2005, along with a 11.0% rise in the productivity of financial services (Graph 35).

Similarly, the figures available at October show real sales per worker in retail trade continued the upward

OUTPUT PER HOUR WORKED IN CONSTRUCTION

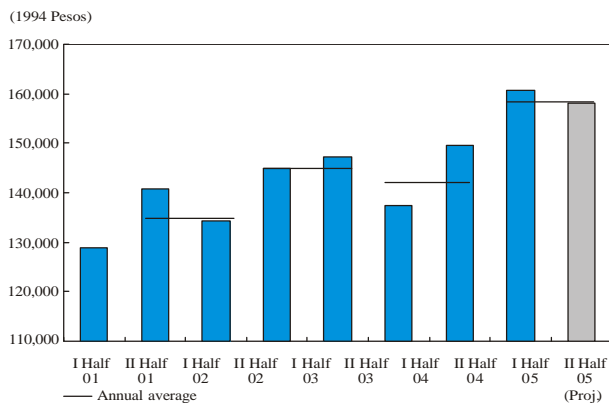


Note: Projection by Banco de la República.  
Source: DANE. Calculations by Banco de la República.

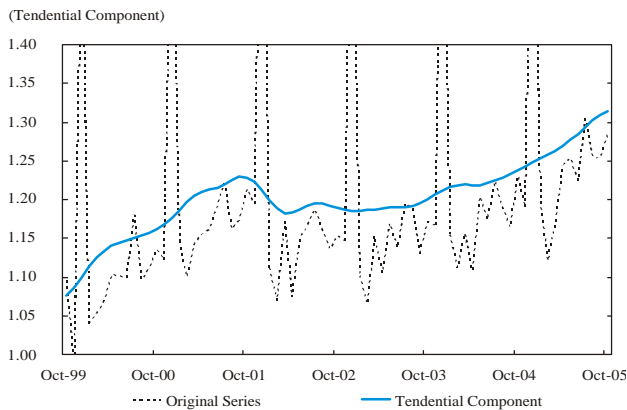
government employees and manual laborers. Agricultural, mining and quarry production are not including when calculating output per urban worker, which is based on the working population in 13 cities, with the exception of government employees and manual laborers.

<sup>9</sup> The projection is based on the amount of GDP growth anticipated by the Bank's Division of Economic Studies (SGEE in Spanish). The projected rise in the number of working or employed persons is consistent with the exercise done to estimate product growth potential, which was based on the production function method.

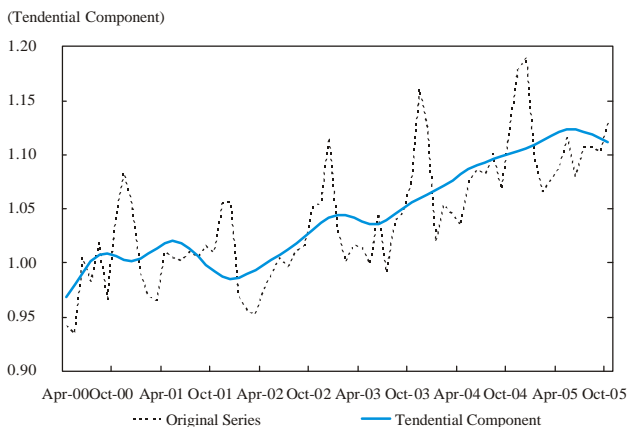
<sup>10</sup> Available information on the total number of hours worked by the economically active population in the 13 major urban areas, excluding government employees and manual laborers, was used for this calculation.

**GRAPH 35****OUTPUT PER HOUR WORKED  
IN FINANCIAL SERVICES**

Source: DANE. Calculations by Banco de la República.

**GRAPH 36****COMMERCE: REAL SALES PER WORKER**

Source: DANE. Monthly retail sample.

**GRAPH 37****OUTPUT PER HOUR WORKED IN INDUSTRY**

Source: DANE. Monthly Manufacturing Sample.

course witnessed since the second half of 2003 (Graph 36). On the contrary, there has been a slight decline in industrial manufacturing productivity as of June 2005 (Graph 37). Nonetheless, it was still above the level observed in 2004. With the high degree of investment in machinery and equipment seen in recent years (imports of industrial goods for industry rose by 65.3% between 2003 and 2005), labor productivity in the manufacturing sector is expected to begin to grow again in the coming months. Also, as noted earlier, an upward revision of real growth rates in industrial production during 2005 cannot be ruled out and could raise the labor productivity estimates for that year.

In general, the indicators presented in this report suggest an increase in labor productivity throughout 2005 (which depends on the ratio of working capital to PTF). This would imply a higher rate of non-inflationary or potential output growth. However, the figures supporting these conclusions usually are revised to a considerable degree. This is an important point, as it means the calculations noted earlier could vary substantially. At the same time, there is empirical evidence on Colombian industry that indicates productivity measurements are biased due to the presence of market power, growing returns to scale and changes in the use of installed capacity<sup>11</sup>.

## 2. The Labor Market

Available information suggests the labor market remains broad. This conclusion is based on wage behavior, the unit cost of labor (as discussed later), the pattern of unemployment with respect to the NAIRU estimates, and the trend in regular hours and paid overtime:

<sup>11</sup> Ramírez, J.M. *et al.* (1998). "Reformas comerciales, márgenes de beneficios y productividad en la industria colombiana," in *Planeación y Desarrollo*, Vol. XXIX, No. 3, July-September.

- Information from the November CHS suggests urban labor-market conditions have improved compared to the two years prior to that date. The unemployment rate was down by 2.7 pp with respect to the rate at November 2003 and by 1.7 pp compared to the same month in 2004<sup>12</sup>. Concurrently, the relative supply of labor has declined, as reflected by the 2.4 pp drop in the overall participation rate compared to November 2003<sup>13</sup>. However, the unemployment rate continues to exceed the NAIRU (unemployment rate with no acceleration in inflation) calculated by Banco de la República. This would suggest the job market still can deal with an increase in demand, without exerting pressure on wages and prices.
- The increase in the number of hours worked in the third quarter of 2005 (3.4%)<sup>14</sup>, as reported in the CHS, is less than the figure registered for the first half of 2005 (4.7%). Also, the increase in hours worked is similar to the growth in employment reported during the same period (3.6%)<sup>15</sup>. Therefore, the growth in total hours worked is related to the rise in occupation or employment, and there is no reason to assume it is caused by more intense use of labor. On the other hand, although the underemployment rate due to insufficient hours worked fell from 13.0% to 12.1% between November 2005 and the same month in 2004, this represents - in terms of levels - only 36 thousand fewer underemployed persons. Consequently, Banco de la República expects the increase in hours worked during the fourth quarter of 2005 to be similar to the rise in the number of people with jobs (4.5%).
- Up to now, the demand for labor has been supplied largely by adding to regular work hours. This confirms that the job market still has a sizable reserve of workers who can be employed without exerting excessive pressure on real wages.

*Available information suggests the labor market remains broad.*

## E. INFLATION AT DECEMBER AND ITS DETERMINANTS

### 1. Consumer Inflation

Annual consumer inflation was 4.9% in 2005, which is 64 bp less than the figure reported at December 2004 (Graph 38). It also is within the target range

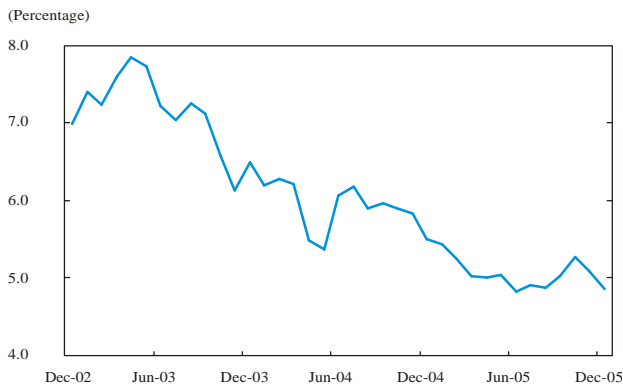
<sup>12</sup> The decline refers to the three-month moving average for the 13 cities. Specific figures for the same period show the unemployment rate went from 14.1% at November 2003 to 12.1% in 2006 (2.0 pp).

<sup>13</sup> The decline refers to the three-month moving average for the 13 cities. Specific figures for the same period show the global participation rate (GPR) went from 65.4% at November 2003 to 63.2% at November 2005.

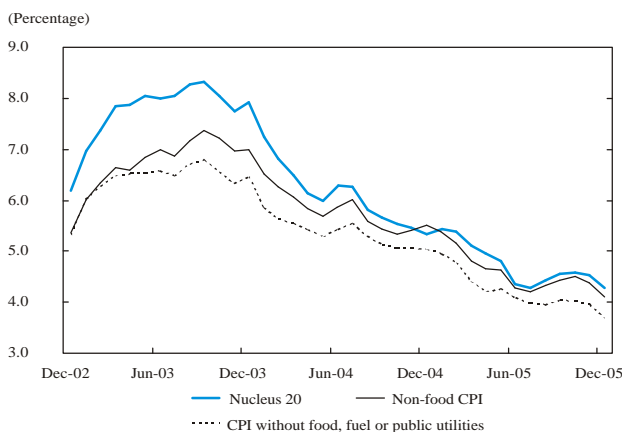
<sup>14</sup> For the total employed population in the 13 cities, excluding government manual laborers and employees.

<sup>15</sup> For the total employed population in the 13 cities, excluding government manual laborers and employees.

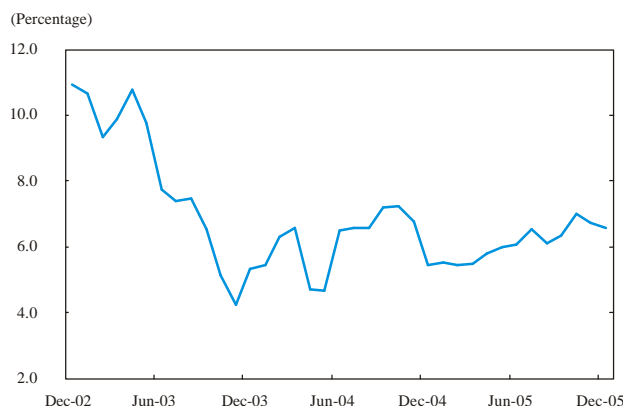
*The drop in tradable inflation was closely related to appreciation in the exchange rate.*

**GRAPH 38****ANNUAL CONSUMER INFLATION**

Source: DANE. Calculations by Banco de la República.

**GRAPH 39****39 CORE INFLATION INDICATORS (ANNUAL VARIATION)**

Source: DANE. Calculations by Banco de la República.

**GRAPH 40****FOOD CPI**

Source: DANE. Calculations by Banco de la República.

set by the Board of Directors (between 4.5% and 5.5%). This rounds out two consecutive years of strict compliance with the country's inflation targets. The fourth quarter saw total inflation surge on a few occasions, prompted by high prices for staple foods, but these hikes proved to be only temporary. The limited adjustments in rates for a number of regulated goods and services also played an important role towards the end of the year.

The decline in consumer inflation during 2005 was possible thanks to a sharp drop in non-food inflation, which went from 5.5% at December 2004 to 4.1% at December 2005 (Graph 39). However, food inflation for 2005 as a whole was up by 116 bp and ended the year at 6.6% (Graph 40).

The results for non-food inflation were 0.4 pp below the Bank's forecasts in the September quarterly report; the results for food inflation were 0.1 pp less. Total consumer inflation was overestimated by 0.3 pp.

## 2. Core Inflation

Above and beyond non-inflation, the past year also saw dramatic reductions in the other two indicators of core inflation: CPI without staple foods or regulated goods and Nucleus 20. At the end of 2005, the average of the three indicators (including non-food CPI) was 4.0%. This is 127 bp under the rate at December 2004 and constitutes a historical low (Graph 39). Most of the reduction occurred in the first half of the year (the average was 4.15% at June). There was a slight upswing in October, which was corrected later.

Pursuant to the classification used in the *Inflation Report* and the central forecast model (MMT), the downturn in annual non-food inflation during the past year occurred in every group, but primarily in tradable goods (determined essentially by the exchange rate) and regulated utilities.

TABLE 5

## CONTRIBUTION TO ACCELERATION

	Contribution		
	2004	2005	to acceleration
Total	5.5	4.9	(0.6)
Food	1.6	2.0	0.3
Non-food CPI	3.9	2.9	(1.0)
Tradable NF CPI	0.9	0.6	(0.3)
Non-tradable NF CPI	1.7	1.5	(0.2)
Regulated NF CPI	1.3	0.9	(0.4)

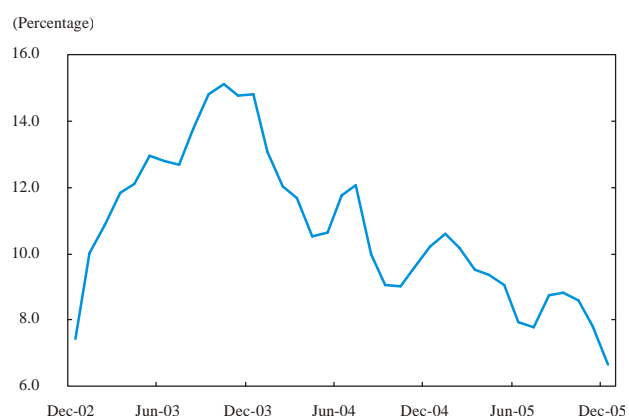
Source: DANE. Calculations by Banco de la República.

From December 2004 to December 2005, tradable inflation (without food and regulated goods/utilities) went from 3.5% to 2.2% (Graph 41). This lowered non-food inflation by 34 bp<sup>16</sup> (Table 5). Regulated utilities made an even bigger contribution (41 bp), with a drop in inflation from 10.2% to 6.7% during the same period (Graph 42). The downward trend in these two groups has been evident since October 2004.

As has been the case since mid-2003, last year's drop in tradable inflation was closely related to appreciation in the nominal exchange rate (11.7%, on average, during 2005). Because most of this appreciation occurred during 2004 and early 2005, the decline in tradable inflation was concentrated in the first half of the year. During the second half, aside from a slight surge, inflation remained practically unchanged. This is consistent with the increased stability of the exchange rate.

On the other hand, the reduction in regulated services/utilities inflation applied to each of its three main components: fuel, public utilities and public transportation (Graph 43). The fuel-price hikes in

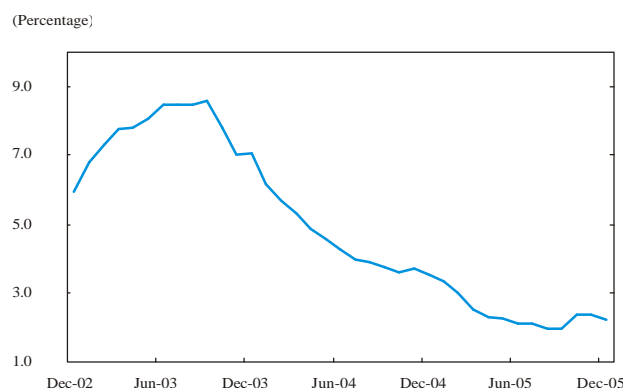
GRAPH 42

REGULATED CPI, WITHOUT FOOD  
(ANNUAL VARIATION)

Source: DANE. Calculations by Banco de la República.

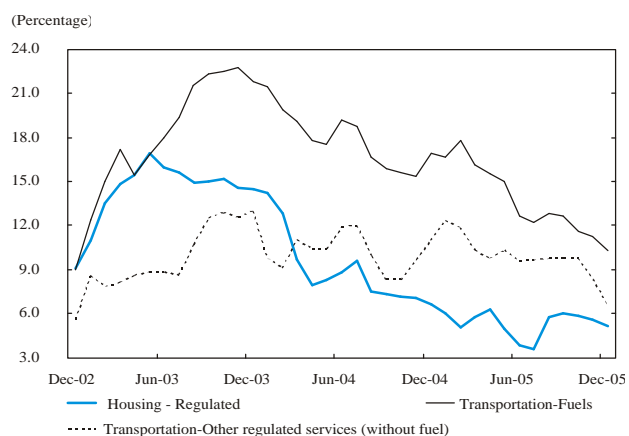
<sup>16</sup> This refers to the contribution to the slowdown. In other words, the total weight of the basket is taken into account.

GRAPH 41

TRADABLE CPI, WITHOUT FOOD OR REGULATED  
GOODS AND SERVICES  
(ANNUAL VARIATION)

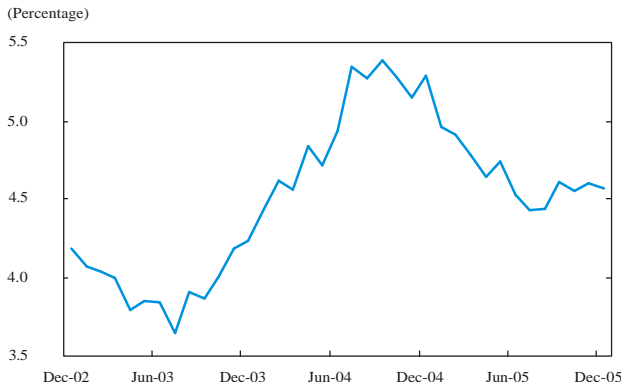
Source: DANE. Calculations by Banco de la República.

GRAPH 43

PUBLIC UTILITIES CPI  
(ANNUAL VARIATION)

Source: DANE. Calculations by Banco de la República.

**NON-TRADABLE CPI, WITHOUT FOOD AND REGULATED GOODS/UTILITIES (ANNUAL VARIATION)**



Source: DANE. Calculations by Banco de la República.

2005 were less than the year before, allowing for a reduction in this indicator (from 16.9% at December 2004 to 10.3% at December 2005).

Annual inflation in public transportation dropped considerably (430 bp during the entire year), thanks to a moderate or practically negligible increase in the price of public transportation in Bogotá, particularly during the final quarter of 2005 (a time when these rates usually go up). This positive performance is a surprise, given the accumulated adjustment in fuel prices over the last two years. Accordingly, the positive outcome at year's end might be the result of having postponed these adjustments until the first and second quarters of 2006.

As to public utilities, there were major reductions in annual inflation, but less so than in 2004. At December, inflation in this subgroup was 5.2%, as opposed to 6.7% in 2004 and 14.5% in 2003. Therefore, public-utility rate hikes seem to be moving gradually in a direction that is more consistent with the inflation targets set by the Central Bank. This comes after several years when these adjustments were well in excess of the inflation targets. Among other reasons, this was because the subsidies were dismantled. Indications are that the adoption of new rate formulas at the end of 2005 will be compatible with more moderate increases in utility rates over the next two years.

Annual non-tradable inflation (without food and regulated goods/utilities) also declined, but not as much. The rate at December 2005 was 4.6% as opposed to 5.3% a year earlier (Graph 44), and its contribution to lowering non-food inflation was 23 bp (Table 5). Contrary to tradables and regulated goods/ utilities, this case indicates a break in trend during 2005, which was not anticipated entirely in the inflation report at the start of that year and contrasts with the rise observed between mid-2003 and late 2004.

In 2005, the reduction in non-tradable inflation (without food or regulated goods/ utilities) also was concentrated in the first half of the year. However, this was due more to the way prices in this sub sector of the economy were revised. The high degree of indexation in these sectors tends to result in price changes being concentrated at the start of the year<sup>17</sup>.

Despite the downward trend, annual inflation in this subgroup also experienced several jumps in the third quarter, which were corrected by the end of the year.

*Non-tradable inflation also was down, particularly during the first half of the year.*

<sup>17</sup> As of 1999, 59% of all annual adjustments in the non-tradable sub-group occur each year in the first quarter and 81% in the first six months, on average.



Generally speaking, the reduction during the first half of 2005 exceeded expectations and has not been explained entirely by the Central Bank’s models. It can be attributed to rentals (with a 65 bp reduction) and “other” components (which were down by 107 bp).

Annual inflation in rentals increased between 2001 and late 2004. However, this tendency was interrupted in 2005 and even showed signs of a turn around, especially during the third and fourth quarters. It was 4.1% at December, which is 60 bp lower than the figure in 2004. Because the price of this item weighs heavily on the basket of consumer goods (20.7%) and is near the targets, its behavior will be decisive to the trend in core and non-tradable inflation during 2006 (Graph 45).

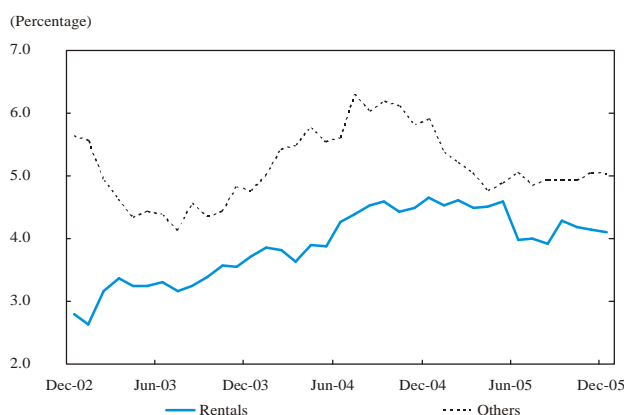
In the non-tradable sub-group known as “others”, which includes prices for a number of services such as education and medical care, the reductions also were generalized and important (Graph 45).

### 3. Food Inflation

The direction of food inflation in 2005 was partially consistent with what was anticipated in the reports at the end of 2004 and early 2005. The tendency was upward until October, when it peaked at 7%, before declining towards the end of the year (Graph 40). Even so, the models applied by Banco de la República initially suggested an earlier reduction and, above all, a lesser value in December than what proved to be the case.

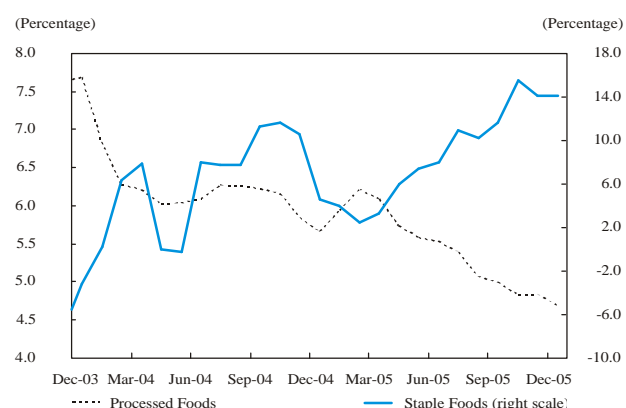
The trend in staple foods was the most atypical. As explained in the September quarterly report, prices for staples usually rise during the first half of the year, then decline during the second, due to increased supply. However, up to October 2005, this phenomenon had yet to manifest itself clearly. One of the reasons that apparently explains this behavior is the possibility of a significant reduction in the amount of acreage planted for different crops during the second half of 2004 and the first six months of 2005. This reduced their supply, forcing prices up during period when they usually decline. It also explains the high annual rate of inflation in staple foods at December 2005 (14.1%), which was well above the figure reported during the same month in 2004 (4.5%) (Graph 46).

**NON-TRADABLE CPI BREAKDOWN (WITHOUT FOOD AND REGULATED GOODS/UTILITIES)  
(ANNUAL VARIATION)**



Source: DANE. Calculations by Banco de la República.

**ANNUAL STAPLE AND PROCESSED FOOD INFLATION**



Source: DANE. Calculations by Banco de la República.

*The upward trend in food inflation was interrupted in October.*

In contrast, processed-food inflation exhibited a downward trend throughout the year. This was due primarily to lower international prices and to appreciation in the exchange rate. These factors curbed the increase in the price of imported foods such as cereals and edible oils. By December 2005, inflation in this group had declined by 97 bp to 4.7% (Graph 46).

## F. CHANNELS THAT DETERMINED INFLATION IN 2005

Inflation during 2005, including the fourth quarter, was determined by four essential factors: surplus production capacity, costs and wages, expectations and the nominal exchange rate. These variables are closely related to the primary channels for monetary policy transmission.

Exchange appreciation contributed the most to inflation in tradable goods. It also could have influenced the prices of other items, given its impact on inflationary expectations. There were no strong demand-pull inflationary pressures in 2005; however, we cannot rule out the possibility that increasingly reduced surplus capacity might have prevented further reductions in non-tradable inflation without food and regulated goods/utilities.

Expectations were also crucial to less overall inflation in 2005. They were influenced by compliance with the target for 2004 and by the growing credibility of the country's monetary policy in recent years. Also important was the fact that real adjustments in wages did not exceed the growth in productivity for most economic activities.

### 1. Surplus Capacity and Demand-pull Pressures

The use of production capacity in the economy continued to increase during the third and fourth quarters of 2005. The latest available information brought most of the indicators back to their long-term levels or above. Fourteen of the 22 indicators used by Banco de la República, including data, surveys and estimates, exceeded their historical averages. The more prominent ones are calculated according to the principal-components method (Box 2 and Table 6). Highly reliable indicators such as use of installed industrial capacity (UIC) and demand in relation to UIC, both from the Fedesarrollo opinion poll, also pointed in this direction (Graphs 47 and 48).

This being the case, available evidence indicates there was considerably less surplus production capacity in the economy during 2005. Although this process was delayed for several years by the high rate of investment in 2005 and the year before, and by the productivity associated with it, the recent acceleration in growth seems to have more than compensated for that effect.

In addition, the forecast at the start of 2005 was 4% growth (according to this report and the opinion of most analysis and the government). However, there is

*There was considerably less surplus production capacity in the economy during 2005.*

every indication that growth will be near 5%, which would mean far fewer expectations of surplus production capacity by the end of the year. As to spending, the increase in growth implies more domestic demand, particularly on the side of household consumption and government spending.

The foregoing points a narrower output gap in 2005, particularly one that closed much faster than anticipated at the start of the year. In the September edition of this report, the average output gap estimated for 2005 had already been reduced compared to the estimate reported during the first half of the year. The new estimates presented in this edition, including the Bank's production-function and main-components models, plus the recent trend in the various available indicators, point to further closure of the output gap. For the purpose of this

TABLE 6

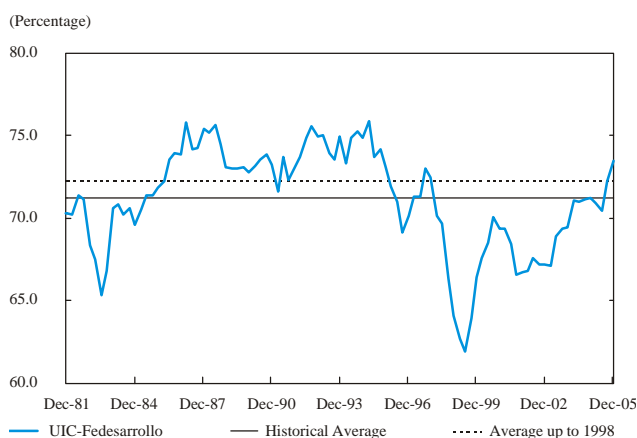
**INDICATORS USED TO DETERMINE SURPLUS PRODUCTION CAPACITY  
COMPARISON BETWEEN THE CURRENT LEVEL AND THE HISTORICAL AVERAGE**

Indicators Based on Surveys and Data	Comparison	Indicators Based on Estimates	Comparison
Trade deficit (US dollars)	Less	HP priors	Same
Industrial overtime	Same	Band pass	Same
Installed capacity vs. demand	Same	NAIRU unemployment	Same
Companies with > avg. UIC	Same	CD production function	Same
UIC Fedesarrollo	Same/Greater	NAIRU-UIC	Greater
ANDI Demand	Greater	HP	Greater
UIC-ANDI	Greater		
Construction permits	Greater		
Commercial sales (EOE)	Greater		
Real net external demand	Greater		

Source: Calculations by Banco de la República.

GRAPH 47

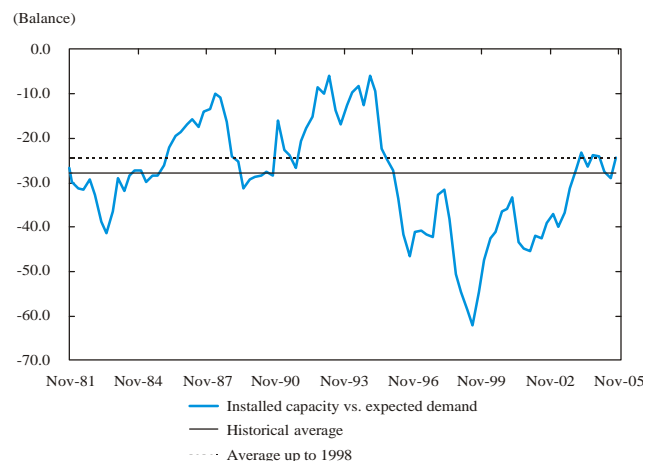
**USE OF INSTALLED CAPACITY,  
FEDESARROLLO**



Source: Fedesarrollo.

GRAPH 48

**INSTALLED CAPACITY VS. EXPECTED DEMAND**



Source: Fedesarrollo.

*For the purpose of this report, the gap in 2005 is estimated at -0.2%, as opposed to -0.6% in the September report.*

report, the gap in 2005 is estimated at -0.2%, as opposed to -0.6% in the September report.

In short, surplus production capacity in the economy throughout most of 2005 allowed for less non-tradable inflation, aided by the drop in inflationary expectations (as explained later). Nevertheless, due to the acceleration in growth, these surpluses began to disappear faster than was anticipated, particularly during the second half of the year. This tended to minimize their contribution to the disinflation process, which partly explains the stability of non-tradable inflation during the last two quarters of 2005.

## **2. Costs and Wages**

The extent of wage hikes in industry and commerce has increased with respect to the September report. While the annual variation at July was 6.5% for industry and 5.0% for commerce, these rates had accelerated to 7.9% and 6.3% by October. As to wages in the construction sector, the latest inflation shows no change compared to the adjustments observed in last six months.

Even so, the wage increases in industry and commerce seem to have been offset by gains in productivity. Given the official figures at October, the real unit cost of industrial labor was down by 1.0% during the year.

On the other hand, information made available by the Social Protection Ministry shows evidence of collective bargaining agreements with one-year or two-year wage adjustments that are less than those registered in past years (Table 7). Also, an important percentage of these adjustments are in line with the target for inflation.

According to the cost indexes calculated by Banco de la República, the increase in prices for domestic raw materials accelerated during the last two months of 2005, as a result of higher cement and fuel prices. Wage costs at October, without the adjustment for productivity, behaved similarly. However, by October, the annual variation in the indicator of total costs was still relatively low (5.0%) and on a stable course, largely because of low inflation in the price of imported raw materials. The latter would be associated with accumulated exchange appreciation and, in specific instances in the agricultural sector, with lower international prices.

The foregoing indicates that costs were not an important source of inflationary pressure during 2005. Although wages might have registered increases above the inflation targets, they did not have an impact on costs and prices, thanks to the rise in productivity. However, the situation in 2006 could be different, given the relatively steep minimum-wage hike (7%), particularly if the gains in productivity tend to dry up.

*Wage increases above inflation were offset by gains in productivity.*

## PERCENTAGE OF BENEFICIARIES PER WAGE INCREASE LEVEL

	Negotiated for the current year					
	<5	[5.6]	[6.7]	[7.8]	[8.9]	>9
Negotiated in 2004 (figures at Nov.)	1.90	10.66	36.10	41.37	7.92	2.05
Negotiated in 2005 (figures at Nov.)	1.35	47.14	38.09	11.68	1.46	0.29
	Negotiated for the following year					
	<7	>7	IPC	IPC +1	IPC + 2	Otros
Negotiated in 2004 (figures at Nov.)	10.53	10.84	25.27	33.35	2.52	17.50
Negotiated in 2005 (figures at Nov.)	0.00	0.00	50.49	26.46	7.44	15.60

Source: Ministry for Social Protection. Calculations by Banco de la República.

### 3. The Exchange Rate

Accumulated appreciation in 2005 lowered tradable inflation that year, keeping it well below average inflation and the target. However, the fact that this reduction was concentrated in the first half of the year might indicate its effect was diluted by exchange stability during that period.

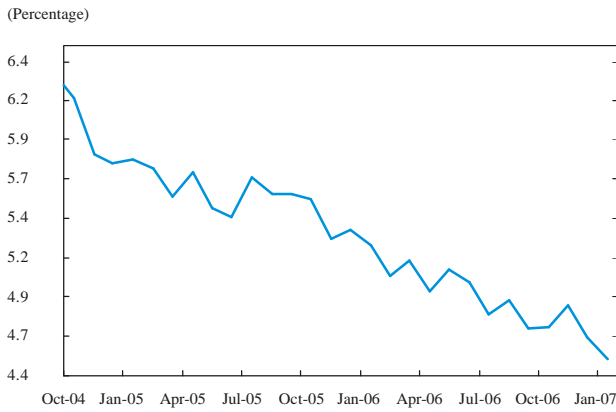
The slight increases in tradable inflation witnessed at the end of the year could have been a sign that other factors, such as the force of demand and wage hikes, are compensating for the impact of accumulated appreciation. Other factors could become more relevant in 2006, if the exchange rate stops declining.

### 4. Expectations

The monthly Banco de la República survey for December 2005 and January 2006 shows a decline in inflationary expectations at twelve months (Graph 49). On the other hand, inflationary expectations for December 2006 are in line with the target. This could indicate the country's monetary policy has gained in credibility. Inflationary expectations stemming from the TES-RVU and the fixed-rate TES declined slightly, but are still above 5.0%.

*Inflationary expectations for December 2006 are in line with the inflation target.*

**ANNUAL INFLATIONARY EXPECTATIONS EACH MONTH (\*)  
BANKS AND STOCKBROKERS**



Source: Banco de la República. Monthly Expectation Survey.

The drop in expectations could have played an important role during 2005 in inflation groups such as non-tradables (without food and regulated goods/ utilities). Lower inflation in this segment of the CPI cannot be attributed to the existence of surplus capacity alone, which declined considerably. Domestic and total demand rose considerable as well. Expectations also may have contributed significantly to the way tradable inflation and cost variables behaved, including wages.

## WHAT ARE COLOMBIANS IMPORTING?

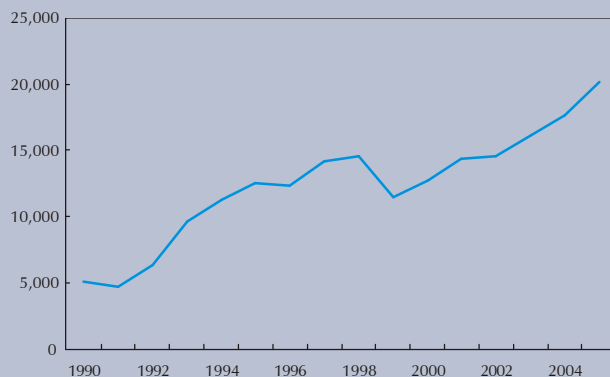
By Gloria Alonso Másmela \*

According to the National Bureau of Revenue and Customs (DIAN), imports saw a 28.1% annual increase (US\$ 3,931 m) to US\$17,916 m<sup>1</sup> between January and November 2005 (Graph B1.1). In real terms, this is less growth (14.5%) than during the first half of the nineties, when the real increase was above 30%, undoubtedly because of measures to open up the economy. However, as a share of GDP, imports are now three percentage points (pp) above the levels reported between 1994 and 1998. The past two years have seen the demand for imports spring back, as the economy recovers from the crisis at the end of the nineties.

GRAPH B1.1

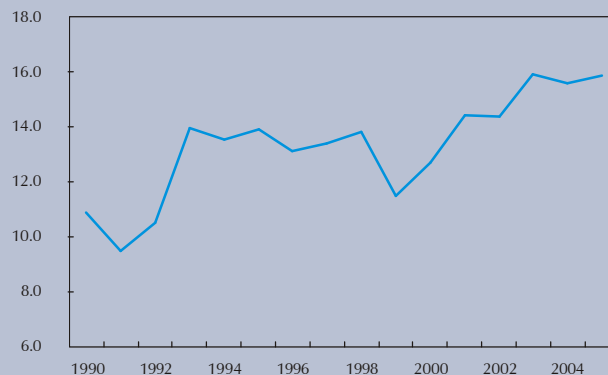
### TOTAL MERCHANDISE IMPORTS 1990-2005

(Millions of 1994 Dollars (\*))



### IMPORTACIONES TOTALES COMO PROPORCIÓN DEL PIB 1990-2005

(Percentage)



**Note:** 2005 pertains to an estimate for the entire year, based on January–November figures.  
 (\*) Deflated using the total import PPI. The 2005 figure is an estimate.  
 Sources: DANE and DIAN. Calculations by Banco de la República.

The rise in imports during 2005 was due primarily to demand in the productive sectors of the economy. In particular, there were significant increases in imports of raw materials and capital goods for industry (Table B1.1).<sup>2</sup> As a whole, these two groups accounted for 61% of total imports at November 2005.

\* The author is the Macroeconomic Programming Section Chief of the Programming and Inflation Department at Banco de la República. The opinions expressed in this article are hers alone and imply no commitment on the part of Banco de la República or its Board of Directors.

1 Refers to the FOB value of imports.

2 The “industrial” category in this classification refers to imports of goods used mainly in nonagricultural productive activities. However, capital goods can include items that could be acquired by households.

**TABLE B1.1**  
**TOTAL IMPORTS ACCORDING TO CUODE AT TWO DIGITS**  
(MILLIONS OF DOLLARS FOB)

	January-november		Variation		Percentage Composition	
	2004	2005	Absolute	Percentage	2004	2005
A. Consumer Goods	2,646.1	3,306.0	659.9	24.9	18.9	18.5
i. Consumer Non-durables	1,290.1	1,547.1	257.0	19.9	9.2	8.6
ii. Consumer Durables	1,355.9	1,758.8	402.9	29.7	9.7	9.8
B. Raw Materials	6,683.4	7,988.4	1,305.0	19.5	47.8	44.6
iii. Fuels, Lubricants and the Like	223.3	444.3	221.0	98.9	1.6	2.5
iv. Raw Materials for Agriculture	556.7	622.6	65.8	11.8	4.0	3.5
v. Raw Materials for Industry	5,903.3	6,921.5	1,018.2	17.2	42.2	38.6
C. Capital Goods	4,633.0	6,612.0	1,979.0	42.7	33.1	36.9
vi. Construction Materials	235.6	355.9	120.2	51.0	1.7	2.0
vii. Capital Goods for Agriculture	46.3	52.2	5.9	12.8	0.3	0.3
viii. Capital Goods for Industry	2,807.1	4,093.0	1,285.9	45.8	20.1	22.8
ix. Transport Equipment	1,544.0	2,111.0	566.9	36.7	11.0	11.8
D. Diverse Materials	22.1	9.1	(13.0)	(58.9)	0.2	0.1
Total	13,984.7	17,915.5	3,930.9	28.1	100.0	100.0

Source: DANE and DIAN.

## I. Consumer Goods

As to imported consumer goods, most of the growth was in durables (30% annual) (Table B1.2). There were major increases in imports of machinery and equipment for domestic use (33.5%) and private vehicles (26.2%). The rise in these items reflects the growth of private consumption during 2005.

## II. Raw Materials

Purchases of raw materials rose at an annual rate of 19.5% during the course of 2005 to November, (Table B1.3). If fuel and lubricants are excluded, most of the increase was in raw materials for industry (17.2%), particularly mining products (30.6%) and chemicals and pharmaceuticals (20.7%). As a share of total raw material imports, these two types of goods increased from 61.8% in 2004 to 64.4% in 2005.

According to a more detailed analysis of this information, raw material imports accounted for the largest share of the total. Among others, those registering the



**TABLE B1.2**  
**IMPORTS OF CONSUMER GOODS ACCORDING TO CUODE, AT TWO DIGITS**  
(MILLIONS OF DOLLARS FOB)

	January-november		Variation		% Composition	
	2004	2005	Absolute	Percentage	2004	2005
<b>Total Consumer Goods</b>	2,646.1	3,306.0	659.9	24.9	100.0	100.0
<b>i. Consumer Non-durables</b>	<b>1,290.1</b>	<b>1,547.1</b>	<b>257.0</b>	<b>19.9</b>	<b>48.8</b>	<b>46.8</b>
Food Products	373.3	420.6	47.4	12.7	14.1	12.7
Beverages	32.4	39.3	6.8	21.0	1.2	1.2
Tobacco	20.1	18.9	(1.2)	(5.9)	0.8	0.6
Pharmaceutical and Personal Care Products	432.4	512.5	80.2	18.5	16.3	15.5
Clothing and Other Manufactured Textile Goods	76.1	105.3	29.2	38.5	2.9	3.2
Other Non-durable Consumer Goods	355.9	450.5	94.6	26.6	13.5	13.6
<b>ii. Consumer Durables</b>	<b>1,355.9</b>	<b>1,758.8</b>	<b>402.9</b>	<b>29.7</b>	<b>51.2</b>	<b>53.2</b>
Domestic Utensils	52.0	70.8	18.9	36.4	2.0	2.1
Items for Decoration, Personal Use, etc.	140.7	187.4	46.7	33.2	5.3	5.7
Furniture and Other Household Fixtures	72.2	98.2	26.0	36.1	2.7	3.0
Machines and Apparatus for Domestic Use	348.1	464.6	116.5	33.5	13.2	14.1
Private Vehicles	674.8	851.7	176.9	26.2	25.5	25.8
Weapons and Military Equipment	68.2	86.1	17.9	26.2	2.6	2.6

Source: DANE and DIAN.

**TABLE B1.3**  
**IMPORTS OF RAW MATERIALS ACCORDING TO CUODE, AT TWO DIGITS**  
(MILLIONS OF DOLLARS FOB)

	January-november		Variation		% Composition	
	2004	2005	Absolute	Percentage	2004	2005
<b>Total Raw Materials</b>	<b>6,683.4</b>	<b>7,988.4</b>	<b>1,305.0</b>	<b>19.5</b>	<b>100.0</b>	<b>100.0</b>
<b>i. Fuel, Lubricants and the Like</b>	<b>223.3</b>	<b>444.3</b>	<b>221.0</b>	<b>98.9</b>	<b>3.3</b>	<b>5.6</b>
Fuel	147.0	332.4	185.4	126.1	2.2	4.2
Lubricants	74.7	109.8	35.2	47.1	1.1	1.4
Electricity	1.7	2.1	0.5	27.4	0.0	0.0
<b>ii. Raw Materials and International Products for Agriculture</b>	<b>556.7</b>	<b>622.6</b>	<b>65.8</b>	<b>11.8</b>	<b>8.3</b>	<b>7.8</b>
Animal Feed	183.3	192.1	8.8	4.8	2.7	2.4
Other Raw Materials for Agriculture	373.5	430.5	57.0	15.3	5.6	5.4
<b>iii. Raw Materials and International Products for Industry (without Construction)</b>	<b>5,903.3</b>	<b>6,921.5</b>	<b>1,018.2</b>	<b>17.2</b>	<b>88.3</b>	<b>86.6</b>
Food Products	794.6	738.1	(56.5)	(7.1)	11.9	9.2
Non-food Agricultural Products	975.3	1,042.2	66.9	6.9	14.6	13.0
Mining Products	1,541.8	2,013.8	472.0	30.6	23.1	25.2
Chemical and Pharmaceutical Products	2,591.6	3,127.5	535.8	20.7	38.8	39.1

Source: DANE and DIAN.

most growth in 2005 were chemical substances, synthetic resins, iron and steel material, and products for the publishing industry (Table B1.4).

On the other hand, as illustrated in Table B1.4, imports of agricultural products suffered an annual decline of 7.5%. The major slumps were in corn (-6.4%), barley (-28.3%) and soybeans (-28.1%). The drop in the dollar value of these imports was due, primarily, to lower international prices for corn, wheat and soybeans. These products account for more than 70% of all agricultural imports. For example, the international price of yellow corn fell by 12%, on average, during 2005 (up to November). Reference prices for the wheat Colombia imports were down by 2.5%, on average, and the international price of soybeans fell by 18%.

### **III. Capital Goods**

There has been considerable growth in imports of capital goods for industry (45.8% annual). As a share of total imports, they increased from 20.1% during January-November 2004 to 22.8% during the same period in 2005. Although imports of capital goods, as a percentage of GDP (around 5%), have remained at levels similar to those seen in the first half of the nineties, their real growth rates are noticeably less (Graph B1.2).

Table B1.5 provides a more detailed look at capital goods imports in 2005. As indicated, there were significant increases in office equipment (34.2%), industrial machinery (27.9%), other fixed equipment (83.6%) and transport equipment (45.1%).

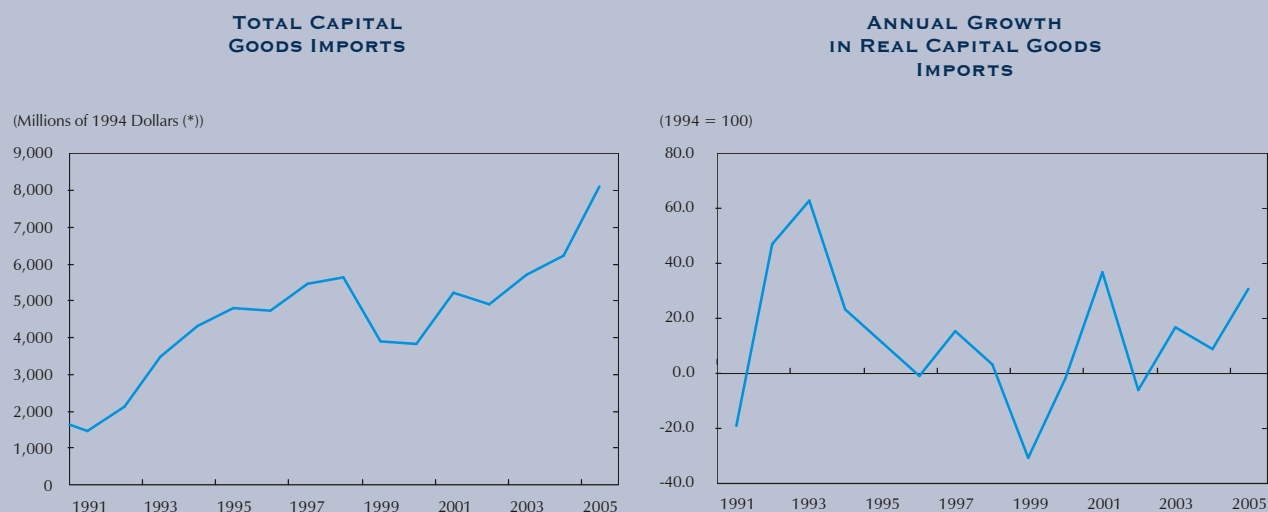
Among capital goods for industry, several purchases are particularly notable, such as imports of communication equipment (88% annual growth), computer equipment (39%), drilling equipment (23%) and professional and scientific equipment (30%). As a whole, they account for more than 65% of all capital goods imported for industry. Nonetheless, as shown in Table B1.6, the rise in imports of capital goods for industry was generalized.

**TABLE B1.4**  
**COLOMBIAN IMPORTS OF CAPITAL GOODS FOR INDUSTRY**  
**CIU GROUPS REV.2 PLUS TOTAL GENERAL IMPORTS 2004-2005**  
**COMPOSITION AND VARIATION (%)**

Description	Millions of Dollars		Composition (%)		Annual variation (%)
	2004	2005 (*)	2004	2005 (*)	
Chemical substances for industry, except fertilizers	1,229	1,482	20.82	21.41	20.61
Laminated products, bars and other iron and steel materials	572	732	9.69	10.58	27.96
Manufacture of synthetic resins, plastics and artificial materials	494	630	8.36	9.10	27.62
Agricultural products (beans, wheat, corn)	577	534	9.77	7.71	(7.50)
Wood pulp and other paper and cardboard materials	242	277	4.10	4.01	14.50
Other chemical products	234	270	3.96	3.89	15.24
Copper and aluminum articles	174	231	2.95	3.33	32.53
Cable, wire, iron chain, aluminum copper, nails and tacks	172	222	2.91	3.21	29.33
Manufacture of other plastic products (footwear, dishes, pottery, etc.)	143	186	2.42	2.68	29.87
Cotton fabric	150	155	2.54	2.24	3.34
Non-electrical machinery parts (roller bearings, gears, pulleys)	121	143	2.05	2.07	18.27
Electrical conductors and storage batteries, dry cell and electrical batteries	86	128	1.45	1.86	49.57
Yarn or thread (included uncombed cotton)	146	120	2.47	1.74	(17.44)
Parts and accessories for office, calculating and accounting machines	80	103	1.35	1.49	29.35
Oils (soybean and sunflower oil, other vegetable and animal oils)	113	102	1.92	1.48	(9.79)
Woven synthetic fabrics	84	90	1.42	1.30	7.04
Various food products (yeast, glucose syrups, etc.)	61	74	1.03	1.07	22.21
Manufacture of artificial fabrics (batting, felt, rubberized fabric)	46	55	0.79	0.80	19.08
Sheets for graphic arts, photographic paper and other plates	38	40	0.65	0.58	4.36
Knit fabrics and articles	36	31	0.61	0.44	(14.52)
Agricultural products (natural rubber)	27	31	0.47	0.44	11.06
Manufacture of plastic products	9	11	0.16	0.17	21.10
Other chemical products	471	560	7.98	8.09	18.85
Other mining products	358	454	6.07	6.56	26.75
Other non-food products	196	232	3.32	3.35	18.34
Other food products	44	28	0.75	0.41	(35.54)
<b>Total raw materials for industry</b>	<b>5,903</b>	<b>6,922</b>	<b>100.00</b>	<b>100.00</b>	<b>17.25</b>

(\*) Accumulated between January and November 2005.  
Source: DANE and DIAN.

GRAPH B1.2



Nota: The figure for 2005 is an estimate for the entire year, based on January-November figures.

(\*) Deflated using the total import PPI. The figure for 2005 is an estimate.

Sources: DANE and DIAN. Calculations by Banco de la República.

TABLE B1.5  
CAPITAL GOODS IMPORTS ACCORDING TO CUODE AT TWO DIGITS  
(MILLIONS OF DOLLARS FOB)

	January-november		Variation		(% ) Composition	
	2004	2005	Absoluta	Porcentual	2004	2005
<b>Total Capital Goods</b>	<b>4,633.0</b>	<b>6,612.0</b>	<b>1,979.0</b>	<b>42.7</b>	<b>100.0</b>	<b>100.0</b>
<b>i. Construction Materials</b>	<b>235.6</b>	<b>355.9</b>	<b>120.2</b>	<b>51.0</b>	<b>5.1</b>	<b>5.4</b>
<b>ii. Capital Goods for Agriculture</b>	<b>46.3</b>	<b>52.2</b>	<b>5.9</b>	<b>12.8</b>	<b>1.0</b>	<b>0.8</b>
Machinery and tools	23.4	30.1	6.7	28.5	0.5	0.5
Other equipment for agriculture	2.2	2.0	(0.1)	(5.7)	0.0	0.0
Transport and traction material	20.8	20.1	(0.6)	(3.1)	0.4	0.3
<b>iii. Capital Goods for Industry</b>	<b>2,807.1</b>	<b>4,093.0</b>	<b>1,285.9</b>	<b>45.8</b>	<b>60.6</b>	<b>61.9</b>
Office machinery and apparatus	633.3	849.8	216.5	34.2	13.7	12.9
Tools	66.3	85.0	18.7	28.2	1.4	1.3
Industrial equipment parts and accessories	186.8	226.3	39.5	21.2	4.0	3.4
Industrial machinery	1,067.7	1,365.3	297.6	27.9	23.0	20.6
Other fixed equipment	853.1	1,566.6	713.6	83.6	18.4	23.7
<b>iv. Transport Equipment</b>	<b>1,544.0</b>	<b>2,111.0</b>	<b>566.9</b>	<b>36.7</b>	<b>33.3</b>	<b>31.9</b>
Transport equipment parts and accessories	722.1	912.7	190.6	26.4	15.6	13.8
Rolling transport equipment	809.8	1,175.3	365.5	45.1	17.5	17.8
Fixed transport equipment	12.2	23.0	10.8	88.9	0.3	0.3

Source: DANE and DIAN.

**TABLE B1.6**  
**COLOMBIAN IMPORTS ACCORDING TO CAPITAL GOODS FOR INDUSTRY 1/**  
**CIIU GROUPS REV.2 PLUS TOTAL GENERAL IMPORTS: 2004-2005**  
**PERCENTAGE COMPOSITION AND VARIATION**

Description	Millions of Dollars		Composition (%)		Annual Variation (%)
	2004	2005 2/	2004	2005 2/	
Construction of equipment and radio, television and communication apparatus	744	1,399	27.13	34.92	88.19
Office, calculating and accounting machines (primarily computers, printers, etc.)	340	472	12.42	11.78	38.73
Other non-electric machinery and equipment (cranes, hydraulic lifts and elevating devices)	188	294	6.87	7.33	56.18
Bulldozers, drilling equipment, flatteners	232	285	8.48	7.10	22.54
Manufacture of professional and scientific equipment	196	254	7.15	6.33	29.51
Manufacture of machinery and equipment for industry, except metal-working and wood-working machinery	220	211	8.04	5.25	(4.43)
Air pumps, centrifuges, compressors	147	205	5.36	5.12	39.89
Other electrical industrial machinery and apparatus (voltage switches, fuses for vehicles)	120	168	4.38	4.18	39.66
Air pumps, centrifuges, compressors	105	130	3.83	3.25	23.88
Other electrical industrial machinery and apparatus (voltage switches, fuses for vehicles)	66	83	2.41	2.08	26.17
Manufacture of engines and turbines	81	78	2.97	1.94	(4.34)
Metal-working and wood-working machinery	51	73	1.87	1.82	42.45
Electro-diagnostic and electro-medical Devices	48	71	1.76	1.77	46.87
Photographic and optic devices	39	43	1.43	1.07	9.54
Metal detectors, signal generators and parts for electrical machinery	16	29	0.58	0.72	82.23
Manufacture of auto parts	18	21	0.67	0.52	13.70
Parts for metal-working and wood-working tools and equipment	15	20	0.56	0.51	31.53
Manufacture of metallic products	8	19	0.31	0.47	121.46
Manufacture of rubber products (transmission belts)	13	18	0.47	0.45	38.50
Manufacture of professional and scientific equipment and measuring and n.c.p. control instruments	13	14	0.48	0.35	7.08
Manufacture of hardware items	9	10	0.34	0.26	11.29
Manufacture of cloth for industrial use	8	8	0.28	0.21	9.55
Construction of non-electrical machinery	4	3	0.13	0.06	(30.24)
Other capital goods, except tools	58	101	2.10	2.51	74.84
<b>Total capital goods for industry (except tools)</b>	<b>2,741</b>	<b>4,008</b>	<b>100.00</b>	<b>100.00</b>	<b>46.23</b>

1/ Does not include tool imports.

2/ Imports accumulated between January and November 2005.

Sources: DANE and DIAN.

## CALCULATING THE OUTPUT GAP BASED ON DIVERSE SOURCES OF DATA \*

By José Luis Torres Trespalacios \*\*

The output gap is defined as the difference in percentage between current and non-inflationary GDP. It is a key monetary policy variable in any inflation targeting system, as it identifies possible demand surpluses that could exert pressure on prices in the future. Because non-inflationary GDP is not a variable that can be observed, it is difficult to know just how adequate a particular estimate is.

The exercises proposed in literature to estimate the output gap are diverse and rely on a number of techniques. Given the uncertainty surrounding these estimates, Banco de la República collects large amounts of information from sectors and surveys to obtain as clear a picture of demand as possible. In this context it is a good idea to consolidate available data on the output gap into a single measurement. Assorted formats, the unit of measure, publication delays, informative power and the extent of aggregation are the main obstacles to this task. However, these difficulties must not result in indicators being ignored or afforded little importance in the diagnostic process, as all of them can contain relevant data.

Several months ago, Banco de la República began using the principal-components method to combine data on the output gap into an estimated factor. This procedure breaks the series down into common factors (that summarize the co-movements in the series) and specific shocks (that reveal measurement and revision errors). A number of studies<sup>1</sup> show the forecast errors with models that include estimated common factors tend to be less than with the traditional models. This is because the model alleviates the problem of omitted variables by replacing the original series with a factor that summarizes most of the information contained in the original data and partly resolves the structural instability that is characteristic of estimates based on only a few variables.

As of late, factor models have been used increasingly in a variety of areas. The Coincident Indicator of the Euro Area Business Cycle (Eurocoin) the Chicago Fed National Activity

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\* This article is based on Rodríguez, N.; J. L. Torres; A. M. Velasco (2006), "La brecha del producto a partir de diversas fuentes de información," Mimeograph, Economic Studies Division, Banco de la República.

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<sup>1</sup> Stock et al. (1999, 2002 and 2004) and Giannoni et al. (2004) are among the most important. Fisher (2000) says the factor models are particularly useful in predicting inflation.

Index (CFNAI), the predicted yield on U.S. treasury bonds, the input estimate for the general dynamic equilibrium models and the study on co-movements in the macroeconomic variables of the G-7 countries are some examples.

For this exercise, Banco de la República used ten quarterly output gap indicators for the period between March 1990 and September 2005. These indicators are monitored regularly because of their empirical relation to core inflation. The following measurements were taken into account:

- ANDI Demand: Demand as the main problem in industry (EOIC-ANDI)<sup>2</sup>
- UIC-ANDI: Use of Installed Capacity (EOIC-ANDI)
- Trade Balance: Merchandise trade balance in dollars (DANE)
- Hrs. Overtime: Index of Overtime Hours Worked in Industry (MMM-DANE)<sup>3</sup>
- Cap. Vs. Dmd.: Ratio of installed capacity to demand expected in the next 12 months (EOE-Fedesarrollo)<sup>4</sup>
- UIC-Fede.: Use of installed capacity (UIC-Fedesarrollo)
- % UIC > Avg.: Percentage of companies with capacity utilization above their historical average
- Net Ext. Demand: Net external demand in 1994 pesos (DANE)
- Bldg. Permits: Building permits approved (DANE)
- Comm. Sales: Commercial sales (EOE-Fedesarrollo)

These measurements have different characteristics. Some are monthly; others are quarterly. The methods used in their calculation vary. Some are sectoral, while others are aggregate. Some rely on preliminary data (subject to revision); others, on definitive data (surveys). Some use data published with a considerable delay; others use data published without delay. For this reason, the idea of estimating a common gap that summarizes most of the data in the original measurements, while maintaining the advantages each has to offer and excluding the measurement errors, is attractive.

These series were used to estimate the first principal static component (CP Data). The explained variance and each indicator's weight in the estimated factor are shown in Table B2.1 Besides the ten original indicators and the one estimated according to the principal-components method, we also worked with the gap estimated by Hodrick and Prescott with priors (HP Priors). Until not long ago, it was the Bank's official measure of the output gap.

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<sup>2</sup> The Combined Business Opinion Survey (EOIC in Spanish) conducted by the National Association of Industrialists (ANDI in Spanish) and the other associations in the sector.

<sup>3</sup> Monthly Manufacturing Sample (MMM in Spanish)

<sup>4</sup> Question No. 11 on the Fedesarrollo Business Opinion Survey.

**TABLE B2.1**  
**EACH VARIABLE AS A SHARE OF THE FIRST PRINCIPAL STATIC COMPONENT**

Indicator	CP Data
Demand-ANDI	12.34
UIC - ANDI	11.97
Trade Bal.	4.56
UIC - Fedesarrollo	12.73
Hrs. Overtime	10.85
Cap. vs. Dmd.	12.42
Net Ext. Demand	5.42
Percentage UIC > Avg.	8.73
Permits	10.78
Commercial Sales	10.19
Explained Variance	58.12

Source: The author's calculations.

Because the output gap cannot be observed, the validity of the indicators was determined on the basis of their power to predict core inflation within a Phillips curve amplified by expectations. Gap indicators were assessed as determinants of annual non-tradable inflation (without food and without regulated goods/utilities), which accounts for 25% of the CPI in Colombia<sup>5</sup>.

For the purpose of the exercise, a separate Phillips curve was estimated for each of the output-gap indicators. The parameters of each model at each point in time were re-estimated, and out-of-sample forecasts were developed for one to eight periods thereafter. In general, the coefficients estimated on the Phillips curves show a similarity among all the measurements and demonstrate plausible values in light of theory and previous studies for Colombia<sup>6</sup>.

The results for the different time periods are summarized in Table B2.2. The CP Data are consistently the best indicator of the gap in terms of core inflation forecast within a Phillips curve amplified by expectations. Other leading indicators in all the time periods are *Cap vs. Demand*, *UIC-Fedesarrollo*, *UIC-ANDI* and *HP Priors*

These results illustrate the relevance of using a principal-components estimate to measure the extent of the output gap. This, in turn, is an important contribution to defining monetary policy in an inflation targeting system.

<sup>5</sup> It is assumed that excluding the price of tradables (determined by the exchange rate), specifically food (generally subject to supply shocks) and regulated goods/utilities (the prices of which are set by regulatory commissions) makes it easier to see the relationship between inflation and the output gap.

<sup>6</sup> The average persistence coefficient (inflation lags) is 0.69. The average output gap coefficient is 0.29 and that of expectations is 0.31.



**TABLE B2.1**  
**BEST ADJUSTED INDICATORS FOR THE DIFFERENT TIME PERIODS**

Ranking	Time Horizon			
	1	2	4	6
1	<b>CP Data</b>	<b>CP Data</b>	Cap. Vs. Demand	<b>HP priors</b>
2	Cap. Vs. Demand	Cap. Vs. Demand	<b>CP Data</b>	<b>CP Data</b>
3	Demand-ANDI	<b>HP priors</b>	UIC Fedesarrollo	Cap. Vs. Demand
4	<b>HP priors</b>	Demand-ANDI	<b>HP priors</b>	UIC Andi

## II. MACROECONOMIC PERSPECTIVES

*Domestic and external conditions favor economic growth during 2006. In this context, the appearance of demand-pull inflationary pressures is expected*

No major changes in the external situation are anticipated for 2006. The world economy should continue to grow at a good pace, propelled once again by the United States and Asian economies. Nevertheless, high oil prices will threaten overall growth. The Fed probably will continue to raise interest rates in line with what is expected. Coupled with the interest rate hikes over the last year and a half, they should be enough to reduce or curb domestic demand and to put the brakes on inflationary pressure in the United States.

On the other hand, the momentum in world demand, and particularly growth in Asia, will keep terms of trade favorable for Colombia, even if the U.S economy slows down. The growth experienced by several of the country's trading partners, especially those that benefit from high oil prices, is another factor, as is an abundant influx of external capital. In this context, the Colombian economy should maintain 4.5% growth in 2006, backed largely by household consumption and by the non-tradable sectors, although positive growth in non-traditional exports is anticipated as well.

The new inflation forecasts indicate the 2006 target likely will be met, but the possibility of continuing to reduce inflation over a longer period of time is limited. The bulk of the task in 2006 will be to lower food inflation, although there is quite a bit of uncertainty in this field. Unlike past years, demand-pull inflationary pressures could begin to constitute an important factor as of 2006 and could halt the downturn in non-tradable inflation. This would be offset by low tradable inflation in the coming quarters, since no strong pressure towards depreciation is anticipated. As of 2007, favorable conditions for the exchange rate are less likely.

*The new inflation forecasts indicate the 2006 target likely will be met, but the possibility of continuing to reduce inflation over a longer period of time is limited.*

### A. THE EXTERNAL CONTEXT AND THE EXCHANGE RATE

Prospects for growth in 2006 have improved compared to three months ago, although they are less than actual growth in 2005. The increase in the world

economy will continue to be spearheaded by the United States, China and, to a lesser degree, by the Euro Zone and Japan. As mentioned in the last edition of this report, higher oil prices will be the main threat to world economic growth, even though they did not have a major impact on inflation or economic growth in 2005.

*The United States economy will continue to grow at a good pace in 2006.*

The U.S. economy remains on a positive course, despite the temporary effects of the hurricanes, which could extend into the fourth quarter. Growth is expected to be 3.6% in 2005 and 3.4% in 2006, which is slightly above the forecast three months ago (Table 8). This momentum will be sustained by investment growth and by the increase in public spending required to complete the recovery effort in the areas affected by the hurricanes. Consumption will continue to grow, although not as much, given the moderate correction anticipated in the housing market. The current account deficit will continue to increase, although at a lower rate than in previous years, thanks to added momentum in external demand (Japan, the Euro Zone and China) and an eventual weakening of the dollar against the euro and the yen.

Prospects for Japan's economic growth are far better than they were three months ago. The forecast is up from 2.0% to 2.4% for 2005, and from 1.8% to

TABLE 8

**GROWTH FORECASTS FOR COLOMBIA'S  
MAIN TRADING PARTNERS  
(PERCENTAGE)**

	Actual 2004	Forecast for 2005 at:		Forecast for 2006 at:	
		Jan-06	Oct-05	Jan-06	Oct-05
<b>Principal Partners</b>					
United States	4.4	3.6	3.5	3.4	3.3
Ecuador	6.9	3.0	2.9	3.3	3.0
Venezuela	17.3	9.1	8.0	6.4	5.5
<b>Other Partners</b>					
Euro zone	1.8	1.4	1.2	2.1	2.0
Japan	2.6	2.4	2.0	2.0	1.8
China	9.5	9.3	9.1	8.5	8.1
Peru	4.8	5.8	5.5	4.8	4.6
Mexico	4.4	3.0	3.1	3.5	3.4
Chile	6.1	5.9	6.1	5.5	5.5
Argentina	9.0	8.7	7.4	5.9	4.5
Brazil	4.9	2.5	3.3	3.4	3.5
Bolivia	3.6	3.4	3.3	3.4	3.1
Developed countries	3.9	3.2	3.0	3.1	3.0
Developing countries	10.7	6.1	5.6	5.0	4.5
<b>Total Trading Partners (*)</b>	<b>5.8</b>	<b>4.3</b>	<b>4.3</b>	<b>3.5</b>	<b>3.5</b>

(\*) Growth weighted by each country's share of Colombian foreign trade.  
Source: Datastream - Consensus.

2.0% for 2006. Economic growth will continue to be propelled by investment and consumption. Both have been on the rise, thanks to better conditions on the job market and favorable external demand.

The Euro Zone also faces improved prospects for growth. The forecast is 1.4% for 2005 and 2.1% for 2006. Although investment and external demand have bolstered the European economy, the force of growth in the coming year will depend on recovery of the labor market and its impact on domestic demand. This is why headway towards structural reforms that allow for a more flexible labor market are so important, as are fiscal stability programs to make agents more confident.

The outlook for the Asian economies remains favorable. The forecast for the Chinese economy is up compared to three months ago. Growth is expected to reach 9.3%<sup>18</sup> in 2005 and 8.5% in 2006. In the case of India,

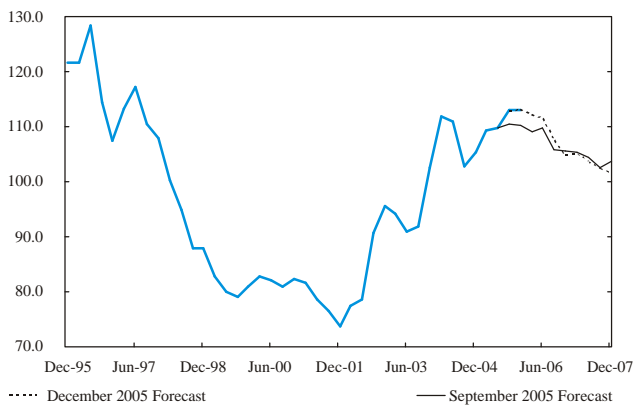
the forecast is for 7.5% growth in 2005 and 7.6% in 2006. This trend will continue to be spurred by a strong export sector and by investment, although less so than in 2005 (partly because the yuan is expected to appreciate moderately). Domestic demand will play a more important role.

As indicated in the last edition of this report, the forecasts for commodities remain high. The Economist Intelligence Unit World Commodity Forecast indicates commodity prices, without energy, will be down by just 2.1% in 2006 (5.5% in 2007). This is similar to the forecast three months ago. However, a breakdown of the price forecasts shows more of an improvement in metals úthan was expected three months ago, while food declined more than anticipated (Graph 50).

On the other hand, oil prices should remain high. According to the International Energy Agency (IEA), the price of oil (WTI) will be US\$63.3 a barrel in 2006 and US\$60.0 in 2007. The price of futures negotiated during the first week of January came to US\$66.2 a barrel for the next twelve months (Graph 51). These values are backed by a large world demand, which will continue throughout the year, and by low surplus capacity and the geopolitical instability

**GRAPH 50**

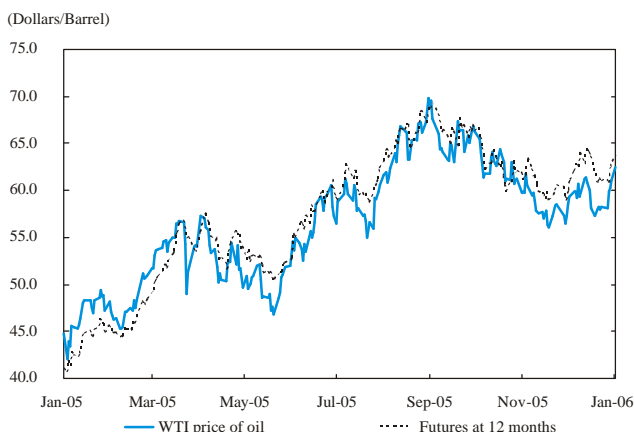
**COMMODITY PRICE INDEX, WITHOUT OIL (WCF)**



Source: Economist Intelligence Unit.

**GRAPH 51**

**WTO OIL PRICE**



Source: Bloomberg.

<sup>18</sup> These forecasts do not include revised GDP for 2004, which was increased by 0.6 points (of GDP).

of certain oil-producing countries. In this respect, as in 2005, the market will remain sensitive to any unexpected shock.

Despite high oil prices and a rather tight labor market, the United States is not expected to see strong inflationary pressure during 2006. Core inflation should remain moderate, as it did in 2005. According to predictions by several analysts<sup>19</sup>, inflation is expected to average around 3.0% for the entire CPI and 2.4% for the basic CPI. This positive performance would be due to the interest-rate hikes ruled by monetary authorities during the last 18 months. However, it is felt that more monetary-policy adjustments are required and the Fed will have to raise its reference rate to 5.0%, which implies an increase of 75 bp (in the last edition of this report, the indication was that rates would reach 4.75% in 2006). On the other hand, the cycle of rate hikes by the European Central Bank could begin this year, but is expected to be much lower than in the U.S. economy.

Good prospects for world economic growth and high prices for oil (in the case of oil-exporting countries) and metals guarantee favorable conditions for Latin America. Capital flows to the countries in the region are not expected to decline, although they might be more moderate than in 2005.

Colombia's major trading partners are expected to grow by 3.5%. This is less than in 2005 (4.3%), but still an important rate. The forecast for Venezuela is 9.1% growth in 2005 and 6.4% in 2006; the respective figures for Ecuador are 3.0% and 3.3%. In both cases, high oil prices were decisive to raising their forecasts. Nevertheless, the fact that there has been no major structural reform in these countries to boost investment jeopardizes their long-term economic stability, as does their climate of political instability.

Strong external demand and better prices for certain commodities will continue to ensure better terms of trade for the Colombian economy (Table 9). Oil and gold prices are up considerably with respect to 2005. Although coffee prices are more moderate compared to the forecast three months ago, the trend in recent days suggests an improvement with respect to the current forecast.

As mentioned in earlier editions of this report, the improvements in economic fundamentals and in the solvency and liquidity indicator should continue to make the Latin American economies less vulnerable to external or political shocks than in the past.

*Despite high oil prices and a rather tight labor market, the United States is not expected to see strong inflationary pressure during 2006.*

*Colombia's major trading partners are expected to continue to grow at a good pace (3.5%), although less so than in 2005 (4.3%).*

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<sup>19</sup> J.P. Morgan, Deutsche Bank, Goldman Sachs, Morgan Stanley and Credit Suisse (information at December).

TABLE 9

## INTERNATIONAL PRICES

	Average 2004	Projection for 2005		Projection for 2006	
		Current	Previous	Current	Previous
		1/	2/	1/	2/
Coffee (ex-dock) (dollars/pound)	0.8	1.2	1.2	1.1	1.1
Oil (dollars/barrel)	37.3	47.1	47.9	52.7	54.4
Coal (dollars/ton)	36.1	47.0	47.9	47.0	47.9
Ferronickel (dollars/pound)	2.3	2.5	2.6	2.1	2.3
Gold (dollars/troy ounce)	409.3	443.6	433.8	500.2	452.7

1/ Estimated balance of payments at January 2005.

2/ Estimated balance of payments at September 2005.

Source: Banco de la República.

Even so, there are some important risks. The main one is soaring oil prices. Larger-than-expected hikes in the price of oil could spell higher inflation and higher external interest rates. Other risks associated primarily with the U.S. economy include: i) price stability, which continues to rest on important gains in productivity, although it is not clear if the current growth in this variable can be maintained in the long term; ii) the possibility of a major drop in housing prices, which would affect household consumption and solvency; and iii) macroeconomic imbalances in addition to what is expected, thereby increasing the likelihood of a sharp adjustment in the years ahead. In the case of Latin America, the electoral calendar could heighten the perception of risk concerning the region. However, this has yet to occur, even though the electoral process in several countries is well underway.

In this context, it is feasible to expect total Colombian exports to continue to grow at a healthy pace in 2006 (although less so than in 2005 with respect to dollar value and in real terms). This is associated with good prospects for world economic growth (and, consequently, the demand expressed by our trading partners) and good international prices for our basic exports.

As indicated, no major changes in private capital flows to Colombia are expected during 2006, barring an abrupt adjustment in U.S. interest rates or some external or internal shock that halts capital inflows. This scenario, as a whole, is mirrored in scant pressure towards exchange depreciation, a tendency observed in January 2006. However, from 2007 onward, the current account deficit is expected to rise and there likely will be more

*In the external context,  
the main risk concerns  
high oil prices.*

pressure for the peso to devalue, mainly because of a drop in oil income, as indicated in current projections on prices and quantities exported.

*No major changes in private capital flows to Colombia are expected during 2006.*

## B. THE DOMESTIC CONTEXT

The information available for 2006 indicates that conditions favorable for growth are likely to continue. Good growth among the country's trading partners, relatively high terms of trade, moderate hikes in external interest rates, and continued capital flows to the emerging economies are some of the external factors that will contribute to growth of the Colombian economy. In this context, Colombia anticipates no increase in its country-risk coefficient.

As in 2005, internal factors will play an important role this year. More investment and household consumption (particularly durable goods) are a highlight in this respect, as is the growth in credit (especially consumer loans). The increase in these variables reflects a recovery in confidence on the part of economic agents in recent years. Added to this is the fact that current interest rates are low and there is considerable liquidity in the economy.

There are public investment programs that will help to raise aggregate demand and expand production capacity in 2006. Although it is difficult to specify the project timetables for investment in civil works, this sector is expected to grow by almost 10% in real terms during 2006. At national level, Plan 2,500 contemplates the construction or refurbishing of 2,500 kilometers of highway by 2008. Also, the regional administrations will continue to implement their four-year development plans, some of which include a number of ambitious projects such as mass transit systems.

Potential (or non-inflationary) economic growth should continue to recover during 2006 (Box 3). The rise in the stock of capital in recent years is a contributing factor, as is the increase in factor productivity, to the extent that it reflects permanent growth rather than just cyclical variations.

The forecast exercises signal approximately 4.5% growth in 2006. Most of this increase will come from domestic demand, which should complete four consecutive years with average growth rates on the order of 6.5%.

*Growth will be around 4.5% in 2006.*

*Real growth in non-traditional exports would offset the slight drop in traditional exports.*

With respect to external demand, the forecast models point to nearly 1.5% real growth in exports. This figure is near 4.0% for non-traditional exports, which would offset the slight reduction in traditional exports (due to a standstill in coffee production and a 5.5% drop in oil production).

The healthy growth in domestic demand will continue to favor the increase in imports of consumer durables, intermediate and capital goods. This being the case, net external demand will remain negative in 2006 (Table 10).

Non-tradables are expected to see the greatest increase during 2006, especially civil works construction, commerce, transport and communications. In the tradable sectors, industrial manufacturing should register added growth, together with services such as air and maritime transport (Table 11).

## C. INFLATION FORECAST

### 1. External Assumptions

External prospects have not changed much in the last three months, at least with respect to what could have a major impact on performance of the Colombian economy. Although oil prices at the end of 2005 were within the range anticipated

TABLE 10

REAL GDP GROWTH FORECASTS BY TYPE OF EXPENSE  
(PERCENTAGE)

	2004	2005	2006
<b>End Consumption</b>	<b>3.9</b>	<b>5.0</b>	<b>5.4</b>
Household	4.1	5.0	5.5
Government	3.3	5.0	5.0
<b>Gross Capital Formation</b>	<b>11.7</b>	<b>25.1</b>	<b>15.4</b>
Gross fixed capital formation (GFCF)	12.8	18.2	12.3
GFCF without civil works	21.9	17.1	12.8
Civil works	(19.1)	24.1	10.0
Variations in inventory	3.1	80.3	32.1
<b>Domestic Demand</b>	<b>5.3</b>	<b>8.8</b>	<b>7.5</b>
<b>Total Exports</b>	<b>10.4</b>	<b>5.5</b>	<b>1.5</b>
<b>Total Imports</b>	<b>16.9</b>	<b>24.1</b>	<b>15.1</b>
<b>Gross Domestic Product</b>	<b>4.0</b>	<b>4.9</b>	<b>4.5</b>

Source: DANE. Calculations by Banco de la República.



**REAL GDP GROWTH FORECASTS BY SECTORS  
(PERCENTAGE)**

	2004	2005	2006
Agriculture, forestry, hunting and fishing	2.5	2.9	1.9
Mining and quarrying	2.2	3.5	0.7
Electricity, gas and water	2.8	3.4	2.6
Manufacturing industry	4.8	2.2	3.1
Construction	9.7	10.0	6.1
Buildings	30.3	3.7	4.0
Civil works	(19.2)	24.2	10.0
Commerce, repairs, restaurants and hotels	5.8	8.8	5.7
Transport, storage and communication	5.1	5.4	6.1
Financial establishments, insurance, real estate and business services	4.3	3.6	3.2
Social, community and personal services	2.7	4.2	5.0
Financial brokerage services measured indirectly	12.2	9.9	5.5
Subtotal: Aggregate value	3.8	4.2	3.8
<b>Gross Domestic Product (GDP)</b>	<b>4.0</b>	<b>4.9</b>	<b>4.5</b>
Taxes less subsidies	6.9	14.4	12.4
Net financial services: SIFMI (*)	1.9	1.4	2.3
Tradables	3.6	3.4	3.3
Non-tradables	4.3	5.8	5.2

(\*) Financial brokerage services measured indirectly.  
Source: DANE. Calculations by Banco de la República.

in the last edition of this report and no change in tendency is expected, they are still the main element of uncertainty.

The inflation forecasts in this report assume the international price of oil will be as high in 2006 as it was in 2005. The reference crude for Colombia (WTI) is expected to average US\$65.8 a barrel<sup>20</sup>. This is similar to the forecast outlined in the September report and above the forecast for 2005 (US\$58.52). As to the crude oil Colombia exports, this forecast would mean an average price of US\$52.7, which is up slightly from the average in 2005 (US\$47.1).

As for most economies in the region, one of the main risks to the Colombian economy is a larger-than-expected rise in U.S. interest rates in response to possibly permanent inflationary pressures spurred by the already high price of oil and/or by additional increases. Higher interest rates and high prices could hurt economic performance in the United States and throughout much

*In 2006, the international price of oil will stay at the high levels witnessed in 2005.*

<sup>20</sup> These forecasts are from IMF World Economic Outlook (WEO) and are slightly different from the IEA forecasts mentioned earlier.

*The Fed's interest rate is expected to reach 5%.*

of the world, with negative consequences for terms of trade, external demand and capital flows.

However, this report does not consider this risk scenario highly probable. On the contrary, the forecast for inflation is based on the assumption that the world economy and that of Colombia's trading partners will continue to grow at a good pace, although slightly less than last year, and that prices for our main export products will stay relatively high. The Fed's interest rate is expected to reach 5% (as opposed to 4.75% forecast in the last edition of this report) and should remain there for the rest of the year, while rates on longer maturities are expected to stay relatively low. This being the case, external capital will continue to come into the country in amounts similar to those seen in 2005.

In view of the foregoing, the assumption in the central inflation scenario is that pressure for the peso to depreciate will be extremely moderate and, if it does occur, will come in the second half of the year. It is unlikely the political scenario in Colombia, or in other Latin American countries, will alter this outlook.

As indicated in earlier reports, even if the risk were to increase, the likelihood that it would have an impact on the Colombian economy is limited, at least for some time. This is because it would occur in a context of high prices for oil, which is one of the country's main export products. Furthermore, if the slowdown is concentrated in the United States and in certain industrialized countries, the strong demand in China and other emerging economies would keep the prices of Colombia's other export commodities from collapsing. In the case of non-traditional exports, Colombia still would have the strength of oil markets like the one in Venezuela, which would not be seriously affected by a slowdown in the United States economy. Lastly, more international reserves, accumulated in recent years, and less indebtedness, both public and private, have made the economy less vulnerable to changes in capital flows.

## **2. Domestic Assumptions**

In this report, the forecasts for domestic growth at the end of the year are up and the prediction for 2006 is maintained. As mentioned in earlier sections, the third-quarter figures exceeded the predictions outlined in the September report and showed unexpected strength in household consumption.

*The new forecast for 2005 is 4.9% growth, which assumes 4.4% annual GDP growth in the fourth quarter.*

The new forecast for 2005 is 4.9% growth, as opposed to 4.7% predicted earlier. The current figure assumes 4.4% annual GDP growth by the fourth quarter. Although less than the third-quarter figure, it does not imply a change or break in economic trends, as the slowdown is due to purely statistical factors.

The 4.5% forecast estimated three months ago for 2006 was ratified. Growth this year will be propelled more by domestic demand than in 2005. Although investment should continue to play an important role, household consumption is expected to be the main factor in this expansion. The momentum in public spending is expected to continue, supported by larger programs for investment in transport facilities.

*The output gap should be near zero by the start of 2006.*

Local and foreign investor confidence in the country is not expected to change, nor is consumer confidence. As to consumers, the recent increase in employment might even result in more optimism about the future of the economy.

The conditions observed in the second half of 2005 with respect to broad liquidity and ample credit to finance investment and consumption are not likely to change much during the year. Therefore, domestic demand and particularly consumption will have plenty of resources. The levels of household and business borrowing are below the historical averages. Lastly, the increase in the value of assets, including real estate in certain specific sectors, produces a positive sensation of wealth that can encourage consumption.

The output gap measurements used in the central model were modified again in this report. Based on evidence of additional growth, a revision of this indicator after the September edition points to less of a gap than was anticipated. The estimate in this report is down to -2.0%, on average, for 2005. The ballpark figure three months ago was -0.6% (see Graph 52 and Table 12 for the respective quarterly figures). In other words, for all practical purposes, the gap is thought to have closed by the end of 2005 and would have been near zero, or in slightly positive terrain, at the start of 2006. However, it is important to underscore that these estimates are highly uncertain.

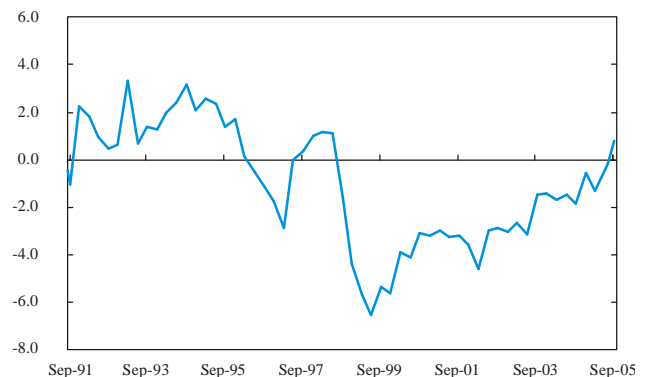
### 3. Inflation Forecasts

The Bank's short-term models lowered the total consumer inflation forecast in the first two months of the year compared to the prediction in the September edition of this report. The results suggested inflation would dip below the center of the target range during the first quarter of the year and would remain there during the second quarter (Table 12).

GRAPH 52

#### OUTPUT GAP

(Percentage of Potential GDP)



Source: Banco de la República.

TABLE 12

## CENTRAL MODEL FORECASTS (MMT)

	Total Inflation	Food Inflation	Non-food Inflation				Output gap
			Total	Non-tradable	Tradable	Regulated	
Dec-05	4.9	6.6	4.1	4.6	2.2	6.6	(0.2)
Mar-06	4.1	4.3	4.1	4.8	2.5	5.1	(0.1)
Jun-06	4.2	3.9	4.3	4.9	2.5	6.0	0.1
Sep-06	3.9	3.6	4.0	4.7	2.2	6.0	0.2
Dec-06	4.0	3.8	4.1	4.8	2.3	6.6	0.3
Mar-07	4.9	5.6	4.6	4.9	2.8	7.9	0.3
Jun-07	4.7	5.0	4.5	4.8	2.9	7.5	0.2
Sep-07	4.6	4.6	4.6	4.8	3.2	7.5	0.1
Dec-07	4.4	4.4	4.4	4.7	3.1	7.0	(0.1)

Source: Banco de la República.

The short-term outlook for inflation is similar to the prediction in the last report and would be explained by a sharp decline in food inflation, particularly for staples. No reduction in non-food inflation is anticipated for the coming months. On the contrary, a slight surge compared to the rate at December 2005 is expected towards the second quarter. Even so, the short-term forecasts for the non-food basket are less than in the September report<sup>21</sup>.

The relative stability of non-food inflation in the next six months hides two opposite trends. One is a slight rise in non-tradable inflation to 4.9% at June (without food or regulated goods/utilities). The other is a sizeable drop in inflation in regulated goods/utilities, particularly during March, to below what it was at December 2005. Annual tradable inflation is not expected to see much change in the short term (2.5%) and should stay slightly above the rate at year's end (2.2%), thanks to the impact of accumulated appreciation.

As to the mid-term and long-term outlook, the central scenario of the MMT showed major changes in its forecasts compared to the September report, particularly with respect to 2007. For that year, the model predicts more risk of inflation in food and in the other items (CPI without food).

For the second half of 2006, the MMT indicates stable inflation below the actual rates at the end of 2005 (Table 12). The forecast for December 2006 is 4.0%, which represents a slight increase compared to the

*In the short term, inflation should decline because of the tendency in food prices.*

<sup>21</sup> At September, the non-food inflation forecast was 4.6% for March 2006 and 4.5% for June 2006. These forecasts are now 4.1% and 4.3%, respectively.

September report but is well below the middle of the BDBR target range (between 4.0% and 5.0%) and much less than at the end of 2005 (4.85%). However, for 2007, the MMT shows an increase in inflation to 4.4% (at December).

*The forecast for total inflation is 4.0% in 2006 and 4.4% in 2007.*

As with earlier forecasts, the drop in total inflation between December 2005 and December 2006 would be accompanied by a major reduction in annual food inflation (Table 12), which would be concentrated during the first half of 2006. This decline would not reverse itself during the second half of the year, but would in 2007. According to the model, it would be 3.8% at December 2006, which is much less than at the end of 2005. The increases for 2007 would come to two pp and occur mostly at the start of the year.

The tendency in the food model is coherent with the high relative prices witnessed in 2005 (especially for perishables). What happened with food in January<sup>22</sup> 2006 supports these predictions. It is important to remember that the models used by Banco de la República tend to accurately predict trends in food inflation for periods of one to three quarters. However, the longer the period, the less reliable the forecast. Therefore, while it is not audacious to expect less inflation in 2006, it could well end the year higher than what is anticipated in this report.

As to the most relevant measure of inflation in terms of monetary policy; that is, non-food inflation, the MMT predicts little variation in 2006 and levels below the middle of the target range. At December 2006, non-food inflation would be 4.1%, as it was at the end of 2005 (Table 12). However, the rise expected in 2007 would place non-food inflation at 4.4% by the end of the year. This break in the long-term trend is an important change with respect to the forecasts in the September report, when non-food inflation was expected to stabilize at around 4% for 2007.

According to the monetary policy transmission channels, low non-food inflation in 2006 and whether or not the target for that year can be met easily will depend largely on limited inflationary pressure originating with the exchange rate. This will help to keep tradable inflation at around 2.5% throughout the year (Table 12) With respect to the September report, there was an increase in the forecasts for 2006 that could be attributed more to the growth in domestic demand than to additional pressures on the exchange front.

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<sup>22</sup> DANE announced the inflation results for January 2006 at the time this report was being published. Total consumer inflation dropped to 4.56%, partly because annual food inflation was down to 6.12%. Annual non-food inflation declined to 3.88%.

*Core inflation is expected to remain stable in 2006 and to experience an increase in 2007.*

*Appreciation and the favorable trend in regulated utilities would keep non-food inflation down in 2006.*

The contribution from the exchange rate is more difficult to predict for longer time periods. A slight surge in tradable inflation is expected towards 2007. However, it still would be less than the total and average inflation forecasts for that year and at levels that are compatible with the long-term targets. This tendency assumes added pressure for devaluation compared to 2006, but moderate all the same.

A relatively favorable trend in regulated utilities also should help to keep non-food inflation relatively low during much of 2006. The forecasts for the end of this year (6.6%) are much lower than in the September report (8.8%). Primarily, this is due to a favorable outlook for public utility prices (Table 12).

Upward pressure exerted by prices for fuel and public transportation is anticipated for 2006, associated with high international prices for oil and with the continued lag between international and domestic prices<sup>23</sup>. However, low adjustments (or even reductions) could offset increases in a number of utility rates. For example, lower water rates in some cities are a possibility, due to the new regulatory formulas introduced in recent months. Nor are small adjustments in electricity rates considered unlikely. According to regulations, these rates are tied to the trend in the exchange rate.

*A longer time line would lessen the effect of the exchange rate on lowering core inflation.*

For 2007, the contribution from regulated utilities is less clear, due to upward pressure from fuel prices and transportation rates. International prices for crude oil are expected to remain high, and the lag in domestic prices will not be eliminated entirely by the end of 2006.

The impact of the drop in tradable, regulated and food inflation would be offset, in part, by an anticipated upward trend in non-tradable inflation (without food or regulated goods/utilities). According to the MMT central scenario, inflation in this subgroup would rise in 2006 compared to the end of 2005. As for 2007, no further increases are expected, but inflation still would be above the levels registered in 2005. For 2006 and 2007, the rate would go beyond the targets and ranges announced by the Board of

*For 2007, it is not as clear how regulated utilities will help, due to possible increases in prices for fuel and transportation.*

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<sup>23</sup> These forecasts do not consider the downturn in prices at the beginning of February, which could continue because of the large-scale introduction and use of ethanol. It was introduced in Colombia at the end of 2005, in the southwest section, but had no major impact on inflation. At the time this report was prepared, ethanol was beginning to be used in Bogotá.

Directors as monetary policy objectives<sup>24</sup>. These projections exceed those in the September report.

The outlook for non-tradable inflation is no surprise, considering the Colombian economy has grown more than expected, particularly in the case of domestic demand. According to the central model, this variable (measured by the output gap) and inflationary expectations have the most impact on how the other non-tradables perform.

Demand-pull inflationary pressures in 2006 and 2007 are expected to surpass those outlined in the September report and could increase over the course of time. This is due to closure of the output gap in 2005. Based on that assumption, the central model predicts (endogenously) a positive gap for 2006 and 2007. In other words, contrary to what happened in 1999, demand and the gap are not expected to help lower non-tradable inflation in the next few years. The recent decline in expectations, plus compliance with the 2005 target, should help to ease inflationary pressures in 2006. However, the pressure that could come from the increase in domestic demand and a closing output gap would offset this effect.

Non-tradable inflation is distancing itself from the long-term inflation targets, complicating any future reduction in inflation, since this basket represents a major share of the total CPI (37%). Also, it creates a situation in 2006 and 2007 where compliance with announced targets and ranges is dependent on a highly uncertain set of circumstances, such as a favorable trend in prices for staples and fuel, coupled with not much pressure on the exchange front.

The long-term forecasts included in this report contemplate an active monetary policy that is compatible with the long-term target set by the Board of Directors (3%). In other words, even with those adjustments, the MMT shows that non-tradable and total inflation could move away from the long-term inflation targets in 2007.

In short, inflation during 2006 and 2007 would be determined by:

- Restrained pressure from the exchange rate, which would help to keep tradable inflation down.
- High inflation in regulated goods/utilities, but with somewhat of a downward tendency. Compared to other years, this will lower inflationary pressure. However, that tendency could reverse itself in 2007.

*Demand-pull inflationary pressures in 2006 and 2007 are expected to be higher than anticipated in the September report and could increase over time.*

*The fact that non-tradable inflation is moving away from the long-term inflation targets complicates any future reduction in inflation, since this basket represents a major share of the total CPI.*

---

<sup>24</sup> In addition to the 4% - 5% target range for 2006, the BDBR agreed on November 18 to situate the middle of the 2007 target range between 3% and 4.5%, and announced a target near 3% for the long term.

*Estimates point to the risk of inflation to a higher degree than what is contemplated in the central scenario.*

- A decline in food inflation in 2006, which would help to meet the target. Significant surges could be expected in 2007.
- The force of domestic demand would go against these disinflationary factors in 2006, by exerting pressure on non-tradable inflation. For 2007, the pressure would be stronger and could distance inflation from the targets.
- Low and declining inflationary expectations and the increased credibility of Colombia's monetary policy. This would help to meet the goal for 2006. However, a standstill in inflation during 2007 would prevent any additional reductions in this variable, which could begin to work against compliance with the targets.

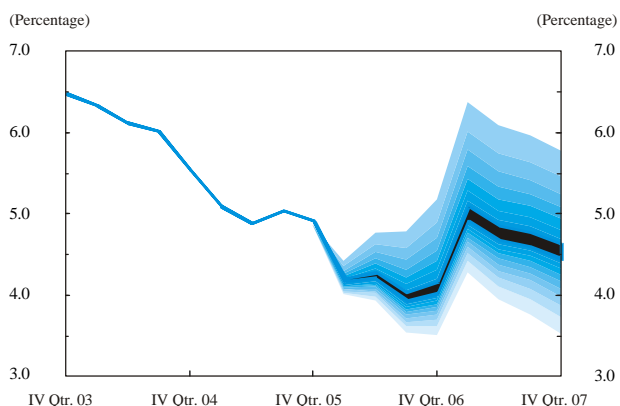
#### 4. Risk Balance

Graph 53 (Fan Chart) shows the central path of the forecast for total inflation, together with its probability distribution, which illustrates the extent of uncertainty associated with that projection. This distribution takes into account the main risk factors inherent in the central forecast, which is considered the most probable.

In general, estimates point to the risk of inflation to a higher degree than what is contemplated in the central scenario. There are several reasons for the upward bias in the central forecast.

GRAPH 53

PROBABILITY DISTRIBUTION OF THE INFLATION FORECAST (FAN CHART)



ACCUMULATED PROBABILITY OF ACTUAL CONSUMER INFLATION IN THE RANGE INDICATED

Inflation Ranges (%)	Probability (%)							
	2006				2007			
	Mar.	Jun.	Sep.	Dec.	Mar.	Jun.	Sep.	Dec.
Above 5.5	0.0	0.0	0.5	4.0	39.1	25.6	20.2	13.7
Below 5.5	100.0	100.0	99.5	96.0	60.9	74.4	79.8	86.3
Below 5.0	100.0	97.5	95.6	85.4	33.4	50.3	57.7	67.8
Below 4.5	95.9	70.5	77.6	62.0	7.9	21.6	29.5	41.4
Below 4.0	2.4	6.6	36.9	27.4	0.5	3.7	7.8	16.1
Below 3.5	0.0	0.0	2.0	2.6	0.0	0.2	0.9	3.4
Below 3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

Source: Calculations by Banco de la República.



- It does not give full consideration to the role of labor costs in price formation. An increase of 6.95% in the nominal minimum wage was authorized for 2006. In real terms, this is the largest hike in recent years. And if not accompanied by equivalent gains in productivity, it could provoke more pressure from costs and prices than what is contemplated in the central path. This increase also can lead to high wage adjustments in other sectors of the job market.
- According to the different balance-of-payments scenarios, pressure in the direction of exchange depreciation could be higher in 2007 than predicted by the MMT.
- Given the recent trend in food prices, the outlook for food inflation in 2006, according to the MMT, may be overly optimistic. Furthermore, relative food prices have been on the rise since the late nineties, which means that changes in food prices for the consumer tended to be higher than for other goods and services.
- Inflation in regulated goods/utilities during 2006 and 2007 might be higher than anticipated in the base scenario, particularly because of larger-than-expected fuel price increases. However, this balance does not take into account the decline in these prices that could originate with the introduction of ethanol to the Colombian market.
- For the reasons mentioned earlier, most of the risks weighing on the growth forecast and its impact on the final result for inflation come from the external context:
  1. High oil prices
  2. The eventuality that real-estate prices will come down
  3. The likelihood that productivity gains in the United States will be maintained
  4. Macroeconomic imbalances in the United States
  5. The political cycle in Latin America

*There is a 62% probability of total inflation being 4.5% or less in 2006.*

If these circumstances materialize, the emerging economies could expect to see less net inflow of capital and less growth in their non-traditional exports. This would entail a stronger tendency towards depreciation in 2006 and 2007 than anticipated herein, thereby adding to the possibility of higher inflation, especially as of 2007.

*Inflation likely will be above 4.5% in 2007.*

With this risk balance, there is a 62% chance of total inflation being no more than 4.5% (the midpoint in the target range) at December 2006. The probability in the last report was 60.2%. There is an 85% chance it will be towards the top of the range, as was indicated in the last report. In other words, it is very likely this year's inflation target will be met. The possibility of inflation being in the lower half of the target range cannot be ruled out either.

Good performance for inflation in 2007 is less probable, even with an active monetary policy. During that year, there is a good chance (59.6%) that inflation will be above 4.5%. This bias in uncertainty is a problem, considering the downward trend in inflation needed to meet the long-term targets.

## THE NON-INFLATIONARY OUTPUT GROWTH RATE

Mario Nigrinis \*

The position of the economy in the economic cycle<sup>1</sup> is a fundamental aspect to consider in any monetary policy. When the economy is below the non-inflationary output level, surplus production capacity exerts disinflationary pressure. On the contrary, when the economy is in a growth phase, this transmission channel does nothing to lower the rate of inflation. In fact, it can generate demand-pull pressure that tends to boost inflation.

As illustrated in this report, the technical team of the Economic Studies Division (SGEE in Spanish) believes that, by 2006, the economy will have absorbed most of the surplus capacity created since 1998. As such, the discussion on the non-inflationary output growth rate becomes even more relevant.

Average anticipated GDP growth at mid-term is calculated herein, according to the growth-accounting method, and is used as a mid-term non-inflationary GDP growth,<sup>2</sup> or potential growth, reference.

### I. Growth Accounting

Assuming that output can be represented by a Cobb-Douglas production function (Equation 1), its growth can be broken down between the variation in total factor productivity (TFP) and the variation in capital stock and the variation in employment (Equation 2). Also, the elasticity of output to capital (**a**) is presumed to be 0.4<sup>3</sup>.

$$(1) \quad Y_t = A_t K_t^a L_t^{1-a}$$

$$(2) \quad \frac{\hat{Y}}{Y} = \frac{\hat{A}}{A} + a \frac{\hat{K}}{K} + (1 - a) \frac{\hat{L}}{L}$$

\* The author is an expert who works with the Special Studies Unit of the Programming and Inflation Department at Banco de la República. The opinions expressed in this section are his alone and imply no commitment on the part of Banco de la República or its Board of Directors.

<sup>1</sup> The economic cycle is understood as the difference between current and non-inflationary output.

<sup>2</sup> Although non-inflationary GDP is considered less volatile than current GDP, it is not immune to shocks originating with supply and demand. For example, using the production function approach, the SGEE estimated average annual non-inflationary GDP growth for 1999-2002 at around 1.7%, given the persistent negative shock to productivity created by the recession in 1999. However, this does not mean it is the average rate of growth for a longer period, such as 20 years.

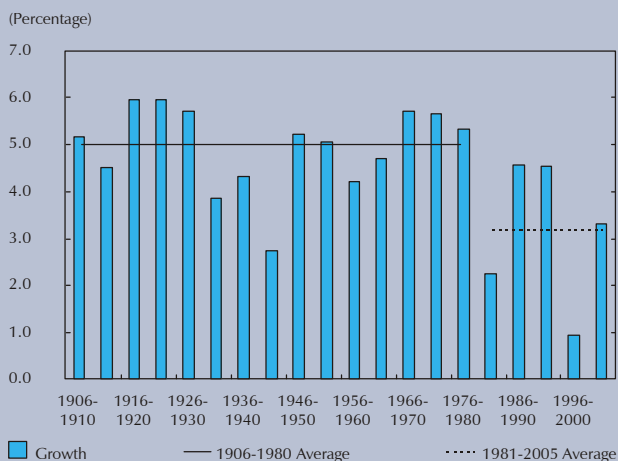
<sup>3</sup> This result is similar to the one found by the GRECO study group (1999). "El crecimiento económico colombiano en el siglo XX: aspectos globales," in Borradores de Economía, No. 134. Banco de la República.

This means the trend in production factors will have to be analyzed to determine how output might behave in the future.

## II. GDP Growth in Colombia

The information constructed by the Banco de la República Study Group on Colombian Economic Growth (Greco)<sup>4</sup> and updated with figures from DANE shows 4.5% average GDP growth in 1905-2005. This average can be broken down into two periods. The first is from 1905 to 1980, when the economy grew at an average annual rate of 5.0%. The second is from 1981 to 2005, when economic growth slowed to 3.1% (Graph B3.1). During the last 25 years of the twentieth century<sup>5</sup>, this occurred not only Colombia but worldwide.

**GRAPH B3.1**  
**GDP GROWTH IN COLOMBIA**



Source: DANE, GRECO and Banco de la República.

## III. Investment and Capital

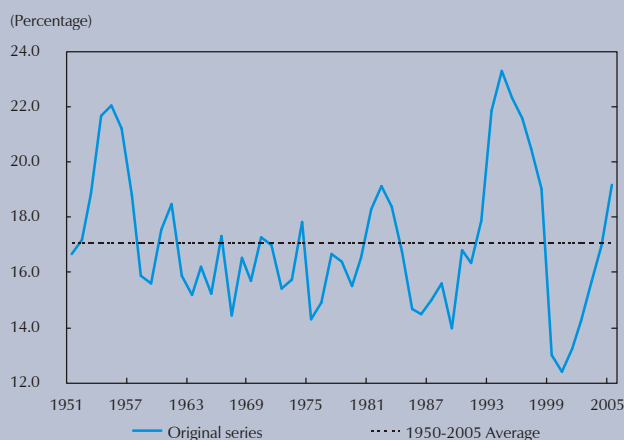
Graph B3.2 shows investment as a share of GDP throughout the last 50 years. It was 17.1% during that period. The investment boom in the first half of the nineties and the sharp drop in 1999, owing to the recession, are highlights. Economic growth during the last three years is associated with a recovery in investment.

<sup>4</sup> See Greco (1999), *El desempeño macroeconómico colombiano - series estadísticas (1905-1997)* (segunda versión) in *Borradores de Economía*, No. 134, Banco de la República, May.

<sup>5</sup> See Montenegro, Armando; Rivas, Rafael (2005). *Las piezas del rompecabezas*, Editorial Taurus.

The variation in capital stock (Table B3.1) mirrors this momentum in investment. Average growth was 4.4% between 1951 and 2005. To maintain this rate in the years ahead, the ratio of investment to GDP will have to stabilize at around 19.6%, which is 2.5 percentage points above the historical average for the last 50 years.

**GRAPH B3.2**  
INVESTMENT (FBKF) AS A SHARE OF GDP



Source: DNP, Greco and Banco de la República.

**TABLE B3.1**  
GROWTH IN CAPITAL STOCK

Period	Percentage
1951-1955	5.5
1956-1960	4.2
1961-1965	3.7
1966-1970	4.3
1971-1975	4.9
1976-1980	5.0
1981-1985	4.9
1986-1990	3.2
1991-1995	6.6
1996-2000	3.8

Source: Banco de la República.

#### IV. Employment

For this exercise, DANE provided the statistics on the number of employed persons in seven cities<sup>6</sup> during the 1989-2005 period. When the information is grouped into five-year periods, the average increase in the number of employed persons came to 3.6% in 1991-1995, 1.4% in 1996-2000 and 3.1% in 2001-2005. The exercise assumes that the economy has the capacity to create jobs at a rate similar to the actual increase registered during the first half of the nineties.

#### V. Total Factor Productivity

The momentum in the Solow Residue is the most important variable for explaining a country's economic growth process. The slowdown in growth experienced worldwide at the end of the twentieth century was accompanied by less average growth in productivity. According to Montenegro and Rivas (2005)<sup>7</sup>, the TFP contribution to

<sup>6</sup> Bogotá, Medellín, Barranquilla, Cali, Bucaramanga, Manizales and Pasto.

<sup>7</sup> See Footnote No. 5.

Colombian economic growth during the period between 1975 and 1995 was near zero (-0.65% for the entire period). They also present the results of the Bosworth and Collins study, according to which average TFP growth during 1960-2000 was 0.44% per year. For the 1960-1995 period, prior to the recession, it was 0.85%<sup>8</sup>. The production function methodology used by SGEE to calculate surplus capacity in the economy shows the TFP rose by 0.4% a year between 2001 and 2005.

Two possible scenarios were considered to calculate sustained non-inflationary or long-term growth. The first assumes a continuation of the trend in TFP growth between 1960 and 2000 (nearly 0.44% per year). The second contemplates the possibility of a recovery in productivity, following the crisis in 1999 (0.85% growth per year).

## VI. Results

Non-inflationary GDP growth in the years ahead was estimated for Colombia based on the assumed increase in capital stock, employment and productivity. The output growth rate, at mid-term, varied between 4.3% and 4.8%. The results are shown in Table B3.2.

The outcome of this exercise is considered “optimistic” in view of the following:

1. Investment as a share of GDP was invariably above its average for the past 50 years. This implies an increase in the country’s savings rate or a sufficient flow of net external savings to finance the larger current account deficit.

**TABLE B3.2**  
**RATE OF GROWTH IN OUTPUT, PRODUCTIVITY AND FACTORS**  
**(PERCENTAGE)**

Scenario	GDP	TFP	Capital	Labor
Average 1/	4.3	0.44	4.3	3.3
High 2/	4.8	0.85	4.3	3.3

1/ A scenario where average annual TFP growth is similar to the rate in 1960-2000.  
2/ A scenario where average annual TFP growth is similar to the rate in 1960-1995.  
Source: Banco de la República.

<sup>8</sup> Despite this discouraging result, the authors show that average growth in productivity in Colombia between 1960 and 2000 surpassed the average for Latin America. However, it still is a long ways from the average for the Asian countries (1.22%) during that same period.

2. The economy is able to create jobs at a rate similar to what was observed in the first half of the nineties.

To achieve higher growth rates (e.g. 6.0%), structural reforms would have to be encouraged to raise the growth in productivity and factor accumulation. This probably would necessitate fiscal reforms to elevate public savings once and for all, coupled with structural tax reforms to eliminate the distortions created by the current tax structure and other measures to increase flexibility and the extent of competitiveness in markets for goods and factors. Policies of this sort can give economic agents an added incentive to invest and to be more productive.

**MACROECONOMIC FORECASTS BY LOCAL  
AND FOREIGN ANALYSTS**

The following are the latest projections by local and foreign analysts regarding Colombia's main macroeconomic variables for 2006 and 2007. These projections were developed with information available at December 2005.

**I. Projections for 2005**

Table A1 shows their predictions for 2006. On average, the local analysts raised their forecast by 25 bp (with respect to the previous quarter) to 4.3%. The foreign analysts raised theirs by 42 bp to 4.1%. Expectations may have improved once the third-quarter growth figure was announced (5.7% annual). This would indicate the market continues to be surprised by the outcome of economic activity and, given recent trends, probably will continue as such.

**TABLE A1  
PROJECTIONS FOR 2006**

	<b>Real GDP Growth (%)</b>	<b>CPI Inflation (%)</b>	<b>Nominal exchange rate (end of)</b>	<b>Nominal TDR (%)</b>	<b>Fiscal Deficit (GDP %)</b>	<b>Unemployment Rate (13 cities) (%)</b>
<b>Local analysts</b>						
<i>Dinero</i>	4.1	4.6	2,300	7.1	1.7	11.5
Citibank Colombia	4.2	4.6	2,350	6.7	1.6	10.8
Banco Santander	4.0	4.7	2,350	7.2	2.0	12.0
BBVA Ganadero	4.2	4.5	2,373	6.9	2.0	10.4
Suvalor-Bancolombia	4.4	4.5	2,353	6.5	1.8	n,d,
Corfivalle	4.5	4.8	2,374	7.5	2.5	12.5
Fedesarrollo	4.4	4.5	2,362	6.5	2.3	10.5
<b>Average: Local Analysts</b>	<b>4.3</b>	<b>4.6</b>	<b>2,352</b>	<b>6.9</b>	<b>2.0</b>	<b>11.3</b>
<b>Foreign Analysts</b>						
C. S. First Boston	4.0	5.0	2,342	7.0	2.0	10.8
Bear Stearns	5.2	4.2	2,350	7.0	1.5	10.0
Goldman Sachs	3.9	4.7	2,370	9.0	2.0	11.2
UBS	4.0	5.0	2,350	8.3	2.0	12.3
Merrill Lynch	3.8	5.1	2,500	8.0	2.0	n, d,
IDEA Global	4.2	4.9	2,350	6.5	2.0	10.6
J. P. Morgan Chase	4.0	4.5	2,375	6.7	2.0	n, d,
Deutsche Bank	4.0	4.7	2,449	7.0	1.1	12.5
<b>Average: Foreign Analysts</b>	<b>4.1</b>	<b>4.8</b>	<b>2,386</b>	<b>7.4</b>	<b>1.8</b>	<b>11.2</b>

n.a. Not available

Source: Dinero and Consensus Forecast, January 2005.



The local analysts left their inflation forecast at 4.6%, while the foreign analysts lowered theirs by 10 bp to 4.8%. Because annual inflation in 2005 was 4.85%, these forecasts assume inflation will decline slightly during the rest of the year. As was the case over a year ago, all the analysts believe the target will be met (4% to 5% for 2006), and their forecasts are slightly above the midpoint of the target range.

With respect to the exchange rate, the analysts reduced their forecasts by Col\$64, on average (for over a year, they have lowered their forecasts for 2006 by Col\$93 per quarter, on average). In other words, they expect 3.6% depreciation in foreign exchange, on average, compared to the price at the end of 2005 (maximum anticipated depreciation is 8%; the minimum is 0.69%). This suggests the duration and magnitude of appreciation still surprise analysts and they continue to be slow about incorporating it into their forecasts.

As to interest on term deposits (DTF in Spanish), the majority of the analysts lowered their forecasts. The average for the local analysts was 6.9% as opposed to 7.4% for the foreign analysts (a year ago, both the local and foreign analysts reduced their forecasts for 2006 by 31 bp per quarter, on average). However, none of them expect additional reductions in the DTF (it was 6.4% in 2005, which is 130 bp less than at the end of 2004). On average, they anticipate an increase of 80 bp in 2006. They expect a fiscal deficit on the order of 1.9%; that is, 100 bp below the forecast nine months ago, and lowered their forecast on unemployment in 13 cities to 11.3%. This is a reduction of 70 bp.

## **II. Projections for 2007**

Table A2 contains several forecasts for 2007. With respect to growth, the local analysts forecast 4% and the foreign analysts, 3.9%. The local analysts expect 4.2% inflation and the foreign analysts, 4.7%, which is slightly above the top of the target range set by BDBR for that year (2.5% to 4.5%). . As to the exchange rate, they anticipate 4.7% average annual devaluation with respect to the forecasts for the end of 2006. In other words, by the end of 2007, the representative market rate (TRM in Spanish) would be Col\$2,480. This is similar to what it was at July 2002.

With respect to the end of 2005, these forecasts imply 8.6% accumulated peso devaluation between 2006 and 2007. On average, the analysts believe 40% of this devaluation will occur in 2006 and the other 60% in 2007. Four of the fifteen analysts expect it to be 50% each year; only one expects 80% of accumulated devaluation to occur this year.

**TABLE A2**  
**PROJECTIONS FOR 2007**

	<b>Real GDP Growth (Percentage)</b>	<b>CPI Inflation (Percentage)</b>	<b>Nominal Exchange Rate (end of)</b>
<b>Domestic Analysts</b>			
Dinero	4.1	4.2	2,410
Citibank Colombia	3.9	4.4	2,480
Banco Santander	4.0	4.0	2,450
BBVA Ganadero	3.7	4.0	2,456
Suvalor-Bancolombia	4.0	3.8	2,424
Corfivalle	3.8	4.8	2,499
Fedesarrollo	4.2	4.0	2,472
<b>Average: Local Analysts</b>	<b>4.0</b>	<b>4.2</b>	<b>2,456</b>
<b>Foreign Analysts</b>			
C. S. First Boston	4.0	4.5	2,366
Bear Stearns	5.0	4.0	2,420
Goldman Sachs	3.6	4.4	2,490
UBS	3.9	5.0	2,500
Merrill Lynch	3.0	5.4	2,675
IDEA Global	4.0	5.0	2,450
J. P. Morgan Chase	3.8	4.5	2,525
Deutsche Bank	4.2	4.9	2,609
<b>Average: Foreign Analysts</b>	<b>3.9</b>	<b>4.7</b>	<b>2,504</b>

Source: Dinero and Consensus Forecast.

# MONETARY POLICY DECISIONS IN THE LAST THREE MONTHS

## **Background Information: The September 2005 *Inflation Report***

The September 2005 edition of the *Inflation Report* contained evidence of a narrower output gap than was estimated earlier. This was supported by second-quarter growth data, by DANE's review of earlier GDP figures, and by the results obtained with the new methods being used to estimate the output gap. For that reason, the presumed average output gap for 2005 went from -1.4% in the June report to -0.6% in the September report. Additionally, the macroeconomic analysis showed it was feasible to expect good GDP growth to continue in the coming quarters, along with pressure for exchange rate appreciation.

In this context and considering the various scenarios that reflect uncertainty about the exchange rate and the extent of the output gap, the central forecast model showed there was no room, in the short term, to reduce intervention interest rates. Also, medium and long-term monetary policy would have to exchange an expansionist stance for a neutral position to prevent inflation from accelerating in the future.

Based on these factors, the Board of Directors agreed to leave the interest rate on expansion repos at 6%. This decision was taken at the BDBR meeting on October 28, 2005. It also reiterated its commitment to continue to intervene in the exchange market, and reached an agreement with the Colombian government to sell no less than US\$3 billion in international reserves. As a result of its policy on intervention, Banco de la República made US\$1,935 m in discretionary purchases during the third quarter, for a total of US\$3,550 m between January and December 2005. This is more than the total amount of foreign currency purchased by the Bank in 2004 (US\$2,95 m).

## **Monetary Policy Decisions in the Fourth Quarter of 2005**

October saw a rebound in inflation, due to supply shocks that affected food inflation (following an increase in September) and certain regulated utilities and services. Although temporary in nature, these shocks raised the inflation forecast for the year and probably had some impact in inflationary expectations, as the surveys suggested.

On the other hand, a look at the indicators shows the economy remained dynamic and there was continued pressure towards exchange rate appreciation. In view of

these factors, the Board of Directors decided, at a meeting on November 18, to leave the expansion repo rate at 6% and to continue its policy of discretionary intervention in the exchange market (Table A). Similar decisions were taken at the BDBR meeting in December with respect to the country's monetary and exchange policy.

**TABLE A**  
**CHANGES IN BANCO DE LA REPUBLICA'S INTERVENTION RATES**  
**(PERCENTAGE)**

Date(*)		Contraction		Expansion	
		Lombard	Auction	Auction	Lombard
2001	Dec. 17	6.25	7.50	8.50	12.25
2002	Jan. 21	6.00	7.00	8.00	11.75
	Mar. 18	5.25	6.25	7.25	11.00
	Apr. 15	4.25	5.25	6.25	10.00
	May 20	3.75	4.75	5.75	9.50
	Jun. 17	3.25	4.25	5.25	9.00
2003	Jan. 20	4.25	5.25	6.25	10.00
	Apr. 29	5.25	6.25	7.25	11.00
2004	Feb. 23	5.00	6.00	7.00	10.75
	Mar. 23	4.75	5.75	6.75	10.50
	Dec. 20	4.50	5.50	6.50	10.25
	Dec. 22	n.a.	n.a.	6.50	10.25
2005	Sep. 19	n.a.	n.a.	6.00	9.75

n.a. Not applicable. Monetary contraction operations (auction and Lombard) have been suspended since 22 December 2004.

(\*) The working day immediately after the decision by the Board of Directors.

Source: Banco de la República.

Pursuant to its policy on intervention, Banco de la República purchased US\$1,108 m in foreign exchange during the fourth quarter of the year, bringing its total discretionary purchases in 2005 to US\$ 4,658 (Table B). A large portion of this amount (US\$3,250 m) was sold to the national government for advance payment on the external debt.

At a meeting on November 8, the Board of Directors set the inflation target for 2006 at 4% to 5%. This is the specific goal for legal effects. On that same occasion, the mid-point for target inflation in 2007 was set at 3% to 4.5%, the idea being to continue convergence toward the long-term goal of 3%.

In anticipation of its January meeting, the Board of Directors assessed Colombia's economic performance, mainly the following characteristics: 1) favorable domestic and external circumstances, which have made good economic growth possible, particularly the increase in domestic demand; 2) substantial appreciation in the exchange rate as of 2004, which has allowed for stable, low tradable inflation, below the target 3) stable

**TABLE B**  
**FOREIGN EXCHANGE PURCHASE-SALE OPERATIONS BANCO DE LA REPÚBLICA**  
(MILLIONS OF DOLLARS)

	2004	2005				Accumulated: Jan-Dec
		I Qtr.	II Qtr.	III Qtr.	IV Qtr.	
Purchases	2,905	603	841	1,935	1,108	4,658
<b>Put Options</b>	1,580	0	0	0	0	0
To accumulate international reserves	1,400	0	0	0	0	0
To control volatility	180	0	0	0	0	0
Discretionary Intervention	1,325	603	841	1,935	1,108	4,658
Sales	500	250	0	700	1,300	3,250
<b>National Government</b>	500	250	0	700	1,300	3,250
Net Purchases	2,405	353	841	1,235	(192)	1,408

Source: Banco de la República.

non-tradable inflation in recent quarters (without regulated utilities and without food); 4) declining inflationary expectations; and 5) low real interest rates with respect to the historical pattern.

The economic-activity indicators point to increasingly less surplus capacity in the economy. The third-quarter growth figure (published by DANE at the end of last year) surpassed all expectations and showed domestic demand was rising at an annual rate of 10.3%. On the whole, this information suggests further closure of the output gap, compared to September, and lowers the average presumed gap for 2005 from -0.6% to -0.2%.

In this context, the trend in core inflation during the next four to eight quarters would be determined primarily by what happens to surplus capacity and the exchange rate, inflationary expectations and the presence or absence of cost and wage-pull inflationary pressures. Therefore, to make decisions on monetary policy, the path these variables might take during the period when the relevant macroeconomic variables would be affected by monetary policy (from four to eight quarters) had to be assessed. The tendencies were the following, according to the analysis done by the technical team.

- There should be no increase in tradable inflation during 2006, although conditions might be different in 2007, due to less income from oil exports (given current projections on export prices and volumes).
- Surplus productive capacity in 2006 is expected to do less to curb inflationary pressures than in past years. The technical team raised its forecasts for GDP growth in 2006 from 4% to 4.5%.

- The trend with respect to inflation in 2006 should benefit from the behavior of inflationary expectations. Surveys show these expectations are more aligned with the goal than in previous years. In particular, this should have a favorable impact on contract price adjustments, which usually are concentrated in the first quarter.
- Recent wage increases, including the minimum wage, could begin to exert pressure on costs, although this will depend on the scope and permanence of the gains in labor productivity.
- In 2006, inflation in regulated services and utilities is expected to be similar to what it was at the end of 2005 (around 6%), with some increase towards the end of the year.

In the case of food inflation, the models show an important reduction during the first quarter of 2006 compared to the end of the year (6.5%). However, this forecast is not altogether certain, particularly in relation to the magnitude of these changes, even in the short term.

The results of the central forecast model simulations ratified those obtained in past months in the sense that there is no room for a reduction in interest rates, despite the tendency towards appreciation. Although the 2006 inflation target likely will be met (possibly in the lower half of the target range), the situation could be very different in 2007: tradable inflation could increase and surplus capacity might no longer be enough to contain the inflationary pressures to be derived from continued economic growth. Food inflation, on the other hand, would continue to help lower inflation in 2006, but would do just the opposite in 2007.

In this context, the results of the model suggest the necessity of gradually reducing monetary stimulus to the economy throughout the year, as a necessary condition for keeping inflation on a downward path aimed at the long-term goals. Also, given the uncertainty of the forecasts for the main variables that determine inflation (the output gap, the exchange rate, expectations and growth in productivity), the pace of monetary-policy adjustment had to conform to the analysis of macroeconomic developments and their prospects. In particular, information on the trend in inflation and inflationary expectations during the first quarter of the year was crucial to reducing the margin of error in the short and medium-term inflations forecasts.

Based on these elements, the Board of Directors agreed at a meeting on 27 January 2006 to keep the interest rate on expansion repos at 6%. It also decided to continue the Bank's discretionary intervention in the exchange market, based on the assessment of the exchange situation and on the balance-of-payments projections.