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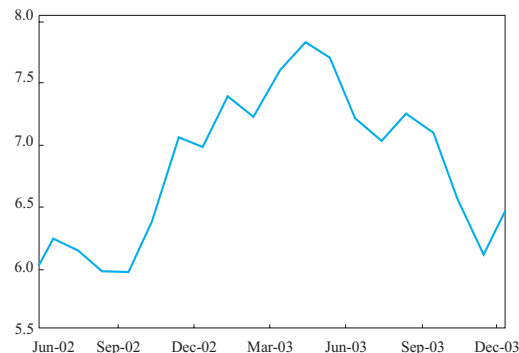
**B A N C O   D E   L A   R E P Ú B L I C A**  
(CENTRAL BANK OF COLOMBIA)  
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## THE INFLATION SITUATION AND OUTLOOK

### I. INTRODUCTION

In 2003 consumer price inflation was 6.49%, 49 basis points (bp) above the upper limit of the target range that had been set between 5% and 6% (Figure 1). Most of the pressure on inflation came from items affected by increases in controlled prices and transitory supply shocks. Particularly important were the adjustments in public service tariffs (with an inflation of 14.5% at year-end) and fuel prices (21.8%), and the December surge in food inflation (5.3%), the latter affected by climatic factors and the transport strike in the first weeks of December.

**FIGURE 1**  
**ANNUAL CONSUMER INFLATION**  
**(PERCENTAGE)**

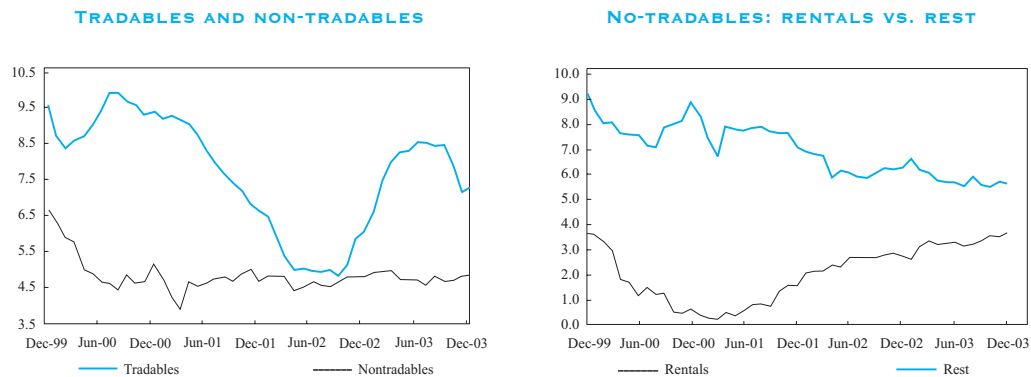


Source: National Administrative Department of Statistics (DANE).  
Calculations by Banco de la República.

Inflation in the other items of the basket (excluding primary food items, public services and fuels) showed two distinct trends (Figure 2, left panel): tradable goods, which are affected by movements in the exchange rate, were above the target (7.3%), but lower than third quarter levels (8.5%). This trend reflects the lagged impact on prices of movements in the exchange rate, which depreciated 14.7% on average between 2002 and 2003. Tradable goods inflation began to fall with the stabilization and later reduction of the exchange rate.

Inflation in non-tradable items was below target (4.9% in December). In the last three years inflation in this group has remained between 4.5% and 5%. A more detailed analysis shows that this group reflects two contrary trends: rental inflation, which has had trended upward in recent years, and the inflation of the rest of the non-tradables, which has been falling gradually (Figure 2, right panel).

**FIGURE 2**  
**CORE ANNUAL INFLATION (\*)**  
**(PERCENTAGE)**



(\*) CPI excluding primary food items, fuel and public services.  
Source: DANE, Calculations by Banco de la República.

Economic growth continued to improve, averaging 3.4% in the first three quarters of 2003. Buoyant domestic demand and especially private investment are the main factors that explain the faster growth of the Colombian economy.

The central question of monetary policy is how these variables will behave (tradables inflation, non-tradables inflation and economic activity) over the next two years. To answer this question, it is necessary to understand the current and future macroeconomic situation, differentiating between the determinants of economic activity, and the inflation of tradable and non-tradable goods.

## II. THE CURRENT ECONOMIC SITUATION

### A. International growth, prices and interest rates

In the second half of 2003 the world economy continued to recover. The latest figures suggest that economic growth is continuing to grow at a faster rate than forecast in previous inflation reports, improving the outlook for the short and medium term. World growth continued to be stimulated by the buoyancy of the U.S. economy, whose third quarter performance (8%) exceeded all expectations.

The higher growth rate of the US economy was possible due, to a large extent, to exceptionally low interest rates, which are currently at their lowest levels since the 1960s, but this is occurring simultaneously with the deepening of the fundamental macroeconomic imbalances of the US economy. The deficit on the balance-of-payments current account has reached record levels (5% of gross domestic product (GDP) at the end of 2003), while the fiscal deficit continues to grow.

Commodity prices have risen in line with stronger demand and optimism about the recovery of the world economy. Prices of commodities exported by Colombia such as coal, nickel, gold and coffee have increased considerably, while oil remains at levels over \$30, higher than the forecasts made in previous reports. Also, since the middle of the year, share prices have recovered strongly accompanied by a fall in the debt prices of emerging countries, including Colombia.

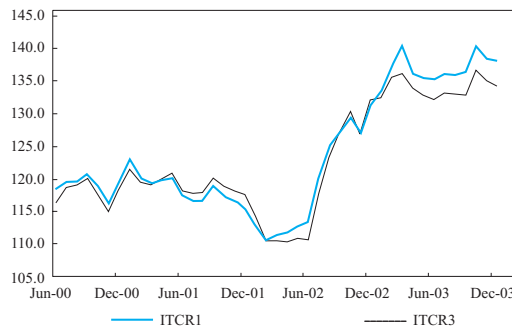
In this situation, the most outstanding aspect of the international capital market has been the appreciation of the dollar against the euro, the yen and the currencies of most emerging countries, and especially Latin American currencies. Everything seems to indicate that the weaker dollar is closely related to the high current-account deficit in the United States and the interest rate differentials that favor investments outside that country.

**B. Production of tradables and the exchange rate in Colombia**

In Colombia, the more favorable external situation stimulated the growth of the tradable goods sector in 2003. Higher commodity prices substantially improved the terms of trade compared with the levels of the two preceding years. Combined with more vigorous world demand, these conditions fuelled strong growth of traditional exports since early 2003, led by carbon, gold and ferronickel. With the stronger external demand, non-traditional industrial exports to the United States also recovered, counteracting the contraction of sales to Venezuela and Ecuador.

The improvement in the trend in external demand was reflected in rapid growth of the GDP of tradable sectors such as mining, which grew 12.5% in the first three quarters of 2003, along with other industrial sectors such as textiles, chemicals, and paper. This recovery does not seem to have been interrupted despite the nominal appreciation of the exchange rate in the second half of 2003, in large part because the real exchange rate is at historically high levels following the strong real depreciation of previous years, especially from the second half of 2002 to the first quarter of 2003 (Figure 3). Moreover, the peso has depreciated in real terms against other currencies besides the dollar, and has even maintained exchange competitiveness against other countries that compete in Colombia’s export markets.

**FIGURE 3**  
**REAL EXCHANGE RATE INDEX (ITCR)**  
**(1994 = 100)**

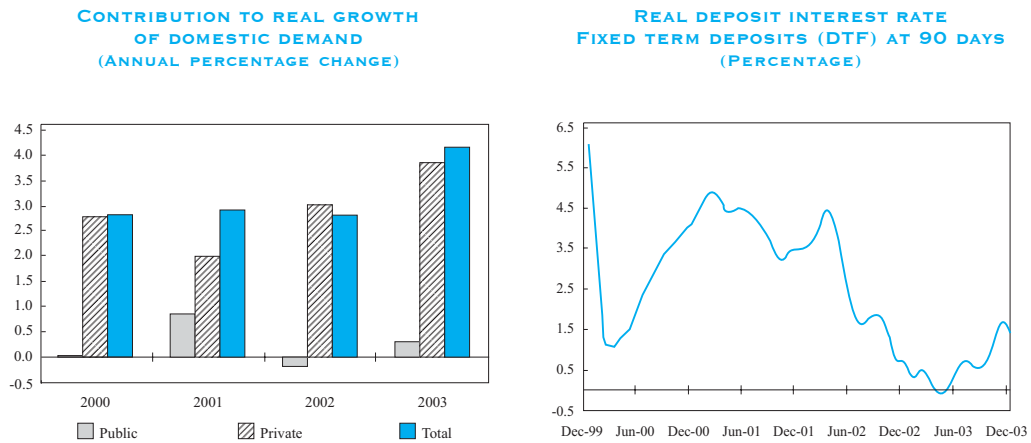


Note: ITCR1 uses the PPI as deflator and ITCR3 uses the CPI.  
 Source: Banco de la República.

**C. Domestic demand and production of non-tradable goods**

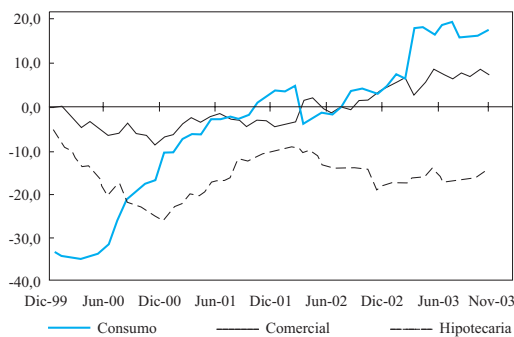
Since the second quarter of 2002, the growth rate of domestic demand has speeded up. The recovery, which has been fundamentally sustained by buoyant private demand, is mainly explained by the long period of low real interest rates. This has led to the reduction of the cost of borrowing, and has guaranteed a healthy debt service for borrowers and lenders (Figure 4). A reflection of this situation is the recovery of credit, which grew 3.2% in real terms in 2003 (December figures) for the first time in several years. Commercial and consumer loans have grown at substantially higher rates, as shown in Figure 5.

FIGURE 4



Source: DANE, Banking Superintendency and Banco de la República.

FIGURE 5  
REAL GROSS PORTFOLIO IN NATIONAL CURRENCY, BY CREDIT TYPE (ANNUAL GROWTH)



Source: Banco de la República, Economic Studies Unit (SGEE).

In addition to low interest rates, other factors that have stimulated growth in the non-tradable sector are: i) higher national income due to the surge in transfers from abroad and the improvement in terms of trade; ii) reduction in the spread of the external debt, which has facilitated the access to external savings at a lower cost; iii) the favorable trend in some asset prices, such as stocks and real estate, with the consequent positive effect on wealth; and iv) improvement in the level of confidence of companies and

consumers, also favored by progress in the government's security strategy and its efforts to slow the growth of the public debt. The higher growth was also accompanied by much more dynamic job creation in 2003 than in previous years, and by an improvement in quality, as revealed by the decline in subemployment.

All this has resulted in the rapid growth of various non-tradable sectors, such as construction, finance, commerce, and transport. Construction has boomed thanks to the stimulus from private building, which is significant because this sector is highly labor-intensive, with high potential as a spending multiplier.

#### **D. Output capacity, wages and inflation expectations**

To understand recent (and future) trends in inflation, and taking into account the trend in GDP of the tradable and non-tradable goods sectors, and the exchange rate, it is necessary to analyze the trend in output capacity, labor costs and inflation expectations. The theory and empirical evidence at world level indicate that inflationary pressures tend to intensify when the economy (or some of its sectors) begin to operate above their output capacity, when growth of real wages exceeds growth of labor productivity, or when inflation expectations move above the target.

In this report, we have used three indicators to evaluate the degree of capacity utilization in the economy. First, the industrial installed capacity utilization index, for which there are two measurements: Fedesarrollo and the National Industrial Association (ANDI). For the second half of 2003, both indicators recorded an increase in capacity utilization from the levels of the two previous years; however both remain below the average level from 1990 to 2003.

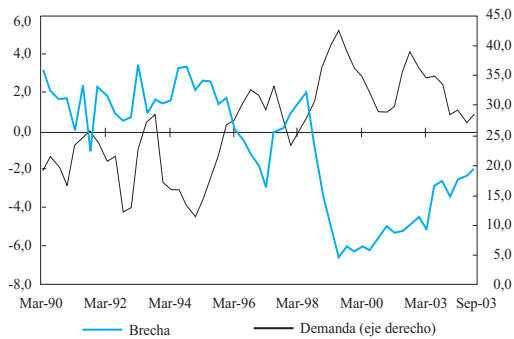
The second indicator of capacity utilization, measured by the Fedesarrollo Business Opinion Survey (EOE) uses the percentage of industrialists who give lack of demand as their main problem in expanding production. In the second half of the year, this indicator fell significantly to the lowest level since 1997.

The third indicator is the output gap. For the *Report on inflation*, the gap, using the Hodrick-Prescott filter, is calculated as the difference between observed and estimated potential GDP. This estimate suggests that the gap is currently negative (that is, potential product still exceeds the observed product), but has been narrowing gradually since mid-2002, being equivalent to -1.8% of potential GDP at the end of 2003. As Figure 6 shows, the gap has a high negative correlation (-0.8) with the percentage of industrialists who say that weak demand is the main factor that limits expansion of production.

In synthesis, although there is still evidence in the Colombian economy of spare output capacity, the three indicators agree that the gap has very probably been narrowing in the recent past due to the economic recovery from the second quarter of 2002, and especially to the higher growth rate in the last two quarters.

On the labor side, costs can represent a danger for price stability if the increase in nominal wages adjusted for productivity (unit labor cost) exceeds inflation targets. The information available for the

**FIGURE 6**  
**LOW DEMAND AS MAIN PROBLEM**  
**OF INDUSTRY VS. OUTPUT GAP (\*)**  
**(PERCENTAGE)**



(\*) The gap is defined as the difference between observed and potential GDP.  
 Source: Fedesarrollo, calculations by Banco de la República.

industrial sector shows that nominal wages were adjusted at decreasing rates during 2003, although still higher than the inflation rate and the targets set by the Board of Directors of Banco de la República (the Board). In the 12 months ended September 2003, workers' nominal wages grew at a rate of 6.6%. However, this situation does not appear to be causing inflationary pressures, at least in industry, thanks to the trend in labor productivity per hour worked, which rose 3.5% to September. Consequently, unit labor costs do not seem to be growing at rates that are incompatible with inflation targets, especially since inflation at producer level in manufacturing industry was 6.4% in 2003.

Lastly, inflation expectations, which grew strongly in late 2002 and early 2003, began to subside in the second half of the year. However, according to the Bank's latest quarterly survey in October, expected inflation for 2004 still exceeds the target range set by the Board (5%-6%). According to this survey, the agents expected 6.6% inflation in September 2004; however, a monthly survey of banks and stockbrokers produced lower figures.

**E. Current inflationary pressures**

The central message of the preceding analysis of the trend in inflation can be summarized in the following points:

1. The exchange rate, whose trend since mid-2002 generated strong inflationary pressures in 2003, has begun to play a favorable role in meeting the inflation targets. After the strong appreciation between the third quarter of 2002 and the first of 2003, the exchange rate was fairly stable and in the last weeks of 2003 and early 2004 appreciated between 3% and 3.5%.
2. Spare capacity has been falling from record high levels at the beginning of the decade, and has been declining at a higher rate than in the last two quarters.
3. All the preceding, together with a set of supply shocks (VAT and food inflation shocks), and substantial adjustments to the prices of controlled goods and services.

To formulate monetary policy, it is crucial to understand how these factors have affected the dynamic of the core inflation indicators and inflation expectations:

1. Core inflation of tradable goods is consistent with the trend in the nominal exchange rate: rapid increase from October 2002 and September 2003, reflecting the lags in the pass-through of inflation to consumer prices, then beginning to fall from high levels.
2. Core inflation of non-tradables has fallen steadily since 2000, consistent with the high levels of spare output capacity, and has been between 4.5% and 5% since 2001. This group displays two contrary trends: rental inflation, which has trended upward in recent years, and the inflation of the rest of the non-tradables, which has been gradually falling. In 2003 rental inflation increased 91 bp, while inflation of non-tradables (excluding rentals) fell 63 bp.
3. Overall, the core inflation indicators remain at high levels (7.1% on average in December 2003), reflecting the effect of the exchange rate on the prices of tradable goods and some supply shocks that were not totally «filtered.»
4. However, tradable goods inflation is expected to continue falling due to the stability of the exchange rate between February and November 2003, and its later appreciation. This is explained by the lags in the pass-through of movements of the exchange rate to consumer prices, and by the recent fall in producer inflation despite the increase in international commodity prices.
5. Inflation expectations have increased strongly since late 2002 along with the increase in total and core inflation; despite a decline in the second half of the year, they remain above the target.

### III. MACROECONOMIC OUTLOOK

The conditions of the Colombian economy at the start of 2004 are characterized by the following factors:

- a. Recovery of the growth of Colombia's main trading partners.
- b. Existence of comfortable monetary conditions that stimulate domestic economic activity by maintaining low real interest rates.
- c. Gradual closing of the output gap as growth of domestic and external demand speeds up.
- d. Recent appreciation of the nominal exchange rate and its possible effect on inflation, the real exchange rate and the competitiveness of the tradable sector.

This is the context for the analysis of the main trends in domestic and external demand, and the production of tradable and non-tradable goods.



**A. External demand, production of tradable goods, and the real exchange rate**

The growth rates of Colombia's main trading partners are expected to speed up rapidly, from -0.6% in 2003 to 4.1% in 2004 in average especially the United States (4.4%) and Venezuela (6.4%), according to projections by Consensus Forecast. Growth in the euro-zone will also recover although to a lesser extent (from 1% in 2003 to 2.4% in 2004). The economic recovery in Latin America will have a positive effect on the inflow of external capital into the region.

In this context of stronger world growth, the terms of trade of emerging countries will continue to improve. According to the balance-of-payments projections, oil and gold prices should remain high, and the international prices of coal and coffee could rise substantially (about 9%), which means that the improvement in Colombia's terms of trade will continue.

On this basis, in 2004 the balance-of-payments model projects large increases in income from coal exports (22.9% in dollars) and coffee (11.2%), while non-traditional exports could grow 9.7%, amply offsetting the lower volume of oil exports (-6.6%) due to the fall in production. The projected growth of non-traditional exports is consistent with an expected average nominal revaluation of 2% in 2004 (4.9% in real terms) in view of the stronger growth of Colombia's trading partners. The real exchange rate remains at record high levels (9.3% above 2002); as a result, strong growth is forecast for the production of the export sectors and the tradable sectors in general.

Imports could grow 10.5% in dollar terms attributable to the higher growth of domestic demand.

In 2004, no substantial improvements are projected for foreign direct investment flows, while net external capital flows from the public sector total US\$1.22 billion, mainly the lower value of amortizations scheduled for this year. With respect to external private flows (not including foreign direct investment), net capital outflows fall by US\$500 million from 2003. In these conditions, and taking into account the accumulation of international reserves which are expected to overtake US\$700 million (given the Bank's intervention), the current-account deficit could increase 1.8% of GDP in 2003 to 2.7% in 2004 (Table 1). The lower income from oil exports projected for 2005 (due to the fall in export volumes and crude prices), combined with the government's intention to limit its external borrowing, suggest that the current revaluation trend will not be maintained in the medium term.

Another factor that could moderate the revaluation pressures is a probable adjustment of interest rates in the United States, given the scale of that country's imbalances on current account and the fiscal front. Analyses indicate, however, the rates would not be adjusted until the second half of the year. Even so, the current low level of real interest rates in the United States and the scale of the deficits could lead to an adjustment in Treasury bonds rates, and introduce a higher degree of uncertainty about the growth of the world economy in the medium term<sup>1</sup>.

In the short term, however, the trend to revaluation could continue or be even higher than predicted. First, the financing of the fiscal deficit can reinforce appreciation in two ways: directly, by financing most of the deficit from external funds<sup>2</sup>; and indirectly, by pressuring the domestic debt market, leading to relatively high interest rates that stimulate capital inflows. Also, factors such as the improved growth outlook for the Colombian and regional

TABLE 1  
CURRENT ACCOUNT  
(MILLIONS OF DOLLARS)

	2001	2002 (pr)	2003 (Proj.)	2004 (Proj.)
<b>Current-account balance</b>	(1,251)	(1,580)	(1,416)	(2,399)
As % of GDP	(1.5)	(2.0)	(1.8)	(2.7)
<b>Trade balance</b>	503	225	152	(786)
Exports	12,772	12,302	13,212	13,652
Imports	12,269	12,077	13,061	14,438
<b>Services</b>	(1,424)	(1,458)	(1,492)	(1,551)
<b>Income</b>	(2,593)	(2,820)	(2,999)	(3,037)
<b>Current transfers</b>	2,263	2,473	2,924	2,975

(pr) Preliminary.  
(Proj.) Projection.  
Source: DANE and Banco de la República.

economies, the increase in transfers from abroad, and the improvement in the country's terms of trade, produce an appreciation of the real equilibrium exchange rate.

It should be noted that the intervention by Banco de la República in the exchange market to buy US\$ 500 million in foreign exchange in December 2003 and early January 2004 did not reverse the trend in the exchange rate, in conditions of strong growth of base money (Figure 7). This indicates that the Bank could face restrictions on continued intervention in the exchange market.

## B. Domestic demand and production of tradable goods

As mentioned, domestic demand has been recovering since the second quarter of 2002, and is expected to continue growing in 2004 at rates above 4.0% (Table 2).

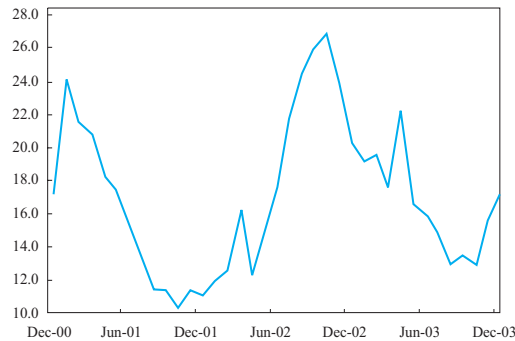
Private consumption should continue to improve thanks to growth of disposable household income, despite higher taxes associated with the recent tax reforms. This factor is likely to be more than offset by higher economic growth, the improved terms of trade, the high volume of transfers from abroad, and the growth of employment. Other factors that contribute to stronger consumption are the low level of real interest rates, buoyant consumer credit, and the recent systematic upswing in the consumer confidence indicators. Finally, the rise in asset prices has a positive wealth effect.

On the other side, private investment will continue to stimulate growth of domestic demand thanks to low interest rates, the expansionary monetary conditions in the economy (growth of M3 and credit), possible inflows of foreign capital, and expectations of higher future profits. In fact, company profits increased substantially last year (Table 3), which provides financing for higher levels of investment,

<sup>1</sup> The central banks of other countries, such as England and Australia, have recently raised their interest rates.

<sup>2</sup> The current schedule for financing the combined public-sector deficit shows that, of total net (deficit) financing of 6.1 trillion pesos, 5.1 trillion pesos would come from net external financing (83% of the total).

**FIGURE 7**  
**BASE MONEY (\*)**  
**(ANNUAL PERCENTAGE CHANGE)**



(\*) Monthly average.  
Source: Banco de la República.

**TABLE 2**  
**DISPOSABLE INCOME AND AGGREGATE DEMAND, 2001-2004**  
**(PERCENTAGE ANNUAL CHANGE)**

	2001	2002 (pr)	2003 (Proj.)	2004 (Proj.)
<b>Private disposable income</b>	0.3	1.9	3.0	3.6
<b>GDP</b>	1.4	1.8	3.5	3.8
Domestic demand	2.9	2.8	4.2	4.4
Exports of goods and services	2.7	(4.5)	3.6	3.0
Imports of goods and services	11.6	0.8	7.4	6.4

(pr) Preliminar.  
(Proj.) Proyección.  
Fuente: DANE y Banco de la República - SGEE.

coupled with the effect of the incentive for plowing back profits approved in the recent tax reform. Also, capacity utilization is now relatively high in several sectors, leading to the possibility of investment decisions possible in the short term. Finally the evident improvement in the climate of confidence and security seems likely to continue in the future.

In these conditions, economic growth in 2004 will be higher than in 2003, led by sectors such as construction (10.2%), transport (6.3%), commerce (5.3%), and industry (4.6%).

#### IV. INFLATION FORECASTS

The previous sections reveal that inflation in the tradable sectors should fall gradually over the next few months, except perhaps for some adjustments in the opposite direction associated with higher than expected hikes in fuel prices. This type of inflation could fall more rapidly if the current trend in the exchange rate continues. Buoyant domestic demand will result in the gradual reduction of spare capacity and put upward pressure on the prices of some non-tradable goods and services, with differences between products depending on the specific degree of capacity utilization in each sector.

## SUMMARY

**TABLE 3**  
**FINANCIAL RESULTS OF COMPANIES**  
**THAT REPORT TO THE SECURITIES SUPERINTENDENCY**  
**(SAMPLE OF 116 NON-FINANCIAL COMPANIES)**

	September		Growth	
	2002	2003	Nominal	Real
	(Millions of pesos)		(Percentage)	
Total assets	48,140,988	55,469,984	15.2	7.6
Total liabilities	19,484,376	21,363,941	9.6	2.4
Total equity	28,656,611	34,106,043	19.0	11.1
Operating income	15,577,918	18,020,435	15.7	8.0
Gross profit	5,216,540	6,042,285	15.8	8.1
Operating profit	1,355,867	1,658,292	22.3	14.2
Profit before tax	32,543	1,783,764		
Profit and loss	20,895	1,937,949		

Source: Securities Superintendency

This report presents forecasts for inflation and other variables with horizons of one, two and three years. These were obtained from the central model used by Banco de la República (transmission mechanisms model).

### A. Transmission mechanisms model (TMM)

Two scenarios were developed for this report: a) the basic scenario that maintains the policy rule active and therefore, offers path of interest rates that is compatible with the long-term inflation targets; and b) an alternative scenario that presents the inflation results under the assumption that CDT (Certificate of Deposit) rates are constant for two consecutive years<sup>3</sup>.

#### 1. Basic scenario

With flexible interest rates, the TMM suggests total projected inflation of 4.7% for 2004, below the target range, with non-food inflation of 5.0%. In 2005 total inflation of 4.8% is projected, within the target range, and non-food inflation also of 4.8%. The downward trend in inflation could continue in 2006 to 4.6% (Table 4)

The basic TMM scenario assumes an average appreciation of 0.5% in 2004, with a return to depreciation in 2005 and 2006 at rates similar to those in the balance-of-payments projection. This trend in the exchange rate is consistent with the adjustment in domestic interest rates resulting from the projection of the model, assuming an increase in the external interest rate of 60 bp in the second half of the year.

<sup>3</sup> This is a common methodological assumption used by central banks in the preparation of inflation forecasts. It is assumed that monetary policy posture does not change during the time horizon in which it is most effective, estimated from six to eight quarters.

With respect to the output gap, the basic scenario assumes an initial level of -1.83% in the fourth quarter of 2003, compatible with growth of 3.5% in 2003<sup>4</sup>. The forecasts indicate that the gap should gradually close throughout 2004 to end at -0.76%, with an additional 0.4 percentage points at the end of 2005. If potential GDP is assumed to grow at around 3%, the trend in the gap projected by the TMM would be equivalent to GDP growth of between 3.5% and 4.0% for 2004.

These forecasts are consistent with a rise of 100 bp in 90-day CDT rates in 2004 and an additional 90 bp in 2005. This increase would be partly due to the rise in external interest rates. The current 90-day CDT rate is around 8.0%.

**TABLE 4**  
**RESULTS OF CENTRAL MODEL (MMT)- BASIC SCENARIO**  
**(PERCENTAGE)**

End of	Inflation			Output Gap	CD (CDT)	Average annual devaluation
	Total	Non-food	Food			
<b>2003</b>	6.5	7.0	5.2	(1.8)	8.0	14.9
<b>2004</b>	4.7	5.0	4.2	(0.8)	9.0	(0.5)
<b>2005</b>	4.8	4.8	4.8	(0.4)	9.9	7.6
<b>2006</b>	4.6	4.6	4.6	(0.6)	10.9	5.1

Source: Banco de la República.

## 2. *Alternative scenario*

If the CDT rate remains constant at 8% nominal in 2004 and 2005, total inflation will be 4.8% in 2004 similar to the basic scenario, but rising to 5.1% in 2005 (vs. 4.8% in the basic scenario) and to 5.5% in 2006 (vs. 4.6% in the basic scenario) (Table 5). In this case the output gap would narrow by 1.4 percentage points in 2004 (against 1 percentage point in the basic scenario) which would generate a positive gap in 2005.

To achieve declining inflation targets below 5% from 2006 would require an increase of over 300 bp in the CDT rate from that year. This strategy would generate excessive volatility in the output gap, which would rapidly close in 2004, becoming positive in 2005 and returning to negative in 2006 and 2007. In this case, monetary policy would increase macroeconomic instability.

## **B. Balance of risks**

According to the analysis of the inflation situation presented in the first two sections of this chapter, the balance of risks should take into account the following factors:

<sup>4</sup> However, on the latest figures, higher growth cannot be expected in 2003.

## SUMMARY

**TABLE 5**  
**RESULTS OF THE CENTRAL MODEL (TMM)**  
**SCENARIO WITH CONSTANT INTEREST RATE**  
**(PERCENTAGE)**

End of	Inflation			Output Gap	CD (CDT)	Average annual devaluation
	Total	Non-food	Food			
<b>2003</b>	6.5	7.0	5.2	(1.8)	8.0	14.9
<b>2004</b>	4.8	5.0	4.2	(0.5)	8.0	(0.6)
<b>2005</b>	5.1	5.1	5.1	0.5	8.0	6.5
<b>2006</b>	5.5	5.5	5.5	(0.6)	13.5	4.8

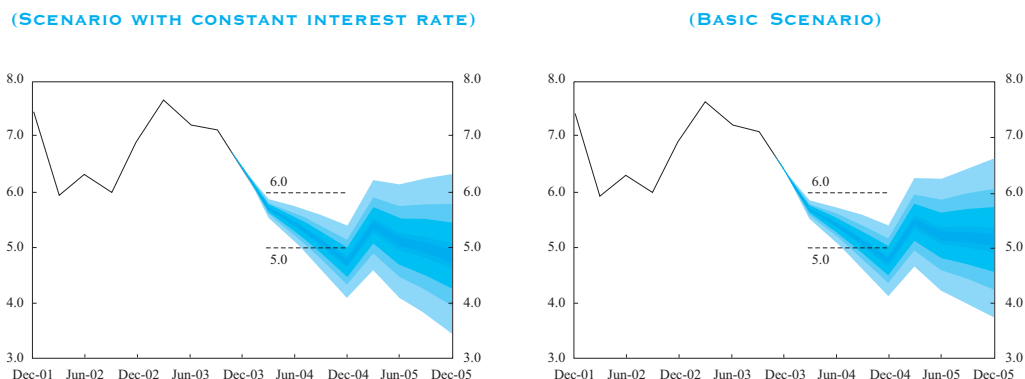
Source: Banco de la República

1. Increased uncertainty in the exchange market in 2004 and 2005.
2. Possibility of greater appreciation of the peso in 2004.
3. Possibility of a more rapid reduction in the output gap between 2004 and 2005.
4. Finally, a higher increase in international commodity prices in 2004.

These risks are included in the distribution of inflation probabilities (Figure 8) for the forecast in the basic scenario (with variable interest rates), and in the alternative scenario (with constant interest rates). Table 6 shows the probabilities associated with various inflation ranges in each scenario.

The results indicate a high probability that inflation will be below 6% in 2004, irrespective of any adjustments in the intervention rates. However, if the rates remain constant, the probability of inflation in 2005 in the announced range (3.5% to 5.5%) falls from 75% to 60%.

**FIGURE 8**  
**PROBABILITY DISTRIBUTION FOR TOTAL INFLATION**  
**(PERCENTAGE)**



Fuente: Banco de la República.

## SUMMARY

**TABLE 12**  
**INFLATION FORECASTS**  
**CONFIDENCE INTERVALS**

	Inflation ranges					
	[< 4.0%]	[4.0%-4.5%]	[4.5%-5.0%]	[5.0%-5.5%]	[5.5%-6.0%]	[6.0%-6.5%]
	<b>Basic scenario (probabilities)</b>					
Mar-04	0.0	0.0	0.0	2.1	97.8	0.1
Jun-04	0.0	0.0	1.6	64.3	33.9	0.2
Sep-04	0.0	2.1	35.0	54.4	8.4	0.1
Dec-04	3.1	24.5	47.6	22.3	2.5	0.1
Mar-05	0.2	3.2	17.6	37.5	30.7	9.6
Jun-05	3.6	12.6	27.0	30.6	18.7	6.3
Sep-05	8.6	16.0	24.9	24.8	16.2	7.0
Dec-05	15.8	17.8	22.4	20.3	13.6	6.7
	<b>Scenario with constant interest rate (probabilities)</b>					
Mar-04	0.0	0.0	0.0	2.1	97.8	0.1
Jun-04	0.0	0.0	1.6	64.3	33.9	0.2
Sep-04	0.0	2.0	34.1	55.0	8.8	0.1
Dec-04	2.6	22.5	47.6	24.3	2.9	0.1
Mar-05	0.1	2.3	14.8	35.8	33.3	11.9
Jun-05	2.2	9.4	23.7	31.4	22.5	8.7
Sep-05	5.0	11.8	22.0	26.2	20.3	10.3
Dec-05	8.8	13.3	20.4	22.4	17.9	10.6

Source: Banco de la República

### V. CONCLUSIONS

The inflation trend in 2004 and 2005 will depend mainly on two factors: i) the speed with which the output gap closes and its effect on non-tradables inflation; and ii) the size and duration of the appreciation and its effect on tradables inflation.

There is ample evidence that the output gap will narrow to around one point of GDP in 2004, although it could still be negative at the end of the year. In very favorable conditions for growth, the gap could close in 2005. This would occur, for example, if average growth in 2004 and 2005 were 4%, and potential product grew 3%<sup>5</sup>.

Projections of the exchange rate trend are much more uncertain. There are reasons for thinking that the current trend in the exchange rate cannot be sustained in the medium term, and that an upward correction could occur. In the short term, however, the revaluation trend is likely to remain at similar or even higher levels than those recorded during the year.

<sup>5</sup> Potential growth in 2004 and 2005 could be higher due to the momentum of investment in 2003 and 2004.

The results of the TMM balance of risks show a high probability of meeting the inflation target of 5% to 6% in 2004, irrespective of the monetary policy posture. However, the probability of inflation in 2005 in the range (3.5% to 5.5%) will be higher if rates are adjusted upwards around 100 bp during the year. The higher rates would be partly influenced by the rise in foreign interest rates, possibly in the second half of the year. On the other hand, if the intervention rate remain constant in the longer term, abrupt changes in interest rates will be necessary in the future, introducing an unnecessary and undesirable volatility into economic growth and the output gap. Moreover, there would be the risk that inflation could “anchor” at levels of 5% or more, incompatible with convergence to long-term inflation levels (around 3%).

In these conditions, an immediate rise in interest rates is unnecessary, but likewise there are no reasons for a cut. This policy would only be desirable if the exchange rate appreciated more than over a long period. On the other hand, an increase in the Bank’s intervention rates may be necessary during the year to increase the probability of achieving inflation in the range announced for 2005, and maintain the process of gradual convergence to long-term inflation levels.

Based on these considerations, the Board maintained the Bank’s intervention rates at the following levels: Lombard expansion 11%, minimum expansion 7.25%, Lombard contraction 5.25% and minimum contraction 6.25%.

Board of Directors  
Banco de la República



# INFLATION REPORT

DECEMBER 2003

Prepared by the  
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## THE CURRENT ECONOMIC SITUATION

The growth rate of product speeded up in the third quarter of the year, expanding at a faster rate than the forecast in the previous report. This is largely explained by the good performance of the construction, mining and financial service sectors. On the expenditure side, private investment continued buoyant, although growth of household consumption is increasing. The trend of expenditure has been especially influenced by the low interest rates levels and the comfortable financial conditions in the economy (as shown by the growth of credit), and the improvement in the climate of confidence and security. Exports also increased strongly in the third quarter (11% annually), especially the traditional sector (18%). Key factors were the higher growth rates of the main trading partners, the recovery of international commodity prices, and the improvement in international financial conditions. It is believed that these trends continued in the fourth quarter of 2003, producing economic growth of least 3.5% during the year.

In the second half of 2003, consumer inflation fell strongly, reversing the upward trend in the first half of the year. At the end of the year, annual consumer inflation was 6.5%, down 0.5 and 0.6 percentage

points from December 2002 and last September, respectively, but half a percentage point higher than the upper limit of the inflation target range set by the Board of Directors of Banco de la República (the Board) for the year (5%-6%). The items that put most pressure on inflation were related to increases in controlled prices and transitory supply shocks, especially, the adjustment of public service tariffs (14.5%) and fuel prices (21.8%), and the surge in food inflation in December (5.3%). These are not prices that depend closely on monetary policy; on the contrary, since December all the core inflation indicators calculated by Banco de la República have trended downward.

The Board maintained the intervention interest rates in the last quarter of the year. These rates were increased in January and April by 100 basis points (bp) on each occasion, due to the growth of expectations and of inflation in the last months of 2002 and early 2003. In the first four months of 2003, the call options mechanism was also used to reduce international reserves to brake the devaluation of the exchange rate. This trend compromised the possibility of meeting the inflation target and encouraged capital flight. In contrast, in view of

the strong trend to appreciation of the peso at the end of 2003, the Board decided to call put option auctions to accumulate international reserves in December 2003 and early 2004, for a total US\$500 million. These options were fully exercised, resulting in an increase in supply of permanent liquidity to over 1.4 trillion pesos.

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#### A. INTERNATIONAL GROWTH, PRICES AND INTEREST RATES

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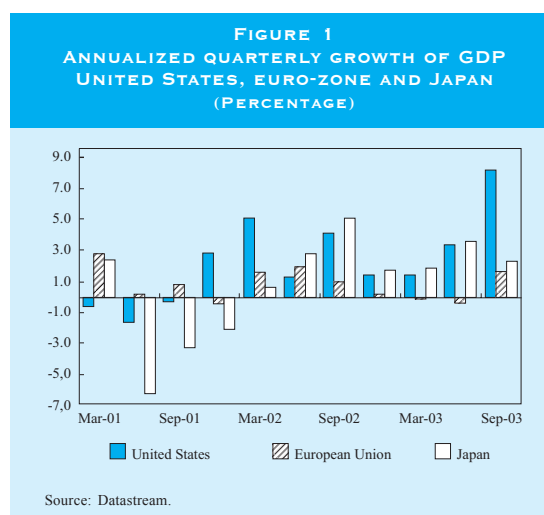
In the second half of 2003, the world economy continued its recovery. The latest figures suggest that economic growth has continued at a more rapid rate than in the forecasts given in the previous inflation reports, improving the outlook for the short and medium term.

The expansion of the world economy has been stimulated mainly by the buoyancy of the US economy. The annualized growth rate of gross domestic product (GDP) in the third quarter of 2003 was 8.2%, higher than the rate initially estimated by the US government (7.2%) and market expectations (Figure 1). Private consumption continued to grow very strongly as a result of low interest rates and the cut in tax rates. At the same time, the low interest rates and the improvement in the level of business confidence led to a recovery of investment. All these factors, combined with strong growth of exports, produced an increase in the productive activity of the industrial, services and real-estate sectors.

In the euro-zone, GDP grew more strongly in the third quarter (1.5%) than in the first half of 2003. The signs of recovery, however, are not convincing.

Although surveys of consumer and business confidence (mainly in Germany and France) are improving, the economic recovery is not yet apparent in spending data and economic activity. This process, as mentioned in the December Bulletin of the European Central Bank, will be gradual. In contrast, the United Kingdom is experiencing strong growth in external and domestic demand, reflected in high growth of product and a booming housing market.

The Japanese economy grew at an annual rate of 2.2% in the third quarter of 2003. On this basis, the forecast for GDP growth during the year is higher than initial expectations. The recovery of the Japanese economy, although weak, is explained by the stronger performance of the export sector and private investment. The economies of the emerging Asian countries returned to high growth rates in the second half of 2003, after the temporary weakness in economic activity caused by the Severe Acute Respiratory Syndrome (SARS). The vigorous growth of the Chinese economy, the recovery of demand in the United States, and the execution of expansionary macroeconomic policies



(monetary and fiscal) in some countries explain the strong growth in the region.

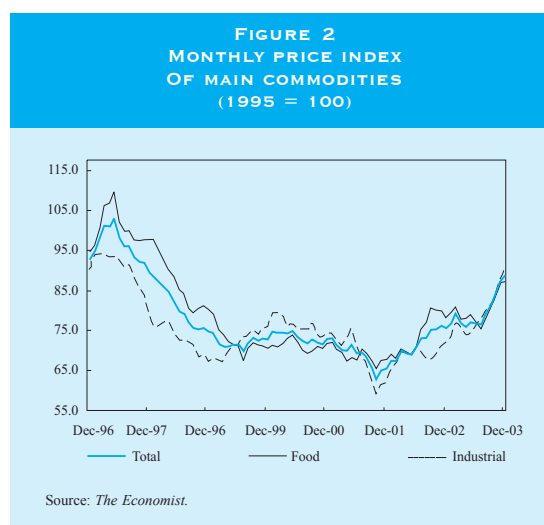
In Latin America, the economically most important countries for Colombia are Venezuela and Ecuador. As oil producers, they should have benefited from high hydrocarbon prices. However, both countries are going through a period of severe political uncertainty. In Venezuela the political crisis has been accompanied by macroeconomic instability, and in Ecuador, the difficulty of attracting new investments into the oil sector resulted in lower than expected crude export volumes in 2003. Consequently, the growth projection for the Venezuelan economy in 2003 is -10.1%, and for Ecuador 2.6%.

In general, Latin America has benefited from the recent improvements in the terms of trade and the performance of international capital markets. The region's terms of trade have improved due to the increase in international commodity prices, which are its main export products. At the same time, international markets have shown a greater appetite for risk in an environment in which the devaluation of the dollar and low interest rates make investing in the United States less attractive. All this, and the fact that some countries have implemented structural reforms and adopted responsible fiscal policies, has given a new stimulus to the inflow of capital into the region, reduced margins of external debt, and strengthened exchange rates.

Consumer price inflation in most of the world's economies was very stable in the last quarter of 2003 in relation to the estimate in the last report. In the United States core inflation continued at historically low levels (1.1% in December), along with head inflation (1.9% in the same month). In

the euro-zone countries, various factors are affecting the speed of the decrease in inflation (for example: the effects on food prices of the strong summer and high international oil prices); even so the indicator is still in the 2.0% to 2.2% range. Japan continues to suffer from deflation, although the rate of the fall in prices has declined. Venezuela ended the year with inflation of 26.9%, and Ecuador with 6.1% despite four years with the dollar as the local currency. In Brazil, inflation performed favorably in the last quarter, ending the year at 9.3%, above the 2003 target (8.5%). In Argentina, inflation (3.7%) was lower than the forecast of most analysts one year before, while in Chile and Mexico inflation ended the year at 1.1% and 4.0%, respectively. These inflation levels are similar to the forecasts made in the previous quarter.

In contrast to the trend in consumer prices, international commodity prices rose strongly in the fourth quarter of 2003. In December, the annual change in *The Economist* commodities index was 17.6%, higher than the forecast in the previous report (7.7%). By type of goods, industrial prices grew significantly; in December this subindex was

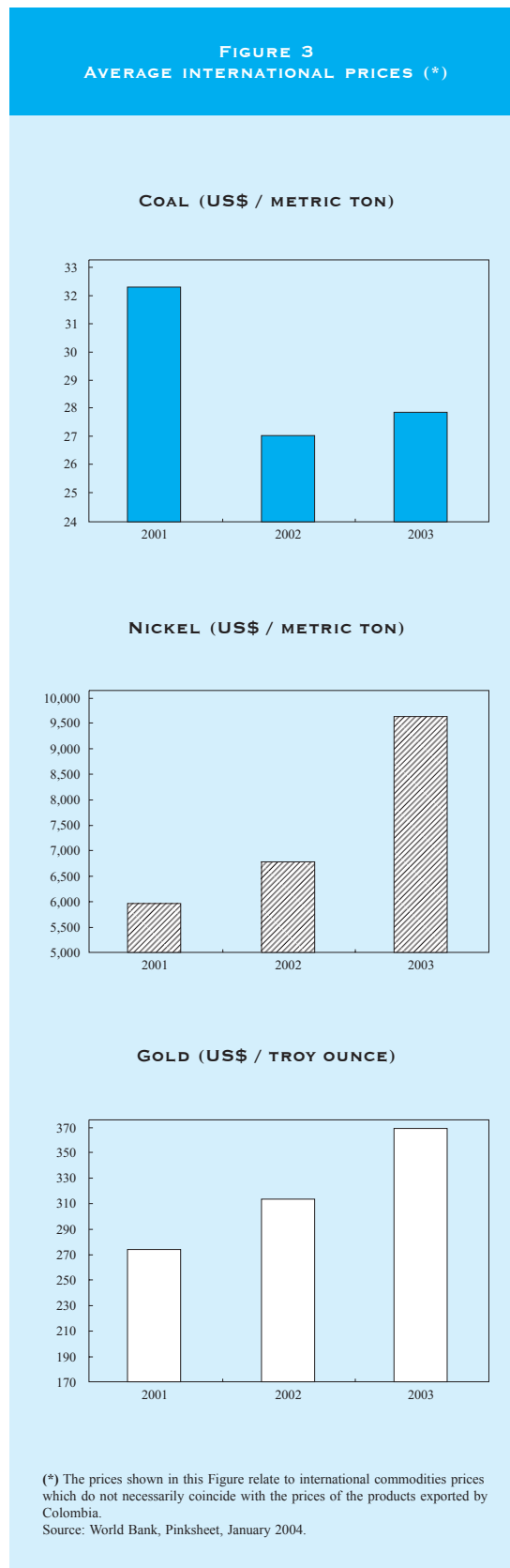


26.9% above December 2002. For the same period the food subindex gained 11.4%. On average, for the full year commodity prices rose between 8% and 15% (Figure 2).

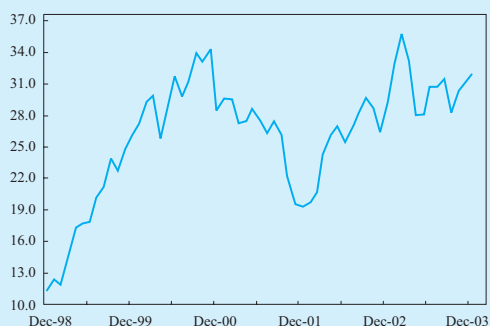
The marked upward trend in international commodity prices in recent months was due to stronger demand from China and the United States and, in general, to optimism about the recovery of the world economy. Evidence of this is the increase in the prices of industrial goods, particularly, metals, which, according to *The Economist* index, gained 33.3% in December. The bad weather in some regions of the world has reduced the supply of certain cereals, such as corn and wheat, generating pressure on their international prices.

The trend in the international prices of Colombia's commodity exports has not been an exception to the general trend. As Figure 3 shows, nickel and gold prices, and to a lesser extent coal, increased strongly, while oil prices ended the year at levels above \$30 per barrel (Figure 4). This latter price is higher than the forecast given in previous reports because of the slow recovery of Iraqi production and the geopolitical uncertainty in the Middle East. International coffee prices in the fourth quarter averaged 69 US cents/pound, a rise of 7.7% during the year; even so, the price of the grain remains at a record low (Figure 5).

In this context, the most outstanding factor on the international capital market has been the depreciation of the dollar against the euro, the yen and the currencies of most emerging countries, especially the Latin American currencies. The Argentine peso, for example, appreciated 12.6% in the year, the Brazilian real 18.3% and the Chilean peso 17.7% (Table 1). This trend is

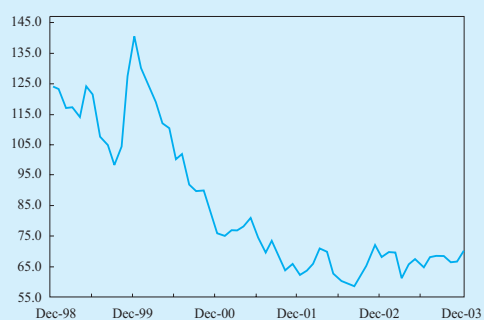


**FIGURE 4**  
OIL PRICE WTI  
NEW YORK EXCHANGE  
(DOLLARS PER BARREL)



Source: Bloomberg.

**FIGURE 5**  
PRICES OF ARABIGO COFFEE - COLOMBIA  
NEW YORK EXCHANGE  
(US\$ CENTS PER POUND)



Source: Bloomberg.

**TABLE 1**  
DEVALUATION OF LATIN AMERICAN CURRENCIES  
AGAINST THE US DOLLAR  
(PERCENTAGE)

	Quarterly	Annual	
	(*)	End of 2003	Average 2003
Argentina	(0.4)	(12.6)	(4.8)
Brazil	(0.0)	(18.3)	5.1
Chile	(10.3)	(17.7)	0.1
Colombia	(3.8)	(3.0)	14.7
Mexico	2.1	8.1	11.7
Peru	(0.6)	(1.2)	(1.1)
Uruguay	4.0	7.8	32.8

(\*) Refers to the December devaluation vs. September (end of period).  
Source: Datastream.

explained by the prolonged period of high current-account deficits in the United States, and by an exceptionally broad monetary policy reflected in low interest rate levels, which favor investments outside the United States.

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## B. PRODUCTION OF TRADABLE GOODS AND EXCHANGE RATE

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In Colombia, the more favorable external context stimulated growth of the tradable goods sector in 2003. The increase in commodity prices improved the terms of trade compared with levels in previous years. Figure 6 shows that although oil prices fell from April after the Iraq war, the terms of trade, measured by the producer price index (PPI), have been at historically high levels.

In these conditions, and with more buoyant world demand, traditional exports have grown strongly since early 2003, led by coal, gold and ferronickel (Table 2 and Figure 7). Vigorous external demand also led to a recovery of non-traditional industrial exports to the United States, offsetting the contraction of sales to Venezuela and Ecuador (Figure 8).

At the same time, the improved performance of external demand was reflected in substantial growth of the GDP of tradable sectors such as mining, which grew 12.5% in the first three quarters of the year, and branches of industry such as textiles, chemicals and paper. This recovery does not seem to have been interrupted despite the nominal appreciation of the exchange rate in the second half of 2003, which, in large part, was due to historically high levels of the real exchange rate



**FIGURE 6**  
TERMS OF TRADE OF COLOMBIA,  
BY PPI



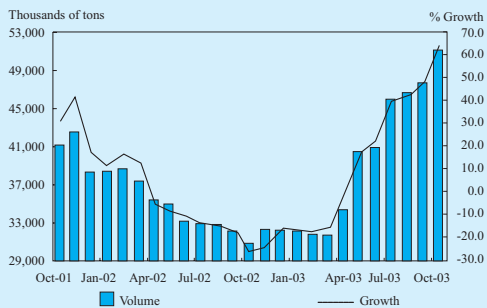
Note: Excludes gold.  
Source: Banco de la República.

**TABLE 2**  
COLOMBIA'S MAIN TRADITIONAL EXPORTS (\*)  
(PERCENTAGE)

	2002	2003
Non-monetary gold	55.0	267.4
Oil and its products	(0.3)	11.0
Crude oil	(0.5)	(0.5)
Coal	(16.0)	14.0
Ferronickel	15.8	46.0

(\*) Annual growth rate in dollars.  
Source: Banco de la República, Balance of Payments.

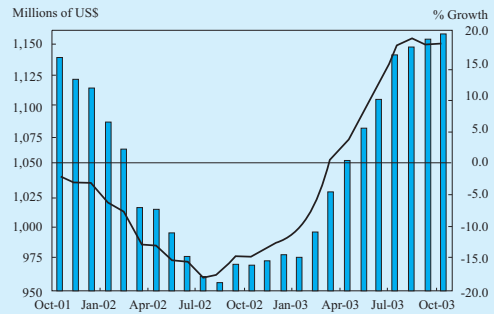
**FIGURE 7**  
COAL EXPORTS  
(VOLUME - LAST 12 MONTHS)



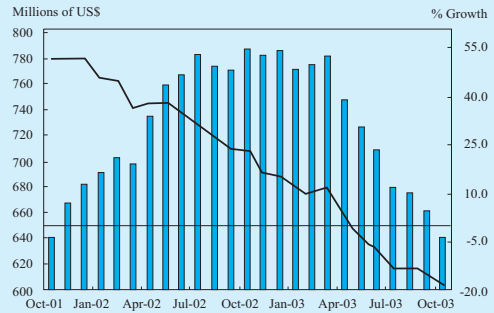
Source: National Administrative Department of Statistics (DANE).

**FIGURE 8**  
NON-TRADITIONAL INDUSTRIAL EXPORTS  
LAST 12 MONTHS

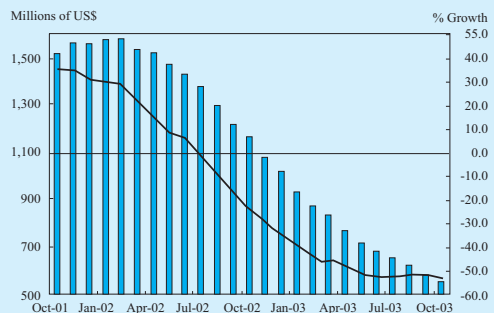
**TO UNITED STATES**



**TO ECUADOR**

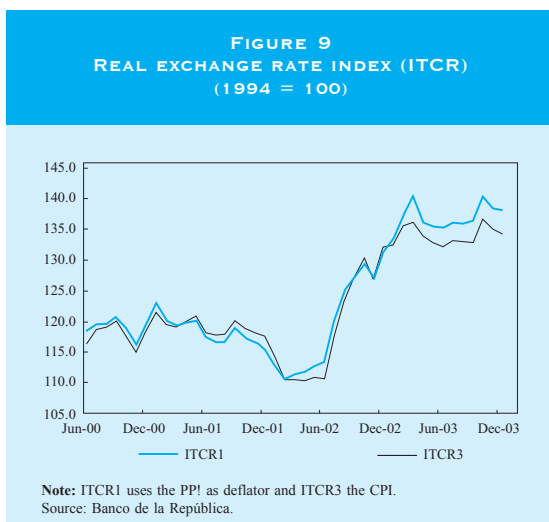


**TO VENEZUELA**



■ Value      — Growth

Source: DANE.



following the strong real depreciation of previous years, especially 2002 (Figure 9).

Several factors explain the strengthening of the Colombian peso against the dollar, since the end of the previous year. The most important are:

- ✘ The pressure on the dollar to devalue against other world currencies, due to factors inherent in the US economy, as explained.
- ✘ The increase in international commodity prices and the growth of world demand, which led to an increase in the flow of dollars into the country from exports.
- ✘ Higher revenue from transfers from abroad.
- ✘ The large proportion of external funds in the financing of the fiscal deficit.
- ✘ The incentives of foreign investors to invest in Colombian public debt instruments, attracted by high interest rates in relation to the US market.

- ✘ The greater strength of the Colombian economy, reflected in stronger growth of GDP.

The recent pressure in favor of the appreciation of the peso against the dollar was so strong that the trend in the exchange rate did not reverse after Banco de la República bought US\$500 million on the local exchange market between mid-December 2003 and early January 2004. The General Treasury of the Nation also made limited purchases of dollars on the exchange market, and the Ministry of Finance and Public Credit announced changes in the composition of the financing of the public-sector deficit. The Ministry will also seek to increase the use of domestic financing.

The better performance of the external sector, particularly, traditional exports and transfers from Colombian residents abroad, affected the balance-of-payment results, which were better than the mid-year projections. The latest estimates are a current-account deficit of 1.8% of GDP compared with a projected deficit of over 2.3%.

On the capital account, the surplus was lower than the projection (1.9% against 2.4% of GDP), which is mainly explained by a lower level of private borrowing than the forecast of six months ago. In contrast, public-sector net borrowing was over US\$900 million, much higher than in 2002 (US\$398 million)<sup>1</sup>.

Despite the improved performance of the balance of payments, in 2003 the international reserves lost US\$178 million, partly due to the Bank's interventions in the exchange market: US\$600

<sup>1</sup> In 2002 the government used portfolio funds of over US\$1.40 billion which had been pre-financed in 2001. Public-sector net external borrowing in these two years averaged US\$936 million.

million in auctions to reduce the reserves (of which US\$344.5 million were exercised) to moderate the impact of the excessive devaluation of the first quarter, and US\$150 million in accumulation auctions in December (of which US\$106.2 million were exercised) to prevent more appreciation of the peso.

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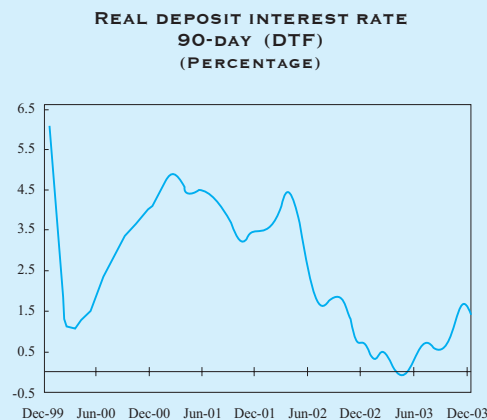
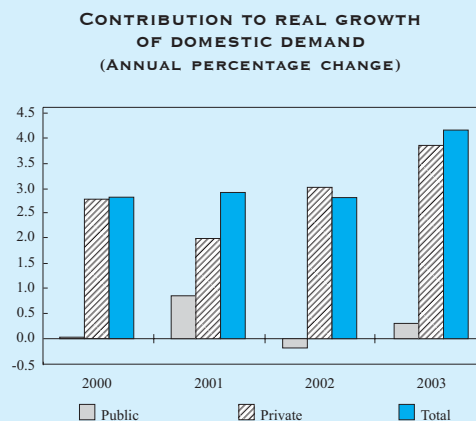
### C. DOMESTIC DEMAND AND NON-TRADABLES PRODUCTION

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Since 2001, the share of private domestic demand in the growth of total domestic demand has increased (Figure 10). This recovery is mainly explained by the long period of real low interest rates, which has reduced the cost of household and corporate borrowing. Also, the expansion of credit has been favored by the better economic conditions in the financial system, and the improved risk perception and greater confidence of agents.

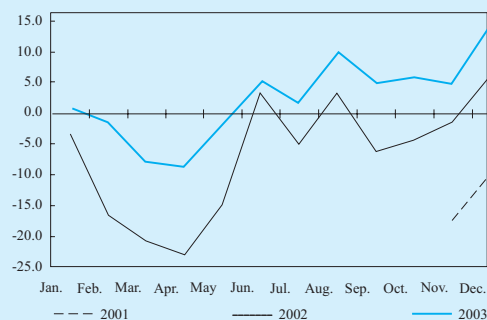
Together with the low interest rates, other factors that have stimulated growth in the non-tradable sector are: i) increase in national income due to the strong growth in transfers from abroad and the improvement in the terms of trade; ii) reduction of the spread of the external debt which has facilitated obtaining external savings at lower cost; iii) the favorable trend of some asset prices, such as stocks and real estate, with the consequent positive effect on wealth; and v) improvement in business and consumer confidence (Figure 11), reflected, among other things, by the increase in credit. This improvement was favored by progress in the government's security strategy, and its efforts to limit the growth of the public debt.

**FIGURE 10**  
DOMESTIC DEMAND AND REAL INTEREST RATE



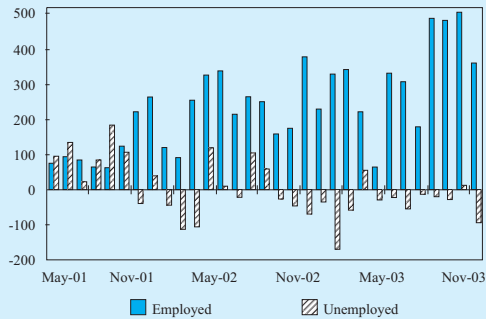
Source: DANE, Banking Superintendency and Banco de la República.

**FIGURE 11**  
CONSUMER CONFIDENCE INDEX



Source: Fedesarrollo.

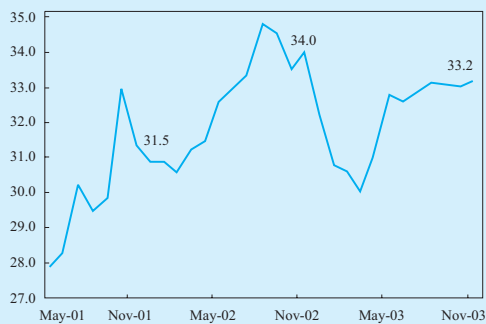
**FIGURE 12**  
ANNUAL GROWTH OF EMPLOYED AND UNEMPLOYED PERSONS FOR THE 13 MAIN CITIES  
(THOUSANDS OF PERSONS)



Source: DANE, calculations by Banco de la República.

The strong growth of GDP has been accompanied by much more dynamic creation of employment in 2003 than in previous years. Employment in 2003 grew at an average rate of 4.4% in Colombia's 13 largest cities (Figure 12). The growth in jobs has been accompanied by a reduction in levels of subemployment (Figure 13). The number of persons considered as subemployed, based on the low level of hours worked, has been falling in annual terms since early 2003. The labor reform that came into effect in 2003 may also have contributed to these good results.

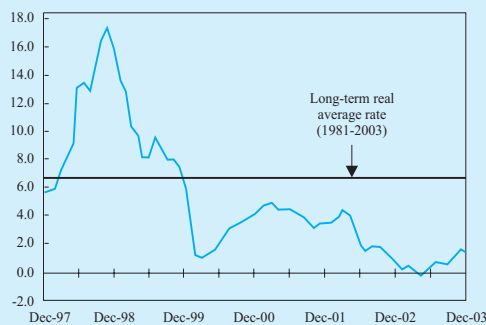
**FIGURE 13**  
SUBEMPLOYMENT RATE. NEW METHODOLOGY  
(PERCENTAGE)



Source: DANE, calculations by Banco de la República.

This progress has led to faster growth in several non-tradable sectors, such as construction, finance, commerce and transport (Table 3). In the case of construction, the upturn was mainly in private building. Since mortgage loans showed no signs of reactivation, even after adjusting for securitization, it is assumed that the new projects in this sub-sector (concentrated until now in the highest income strata) are being financed by companies and household from their own funds (both internal and external).

**FIGURE 14**  
REAL FIXED-TERM DEPOSIT (DTF)  
(PERCENTAGE)



Deflator: CPI  
Source: Banking Superintendency and Banco de la República.

#### D. MONEY AND CREDIT MARKETS

As mentioned, in recent years monetary policy has maintained short-term interest rates at real levels that are lower than the historical average (Figure 14).

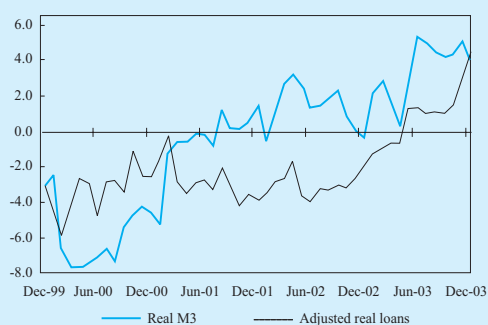
The power of this policy's effect on aggregate expenditure and inflation was low at the start of the decade due to the interruption of the credit channel with the recession of 1998 and 1999 and the simultaneous financial crisis. As Figure 15 shows, while real growth of the broad M3 aggregate was reestablished in 2000, real

**TABLE 3**  
**QUARTERLY GDP BY BRANCHES OF ACTIVITY – SEASONALLY ADJUSTED SERIES**  
**(PERCENTAGE ANNUAL CHANGES)**

Branches of activity	2002 (pr)			2003 (pr)		
	III	IV	Annual	I	II	III
Agriculture, forestry, hunting and fishing	0.27	(1.77)	0.63	1.78	(0.44)	4.24
Mining and quarries	(10.83)	6.22	(4.57)	(1.61)	18.67	21.58
Electricity, gas and water	3.05	3.76	3.03	3.49	2.15	3.22
Manufacturing industry	2.69	4.48	1.08	8.32	0.96	3.42
Construction	5.77	11.97	8.58	16.10	5.38	11.31
Buildings	21.45	30.97	27.62	9.64	19.11	22.72
Civil works	(7.63)	(5.35)	(7.87)	24.60	(9.80)	(1.52)
Commerce, repairs, restaurants and hotels	3.04	6.45	2.44	3.63	3.84	5.16
Transport, storage and communication	3.17	2.41	3.04	5.05	3.24	4.81
Financial establishments, insurance and real estate	1.25	5.34	2.36	5.75	4.50	6.05
Social, community and person services	1.17	(0.23)	0.92	1.07	1.18	0.39
<b>GDP</b>	1.92	2.72	1.76	3.82	2.36	4.17

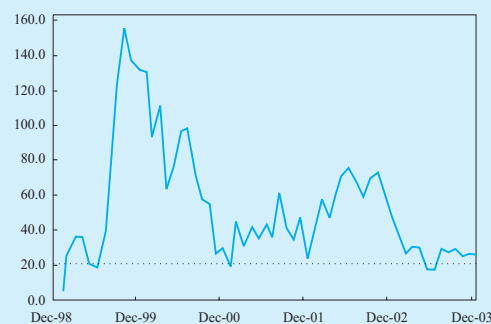
(pr) Preliminary.  
Source: DANE.

**FIGURE 15**  
**M3 AND ADJUSTED LOANS (\*)**  
**(PERCENTAGE REAL ANNUAL GROWTH)**



(\*) Refers to pesos.  
Source: Banco de la República.

**FIGURE 16**  
**TREASURY BILLS (TES) HELD**  
**BY FINANCIAL SECTOR**  
**(PERCENTAGE REAL ANNUAL GROWTH)**



Source: Banco de la República, Trust and Securities Department.

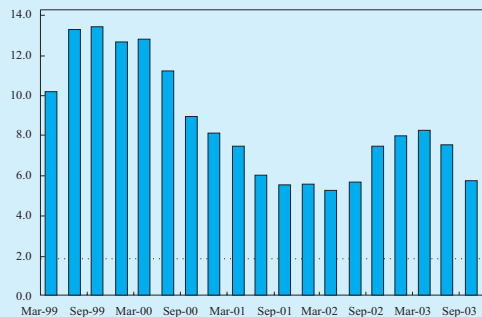
adjusted loans<sup>2</sup> continued to exhibit negative growth rates until 2002. The slowing of demand for credit, the equity problems of some entities, and the general risk perception of financial

intermediaries after the recession and the crisis, led to a trend to invest increasing proportions of financial savings in public-sector instruments (Figure 16).

<sup>2</sup> Refers to the sum of loans in pesos of the balance sheets of financial intermediaries, and withdrawals for write off or securitization.

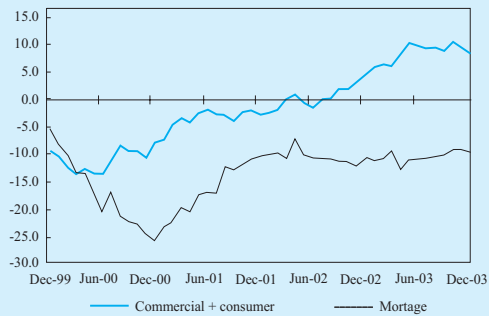
Thus, in the 2000-2002 period, the comfortable monetary policy represented relief for debtors'

**FIGURE 17**  
**FINANCIAL PRESSURE: INTEREST EXPENSE / OPERATING INCOME (NOT INCLUDING COMMUNICATIONS) (PERCENTAGE)**



Source: Securities Superintendency, with data from Banco de la República.

**FIGURE 18**  
**LOANS BY TYPE (\*) (PERCENTAGE REAL ANNUAL GROWTH)**



(\*) Refers to consumer, commercial and microcredit loans from March 2002.  
 Source: Banco de la República.

profit and loss accounts («income effect,» Figure 17) but did not result in an growing supply of credit from the financial system. This situation reversed in 2003. As Figures 15 and 18 show, loans in pesos have achieved real growth similar to that of M3, although most of the impetus comes from commercial and consumer credit, whose real growth rates are much higher than GDP (to November of 7.5% and 17.3%, respectively), while mortgage loans continue to fall in nominal and real terms.

The reactivation of the credit channel has stimulated, among other factors, domestic demand and product, especially in the non-tradable sectors, as detailed in the next section. Also, the channel reactivation results in an increase in the impact of monetary policy on aggregate expenditure and future inflation.

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## E. OUTPUT CAPACITY, WAGES AND INFLATION EXPECTATIONS

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To understand the recent (and future) trend in inflation, taking into account the performance of GDP of the tradable and non-tradable goods sectors, and the exchange rate, it is necessary to analyze the trend in output capacity, labor costs and inflation expectations. The theory and empirical evidence at world level indicate that inflationary pressures tend to intensify when the economy (or some of its sectors) begin to operate above their productive capacity, when real wages rise more than labor productivity, and when inflation expectations move above the inflation target.

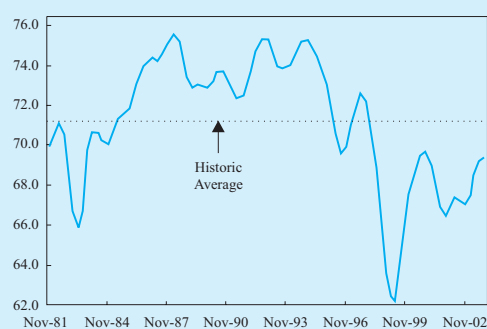
### 1. Output capacity

Three types of indicators are used to evaluate the degree of capacity utilization. The best known is the installed capacity utilization index, estimated by Fedesarrollo and the National Association of Industrialists (ANDI). Both sources agree that this indicator increased strongly during 2003. According to the Fedesarrollo Business Opinion Survey (EOE), the level of utilization was 5.3 percentage points below the historical average in the first quarter, while in the fourth quarter this difference was only 2.1 percentage points below (Figure 19).

The information from Fedesarrollo also shows how some sectors of industry - such as chemicals, paper, metal products and textiles - have begun to operate at utilization levels similar or even higher than the historical average (Table 4). Also, there was an important increase in installed capacity utilization in some sectors whose exports grew strongly (such as chemicals, paper and rubber). Finally, sectors such as textiles and clothing did not experience additional pressures on their installed capacity despite good growth in their exports, which can be explained by investment projects that have expanded the output capacity of some companies.

Another indicator of capacity utilization is the percentage of industrial companies that give lack of demand as their main problem in relation to

**FIGURE 19**  
INDUSTRIAL INSTALLED CAPACITY UTILIZATION INDEX, SOURCE FEDESARROLLO  
(TREND COMPONENT)



Source: Fedesarrollo, calculations by Banco de la República, SGEE.

**TABLE 4**  
INSTALLED CAPACITY UTILIZATION  
AND GROWTH OF INDUSTRIAL EXPORTS  
(PERCENTAGE)

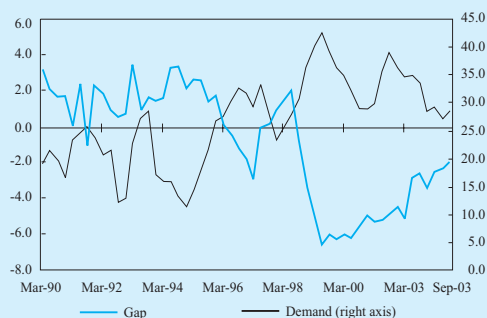
	Capacity Utilization Rate			Nov-03 vs. Nov-02	Growth	
	November		Average 1991-2003		Exports	Production
	2002	2003			1/	2/
Chemicals	69.2	79.2	73.4	10.0	8.1	13.5
Paper	72.1	81.0	74.6	8.9	8.4	5.4
Metal products	62.1	69.8	63.3	7.7	(14.2)	8.6
Tobacco	57.9	63.8	52.4	5.9	36.5	3.9
Printing	64.2	69.3	68.9	5.1	(4.2)	(6.4)
Rubber	60.4	64.6	66.8	4.2	4.5	3.1
Transport equipment	68.1	71.9	67.2	3.8	(62.0)	(7.6)
Plastic	68.3	71.3	72.8	3.0	3.5	5.1
Base metals	72.0	75.0	70.3	3.0	1.0	26.5
Food	70.2	72.1	74.7	1.9	1.3	3.7
Non-electrical machinery	61.5	62.0	64.5	0.5	(11.2)	16.3
Other chemicals	69.2	69.3	72.1	0.1	(38.2)	(1.6)
Textiles	74.3	74.0	76.4	(0.2)	7.8	5.5
Leather	63.1	62.5	68.3	(0.6)	(0.6)	6.6
Beverages	65.7	63.3	64.0	(2.4)	21.3	(0.5)
Ceramics	73.4	70.7	76.6	(2.6)	17.5	8.4
Wood	62.6	59.4	67.6	(3.2)	(17.4)	14.7
Cement	63.3	59.3	66.9	(4.0)	(2.4)	11.8
Clothing	65.5	61.4	70.1	(4.1)	18.7	8.4
Electrical machinery	65.8	59.6	64.5	(6.2)	(18.3)	(7.2)

1/ January-October 2003.

2/ January-November 2003.

Source: Fedesarrollo, with calculations by Banco de la República.

**FIGURE 20**  
**LOW DEMAND AS MAIN PROBLEM**  
**OF INDUSTRY VS. OUTPUT GAP (\*)**  
**(PERCENTAGE)**



(\*) The gap is defined as the difference between observed and potential GDP  
 Source: Fedesarrollo, calculations by Banco de la República.

observed GDP. This report uses the Hodrick and Prescott filter to estimate potential GDP. With this technique, the output gap continued negative at December 2003 (-1.8%) but narrowed progressively throughout the year. The December figure, which is compatible with growth of 3.5% for all of 2003, did not change substantially in relation to the estimate given in the September report<sup>3</sup>. Moreover, the gap measured with this technique has a high negative correlation with companies' opinion that lack of demand is the main problem that constrains expansion of production (Figure 20).

**TABLE 5**  
**GROWTH OF MINIMUM WAGE**  
**AND INFLATION TARGET**  
**(PERCENTAGE)**

	<b>Inflation target</b>	<b>Minimum wage adjustment</b>	<b>Difference</b>
<b>1991</b>	22.0	26.1	(4.1)
<b>1992</b>	22.0	26.0	(4.0)
<b>1993</b>	22.0	25.0	(3.0)
<b>1994</b>	19.0	21.1	(2.1)
<b>1995</b>	18.0	20.5	(2.5)
<b>1996</b>	17.0	19.5	(2.5)
<b>1997</b>	18.0	21.0	(3.0)
<b>1998</b>	16.0	18.5	(2.5)
<b>1999</b>	15.0	16.0	(1.0)
<b>2000</b>	10.0	10.0	0.0
<b>2001</b>	8.0	10.0	(2.0)
<b>2002</b>	6.0	8.0	(2.0)
<b>2003</b>	5.5	7.4	(1.9)
<b>2004</b>	5.5	7.8	(2.3)

Source: Banco de la República.

Taking into account the uncertainty associated with the estimate of the output gap, Banco de la República uses other tools and indicators. The results of these exercises agree that the gap narrowed in 2003 and that the economy continues to operate below its potential.

## 2. Labor costs

The government decreed an increase of 7.8% in the minimum monthly wage for 2004. This hike is over two percentage points above the inflation target, which, for legal purposes, was set by Banco de la República (5.5%). However, as illustrated in Table 5, the minimum wage tends to increase above the inflation target set by the Board. According to empirical studies by the Bank's Economic Studies Unit<sup>4</sup>, the effects of indexing wages to past inflation instead of the inflation target increases inflationary inertia, and the cost of

expanding production, measured by the Fedesarrollo Business Opinion Survey (EOE). In the third quarter of 2003, this indicator fell drastically to its lowest level since 1997 (Figure 20).

A third indicator is the output gap, which measures the difference between potential and

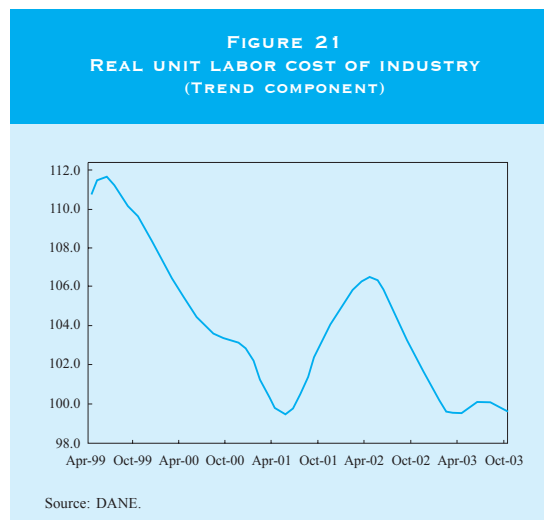
<sup>3</sup> Given the latest figures on real activity, especially in commerce and industry, growth of over 3.5% cannot be ruled out in 2003, which could result in a smaller gap for last year.

<sup>4</sup> See Gómez, J. (2002). (Wage indexation, Inflation Inertia and the Cost of Disinflation." in Borradores de Economía, Banco de la República, No. 198.



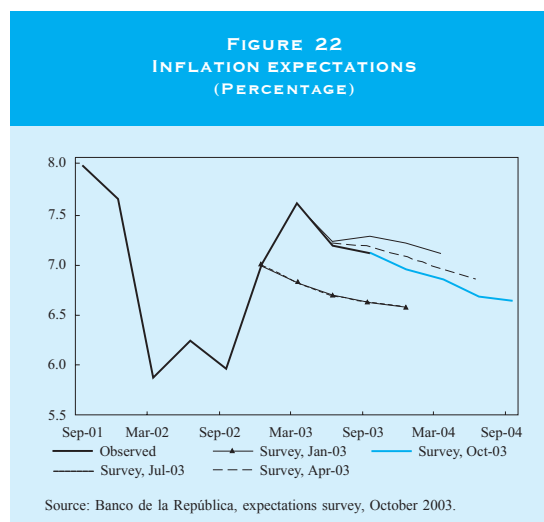
reducing inflation in terms of production and employment.

The real unit labor cost in industry has fallen slightly. At October 2003, according to the information from the monthly manufacturing sample (MMM) published by DANE, real unit labor cost was 99.6, down 2.8% from the cost in October 2002 (Figure 21). Thus, rises in nominal wages above the inflation target seem to have been absorbed by the higher productivity, without generating additional inflationary pressures through labor costs in industry.



### 3. . Inflation expectations

Inflation expectations increased strongly from late 2002 along with the surge in (headline and core) inflation and devaluation; although they began to fall in the second half the year, these indicators are still above the target. The Banco de la República Quarterly Survey for October shows that these expectations continued at a high level in relation to the inflation target (6.7% on average), although falling from the estimates in the reports of the two preceding quarters, in line with the improved trend in headline inflation and exchange stability (Figure 22).



In any event, given the strongly backward-looking component that characterizes the formation of expectations in Colombia, the fall in inflation in December against September should generate an additional downward correction. Moreover, the decline in inflation in December 2003 against December 2002 could be a positive sign that creates incentives for smaller price adjustments in the early months of 2004. Other indicators, such as the results of the Bank’s monthly expectations survey of the financial sector, and calculations based on Treasury bill (TES) rates, show a similar trend.

## F. CURRENT INFLATIONARY PRESSURES

The central message of the previous sections with respect to the inflation trend (see Box 1) can be summarized in the following points:

- ✦ The exchange rate, whose trend from mid-2002 generated strong inflationary pressures during 2003, has begun to play a role that favors the inflation targets. After the strong

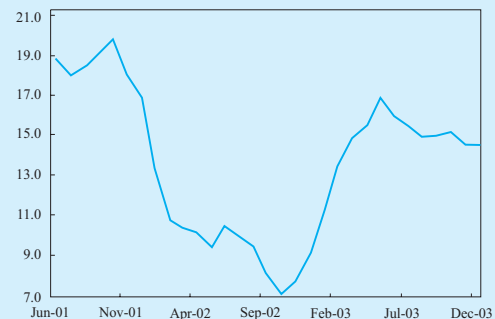
appreciation between the third quarter of 2002 and the first of 2003, the exchange rate was fairly stable, and in the last weeks of 2003 and early 2004 appreciated between 3% and 3.5%.

- ✦ Spare capacity has been falling from historically high levels at the start of the decade, and has declined at a faster rate in the last two quarters.
- ✦ All this has taken place with a set of supply shocks (VAT and food inflation), and substantial adjustments in the prices of controlled goods and services. Although annual inflation of public services was relatively stable in the last quarter, monthly adjustments continued to be high. Fuel prices increased influenced by high international prices, the devaluation accumulated since mid-2002, and the policy of dismantling subsidies. The hike in fuel prices affected the costs of transport services, as reflected in the high rate of inflation for this subgroup to December (13.0%), much higher than one year ago (5.6%) (Figures 23 and 24).
- ✦ Inflation expectations remained at levels above the target range for 2004.

To formulate monetary policy, it is crucial to understand how these factors have affected the dynamic of the core inflation indicators and inflation expectations.

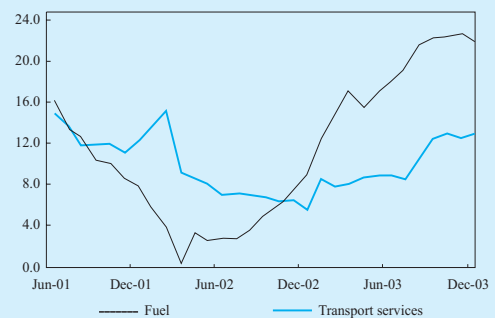
Core inflation of tradable goods (for example: domestic electrical appliances, apparel and some food, among others) is consistent with the trend in the nominal exchange rate. This indicator rose rapidly between October 2002 and September 2003,

**FIGURE 23**  
ANNUAL INFLATION  
PUBLIC SERVICES (ELECTRICITY, GAS AND WATER)  
(PERCENTAGE)



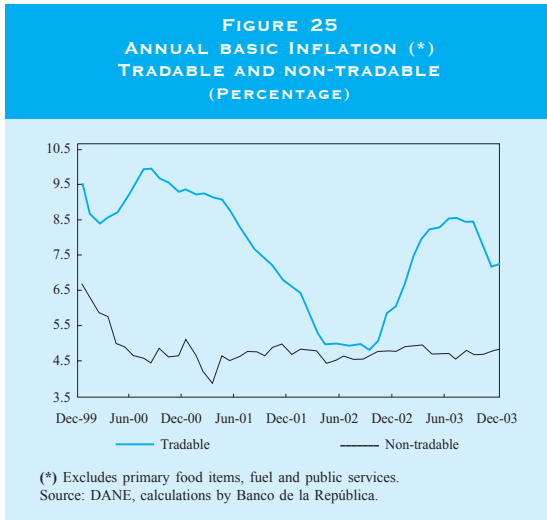
Source: DANE, calculations by Banco de la República.

**FIGURE 24**  
ANNUAL INFLATION  
FUEL AND TRANSPORT SERVICES  
(PERCENTAGE)

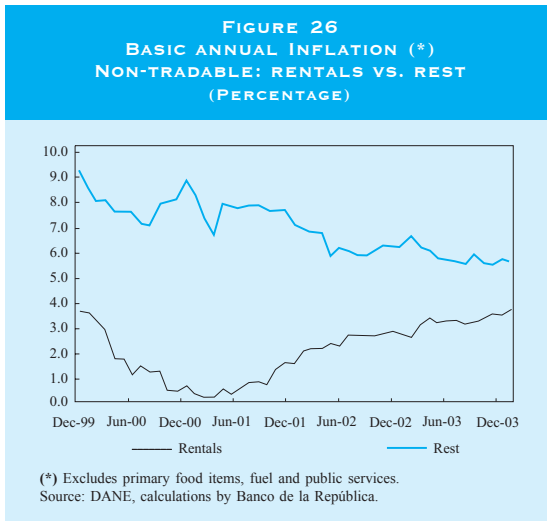


Source: DANE, calculations by Banco de la República.

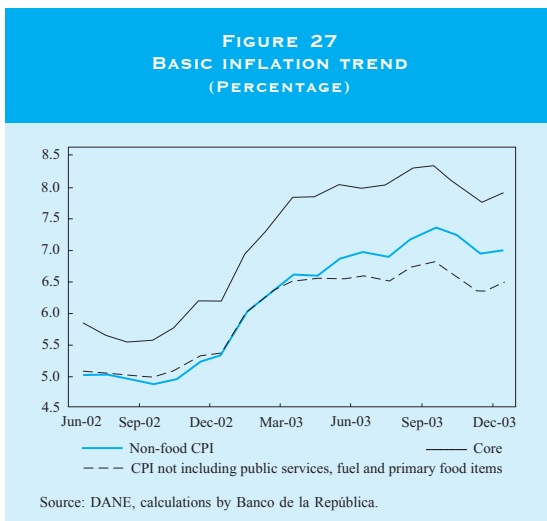
reflecting delays in the pass-through of inflation to consumer prices, and then began to fall from these high levels (Figure 25). Also, the reclassification of tradable goods into durable goods not including transport services, and non-durable goods not including gasoline, shows a steady decline in their inflation rate. Something similar occurred with PPI import inflation suggesting that a high proportion of the effects of the devaluation have been passed through to prices. If this trend in the exchange rate continues over the next few months, tradable goods inflation could continue to fall during 2004.



Core inflation of non-tradables has fallen steadily since 2000, consistent with the high levels of spare output capacity, and has been between 4.5% and 5% since 2001. This group displays two contrary trends: rental inflation, which has trended upward in recent years, and the inflation of the rest of the non-tradables, which has been gradually falling. In 2003 rental inflation gained 91 bp, while non-tradables inflation (excluding rentals) fell 63 bp (Figure 26). This possibly reflects different market structures or different levels of installed capacity utilization by sector.



During the fourth quarter of 2003, and for the first time since September 2002, all core inflation indicators analyzed by Banco de la República declined (Figure 27). The steepest fall was in «core inflation nucleus,» which dropped from 8.3% in September to 7.9% in December, while non-food inflation and inflation excluding primary food items, fuels and public services was situated at 7.0% and 6.5%, down 0.4 and 0.3 percentage points respectively. Overall, the core inflation indicators remain at high levels (7.1% on average in December 2003), reflecting the effect of the exchange rate on tradable goods prices and some supply shocks that were not totally «filtered.»



However, tradable goods inflation is expected to continue falling due to the stability of the exchange rate between February and November 2003, and its later appreciation. This is explained by the lags in the pass-through of exchange rate movements to consumer prices, and by the recent fall in producer inflation despite higher international commodity prices.

**Box 1**  
**BREAKDOWN OF INFLATION, ACCORDING**  
**TO THE MONETARY POLICY TRANSMISSION MECHANISMS**

In the implementation of the inflation target in Colombia, four main channels of transmission of monetary policy have been identified: aggregate demand channel, direct and indirect channels through the exchange rate, and the inflation expectations channel. In its set of prediction and policy analysis models, Banco de la República has a central model (transmission mechanisms model, TMM) which is designed to capture these four channels to produce medium- and long-term predictions for the key macroeconomic variables. These predictions consider the response of the monetary authority to the shocks that can affect the economy.

The TMM consists of eight trend equations that model the trend in the key macroeconomic variables, as well as various identities that relate the variables to each other. The model's main trend equations are: a) aggregate demand equation which relates product to inflation, real interest rate and exchange rate; b) covered interest parity equation; and c) the policy rule that determines the movement of the domestic interest rate<sup>1</sup>.

The model also incorporates a Phillips equation increased by expectations to model non-food inflation, which takes the following form:

$$(1) \quad \pi_t^{sa} = 0,55\pi_{t-1}^{sa} + 0,405\pi_t^e + 0,045(\pi_{t-1}^m - \bar{\delta}_t^z) + 0,25\hat{y}_{t-1} + \varepsilon_t^{sa}$$

Where  $\pi_t^{sa}$  is non-food inflation,  $\pi_t^e$  are the expectations of total inflation,  $\pi_{t-1}^m$  is import inflation,  $\bar{\delta}_t^z$  is the equilibrium real depreciation rate and  $\hat{y}_{t-1}$  is the output gap. This equation condenses the four transmission channels of monetary policy indicated above.

The inflation expectations variable follows a process that can be characterized as a combination of backward- and forward-looking expectations. This equation is written as:

$$(2) \quad \pi_t^e = 0,5\pi_{t-1}^4 + 0,5E_t\pi_t^4$$

where  $\pi_t^4$  is total annual inflation and  $E_t$  is the expectations operator.

Based on the Phillips curve (equation (1)), non-food inflation can be broken down by the main inflationary factors:

- ✚ persistent or inertial inflation,
- ✚ inflation expectations,
- ✚ level of economic activity (output gap),
- ✚ imported goods inflation,

<sup>1</sup> For more information on MMT see the *Report on inflation* (2003). Banco de la República, June and *The Implementation of Inflation Targeting in Colombia*, J. Gómez; H. Vargas; J. Uribe (2002). Borradores de Economía, No 202, Banco de la República.

- ✦ other shocks attributable to exogenous variables such as the adjustments in energy tariffs, fuel prices and changes in indirect taxes,
- ✦ the difference between non-food inflation effectively observed and the inflation estimated from this equation is the residual or unexplained component.

The table presents the results of this breakdown for March to December 2003. Non-food inflation in the first three quarters of 2003 is mostly explained by persistent inflation, and the inflation expectations channel. The shocks from adjustments in energy tariffs and fuel prices and the VAT increase also played an important role. The fall in non-food inflation in the last quarter of the year was mainly due to the reduction in import inflation and is associated with the lower rate of depreciation since the second quarter. Similarly, the demand channel, which reflects the effects of the output gap, exerted a deflationary pressure on non-food inflation in 2003.

**TABLE**  
**BREAKDOWN OF NON-FOOD INFLATION, 2003**

	<b>Non-food inflation (*)</b>	<b>Persistence</b>	<b>Inflation expectations</b>	<b>Output gap</b>	<b>Import inflation</b>	<b>Energy, fuel, VAT shocks</b>	<b>Residual</b>
<b>Mar.</b>	6.7	2.9	2.7	(0.8)	0.4	0.3	1.2
<b>Jun.</b>	7.1	3.7	2.8	(0.6)	0.6	0.5	0.2
<b>Sep.</b>	7.4	3.9	2.8	(0.6)	0.5	0.6	0.2
<b>Dec.</b>	7.0	4.1	2.8	(0.6)	0.0	0.8	(0.1)

(\*) Annual inflation. The discrepancies between these figures and the DANE figures are explained by the seasonally-adjusted price index used. Source: Banco de la República.

## II

### MACROECONOMIC OUTLOOK

Everything seems to indicate that the favorable conditions for growth in Colombia will continue in 2004. On the external front, the absence of inflationary pressures in the United States and the rest of the industrialized world diminish the danger of upward adjustments in the interest rates by the respective monetary authorities, at least in the early months of the year. This circumstance offers a favorable context for stronger world economic growth, which should result in a good performance of Colombian exports and tradable goods production in general, and stimulate capital flows into the region. Also, the pickup in world demand will continue to favor the recovery of international commodity prices, with the consequent improvement in Colombia's terms of trade.

On the domestic front, real interest rates are expected to continue at historically low levels, which, combined with the rise in consumer and business confidence, and the improvement in internal security conditions will result in the strengthening of credit. Thus, domestic demand, both investment and consumption, should grow at a satisfactory rate, expanding the product at higher rates than in 2003.

In this context, inflation will face two opposing pressures. First, tradables inflation is expected to continue falling, given that no important increases are expected in the exchange rate, at least in the first half of the year. Second, non-tradables inflation could rise, or least maintain levels near 5.0%, as a result of buoyant demand and increased capacity utilization. Special attention should be paid to the trend in rent prices, given their large share of the basket of goods in the consumer price index (CPI), and the upward trend during the last few quarters. Despite this, the Bank's forecasts indicate a high probability of meeting the inflation target for 2004.

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#### A. INTERNATIONAL GROWTH, PRICES, AND INTEREST RATES

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The outlook for the world economy suggests that economic growth will speed up in 2004, consistent with the trend at the end of 2003. In the United States, 2004 is being viewed optimistically due to several factors. As noted, the recent indicators for private consumption, confidence and economic activity have a favorable trend. The strong

devaluation of the dollar against other world currencies has stimulated production of tradable goods. Also, a good trend in core inflation will very probably prompt the Federal Reserve to leave interest rates as they are at least until the middle of this year. All these factors point to more buoyant demand, both domestic and external, and support the GDP growth projections for 2004 and 2005 of 4.4% of 3.6%, respectively. However these forecasts have certain risks. The United States is a country with high levels of deficit on the balance-of-payments current account, and a fiscal deficit that has grown in recent years.

The recovery of the European economies is expected to be slow and moderate due to the action of opposing forces. The factors that favor higher growth are low interest rate levels, the good performance of the stock market, and the increase in external demand driven by the stronger growth of the US economy. On the other hand, the factors against higher growth are the strong appreciation of the euro against the dollar, high unemployment rates, and high fiscal deficits in some countries. The latter limits the capacity of European economic authorities to implement anti-cyclical fiscal policies, while the appreciation of the euro against the dollar could prevent the region from benefiting from the recovery of the world economy.

As in 2003, in the two following years, the emerging economies of Asia are expected to enjoy the world's highest economic growth. The latest forecasts for 2004 and 2005 suggest that these economies will grow between 5.0% and 8.0%, led by the performance of the Chinese economy. This growth is supported, among other factors, by expansionary macroeconomic policies and the stronger economies of the United States and China. The latter is increasingly important for the per-

formance of the other regional economies, and for the growth of emerging economies in general.

The favorable external environment of Latin America since the second half of 2003 should continue in the first half of 2004. This will be possible thanks to the maintenance of lower external interest rates, higher international commodity prices, and the increase in external demand and capital flows. All this, coupled with upturn in domestic demand, points to growth of Colombia's main trading partners<sup>5</sup> of around 4.1%, up 1.8% from the estimated regional growth in 2003. In Venezuela the economy is expected to grow 6.4% in 2004, in contrast to the strong fall in product in 2003. Although oil exports have been re-established, there are factors that could affect its future performance such as the unresolved political crisis and macroeconomic instability. Ecuador will grow at a rate of 3.9% according to the latest forecasts. The future performance of the Ecuadorian economy depends mainly on the approval of economic reforms, and oil production and exports (Table 6).

In 2004 international commodity prices are expected to maintain their upward trend of recent months, mainly supported by the upswing in the world economy. In 2005 crude prices are expected to fall from this year's level. Although demand is projected to strengthen - especially for China, Japan and the United States - as a result of the world economic recovery, the production of Iraq and non-member countries of the Organization of Petroleum Exporting Countries (OPEC) should increase. Some analysts believe that, in this context,

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<sup>5</sup> Growth weighted by total exports accumulated between January and October 2003, which are 78% of total exports.

**TABLE 6**  
**GROWTH FORECASTS**  
(PERCENTAGE)

	Observed 2002	Forecast made:			
		Jan 8, 2004		8, Oct 2003	
		2003	2004	2003	2004
<b>Developed countries</b>					
United States	2.04	3.1	4.4	2.6	3.9
Euro-zone	0.8	1.0	2.4	1.0	2.4
Japan	0.3	2.7	2.1	1.9	1.2
<b>Latin America</b>					
Argentina	(11.0)	7.3	5.3	5.5	3.9
Brazil	1.5	0.1	3.4	0.7	3.0
Chile	2.1	3.3	4.6	3.2	4.3
Mexico	0.7	1.2	3.4	1.7	3.6
Peru	5.3	4.0	3.9	3.8	3.7
Ecuador	3.4	2.6	3.9	2.7	3.6
Venezuela	(8.9)	(10.5)	6.4	(12.1)	6.1
<b>Main trading partners of Colombia</b>					
	1.5	1.8	4.1	1.4	3.7

Sources: Observed IMF, forecasts Consensus Forecast, Datastream and calculations by Banco de la República.

OPEC could reduce its production quotas this year to prevent crude prices from falling below the floor of the defined band<sup>6</sup>. Thus, the forecast for international oil prices in 2004 increased slightly in relation to the estimate of three months ago, and the average price for the US West Texas Intermediate (WTI) benchmark is projected to be between \$27 and \$29 per barrel.

According to the November report of the World Coffee Organization (WCO) total production is expected to fall 15.5% in the 2003/2004 harvest year in relation to the last harvest, which would bring production below market demand. This deficit could reduce inventories, leading to a moderate increase in the price of the grain in 2004.

<sup>6</sup> In line with the band mechanism established by OPEC, crude prices should remain between \$22 and \$28 per barrel for the organization's crude basket. In terms of WTI, these prices are equivalent to approximately \$25 and \$30 per barrel.

#### B. PROJECTIONS OF BALANCE OF PAYMENTS, REAL EXCHANGE RATE, AND TRADABLES PRODUCTION

Table 7 presents the main assumptions used in the balance-of-payments projections. On this basis, in 2004 large increases are projected in export revenue from coal (22.9% in dollars) and coffee (11.2%), while non-traditional exports could grow 9.7%, amply offsetting the fall in volume of oil exports (-6.6%) due to lower production. Projected growth of non-traditional exports is consistent with a nominal average revaluation of 2.0% in 2004 (4.9% in real terms) as a consequence of the increase in the number of the country's trading partners.



**TABLE 7**  
**BALANCE OF PAYMENTS ASSUMPTIONS**

	2001	2002	2003	2004	
				Projection	Change %
<b>Annual variations (%)</b>					
GDP trading partners <sup>1/</sup>	1.0	1.5	1.8	4.1	
External inflation <sup>2/</sup>	1.5	2.4	1.9	1.9	
<b>Levels</b>					
	<b>Average annual</b>				
<b>Price</b>					
Oil (US\$ / barrel)	23.8	24.2	28.6	28.7	0.2
Coffee (US\$ / pound)	0.7	0.7	0.7	0.8	9.1
Ferronickel (US\$ / pound)	1.1	1.1	1.6	1.4	(13.4)
Gold (US\$ / troy ounce)	270.0	310.2	352.0	357.5	1.6
Coal (US\$ / ton)	30.9	30.8	28.8	31.6	9.7
90-day CD rate (%) <sup>3/</sup>	3.5	1.7	1.1	1.7	

<sup>1/</sup> Growth weighted by total exports accumulated between January and October 2003, which are 78% of the total of the country's exports.

<sup>2/</sup> Inflation in the United States.

<sup>3/</sup> In the United States.

Source: Banco de la República – SGEE.

Despite this moderate revaluation of the peso, the real exchange rate could remain at historically high levels (9.3% above 2002). The peso has depreciated in real terms against various currencies in dollar terms, and has even maintained exchange competitiveness against other countries that participate in Colombian export markets. As a result, the export and tradable sectors in general are expected to grow strongly. On the import side, vigorous domestic demand will be reflected in a dollar increase of 10.5%.

On the capital account in 2004 no substantial improvements are projected in foreign direct investment flows, while net external capital flows from the public sector total US\$1.27 billion, higher than a year before, despite the lower value of amortizations of external public debt scheduled for this year.

Net private capital outflows are assumed to fall by \$500 million from 2003 (US\$816 million). In these

conditions, and taking into account the accumulation of international reserves predicted to top US\$700 million (given the Bank's recent intervention), the deficit on current account could rise from 1.8% of GDP in 2003 to 2.7% in 2004 (Table 8). The fall in income from oil exports forecast for 2005 (due to lower export volumes and crude prices) and government's intention to limit its external borrowing suggests that the current revaluation trend will not persist in the medium term.

Another factor that could mitigate revaluation pressures from 2005 is a probable adjustment of interest rates in the United States, given the size of the imbalances on the current account and the fiscal front in that country. Various analyses show, however, that this adjustment would only occur in the second half of the year. In any event, the current low level of real interest rates in the United States and the size of the imbalances of its public finances and external sector could bring about an adjustment

**TABLE 8**  
**CURRENT ACCOUNT**  
(MILLIONS OF DOLLARS)

	2001	2002 (pr)	2003 (Proj.)	2004 (Proj.)
<b>Balance on current account</b>	(1,251)	(1,580)	(1,416)	(2,399)
As percentage of GDP	(1.5)	(2.0)	(1.8)	(2.7)
<b>Balance of trade</b>	503	225	152	(786)
Exports	12,772	12,302	13,212	13,652
Imports	12,269	12,077	13,061	14,438
<b>Services</b>	(1,424)	(1,458)	(1,492)	(1,551)
<b>Income</b>	(2,593)	(2,820)	(2,999)	(3,037)
<b>Current transfers</b>	2,263	2,473	2,924	2,975

(pr) Preliminary.  
(Proj.) Projection  
Source: DANE and Banco de la República.

of Treasury bond rates, and cause more uncertainty about the growth of the world economy in the medium term<sup>7</sup>.

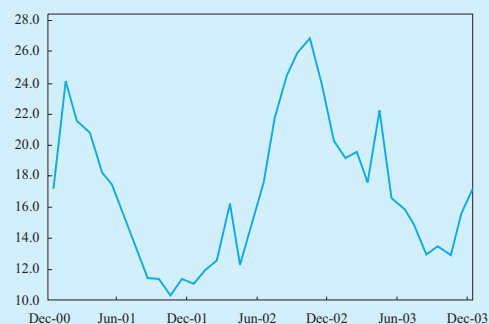
In the short term, however, the trend to revaluation could be persist or be even greater than expected. First, the financing of the fiscal deficit could reinforce the appreciation in two ways: directly, by financing the greater part (over 90%) of the deficit from external funds<sup>8</sup>, and indirectly, by pressuring the domestic debt market, pushing interest rates up to relatively high levels which stimulate capital inflows. Second, factors such as the improved growth outlook for the Colombian economy and the regional economies, the increase in transfers from abroad, and the improvement in the country's terms of trade and internal security produce an appreciation of the real equilibrium exchange rate.

<sup>7</sup> It should be noted that the central banks of other countries, such as England and Australia, have recently raised their interest rates.

<sup>8</sup> The current schedule for financing the combined public-sector deficit shows that, of total net (deficit) financing of 6.1 trillion pesos, 5.1 trillion pesos would come from net external financing (90% of the total).

As mentioned earlier, Banco de la República intervened in the exchange market buying US\$500 million in foreign exchange in late December 2003 and early 2004, without reversing the trend in the exchange rate. The accumulation of reserves in the context of strong expansion of base money (Figure 28), even though, as explained later, demand for base money has been very unstable in recent years, and the high growth of monetary aggregates (especially the broadest) could handicap additional interventions by Banco de la República in the exchange market.

**FIGURE 28**  
**BASE MONEY**  
(ANNUAL AVERAGE MONTHLY GROWTH RATE)



Source: Banco de la República, SGEE.

The expected better performance of external demand will have positive effects on tradable goods production. The recovery of international commodity prices will stimulate agricultural production (including cotton) and the mining and quarries sector, particularly coal and gold production. Also, the expected recovery of exports to Venezuela will add at least 0.5 percentage points to the growth of the manufacturing industry. This effect could be partly counteracted, with some lag, by the appreciation of the real exchange rate.

higher than expected economic growth (3.8% or above)<sup>9</sup>, the dynamic generation of higher quality jobs, the increase in the minimum real wage (Figure 30), low real interest rates and the growth of transfers from abroad. This forecast takes into account the higher taxes imposed in the new tax reform (four per mil, net worth tax, income surcharge and higher social security contributions).

<sup>9</sup> Although the growth prediction using the “satellite” models shows a figure of 3.8%, higher growth is possible based on the trends described in this report and the performance of various sectoral indicators at the end of 2003 and in January 2004.

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### C. DOMESTIC DEMAND AND NON-TRADABLE GOODS PRODUCTION

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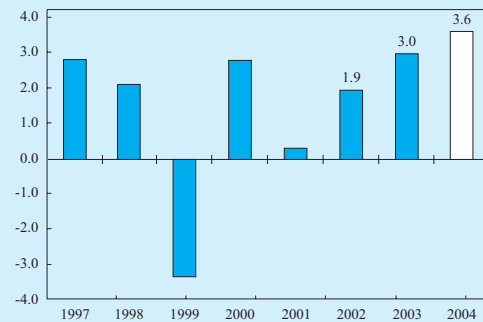
Growth of GDP in 2004 will continue to be stimulated by the recovery of domestic demand. Private investment is likely to continue as the most dynamic component, and household consumption is expected to perform better than in recent years.

#### 1. Consumption

The stronger growth of consumption will be sustained by household consumption. A significant contribution from public consumption is not expected because it is assumed that the fiscal adjustment program agreed with the International Monetary Fund (IMF) will be applied.

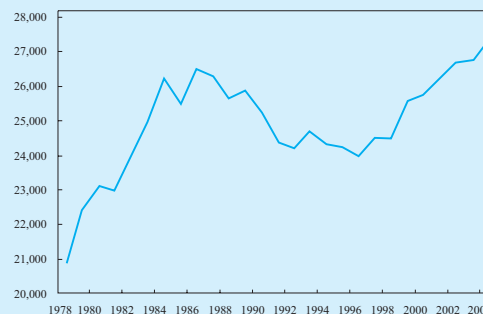
The surge in private consumption will be due to improved performance by its fundamentals. This year disposable household income is expected to continue recovering (Figure 29) as a result of

**FIGURE 29**  
GROWTH OF REAL DISPOSABLE INCOME  
(PERCENTAGE)



Source: DIAN, DANE, calculations by Banco de la República, SGEE.

**FIGURE 30**  
REAL MINIMUM WAGE  
(1988 PESOS)



Source: DANE and government decrees

## 2. Investment

In 2004 a favorable climate has been generated for investment due to the improvement in confidence levels and security, good company profits (Table 9), growth of domestic demand and the easy financial conditions existing in the economy (as shown by growth of M3 and credit). Investment is still below the levels of recent years (Figure 31). However, finance for new projects is expected to become available thanks to lower interest rates, recovery of the financial system, the increased

inflow of capital and higher company profits, and taking into account the incentives approved in the recent tax reform for plowing back profits.

With respect to investment in building, the trend in real-estate prices and building permits (Figure 32) and the increase in new projects in progress, according to the buildings census, assures strong growth for the sub-sector in 2004. The composition of the building permits approved points to more intense construction activity by the medium and high strata, which generate higher value added.

**TABLE 9**  
**FINANCIAL RESULTS OF COMPANIES**  
**THAT REPORT TO THE SECURITIES SUPERINTENDENCY**  
**(SAMPLE OF 116 NON-FINANCIAL COMPANIES)**

	September		Growth	
	2002 (Millions of pesos)	2003	Nominal (Percentage)	Real (Percentage)
Total assets	48,140,988	55,469,984	15.2	7.6
Total liabilities	19,484,376	21,363,941	9.6	2.4
Total equity	28,656,611	34,106,043	19.0	11.1
Operating income	15,577,918	18,020,435	15.7	8.0
Gross profit	5,216,540	6,042,285	15.8	8.1
Operating profit	1,355,867	1,658,292	22.3	14.2
Profit before tax	32,543	1,783,764		
Profit and loss	20,895	1,937,949		

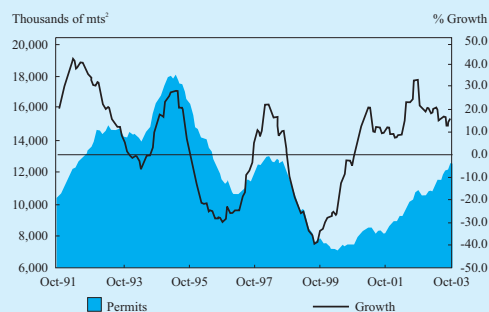
Source: Securities Superintendency.

**FIGURE 31**  
**GROSS FIXED CAPITAL FORMATION**  
**(1994 PRICE INDEXES – SEASONALLY ADJUSTED)**



Source: DANE.

**FIGURE 32**  
**CONSTRUCTION IN 1,000s OF M2**  
**(ACCUMULATED LAST 12 MONTHS)**



Source: DANE.

With respect to investments in capital goods, conditions exist for continued expansion in 2004. Installed capacity utilization in manufacturing industry increased in 2003, reflecting the higher level of economic activity. The ANDI Joint Industrial Opinion Survey (EOIC) shows that the relative importance of lack of demand declined during 2003, although it is still the main problem faced by industrialists, and that inventories now seem to be at low levels, while orders are recovering. Also, the recovery of exports to Venezuela and the possible signing of the Free Trade Treaty (FTT) with the United States in 2005 are favorable signs.

### 3. Non-tradable goods production

The good performance forecast for domestic demand is sure to stimulate growth of the non-tradable goods sectors. In 2004 financial services GDP is expected to continue its recovery, although with a lower growth rate than in 2003. Similarly, stronger household consumption will contribute to the expansion of commerce, which is a labor-intensive sector. Finally, the trend in construction indicators in the last months of 2003 generates confidence that high growth rates will continue this year.

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#### D. MONEY AND CREDIT MARKETS

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The outlook for the money and credit markets, and their relation to economic activity and inflation, will be determined in the short and medium terms by the following factors:

- ✧ trend in aggregate demand over the next few months,

- ✧ monetary policy,
- ✧ public deficit and its financing, and
- ✧ balance-of-payment flows.

First, the maintenance (or speed up) of growth of demand and product in the next few months will stimulate demand for credit and money. Second, the greater availability of external savings (reflected, for example, in the projected expansion of the current-account deficit of the balance of payments) and the announced reduction in the public deficit open a larger space for financing for investment and private consumption. This would result, among other things, in more loanable funds for the financial system, which would be reinforced if a large part of the public deficit were financed from external sources.

If short-term interest rates remain stable or rise moderately (as predicted in the macroeconomic forecast in section E of this chapter), these trends would lead to growth of the monetary and credit aggregates equal or greater than growth of GDP.

The question is: should this be a source of concern from the point of view of achieving the inflation target or the financial stability of the economy? Specifically, how worrying are the high growth rates recorded and expected for base money (16.5% on average in 2003 and over 15.0% in 2004), and for commercial and consumer credit (14.3% and 23.7% on average in 2003)?

The observed and projected growth of base money very much above GDP is not necessarily a reason for immediate concern about the future inflation trend. As Figure 33 shows, in recent years real growth of the base has exceeded GDP growth,

while inflation has fallen and the velocity of M3 has remained stable. The change in base money is basically explained by the trend in the demand for cash, which has been affected by the series of changes in the financial transactions tax. The international evidence shows that the relationship between the base, GDP and prices, changes when inflation falls to single-digit levels<sup>16</sup>. Thus, the persistence of high growth rates of base money is not in itself sufficient to confirm the presence of a monetary surplus, since demand for base money has been very unstable. The growth of broader aggregates can be more informative in this respect.

In relation to credit, although the growth rate of commercial and consumer credit exceeds the GDP growth rate, the previous contraction of total loans means that the current balances are probably not a threat to financial stability or achieving inflation targets. Figure 34 illustrates the difference between the loan / GDP ratio and its (linear) trend. The current level of this ratio is still below the trend. However, it is imperative to closely monitor the credit and asset price variables to detect trends that could weaken the financial soundness of households, companies and intermediaries or which suggests the existence of inflationary pressures.

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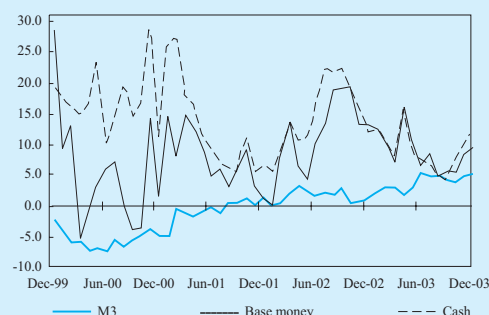
#### E. FORECASTS OF INFLATION AND OTHER VARIABLES

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This section presents the forecasts for inflation, devaluation and output gap for 2004 and 2005, some of the assumptions that underlie these forecasts, and the balances of risk that accompany the central inflation projection.

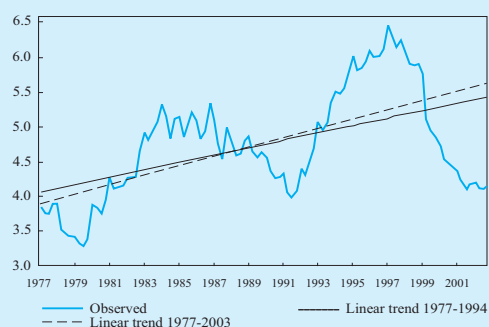
<sup>10</sup> Razzak, W. A. (2001). "Money in the Era of Inflation Targeting", *New Zealand Reserve Bank*, July.

**FIGURE 33**  
M3, BASE MONEY AND CASH  
(PERCENTAGE REAL ANNUAL GROWTH)



Source: Banco de la República.

**FIGURE 34**  
LOANS / GDP AND TREND  
(PERCENTAGE REAL ANNUAL GROWTH)



Source: Banco de la República.

Banco de la República makes forecasts of inflation and other variables in two stages. In the first, short-term forecasts (STF) are obtained at one and two quarters from various satellite models that have traditionally had a high prediction power on this horizon. The second stage is the long-term forecast (three quarters and longer) which is used as a base for taking policy decisions. As explained in the June report, these long-term forecasts are obtained from a central transmission mechanism model (TMM), which simultaneously projects variables such as

output gap, devaluation and interest rate, using the short-term forecasts as exogenous data.

The Bank also makes medium-term inflation forecasts, using some structural-type econometric models, whose results are «averaged» through a statistical method known as Forecast Combination<sup>11</sup>. This methodology usually offers predictions with a high margin of confidence at horizons of three and four quarters. This section also presents these results.

### 1. Short-term forecast

The short-term forecast, obtained from “satellite” models (monthly time series and by components) predicts headline (consumer) inflation of 5.7% and 5.4% for the first and second quarters, and non-food inflation of 6.0% and 5.6%, respectively. Food inflation of 5.0% is expected in both first and second quarters. In the September report, the short-term forecast for headline inflation in March 2004 was 6.0%.

The fall in annual non-food inflation at the beginning year, which was anticipated in recent quarterly inflation reports, is due, among other factors, to unusually high price adjustments in the first quarter of 2003 as a consequence of the VAT reform. Since no shocks of this nature are expected in 2004, the adjustments in the first quarter should be lower than in 2003, leading to a fall in annual non-food inflation. The decline in the short-term forecasts for non-food inflation also captures the effect of the stable exchange rate in the second half of last

year and its more recent nominal appreciation, not predicted in previous reports.

### 2. Forecast Combination

Using the various uniequational structural models, the forecast combination method produces a result of 5.8% total inflation for the end of 2004, compatible with the target range set by the Board. This result is obtained assuming that the interest rate and output gap, among other variables, continue a similar trend to that obtained by the basic scenario of the central model.

### 3. Results of the central model (TMM)

The common practice of most central banks that publish inflation reports is to present inflation forecasts under two scenarios, one of flexible interest rates, and another under the assumption that the rates are constant for a determined period. This strategy is used in this report, which presents two scenarios: a) the first (basic scenario) in which the policy rule is maintained active, and interest rates are adjusted to guarantee compliance with the long-term inflation targets in a context of stabilization of growth; and b) the second (alternative scenario) which presents the inflation results under the assumption that the CTD rate is set at a level of 8.0% in 2004 and 2005.

#### A. Basic scenario

The analysis presented in the preceding sections of this report indicates how inflation in 2004 and 2005 will depend on two basic factors: first, the growth rate of demand, which will determine the

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<sup>11</sup> Castaño, E.; Melo, L. (1998). “Métodos de combinación de pronósticos: Una aplicación a la inflación colombiana”; in Borradores de Economía, *Banco de la República*, No. 109, November.

speed of closure of the output gap. Second, the intensity and duration of the exchange rate appreciation. The previous quarterly reports had partially identified these trends; however, their intensity has now changed.

For growth in 2004, the Bank's models produce a figure of 3.8%, higher than the September forecast. This figure takes into account the considerable speed up in the second half of 2003. However, growth could be higher taking into account all the favorable factors identified in previous sections, and the very good performance of several sectoral indicators at the end of 2003 and early 2004 which it was not possible to include in this report.

The strong growth of the economy will result in a more rapid narrowing of the output gap than considered in previous reports. Thus at the end of 2004 the gap is expected to be -0.8%, closing one percentage point against the estimated data for the end of 2003, and not 0.4 points as forecast in the last report. In 2005, the Bank's central model estimates that the gap could narrow an additional 0.4 percentage points. In any event, for both years the gap would remain negative despite stronger growth, which suggests that the economy will continue operating below its potential. For the nominal exchange rate, the central model uses an average appreciation assumption of 0.5% for all 2004, compatible with the balance-of-payments forecasts presented earlier. This figure represents an important change from the last report, which predicted a nominal depreciation as the average for the year.

In 2005, at present, the nominal exchange rate is still expected to trend upward as the outcome, among other reasons, of a drop in expected income from oil exports and the increase in imports

associated with the stronger economic growth. According to the central model, a annual average appreciation of 7.9% is expected for this year, which would mean a slight real depreciation.

The increased stability of the exchange rate in 2004 in this report has its counterpart in a smaller expected increase in external interest rates. For this report, the external reference rate used by the central model (90-day US certificates of deposit) is assumed to average 1.7% this year (against 1.9% in the last report). The level at the end of 2003 was 1.1%. The rate adjustments will probably take place mainly in the second half of the year. The increased stability of the rates is related to the fall in external inflation expected in 2004 against the forecasts of three months ago, following the figures of Consensus Forecast (see Table 7).

For inflation expectations, no substantial changes are predicted in relation to the forecasts presented three months ago. Thus, they are expected to gradually decline during the year, but always remaining within the target range set by the Board, as a reflection of the credibility of monetary policy.

Lastly, both the basic and alternative scenarios include transitory inflation shocks as a result of adjustments above the target in the prices of public services and gasoline in 2004. Overall, these shocks are estimated at 66 bp of total annual inflation for all of 2004. Their direct effect could start early in the year and only begin to dissipate in 2005. The central model assumes that the shock in question has a permanent effect on inflation through expectations and the persistence component, which is not made explicit in this report.

In this context, the central model in the basic scenario suggests CPI inflation of 4.7% for



December 2004, non-food inflation of 5.0% and food inflation of 4.2% (Table 10). In the case of CPI inflation, the result is slightly lower than the forecast made in the September report (5.0%). Non-food inflation also falls slightly in the forecasts attributable to the expected lower depreciation and to the non food reduction short-term forecasts as explained earlier. Both factors offset the more intense pressures on core inflation associated with higher growth. For 2005, the central model predicts CPI and non-food inflation of 4.8%. The stabilization of inflation at levels near 5% is related to the speed up in appreciation, expected at the end of 2004 and throughout 2005, and to the additional narrowing of the gap. Finally in 2006 inflation should fall by around an additional 20 bp (Table 10).

These inflation predictions assume that the 90-day CDT rate rises by 100 bp in 2004 and a further 90 bp in 2005. These increases are consistent with the target range for 2004 (between 5% and 6%)

and with the Board's commitment to bring inflation down to levels of 3% in the long term, and minimize the volatility of product.

*b. Alternative scenario*

This scenario attempts to capture the effects on inflation and other variables of a possible decision by the monetary authority to maintain the Bank's intervention rates unchanged for two consecutive years. For the purposes of this forecast, this scenario is equivalent to estimating the central model under the assumption that the 90-day CDT rate remains at 8% over the next eight quarters.

As expected, this policy posture would result in a slightly larger closure of the output gap than that predicted in the basic scenario, during the first years. At the end of 2004 the gap would be -0.5% becoming positive at 0.5% in 2005, which indicates that productive activity would be above its potential.

**TABLE 10**  
RESULTS OF CENTRAL MODEL (MMT)  
BASIC SCENARIO  
(PERCENTAGE)

	Inflation			Output Gap	CD (CDT)	Average annual devaluation
	Total	Non-food	Food			
Mar-04	5.7	6.0	5.0	(1.5)	8.5	6.4
Jun-04	5.4	5.6	5.0	(1.2)	8.9	0.5
Sep-04	5.1	5.1	5.0	(0.9)	8.9	(1.0)
Dec-04	4.7	5.0	4.2	(0.8)	9.0	(0.5)
Mar-05	5.4	5.3	5.7	(0.6)	9.3	3.1
Jun-05	5.1	5.1	5.1	(0.5)	9.4	5.6
Sep-05	5.0	5.0	5.0	(0.4)	9.6	7.0
Dec-05	4.8	4.8	4.8	(0.4)	9.9	7.6
Mar-06	4.8	4.8	4.8	(0.4)	10.2	6.7
Jun-06	4.7	4.7	4.7	(0.4)	10.5	6.0
Sep-06	4.7	4.7	4.7	(0.5)	10.8	5.5
Dec-06	4.6	4.6	4.6	(0.6)	10.9	5.1

Source: Banco de la República.

Total inflation of 4.8% is projected for December 2004, not significantly different from the basic scenario, but by the end of 2005 it would reach 5.1%, higher than this year. The difference from the basic scenario is even greater in 2006 with total inflation ending the year at 5.5%, breaking its downward trend (Table 11).

The inflation result is consistent with the fact that the effect of monetary policy on inflation has a lag of more than two or three quarters. Thus, maintaining rates unchanged at the start does not have an appreciable inflation cost at one year, but it does affect inflation at longer horizons. For the same reason, to return to an inflation trend compatible with the monetary authority's long-term target of 3%, the model predicts increases of over 300 bp in the interest-rate in the first quarter of 2006 and 500 bp for all the year. This monetary strategy would make

growth more volatile since the gap would return to negative levels in 2006.

#### 4. Balance of risks

The result of an exercise that establishes the balance of risks for the inflation predictions for 2004 and 2005 is presented in this section. For this purpose, some of the main risks that inflation could encounter in these years were identified as follows:

- i) increased uncertainty about the trend in the exchange market in 2004 and 2005.
- ii) possibility of greater appreciation of the peso in 2004.
- iii) possibility of a more rapid reduction in the output gap between 2004 and 2005.

TABLE 11  
RESULTS OF THE CENTRAL MODEL (TMM)  
SCENARIO WITH CONSTANT INTEREST RATE  
(PERCENTAGE)

	Inflation			Output Gap	CD (CDT)	Average annual devaluation
	Total	Non-food	Food			
Mar-04	5.7	6.0	5.0	(1.5)	8.0	6.4
Jun-04	5.4	5.6	5.0	(1.1)	8.0	0.5
Sep-04	5.1	5.1	5.0	(0.7)	8.0	(1.0)
Dec-04	4.8	5.0	4.2	(0.4)	8.0	(0.6)
Mar-05	5.5	5.3	5.8	(0.2)	8.0	2.9
Jun-05	5.2	5.2	5.3	0.1	8.0	5.2
Sep-05	5.2	5.2	5.2	0.3	8.0	6.2
Dec-05	5.1	5.1	5.1	0.5	8.0	6.5
Mar-06	5.2	5.2	5.2	0.7	11.6	5.4
Jun-06	5.3	5.3	5.3	0.4	12.9	4.6
Sep-06	5.4	5.4	5.4	(0.1)	13.5	4.5
Dec-06	5.5	5.5	5.5	(0.6)	13.5	4.8

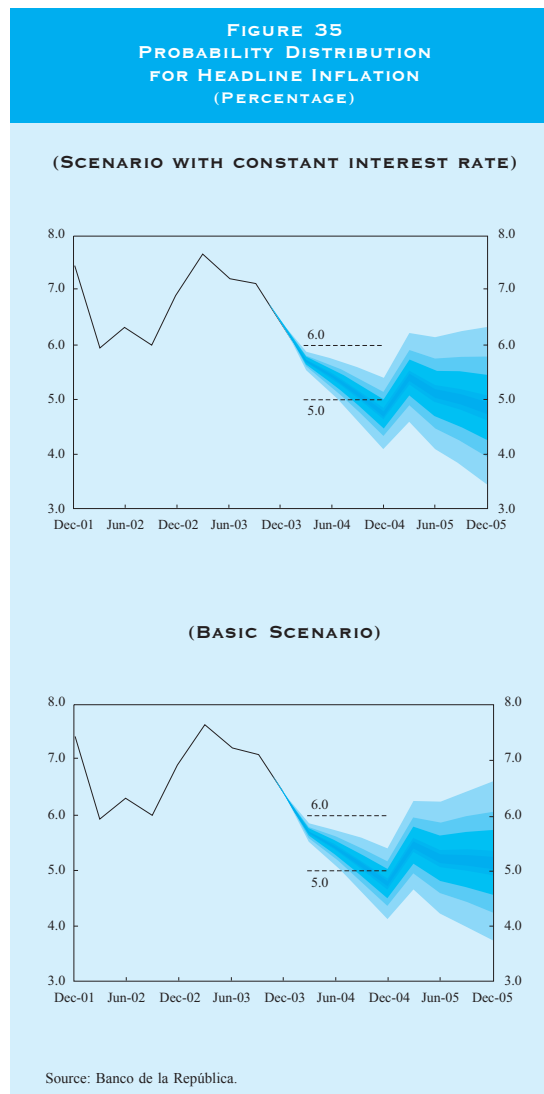
Source: Banco de la República.

- iv) possibility of higher international commodity prices in 2004.
- v) it is considered that the transitory shocks from adjustments of public service tariffs and gasoline prices do not confront a bias in their associated uncertainty.

The balance of risks for the basic and alternative scenarios, presented through the inflation probability distribution (Fan Figures), quantify these risks using statistical procedures usually followed by the central banks that publish inflation reports (Figure 35). Box 2 gives an explanation, in some detail, of how the Bank obtained this indicator.

The inflation probability distribution can be read as a confidence interval, with the difference that its results can present an (upward or downward) bias against the central prediction, which in this case are the previously mentioned inflation trends.

Taking this into account, Table 12 shows the probabilities associated with different inflation ranges in each scenario. The results indicate a high probability of inflation below 6% in 2004, irrespective of any adjustment in the intervention rates. However if the rates remain constant, the probability of inflation in 2005 remaining in the announced range (3.5% to 5.5%) falls from 75% to 60%.



**TABLE 12**  
**INFLATION FORECASTS**  
**CONFIDENCE INTERVALS**

	<b>Inflation ranges</b>					
	<b>&lt; 4,0%</b>	<b>[4,0%-4,5%]</b>	<b>[4,5%-5,0%]</b>	<b>[5,0%-5,5%]</b>	<b>[5,5%-6,0%]</b>	<b>[6,0%-6,5%]</b>
Mar-04	0.0	0.0	0.0	2.1	97.8	0.1
Jun-04	0.0	0.0	1.6	64.3	33.9	0.2
Sep-04	0.0	2.1	35.0	54.4	8.4	0.1
Dec-04	3.1	24.5	47.6	22.3	2.5	0.1
Mar-05	0.2	3.2	17.6	37.5	30.7	9.6
Jun-05	3.6	12.6	27.0	30.6	18.7	6.3
Sep-05	8.6	16.0	24.9	24.8	16.2	7.0
Dec-05	15.8	17.8	22.4	20.3	13.6	6.7
	<b>Scenario with constant interest rate (probabilities)</b>					
Mar-04	0.0	0.0	0.0	2.1	97.8	0.1
Jun-04	0.0	0.0	1.6	64.3	33.9	0.2
Sep-04	0.0	2.0	34.1	55.0	8.8	0.1
Dec-04	2.6	22.5	47.6	24.3	2.9	0.1
Mar-05	0.1	2.3	14.8	35.8	33.3	11.9
Jun-05	2.2	9.4	23.7	31.4	22.5	8.7
Sep-05	5.0	11.8	22.0	26.2	20.3	10.3
Dec-05	8.8	13.3	20.4	22.4	17.9	10.6

Source: Banco de la República.

The inflation forecast, like that of any other economic variable, is subject to uncertainty. Although it is impossible to predict all the factors that could affect inflation in the future, there are methodologies that take into account the possibility of events that could affect the central forecast. An approach followed by many central banks is to quantify the probability that the future trend in inflation is in a specific range, modifying these probabilities according to a balance of risks defined by the analysts.

This instrument is known as the probability distribution diagram (Fan Figure in the international literature), which, as its name indicates, is a probability distribution for the inflation forecast. This distribution incorporates the analysts' subjective judgments on the uncertainty and risks of the inflation forecasts.

### **What is the probability distribution diagram (PDD) (Fan Figure)?**

It is a set of confidence bands constructed from a probability distribution, which represents the subjective valuation of the trend in inflationary pressures over time. Its construction requires three main elements: 1) the central prediction, 2) the judgment on the uncertainty of the prediction, and 3) the balance of risks.

#### *1) Central prediction*

To construct the fan Figure, the Bank establishes, as central view, the annual inflation forecast for the transmission mechanism model (TMM). Graphically, the central view relates to the central line around which the probability bands are constructed. The central trend can be interpreted as the mode of the statistical distribution of the predictions.

#### *2) Judgment of uncertainty*

Uncertainty refers to the probability of unforeseen events in the model, which could divert inflation from the central view. For its implementation, it has to be specified if the expected future uncertainty is more or less than that observed in the past for the main variables of the model which determine inflation. The judgment of uncertainty can be measured through various statistics such as variants, absolute mean error, or the mean quadratic error which is used by Banco de la República.

#### *3) Balance of risks*

It might be thought that the results of the inflation forecasts are situated symmetrically around a mean value. In reality, the inflation prediction error is concentrated more in one direction than in another. This bias or asymmetry is known as the balance of risks. For example, the risk evaluation may suggest that the final result has a higher probability of being above the central view than below, resulting in an upward balance of risks. On the other hand, if the valuations suggest that a lower result than the central view is more probable, the resulting balance of risks is downward.

Graphically, an upward balance of risks is presented as a concentration of over 50% of the probability mass above the central view, while a downward balance of risks is presented as a concentration of over

**TABLE**  
**VARIABLES THAT AFFECT INFLATION**

	<b>Historical uncertainty</b>	<b>Judgment of uncertainty</b>	<b>Judgment of downward trend</b>
Aggregate demand	0.013	0.800	0.40
Food inflation	0.043	1.000	0.40
Inflation expectations	0.004	0.750	0.50
Import prices	0.027	1.000	0.30
Non-food inflation shock	0.012	1.000	0.50
Devaluation expectations	0.090	1.200	0.70

Source: Banco de la República.

50% of the probability mass below the central view. A neutral balance of risks has an asymmetrical distribution of the probability mass around the central view (50% above and 50% below).

The table contains the values that were used in the judgment of uncertainty and the balance of risks to construct the Fan Figure, which was shown in the inflation forecast section. The first column shows the historical uncertainty of the forecast of the various variables that affect inflation in the model. The second reports the judgment of the monetary authority on the unforeseen events that could affect the inflation variables. For example, the historical uncertainty about the projection of inflation expectations, measured as the mean quadratic error of the forecast is 0.004. However, the monetary authority considers that the predictive uncertainty of this variable could be 25% lower than its historical level, consequently the historical level of uncertainty is weighted by 0.75. If the monetary authority believes that the predictive uncertainty of any variable should not change, the weighting of the judgment of uncertainty is set at 1 (as in the case of food inflation).

The third column of the table illustrates the construction of the balance of risks for the inflation variables. In the case of food inflation, for example, the monetary authority considers that there is a 40% probability that the value of this variable is lower than the value predicted by the model. This means that the analysts expect an "upward bias," that is there is a 60% probability that food inflation in 2004 could be equal or greater to the value predicted by the model.

## PROJECTIONS BY LOCAL AND EXTERNAL ANALYSTS OF THE MAIN MACROECONOMIC VARIABLES

This box contains a review of the most recent projections by local and foreign analysts on the growth of the Colombian economy in 2003 and the main variables for 2004. It should be borne in mind that at the time of making the projections, the analysts already knew the observed inflation at December 2003.

### A. GROWTH IN 2003

As shown in Table 1, both foreign and local analysts forecast, on average, that the Colombian economy grew 3.1% in real terms in 2003. The last quarterly report showed how the analysts have agreed on growth forecasts of between 3.0% and 3.2% since January 2003.

**TABLE 1**  
**PROJECTION OF REAL GDP GROWTH**  
**FOR 2003 1/**

<b>Local analysts</b>	
Revista Dinero	3.0
Suvalor-Corfinura	3.0
Corfivalle	3.0
ANIF 2/	3.2
Fedesarrollo	3.1
<b>Average</b>	<b>3.1</b>
<b>External analysts</b>	
Goldman Sachs	3.2
IDEA global	3.5
J. P. Morgan Chase	2.5
Deutsche Bank	3.0
<b>Average</b>	<b>3.1</b>

1/ Projections January 2004.  
2/ Projections December 2003.  
Source: Analysts' reports.

### B. PROJECTIONS FOR 2004

The analysts have raised their inflation forecasts slightly for 2004. As Table 2 shows, the average inflation forecast for the year by the local analysts consulted was 5.9%, 10 basic above the average forecast in September 2003. The foreign analysts predicted on average inflation of 6.1% for this year. The increase in relation to the last report was 0.6 percentage points, due to the adjustments in the forecasts of Deutsche Bank and Goldman Sachs.

EOOn economic growth, both local and foreign analysts make conservative forecasts for 2004, expecting rates similar to 2003. The local analysts, more optimistic, increased their average forecast from 3.0%

in September 2003 to 3.5% for this report. In contrast, the external analysts reduced their forecast by 10 bp since the last report and forecast average growth of 3.3%.

In general, the analysts expect 2004 to be a more satisfactory year in the fiscal accounts of the consolidated public sector (SPC) than the year just ended. Local analysts forecast a SPC fiscal deficit of 2.7% of GDP, while the external analysts are even more optimistic with average forecasts of 2.6% of GDP for the deficit. It should be mentioned that the target set by the IMF is 2.5% of GDP.

On the rest of the variables, in the last quarter local analysts corrected the fixed-term deposits (DTF) forecast down from 8.7% to 8.6%, and reduced their forecast for the representative market exchange rate (TCRM) at the end of 2004 to 3,020 pesos per dollar, which implies a devaluation of around 9% at December 31, 2004. Lastly, local analysts increased, on average, their projection of the current-account deficit to 2.0% of GDP and reduced the unemployment rate to 14.4% against 14.6% in the September report.

The international analysts are more conservative with their devaluation forecast for 2004. They predict, on average, a devaluation of 5.8% at December 31 this year. They also forecast a lower interest rate than local analysts for 2004 (7.9%).

**TABLE 2**  
**PROJECTION OF THE MAIN MACROECONOMIC VARIABLES FOR 2004 1/**

	Growth of real GDP %	CPI inflation %	Nominal exchange rate (end of)	Nominal Fixed-term deposit (DTF) 2/ %	Deficit (% of GDP)		Unemployment rate %
					Fiscal (CPS)	Cur. Acc.	
<b>Local analysts</b>							
Revista Dinero	3.4	5.9	2,999	8.0	(2.7)	(2.0)	13.9
Suvalor-Corfinsura	3.5	5.8	3,100	8.4	(2.5)	n.d.	n.d.
Corfivalle	3.3	5.8	2,935	9.0	(2.8)	(2.0)	14.5
ANIF 3/	3.4	6.0	3,100	9.0	(2.8)	(2.0)	15.0
Fedesarrollo	3.9	6.0	2,967	8.5	(2.8)	(1.8)	14.0
<b>Average</b>	<b>3.5</b>	<b>5.9</b>	<b>3,020</b>	<b>8.6</b>	<b>(2.7)</b>	<b>(2.0)</b>	<b>14.4</b>
<b>External analysts</b>							
Goldman Sachs	3.3	5.9	3,000	8.3	(2.8)	(2.0)	13.4
IDEA global	3.8	5.5	2,900	7.5	(2.8)	(1.6)	12.6
J. P. Morgan Chase	3.3	6.3	n.d.	n.d.	(2.3)	(2.5)	n.d.
Deutsche Bank 4/	2.8	6.5	2,905	8.0	(6.8)	(2.4)	14.6
<b>Average</b>	<b>3.3</b>	<b>6.1</b>	<b>2,935</b>	<b>7.9</b>	<b>(2.6)</b>	<b>(2.1)</b>	<b>13.5</b>

SPC: Consolidated public sector

n.d.: Not available.

1/ Projections January 2004.

2/ Average for year.

3/ Projections December 2003.

4/ The Deutsche Bank data for the fiscal deficit refers to Central National Government, not included in the average.

Source: Analysts' reports.



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