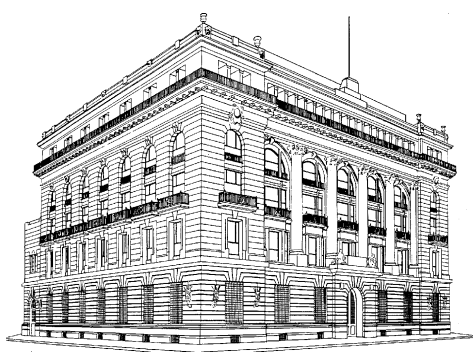


# Inflation Report

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July – September 2000



BANCO DE MEXICO

OCTOBER, 2000

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*BOARD OF GOVERNORS*

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### **FOREWARNING**

*Unless otherwise specified, this document is prepared using data available as of October 12, 2000. Figures are preliminary and subject to change.*

*Banco de México has always given the utmost importance to the publication of information that will help decision-making and allow the public to evaluate the execution of its policies. This text is provided only as a convenience to the reader, and discrepancies could eventually arise from the translation of the original document into English. The original and unabridged Inflation Report in Spanish is the only official document.*



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## I. Introduction

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This document presents to the public the analysis, prepared by Banco de México, that served as the basis for decision-making in monetary policy matters from July to September. In addition to containing a detailed evaluation of various aspects of the Mexican economy's performance that affect inflation, on this occasion the report includes an extra chapter to announce the objectives that will serve as monetary policy guidelines during the 2001-2003 period.

During the third quarter of the year, the annual growth rate of the National Consumer Price Index (INPC) continued to decline, reaching 8.85 percent in September. This result makes it possible to predict that inflationary goals for the year 2000 will comfortably be attained. The preliminary information available at present indicates that a certain degree of deceleration in aggregate demand and economic activity probably took place in the third quarter. Domestic spending, however, is still growing at a high rate, greater than that of production. A dynamic demand and the persisting gap between medium-term inflation expectations and goals are the main reasons for the tightening of monetary policy during the period under analysis.

The expansion that has occurred in domestic demand and the inconsistency between the evolution of contractual wages and expected inflation as well as the anticipated gains in labor productivity, are the main internal factors that could trigger inflationary pressures incompatible with 2001 inflationary goals. In terms of external elements of risk, this document emphasizes: a) an abrupt adjustment in the United States economy's growth rate, and b) a significant drop in oil prices.

In light of the above, Banco de México should maintain and perhaps increase the restrictive stance of monetary policy in order to reach its medium-term objectives. Since inflation in Mexico is still high, the Board of Governors has determined that a gradual strategy to curb the growth of prices in a permanent manner is preferable, in this way reducing the social costs of the process. Banco de México pursues the ultimate goal of attaining and preserving the conditions of stability indispensable for growth in economic activity, employment, investment and productivity and for the continued improvement in real wages.

## II. Recent Developments in Inflation

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The evolution of prices during the third quarter of 2000 was favorable, as anticipated in the previous *Inflation Report*. This diagnosis is based on the path shown by the INPC as well as by the core price index. It is worth noting that:

- (a) Annual inflation measured by the INPC continued to fall.
- (b) The rate of core inflation<sup>1</sup> continued to decrease, in both the goods and services sectors.

However, certain phenomena that were present during the period limited the decline in inflation, including the following:

- (a) The increase in the annual inflation of agricultural and livestock prices, and the stability in the annual growth rate of the prices of goods and services provided or regulated by the public sector.
- (b) The upward trajectory shown by inflation in the National Producer Price Index, excluding oil and services, was interrupted in the second quarter, although the increased rate of growth has not been fully reversed. This behavior is explained to a large degree by the indirect effects the higher international prices of oil and natural gas have had on some of the components of the Index.

### II.1. Behavior of Inflation Indicators

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Following is an analysis of the evolution of the various price indices from July to September.

#### II.1.1. National Consumer Price Index

In the third quarter of the year, annual inflation decreased, yet at a slower rate than in the second quarter. As anticipated,

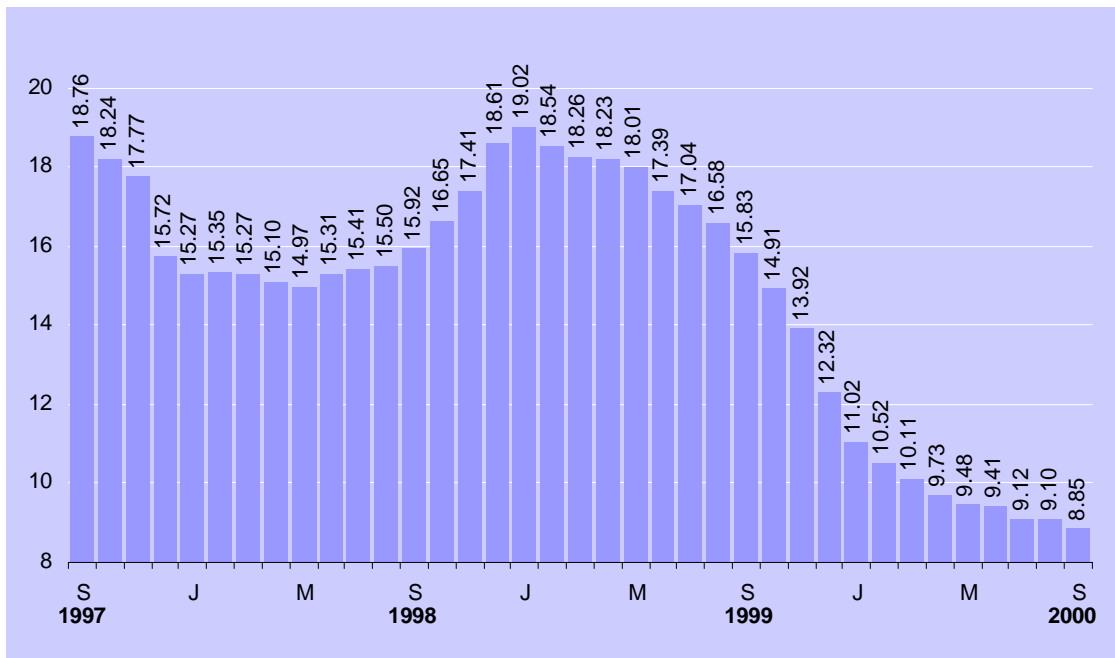
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<sup>1</sup> Core inflation is an indicator utilized by Banco de México to identify medium-term inflationary pressures. A detailed explanation of the methodology used to construct the corresponding index may be found in the *Inflation Report: January-March 2000*, pp. 53-59.

accumulated inflation during the quarter was also higher than that of the previous quarter, due largely to seasonal effects.

Inflation from July to September was lower than that of the same period in 1999; the quarter closed with annual inflation at 8.85 percent, down 0.56 percentage points from June (Graph 1). During the first two quarters of the year, inflation had decreased by 2.21 and 0.70 percentage points, respectively.

**Graph 1** National Consumer Price Index  
Annual percentage change



The growth in the general price level from July to September was lower than that predicted by private sector analysts at the end of the previous quarter<sup>2</sup> (Table 1). However, inflation in August was higher than the 0.52 percent that had been anticipated at the beginning of the quarter. This result is explained mainly by the 0.56 percent increase in the sub-index of prices for agricultural and livestock products.<sup>3</sup>

<sup>2</sup> These expectations are reported in the *Inflation Report: April-June 2000*, Table 7, p. 51.

<sup>3</sup> In August, the products that showed outstanding monthly price increases included tomatoes, up 7.2 percent, oranges, up 10.5 percent, and avocados, up 29.4 percent.

**Table 1**

**Observed and Expected INPC Inflation in the July-September Period**  
Percentage change

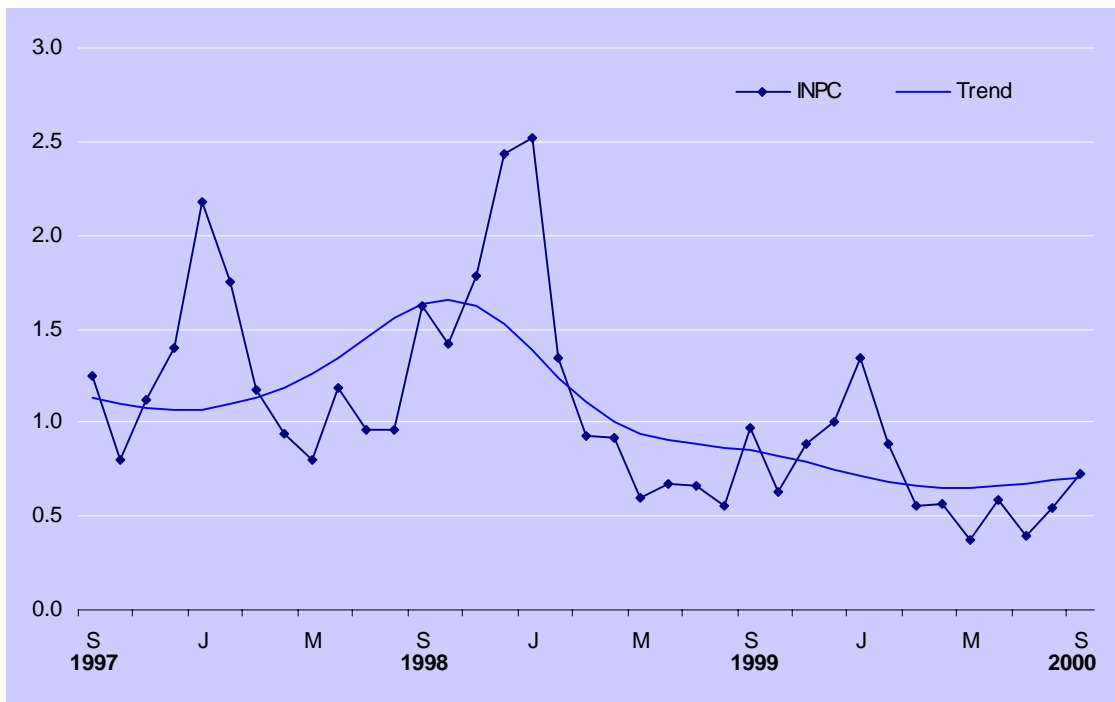
	2000		1999	
	Monthly Inflation		Monthly Inflation	
	Observed	Expected 1/	Observed	Expected 1/
July	0.39	0.55	0.66	0.72
August	0.55	0.52	0.56	0.74
September	0.73	0.81	0.97	1.03

1/ Expected inflation at the end of the previous quarter, according to the Survey of Expectations of Private Sector Economic Specialists, compiled by Banco de México.

During the third quarter, monthly inflation fluctuated within a range similar to that of the previous quarter (Graph 2). The trend series<sup>4</sup> showed a relatively stable behavior as well.

**Graph 2**

**National Consumer Price Index**  
Monthly percentage change



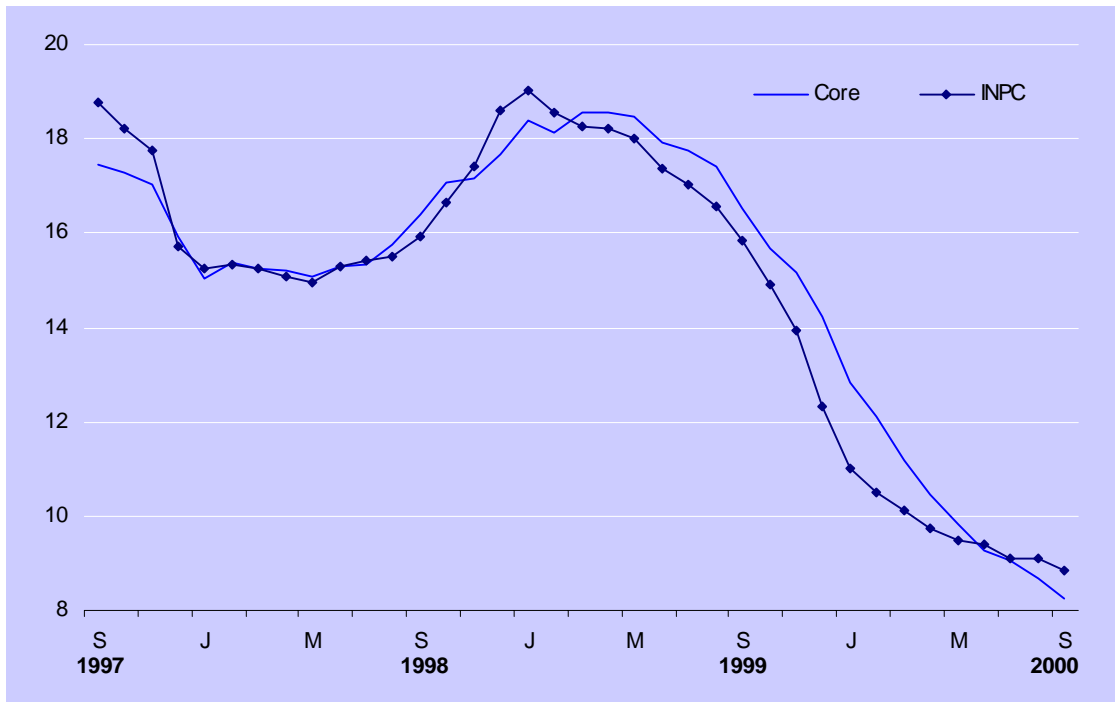
**II.1.2. Core Inflation**

During the quarter under analysis, core inflation performed better than inflation in general, and maintained a downward pace similar to that observed in the first two quarters of the year. In

<sup>4</sup> Calculated through the statistical procedure known as X12 ARIMA. This method "softens" the original series by utilizing moving averages.

September of 2000, the annual growth rate of the core price index was 8.26 percent, compared with 9.29 percent in June (Graph 3). These results suggest that the growth in the annual inflation of agricultural and livestock prices and the increase in the sub-index of prices for goods and services provided or regulated by the public sector—which were higher than the INPC inflation rate— did not obstruct the general process of disinflation (Table 2).

**Graph 3** National Consumer Price Index (INPC) and Core Price Index  
Annual percentage change



For the fourth consecutive month, the annual core inflation in September was lower than INPC growth. This fact indicates that the low annual increase in agricultural and livestock prices has been more than offset by the high annual inflation in the prices of educational services and the prices of goods provided or regulated by the public sector.

The speed at which prices for goods included in the core price index decreased was similar to that of the previous quarter. The result has been that core inflation is at a lower level than inflation measured by the INPC.

Table 2

**Price Indices: INPC, Core Inflation, Agricultural and Livestock Products, Education, and Goods and Services Provided or Regulated by the Public Sector**  
Percentage change

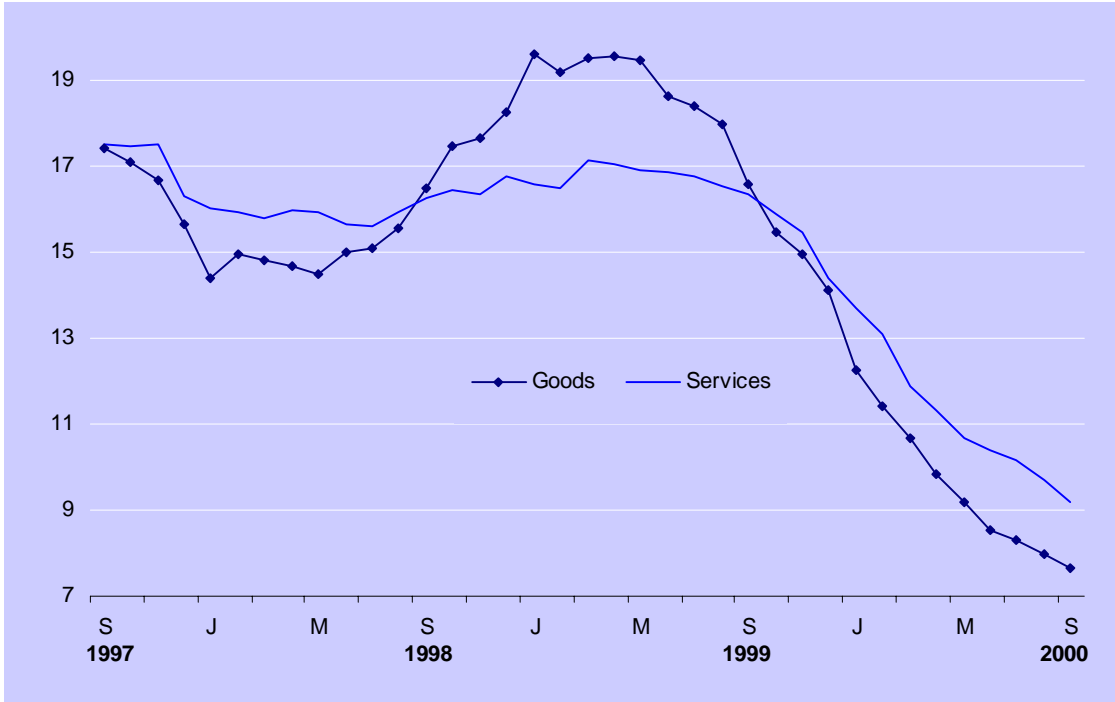
	Annual Change			Quarterly Change		
	Sep-2000/	June-2000/	Sep-1999/	Sep-2000/	Jun-2000/	Sep-1999/
	Sep-1999	June-1999	Sep-1998	June-2000	March-2000	June-1999
INPC	8.85	9.41	15.83	1.68	1.54	2.21
Core Inflation	8.26	9.29	16.51	1.14	1.38	2.10
Goods	7.64	8.55	16.61	0.95	1.16	1.81
Services	9.19	10.39	16.36	1.41	1.70	2.53
Agricultural and Livestock						
Livestock	5.42	3.91	8.73	0.77	4.60	-0.67
Education	15.08	17.66	18.16	12.20	0.71	14.71
Provided or Regulated by Public Sector	12.41	12.54	18.15	2.51	0.32	2.64

In the analyzed quarter, the annual core inflation continued to decline<sup>5</sup> (Graph 4). As of September, the annual core inflation for goods was 7.64 percent, compared with 8.55 percent at the close of the previous quarter. This deceleration is also evident in the prices of the services sector, which have followed the prices of goods. In September, the annual core inflation for services was 9.19 percent, contrasting with the rate of 10.39 percent reported in June. The evolution of prices in the services sector shows a clear downward trend and even though inflation has been higher than in the goods sector, its annual growth rate is below 10 percent.

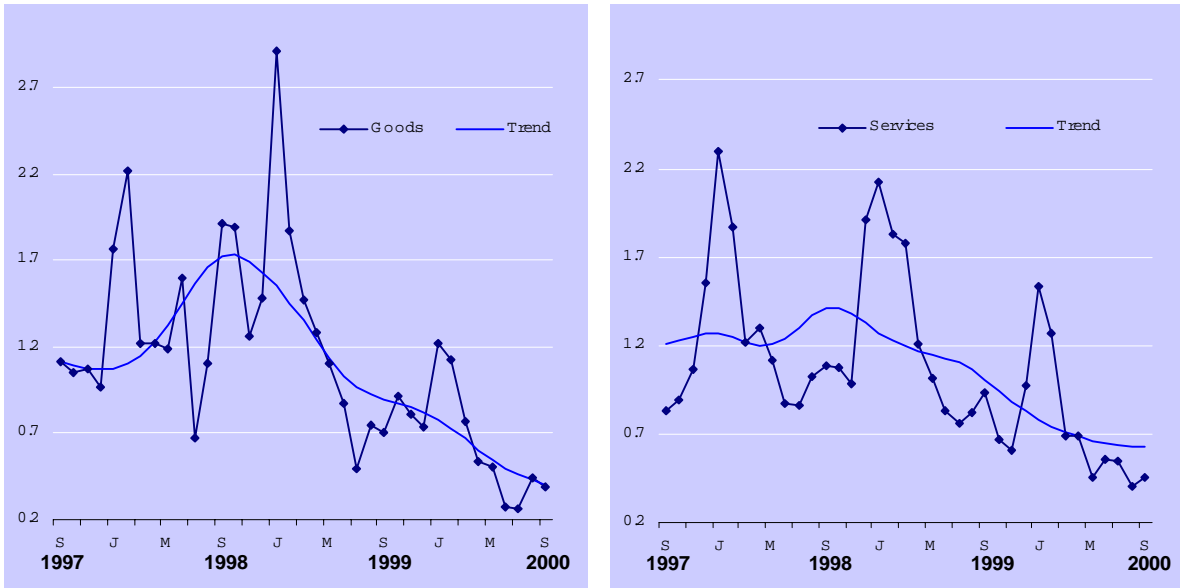
The core monthly inflation, for both goods and services, presents a panorama similar to that described above. Thus, in September the monthly change for these indices was 0.34 and 0.45 percent, respectively. In addition, the monthly growth of the trend series of both indices continued downward (Graph 5).

<sup>5</sup> Since goods are generally traded internationally, their prices are very sensitive to fluctuations in the exchange rate. On the other hand, services are fundamentally non-tradable, and therefore their prices respond primarily to inflation and wage expectations.

**Graph 4** Core Inflation Indices for Goods and Services  
Annual percentage change



**Graph 5** Core Inflation Indices for Goods and Services  
Monthly percentage change



The favorable behavior of the core index for goods is explained to a large extent by the stability of the exchange rate

during the year. The core index for services, on the other hand, has been positively influenced by improved inflation expectations and, to a lesser degree, by the evolution of the exchange rate.

### **II.1.3. National Producer Price Index**

Changes in the National Producer Price Index (*Indice Nacional de Precios al Productor*, INPP) excluding oil and services may be a leading indicator of inflationary pressures. The upward inflationary trend that had been shown by the index in the previous quarter was interrupted during the July-September period. As a consequence, its annual growth rate decreased from 8.59 percent in June to 7.68 percent in September (Graph 6). However, the annual growth of INPP (excluding oil and services) shown during the third quarter was higher than the level attained in the first quarter. In the period under analysis, the INPP without oil and services was significantly affected by the indirect impact of the rising prices of crude oil and natural gas in international markets. In fact, during the first nine months of the year, approximately 60 percent of the change in the INPP is explained by the influence of three of its sub-indices that intensively use crude oil and natural gas as inputs: Chemical Industries based on Petroleum, Rubber and Plastic (with an annual growth rate of 14.04 percent), Electricity and Gas (12.75 percent) and Construction (10.20 percent)<sup>6</sup>.

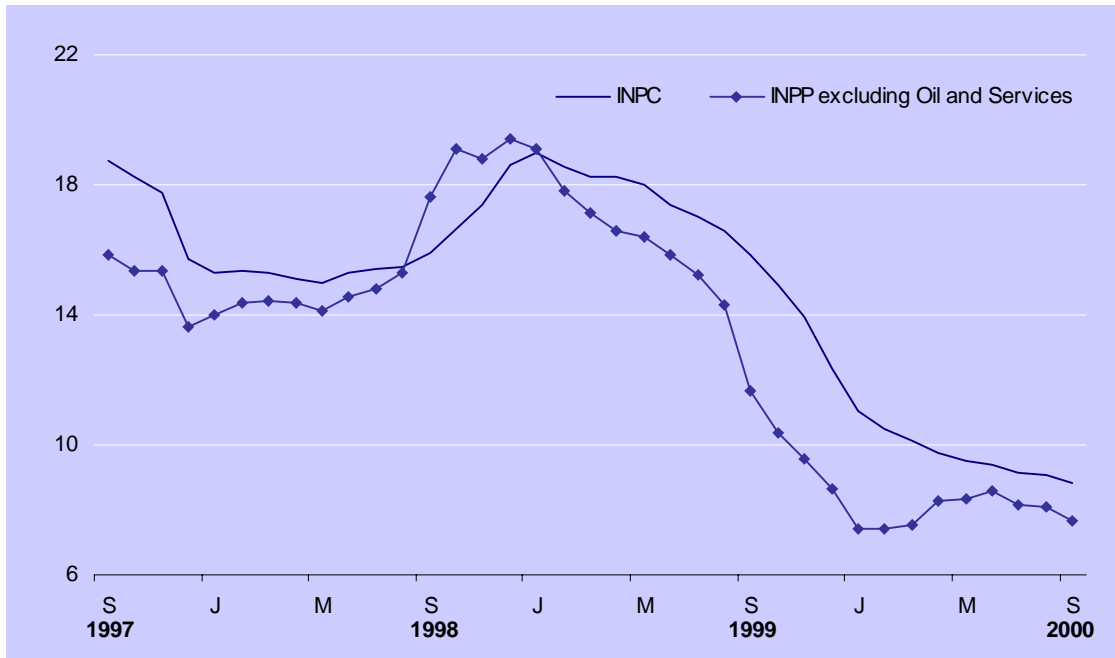
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<sup>6</sup> The construction industry was negatively affected by the higher prices for paving materials.



Graph 6

**National Consumer Price Index (INPC) and National Producer Price Index (INPP) excluding Oil and Services**  
Annual percentage change



In summary, during the third quarter of 2000, the annual inflation in consumer prices, as measured by the general index as well as by the core indices for goods and services, was less than 10 percent. Nevertheless, certain phenomena evident during the period point to the possible contamination of inflation expectations:

- (a) The annual inflation of the prices of goods provided or regulated by the public sector, as well as of the prices of education, remained well above 10 percent. In addition, the growth rate of these prices during the previous twelve months showed a downward trend that was less pronounced than for the remaining goods and services.
- (b) The increase in the annual inflation of agricultural and livestock products.
- (c) Even though the upward trend shown by the INPP (excluding oil and services) in the second quarter was reversed during the third quarter, it has not yet returned to the levels observed at the beginning of the year.

## **II.2. Main Determinants of Inflation**

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As mentioned in previous *Inflation Reports*, the principal causes of price increases include variations in the exchange rate, in wages and in the prices of goods and services provided or regulated by the public sector, as well as aggregate demand pressures and short-term, transitory and seasonal phenomena such as tuition increases. The evolution of these variables during the period under study is described below.

### **II.2.1. External Environment and the Exchange Rate**

In the third quarter of 2000, the main external variables that influenced the behavior of the Mexican economy evolved in a generally favorable manner, resulting in a stable exchange rate. The main positive factors in the international environment included: signs of a gradual deceleration in the economic growth of the United States towards a sustainable medium-term level; the absence of indications of possible inflationary pressures in that economy; and a rise in the price of oil. Although until now higher oil prices have had a beneficial impact by raising the value of Mexico's crude oil exports, substantial price increases in the future could endanger world economic expansion and create inflationary pressures in the economies of industrialized nations. Such events would have negative repercussions on the Mexican economy. In addition, higher international energy prices have been reflected by increases in the domestic price of liquefied petroleum gas (LPG) and wholesale energy.

Analyzed below is the behavior of these external elements and their effect on the domestic economy, internal markets and inflation during the third quarter.

#### **II.2.1.1. Oil Prices**

Between July and September, 2000, average international oil prices surpassed those reported during the first two quarters of the year. In late June, the price of Mexico's export mix was close to 27 dollars per barrel. In July, that price declined considerably, down to an average of 24.04 dollars per barrel. However, due to the widely-diffused market perception of reduced inventory levels in the main importing nations, the price of crude oil increased significantly over the following two months. In this manner, during the first week

of September, the price of crude oil surpassed the historic high of the previous ten years.

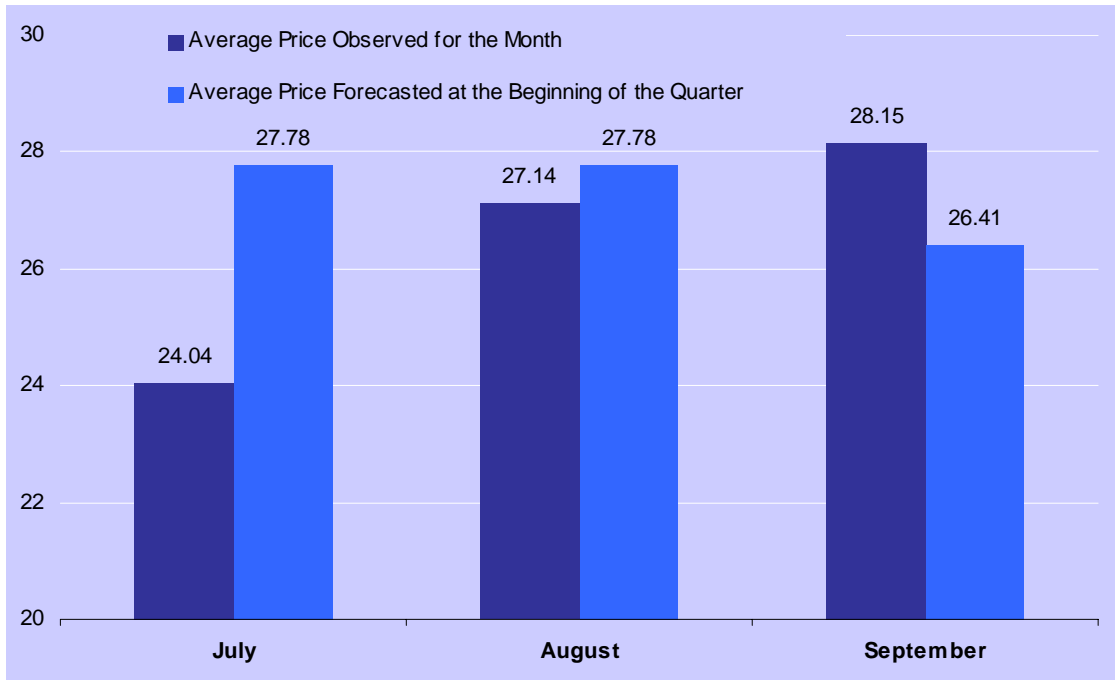
Because of the drop in the international price of crude oil observed in July, during that month and throughout August, the price of Mexico's export mix was lower than the price implied in the futures quotes prevailing at the beginning of the quarter. However, the increases reported in August and September caused the average price of Mexico's export mix to surpass the futures price (Graph 7).

The high international oil prices that have prevailed so far this year have been a fundamental factor in limiting an expansion of the trade deficit and maintaining it at levels consistent with the availability of long-term foreign investment. Nevertheless, higher international prices of natural gas and LPG have influenced their domestic market prices, representing a negative factor in the process of reducing inflation. In addition, higher crude oil prices are clearly an inflationary pressure in industrialized oil-importing countries. High oil prices currently coincide with the expansive stage of the economic cycle in developed countries. Consequently, this phenomenon has become an additional inflationary pressure, resulting in restrictive actions by monetary authorities in some developed economies. Such was the case of the European Central Bank (ECB), which raised its short-term interest rate objective<sup>7</sup> by 25 basis points in late August.

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<sup>7</sup> In the first week of October, the ECB again increased this rate, by 75 basis points.

**Graph 7** **Price of Mexico's Export Mix in 2000**  
Dollars per barrel of oil

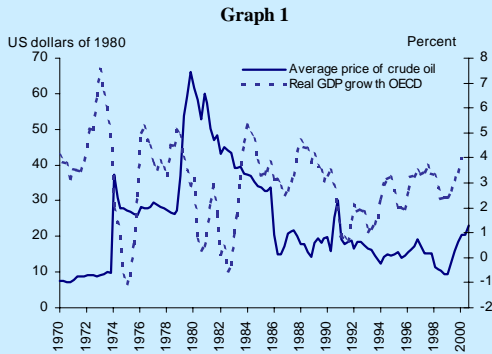


Source: Observed price, Pemex. The forecasted price is based on WTI's futures price and the difference between said futures and Mexico's export mix.

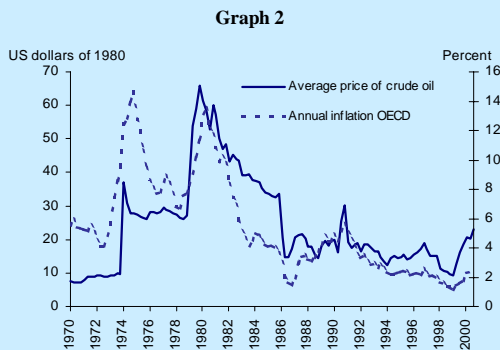
In addition, the volatility in international financial markets during the third week of September was associated to a large extent to adjustments in the price of crude oil. The result was the United States government's decision to release 30 million barrels from its strategic reserve, with a repurchase commitment for the fall of 2001. This action led to a reduction in the international price of approximately 5.50 dollars per barrel and moderated expectations with regard to upward movements in this price. Given that fluctuations in oil prices have not yet caused generalized monetary restrictions in industrialized nations, there has been no limiting effect on capital flows to emerging economies. The implication is that the overall impact of higher oil prices on the Mexican economy continues to be positive.

**Impact of Oil Price Increases on Industrialized Economies**

The upward trend that has been evident in oil prices since late 1998, has recently induced reactions by the central banks of industrialized nations, in response to the potential effect high oil prices could have on their economies' growth and inflation. These reactions are justified by the fact that substantial increases in international oil prices have caused declines in the rate of economic growth in the past. Such increases preceded the three global recessions of the past thirty years (Graph 1).



Likewise, a high positive correlation has also been observed between the behavior of international oil prices and inflation in developed economies (Graph 2).



Increases in oil prices reduce the growth of industrialized economies because they are net importers of oil. However, it has not yet been possible to verify the impact of the currently rebounding oil prices on the growth of developed countries. In order to analyze this effect, it must be considered that the price increases posted from late 1998 to date are far lower, in real terms, than those of the 1970's (Graph 1).

It must also be considered that the larger the imports of oil, the greater the impact on national income. In this respect, the ratio of oil and gas imports to GDP in developed countries peaked in the early 1980's, when energy conservation measures had not yet consolidated. However, during the 1990's, the indicator contracted in all developed economies (Table 1). It is also evident that Japan and Europe continue to be more vulnerable than the United States, which has more energy resources.

**Table 1**

Net Oil and Gas Imports				
Share of GDP				
	1973	1978	1989	1998
United States	0.6	1.9	1.0	0.6
Euro zone	1.5	2.7	1.5	0.8
Japan	1.7	2.9	1.4	0.9
Germany	1.6	2.6	1.6	0.9
France	1.3	2.6	1.5	0.8
Italy	1.5	3.1	1.5	0.7
England	1.8	1.5	0.0	-0.4
Canada	-0.4	-0.3	-0.9	-1.5
OECD	1.1	2.4	1.3	0.7

The decline in oil exports as a proportion of GDP implies that although price increases will probably limit growth, the deterioration in terms of trade should be less than during former episodes. It is also important to note that leading oil sector analysts anticipate that the price increases of the past two years will be reversed more quickly than in the past.

On the other hand, in this current episode of rising prices, annual inflation in the OECD member countries has exceeded 2 percent (Graph 2). It is yet unclear whether the recorded price increase will translate into even higher inflation expectations, as was the case during the episodes of the 1970's. However, given the greater independence and credibility currently enjoyed by the central banks of developed nations, monetary policy reactions will probably not validate the deterioration in inflation expectations. Proof of this is the recent increase in the short-term interest rate determined by the European Central Bank.

**II.2.1.2. Evolution of the United States' Economy**

The expansion of the United States' economy during the first quarter of the year (4.8 percent) was followed by growth of 5.6 percent in the second quarter. This growth was characterized by a more gradual increase in consumer spending —initial evidence of a weakening expansion rate of that nation's aggregate demand. Various private-sector spending figures released during the third quarter confirm a deceleration in total spending. Indicators published

in July and August with regard to the housing market and spending on durable goods suggested a less vigorous aggregate demand in the United States.<sup>8</sup>

Labor market statistics provide additional evidence that the expansion in the United States' economy is gradually reaching a rate considered sustainable over the medium term. In July and August, the unemployment rate stabilized, although it shrank to 3.9 percent in September. However, the main reasons behind the absence of inflationary pressures have been the spectacular growth in productivity and the dynamic investment registered during recent years.<sup>9</sup>

The above indicators have resulted in a widespread perception that the United States' economy will make a “soft landing” towards its long-term growth rate. This fact was reflected in the Federal Reserve's decisions made at the June and August meetings not to modify its federal funds rate objective<sup>10</sup>. As a result, the pattern of monetary tightening that had been observed during the preceding year was suspended, at least temporarily.

Such phenomena contributed to a relative calm in international capital markets during the third quarter of the year. In other words, the type of pressures reported during the first half of the year were not observed in these months, which obviously helped to reduce the average variability in US interest rates. This factor has lessened the pressures on capital flows to emerging economies, thus contributing to the stability of financial variables in Mexico, especially the exchange rate.

### **II.2.1.3. Economic Evolution in the Rest of the World**

The recent evolution of the rest of the world's economies has been generally favorable (Table 3). In Europe, a growth rate of approximately 3.5 percent is expected for the year 2000, the highest in recent years. However, the inflationary pressures caused by the

<sup>8</sup> Drops in housing indicators were reported in June, July, and August. Single-family housing starts decreased at a seasonally adjusted annual rate of 3 percent in June and July, and new home sales went down to a seasonally adjusted rate of 4 percent in June. As a result, housing market indicators were at the lowest recorded level of the previous 18 months. On the other hand, July orders for durable goods grew at an annual rate of 8.1 percent, the lowest reported for this monthly indicator over the past 10 years.

<sup>9</sup> The unemployment rate remained at 4 percent in July and rose to 4.1 percent in August. Labor productivity, meanwhile, grew at an annualized rate of 5.7 percent during the second quarter of 2000.

<sup>10</sup> At its meeting in the first week of October, the United States' Federal Reserve once again left its benchmark rate unchanged.

current expansion, high fuel prices and the depreciation of the euro brought about a modification in monetary policy. In August, the ECB once again increased its objective for the short-term interest rate. In addition, in late September, the ECB intervened jointly with the Bank of Japan, the Federal Reserve, the Bank of England and the Bank of Canada to contain the depreciation of the euro, which had lost 25 percent of its value since its creation. In spite of the existence of deceleration signs in Europe, the depreciation of the euro could stimulate the export sector.

Although Japan will also experience its highest growth in recent years, Moody's reduction of the rating of Japanese public debt in September reflects prevailing uncertainty about Japan's economic recovery. Regarding the recently industrialized Asian economies, they show signs of slight deceleration after the vigorous growth of the first half of the year.

In Latin America, the risks of disturbances originating abroad have diminished. Therefore, the dispersion in the growth rates of the region's economies is expected to decrease by the end of 2000 and throughout 2001. It should be pointed out, however, that the economic recovery expected in Argentina has not materialized, and that speculative pressures in its financial markets have intensified.

Table 3

**World Economic Growth**  
Annual percentage changes

	1998	1999	2000 p/	2001 p/
<b>Major Industrialized Countries</b>				
United States	4.4	4.2	5.2	3.2
Japan	-2.5	0.2	1.4	1.8
Germany	2.1	1.6	2.9	3.3
France	3.2	2.9	3.5	3.5
United Kingdom	2.6	2.1	3.1	2.8
Canada	3.3	4.5	4.7	2.8
Euro zone	2.7	2.4	3.5	3.4
<b>Developing Countries</b>				
Asia	4.1	5.9	6.7	6.6
Middle East and Europe	3.1	0.8	4.7	4.1
Latin America and the Caribbean	2.2	0.3	4.3	4.5

p/ Projected

Source: *World Economic Outlook*, IMF, September, 2000

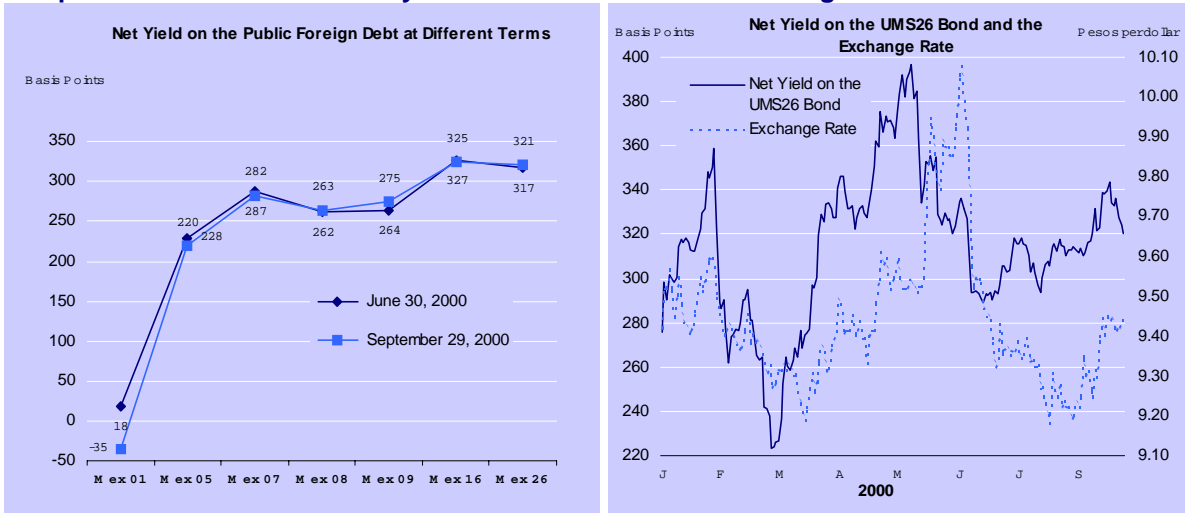
#### II.2.1.4. External Effects on the Domestic Economy

The international situation influences the domestic economy's performance and the evolution of inflation through its repercussions on the trade balance, the capital account, and the exchange rate. The expansion of the United States' economy in the third quarter of 2000, in addition to higher oil prices, had a positive effect on Mexico's current account. In spite of decelerating consumption in the United States, Mexican total exports, oil exports and manufacturing exports accumulated in the period from January to August grew at annual rates of 24.3, 97.8 and 19.7 percent, respectively. Total imports rose in the same period at an annual rate of 24.6 percent. As a result, in August the accumulated trade deficit reached 3.832 billion dollars, 33.7 percent higher than in the same period of the previous year.

On the other hand, the conditions prevailing in international financial markets also had a favorable influence on capital inflows. During the third quarter of 2000, the net yield of Mexican government bonds issued on international capital markets remained at levels below the historical average. Immediately after the orderly presidential elections held in the first week of July, the net yield on Mexican foreign debt diminished. A larger supply of external resources induced an appreciation of the Mexican peso exchange rate during the first two weeks of that month. Since then, the net yield on Mexico's foreign debt has remained stable within a range of 300 to 340 basis points. However, the exchange rate continued to appreciate, reaching a level below 9.30 pesos per dollar. This trend towards appreciation does not seem to have been associated with movements in the net yield on Mexico's debt, but rather with the rise in oil prices during the first week of August. The additional hikes in oil prices observed in the third week of September generated increases in long-term interest rates in the United States, as well as a deteriorated perception of Mexico's country risk. These events influenced domestic markets by reversing part of the exchange rate appreciation and pushing interest rates upwards (Graph 8).



**Graph 8 Country-Risk Indicators and the Exchange Rate**

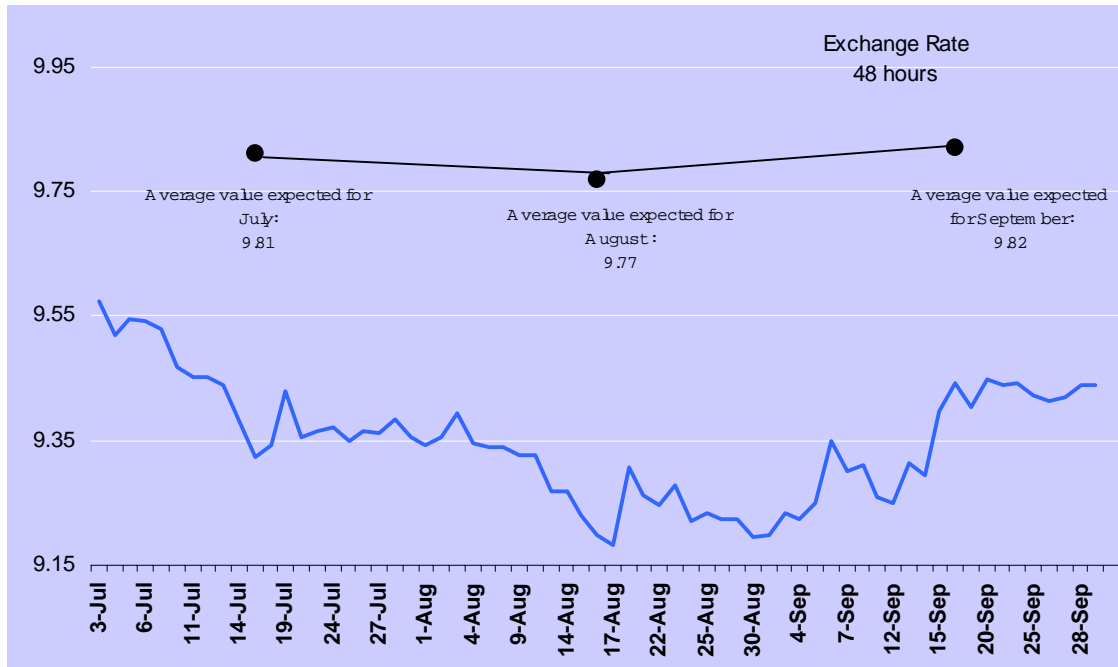


Sources: Bloomberg and Banco de México.

Note: The net yield of the UMS26 bond is the spread over the yield of a US Government bond with a similar maturity.

During the third quarter, the exchange rate appreciated against the level reported at the end of the first semester. The relative calm in international capital markets, as well as the favorable effects of the orderly elections and higher oil prices, caused the behavior of the exchange rate in July and August to be characterized by periods of slight appreciation followed by intervals of stability. In September, however, with the higher volatility in international financial markets resulting from the persistent increases in oil prices, part of the appreciation in the exchange rate of the two previous months was reversed, and the rate closed the third quarter at 9.44 pesos per dollar. Nonetheless, the exchange rate stayed below the average value forecasted by private sector analysts at the beginning of the period (Graph 9).

**Graph 9** Observed and Expected Exchange Rate in July-September, 2000  
Pesos per dollar



In sum, the appreciation of the peso's exchange rate with respect to the dollar and the lower net yield on Mexican foreign debt during the third quarter of the year were the reflection of a favorable external environment and the satisfactory performance of the domestic economy. The factors that caused this sort of behavior were the following: the signs of a gradual deceleration in the United States' economy, the rebound of international oil prices, and a larger supply of foreign resources for Mexico. Consequently, the evolution of the exchange rate contributed to the deceleration of inflation in the third quarter.

## II.2.2. Compensation, Wages and Employment

As discussed in previous *Inflation Reports*, the main factors that influence price changes in an economy include the behavior of wages and employment. Below is an analysis of the evolution of these variables during the third quarter of 2000.

### II.2.2.1. Wages

Statistics on wages, employment and production in the manufacturing industry are published with considerable delay. Thus, only data for the month of July were available for the following

analysis. In July, nominal compensation per worker grew between 14.1 and 16.9 percent in the sectors for which information is available.<sup>11</sup> It is important to point out that, with the exception of the construction industry, the nominal compensation paid in the second quarter rose at a faster rate than price increases. Therefore, the annual growth in real compensation per worker ranged between 3.3 and 7.2 percent in July, depending on the sector of production examined (Table 4).

**Table 4****Nominal and Real Compensation per Worker**

Annual percentage change

	Nominal Change								Real Change							
	2000								2000							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Jan	Feb	Mar	Apr	May	Jun	Jul		
Manufacturing Industry	16.0	15.8	14.1	16.6	16.1	16.8	14.9	4.5	4.8	3.7	6.3	6.0	6.8	5.3		
In-bond Industry	16.1	16.2	16.2	12.2	20.5	17.7	16.9	4.6	5.2	5.6	2.3	10.1	7.5	7.2		
Construction	8.5	5.7	6.1	5.3	4.6	nd.	nd.	-2.3	-4.3	-3.7	-4.0	-4.4	nd.	nd.		
Wholesale Commerce	16.7	19.2	18.3	18.3	17.3	19.6	12.7	5.1	7.9	7.4	7.8	7.2	9.3	3.3		
Retail Commerce	15.9	18.3	17.1	16.3	15.2	19.9	14.1	4.4	7.1	6.4	6.0	5.2	9.5	4.6		

Source: Prepared with information from INEGI (National Institute of Statistics, Geography and Information Technology, *Instituto Nacional de Estadística, Geografía e Informática*).

As stated in the two previous quarterly reports, since late 1998 contractual wage revisions have been based on overly high inflation expectations. The result has been increases in real wages beyond productivity gains and, therefore, rises in unit labor costs (Table 5). For example, during 2000, unit labor costs in the in-bond and construction industries have posted positive growth rates. Two out of the three remaining sectors reported rises in this indicator in July. Because of the volatility of this variable, however, it is difficult to detect an unambiguous trend.

<sup>11</sup> Data for the construction industry is available only up to May, 2000.

Table 5

**Unit Labor Costs and Output per Worker**  
Annual percentage change

	Unit Labor Costs							Output per Worker						
	2000							2000						
	Jan	Feb	Mar	Apr	May	Jun	Jul	Jan	Feb	Mar	Apr	May	Jun	Jul
Manufacturing Industry	-2.5	-3.4	-3.1	4.3	-1.4	1.8	0.7	7.2	8.5	6.9	1.9	7.5	4.9	4.5
Non-bond Industry	3.1	1.7	5.5	0.8	7.1	7.6	5.9	1.5	3.4	0.1	1.5	2.8	-0.1	1.2
Construction	13.9	17.3	5.7	12.2	6.2	nd.	nd.	-14.2	-18.5	-8.9	-14.4	-10.0	nd.	nd.
Wholesale Commerce	0.8	-0.8	5.1	9.0	-1.9	5.1	1.5	4.3	8.7	2.2	-1.1	9.3	4.0	1.7
Retail Commerce	-2.7	-6.2	6.8	-2.2	-4.1	7.8	-1.2	7.3	14.2	-0.4	8.4	9.7	1.6	5.9

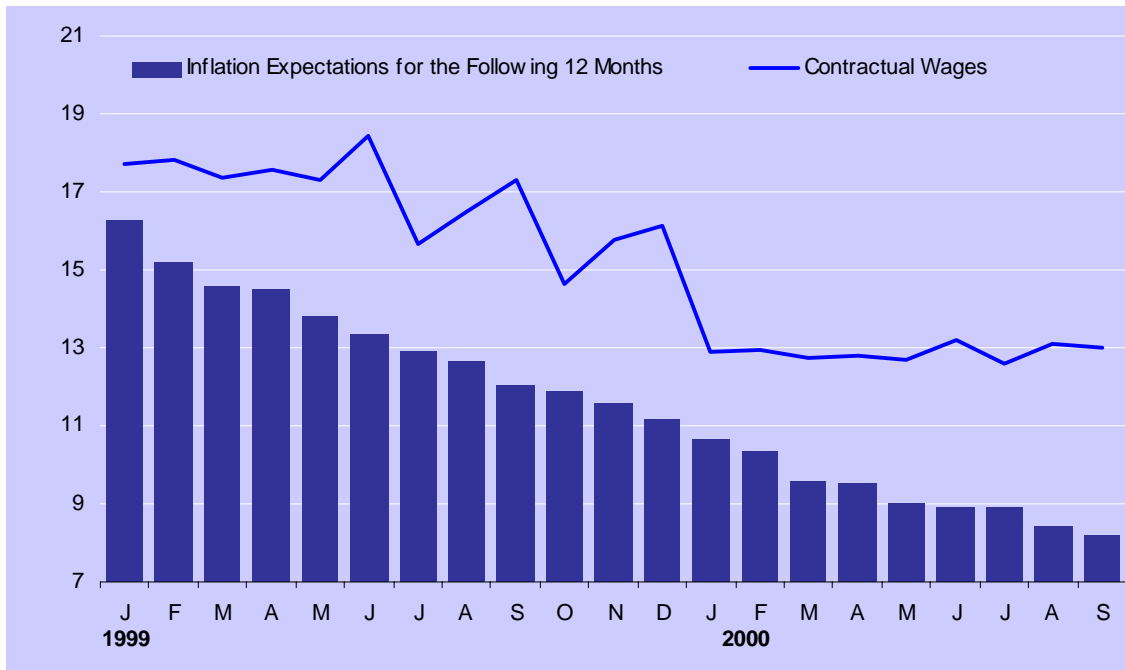
Source: Prepared with information from INEGI.

Available information suggests that the growth of real wages and productivity decreased in the quarter being analyzed. However, the deceleration of productivity was even greater, causing unit labor costs to increase in almost all sectors. If this trend is confirmed, the resulting cost increases could eventually represent additional inflationary pressures.

#### II.2.2.2. Contractual Wages

At the time this report went to press, the only statistics available for the entire third quarter of 2000 refer to contractual wage revisions. Inasmuch as contractual wages remain in force for the twelve months following their revision, their increases affect total compensation during that same interval. The average nominal increase in contractual wages during the first semester of 2000 was 12.9 percent, while expected inflation for the following twelve months averaged 9.7 percent. During the third quarter of 2000, increases in nominal contractual wages averaged 13 percent, while the expected inflation for the following twelve months was 8.5 percent (Graph 10). In other words, *ex-ante* increases in real wages have expanded throughout the year.

**Graph 10 Contractual Wages and Inflation Expectations for the Following 12 Months**  
Annual percentage change



Source: Survey of the Expectations of Private Sector Economic Specialists, Banco de México; and Ministry of Labor.

The analysis of the evolution of contractual wages for the various sectors of the economy confirms that their high nominal growth has not been contained. In the sectors that produce manufactured goods (mainly goods traded internationally), the increase in contractual wages until September ranged between 12.5 and 14.0 percent. In other sectors, this increase has remained stable throughout the year, at approximately 12.5 percent, except in July and September, when an increase higher than the average was posted (Table 6).

**Table 6 Contractual Wages per Sector**  
Annual percentage change

	2000								
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Manufacturing	13.4	13.6	13.3	14.0	13.8	13.9	12.5	13.9	13.3
Other Sectors	12.4	12.2	12.3	12.3	12.1	12.5	13.8	12.2	13.8

Source: Prepared by Banco de México using information provided by the Ministry of Labor.

In conclusion, the recent trend in wages shows some aspects that must be closely observed:

- a) The growth in nominal wages has been reflected in most sectors by increases in unit labor costs.
- b) The decline in inflation expectations, along with stability in the growth rate of nominal contractual wages, has led to a rise in the expected rate of increase in real wages beyond the level considered sustainable given the productivity gains attainable over the medium-term.
- c) For two consecutive quarters, nominal increases granted in wage negotiations have been greater than those forecasted by private sector analysts.<sup>12</sup>

If the above trends consolidate, companies will very likely attempt to transfer higher unit labor costs on to the prices of their products, in order to prevent reduced profits. As stated in the *Inflation Report* for April-June 2000, the results of wage negotiations and the evolution of unit labor costs must be carefully monitored, in order to evaluate whether the recent behavior of these variables is sustainable in the future and if higher unit labor costs are being transferred to consumer prices.

### II.2.2.3. Employment

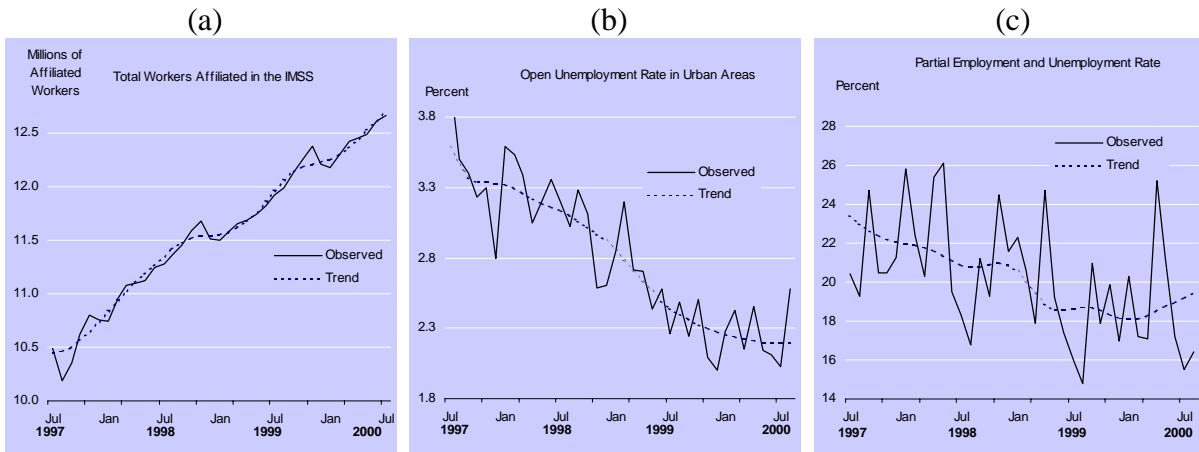
During the third quarter of this year, employment continued to be vigorous, notwithstanding that the annual growth rate went from 6.6 percent in the first quarter to 6.2 percent in the third quarter. From late December 1999 to the end of September 2000, the number of employees (permanent and temporary urban employees) affiliated with the IMSS (Mexican Social Security Institute, *Instituto Mexicano del Seguro Social*) rose by 628,773 to a total of 12,645,693 (Graph 11a). During the first eight months of the year, the unemployment rate ranged between 2.03 and 2.58 percent, reaching its historic minimum in July. In August, however, this rate reported a significant rebound (Graph 11b). On the other hand, the rate of partial employment and unemployment (employment under 35 hours per week) showed a slight upward trend (Graph 11c).

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<sup>12</sup> Reported in Banco de México's Survey of the Expectations of Private Sector Economic Specialists.

**Graph 11**

**Employment and Unemployment Indicators**  
Trend series



According to available information, employment and unemployment indicators performed favorably in the period under study. Employment continued to grow at a practically constant pace, while the rate of open unemployment rebounded, although still at historically low levels. This upsurge may have been due to the moderate deceleration in economic activity recently suggested by some indicators. Lastly, regional labor markets present very diverse situations, with some areas of the country reporting a shortage of labor, especially skilled labor.

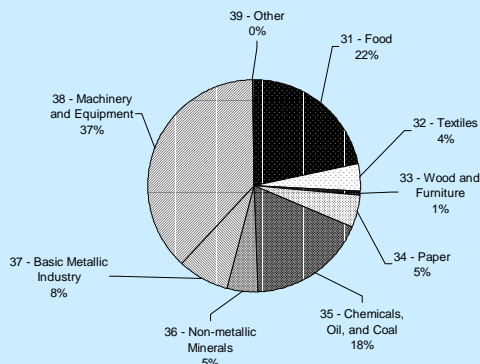
### Industrial Sector Productivity in Mexico

This section presents a general panorama of recent productivity in Mexico's main industrial areas. The source of data used for this analysis is the Monthly Industrial Survey (EIM) conducted by the INEGI. This survey does not include the in-bond industry. The analysis is focused on the two-digit classification of sub-sectors as follows:

31. Food products, beverages and tobacco.
32. Textiles, clothing and leather apparel.
33. Wood and wood products (including furniture).
34. Paper and paper products, printing and publishing.
35. Chemicals, oil and coal by-products.
36. Non-metallic mineral products (excluding oil and coal by-products).
37. Basic metals.
38. Metallic products, machinery and equipment (including surgical and precision instruments and the automotive industry).
39. Other manufacturing industries.

Taking into account the industrial output as of June, 2000, the importance of each of the above sub-sectors in total output is shown in Graph 1.

**Graph 1**  
RELATIVE SIGNIFICANCE OF EACH INDUSTRIAL SUB-SECTOR

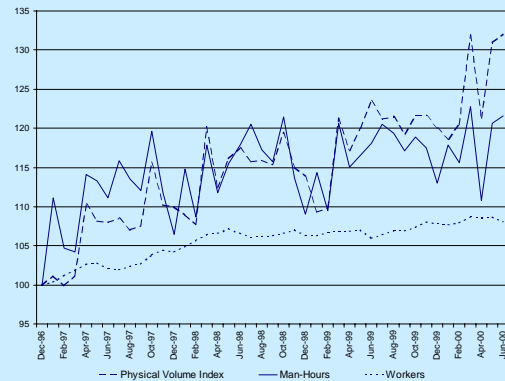


For each of the above sub-sectors, the EIM measures the principal variables indicative of industrial activity. The variables analyzed in this section are the index of employed personnel, which includes hourly workers and salaried employees, and the index of man-hours worked. The measurement of production levels is the "Index of Physical Volume of Manufacturing/Transformation Industries", also published by the INEGI (Graph 2). The above data is used as the basis for calculating two productivity indicators. The first indicator measures output per worker, and the second indicator measures output per man-hour worked (Graph 3).

The data used for the following analysis include figures from December, 1996, to June, 2000. This period was defined in order to avoid the statistical distortion

generated by the 1995 crisis and the subsequent recovery during the first months of 1996.

**Graph 2**  
EMPLOYMENT AND OUTPUT  
Dec.96 = 100



**Graph 3**  
PRODUCTIVITY  
Dec.96 = 100

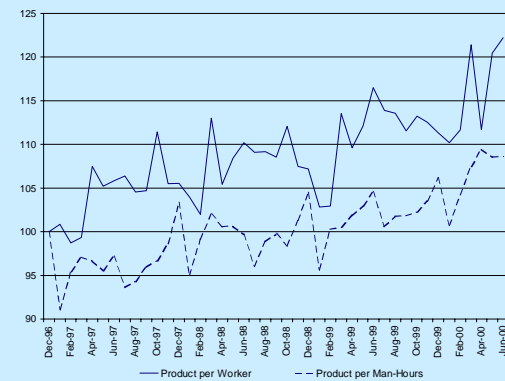


Table 1 shows that during the period analyzed, there was an average annual increase of 1.91 percent in the number of workers. The sub-sector with the highest growth in employment, in the amount of 5.06 percent, was Other Manufacturing Industries (39). The total number of workers in the Wood and Wood Products (33) sub-sector shows an average annual contraction of 1.54 percent. The number of man-hours worked shows an average annual increase of 3.04 percent, far higher than that reported in the number of workers. The Basic Metals sub-sector shows a reduction of 0.03 percent.

Output shows a significant average annual increase of 6.92 percent in the period. The sub-sectors with greatest growth are Metallic Products, Machinery and Equipment (38) and Other Manufacturing Industries (39), with 11.18 percent and 9.23 percent, respectively. The production of the Wood and Wood Products sub-sector (33) decreased by 0.88 percent.



Productivity, measured by the ratio of the index of physical volume over the index of number of workers, presents an average annual increase of 4.92 percent. The productivity figure that is obtained by dividing the index of physical volume over the index of man-hours worked shows a lower average annual increase, 3.77 percent. In addition, the difference between the two productivity estimates varies across the sub-sectors analyzed.

For example, the sub-sectors of Machinery and Equipment (38) and Wood and Wood Products (33) show increases of 6.35 percent and 0.67 percent using the first measurement,

while increases of 4.97 percent and -1.33 percent result from the second measurement.

The above results seem to suggest that a portion of the increased output has been achieved by the greater number of hours worked per employee and not solely by increases in productivity. In addition, changes in measurement are likely to be affected not only by the index used, but also by the characteristics of the specific sub-sector being analyzed.

**Table 1**  
**Employment, Output and Productivity**  
Annual Percentage Change\*

Year	Industrial Food and Textiles		Wood and Paper		Chemicals, Non-Metallic		Basic Machinery and Equipment Other			
	Sector 3	Beverages 31	Wood 32	Products 33	Paper 34	Oil and Coal 35	Metallic Minerals 36	Metals 37	Equipment 38	Other 39
1997	4.22	0.83	1.83	1.93	4.05	4.08	1.75	6.67	12.17	4.87
1998	1.98	2.77	1.47	-0.63	-0.86	1.96	1.85	-1.21	3.13	1.46
1999	1.42	1.29	2.40	-4.34	2.95	-0.10	-1.21	-1.22	3.13	4.29
Jun-2000	1.94	0.41	0.92	-2.28	2.36	0.51	1.82	2.85	4.23	11.44
Average	1.91	1.29	1.04	-1.54	1.55	1.13	1.30	-0.07	4.54	5.06
1997	6.46	2.18	4.30	-1.00	6.49	5.53	6.28	7.97	19.10	2.29
1998	2.42	2.65	1.26	2.02	0.11	3.46	2.47	-1.09	3.03	7.27
1999	3.66	2.17	4.44	-2.75	4.98	1.50	3.85	0.61	6.94	10.22
Jun-2000	2.98	0.30	2.86	-1.44	3.33	0.10	3.84	3.26	7.00	12.61
Average	3.04	1.65	2.65	0.46	2.73	1.64	3.10	-0.03	5.92	5.98
1997	10.01	5.16	6.67	7.52	9.89	5.58	2.20	12.22	23.13	9.01
1998	3.55	4.66	-5.67	2.20	2.85	6.93	3.37	-7.11	4.78	17.26
1999	5.35	5.41	4.99	0.89	5.22	2.30	5.87	11.23	7.47	-5.71
Jun-2000	6.92	2.72	7.35	-3.30	-0.87	4.45	7.51	5.46	13.80	19.79
Average	6.92	6.21	3.81	-0.88	5.09	6.15	5.08	2.86	11.18	9.23
1997	5.56	4.29	4.75	5.48	5.61	1.44	0.44	5.20	9.77	3.95
1998	1.55	1.84	-7.04	2.85	3.75	4.88	1.49	-5.97	1.60	15.57
1999	3.88	4.06	2.53	5.47	2.21	2.41	7.16	12.61	4.21	-9.59
Jun-2000	4.88	2.30	6.37	-1.05	-3.16	3.92	5.59	2.54	9.18	7.50
Average	4.92	4.86	2.73	0.67	3.49	4.96	3.73	2.93	6.35	3.96
1997	3.33	2.92	2.27	8.61	3.19	0.05	-3.84	3.94	3.38	6.57
1998	1.10	1.96	-6.84	0.18	2.73	3.36	0.88	-6.08	1.70	9.31
1999	1.64	3.16	0.52	3.75	0.23	0.79	1.95	10.56	0.49	-14.45
Jun-2000	3.83	2.41	4.37	-1.89	-4.06	4.35	3.53	2.13	6.35	6.38
Average	3.77	4.49	1.12	-1.33	2.30	4.44	1.92	2.90	4.97	2.15

Note: The annual average rate is calculated by using the formula:  $\left(\frac{\text{final index}}{\text{initial index}}\right)^{(12/36)} - 1$  \* 100; the indexes used are as of June, 1997, and June, 2000.

\* December-December of the previous year, except June-June of the previous year for 2000.

### II.2.3. Aggregate Supply and Demand

As thoroughly discussed in previous *Inflation Reports*, if aggregate demand grows faster than the economy's production capacity, medium-term inflationary pressures are likely to ensue. Such pressures appear directly in the non-tradable goods markets, and indirectly in the tradable goods market, by widening the trade deficit and causing potential exchange rate effects. Therefore, in the

following pages, the evolution in aggregate supply and demand as well as in the balance of payments is analyzed in order to evaluate if the recent behavior of these items suggests the existence of inflationary pressures.

During the second quarter of the year, the vigorous growth in output and in aggregate demand continued (Table 7). The latter grew at an annual rate of 11.2 percent in the period. The components of aggregate demand that showed an increase in their annual growth rate during the quarter were private consumption and public investment. Growth in private consumption has been driven by the rise in real wages and employment, as well as by the positive perspectives for the economy's future. Worthy of emphasis is the high growth in public investment, which expanded to an annual rate of 23.6 percent. However, the rate of increase of total investment slowed, given the deceleration in private investment posted since the first quarter of the year.

Although GDP reacted favorably to the expansion in aggregate demand, its growth was not sufficient to fully satisfy the growth in demand. As a result, imports increased more than exports.

In spite of the relative scarcity and preliminary nature of the information available upon publication of this Report, available data suggest that during the third quarter, the internal component of both aggregate demand and production may have already been decelerating. Yet growth in domestic demand, particularly consumption, is still at very high levels and greater than that of output. If this diagnosis is correct, there is increased risk that the dynamism of demand may eventually translate into higher prices for non-tradable goods and into exchange rate pressures associated with a larger trade deficit.

Table 7

**Aggregate Supply and Demand in 1999 and 2000**  
Real annual percentage change

	1999					2000	
	I Qrt.	II Qrt.	III Qrt.	IV Qrt.	Annual	I Qrt.	II Qrt.
Aggregate Supply	2.4	5.0	7.2	8.3	5.8	11.9	11.2
GDP	1.8	3.1	4.3	5.2	3.7	7.9	7.6
Imports of Goods and Services	4.5	11.4	16.6	17.9	12.8	25.6	22.5
Aggregate Demand	2.4	5.0	7.2	8.3	5.8	11.9	11.2
Total Consumption	2.1	3.1	3.4	6.7	3.9	8.7	9.0
Private	2.2	3.3	4.0	7.6	4.3	9.2	9.7
Public	1.8	1.6	-1.3	1.4	1.0	5.0	4.9
Total Investment	3.8	6.1	5.2	8.1	5.8	11.6	10.5
Private	5.0	8.5	9.3	13.2	9.0	12.8	9.5
Public	-7.8	-18.2	-22.9	-12.5	-15.3	-2.0	23.6
Exports of Goods and Services	7.8	14.2	18.8	14.6	13.9	17.0	15.9

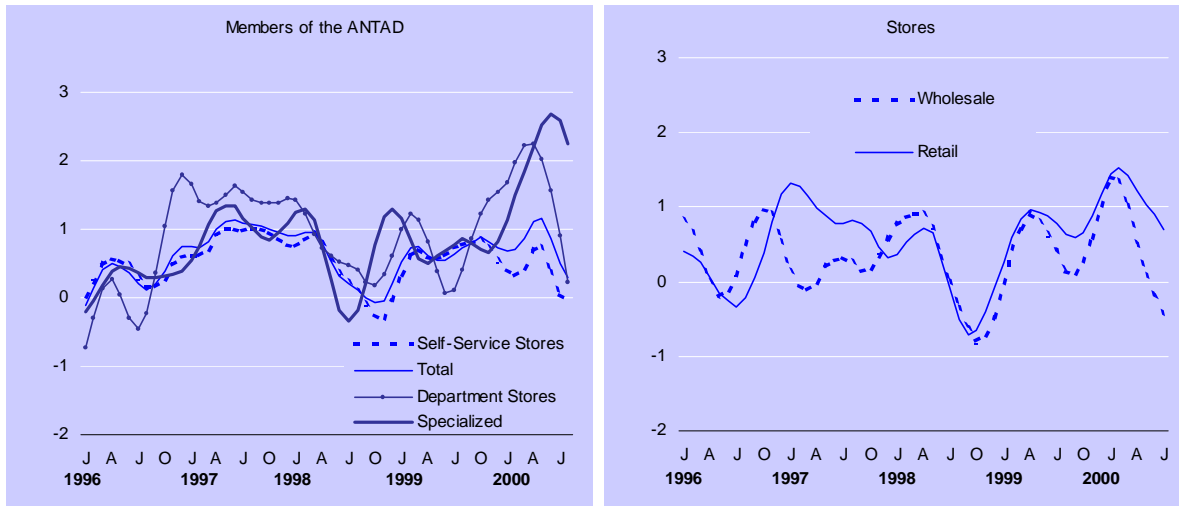
Source: National Accounts System of Mexico (*Sistema de Cuentas Nacionales de México*, INEGI).

Regarding the behavior of private demand, available information suggests that consumption is showing an incipient deceleration, while growth in investment rebounded in the third quarter. The sum of these factors, along with the expected deceleration in public spending, points to a slight moderation in the expansion of domestic demand in the third quarter and a favorable composition of aggregate spending, due to the increased importance of investment.

The previous evaluation is based on the following figures. In reference to the evolution of consumption, the annual growth rate of total store sales reported by the National Association of Self-Service and Department Stores (ANTAD) fell from 11.3 percent in the second quarter to 9.5 percent in the July-August period, while the monthly growth of its trend series showed a decrease in all its components. Meanwhile, the monthly rise in the trend series of the retail and wholesale sales of commercial establishments reported by the INEGI declined as well (Graph 12). The growth in the consumption of various durable and non-durable goods, based on indicators compiled by Banco de México, suggests that the rate of expansion in private consumption has begun to decline slightly, although it remains at a high level.

Graph 12

**Sales Index of the Commerce Sector: Trend Series**  
Monthly percentage change



Source: National Association of Self-Service and Department Stores (ANTAD) and the INEGI.

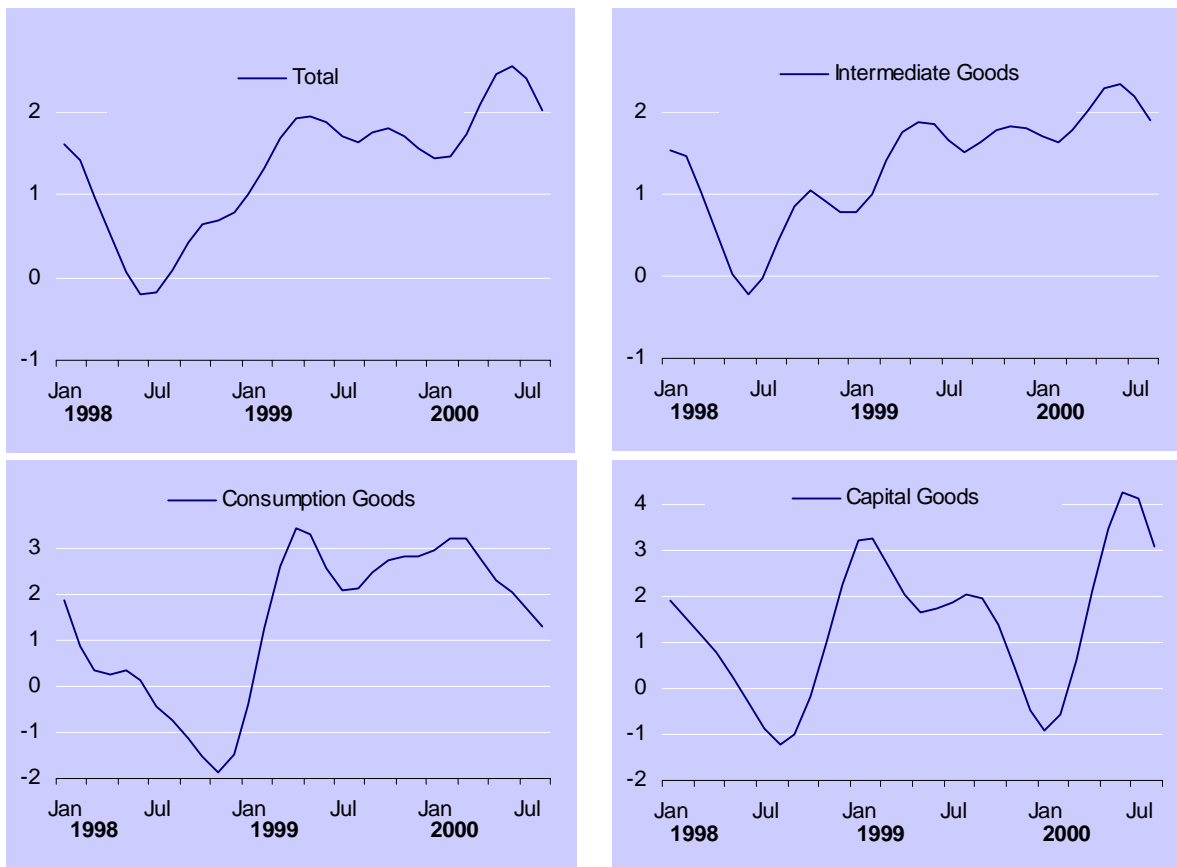
Imports of consumer goods showed a slight deceleration as well (Graph 13), as their annual rate of growth decreased from 39.4 percent in the second quarter to 33.4 percent in July-August. Imports of intermediate goods have also given indications of slower monthly growth rates, which is a sign of a more gradual pace of expansion in consumption and production. Based on this preliminary information, Banco de México forecasts a probable annual growth rate greater than 8 percent in the third quarter (compared with 9.7 percent in the second quarter).

The real annual growth rate for gross fixed investment rose from 6.8 percent in April to 11.2 percent in June and 12.8 percent in July. This upward trend and the renewed momentum shown by capital goods imports (with a growth rate that increased from 13.6 percent in the second quarter to 24.6 percent in July-August), point to an anticipated annual growth in investment close to 12 percent in the third quarter of the year.

Graph 13

### Merchandise Imports: Trend Series

Monthly percentage change



Statistical evidence indicates that the expansion in domestic supply may have been lower in the third quarter. The annual growth rate of industrial production continued to decrease, from 8.7 percent and 7.2 percent in the first and second quarters, to 6.9 percent in July-August. The Global Indicator of Economic Activity (IGAE) showed significant deceleration in its annual growth rate, falling from a range between 7.0 percent and 8.7 percent in the first half of the year, to 6.6 percent in July. Based on the preceding information, Banco de México estimates that the annual growth in GDP during the third quarter was approximately 7 percent.

The assumption that the domestic demand growth rate was greater than that of output during the third quarter is supported by the widening of the trade deficit from the second to the third quarter of the year (Graph 14), despite the rise in petroleum exports. Thus, the average monthly deficit increased from 449 million dollars in the second quarter to 668 million dollars in the July-August period. In

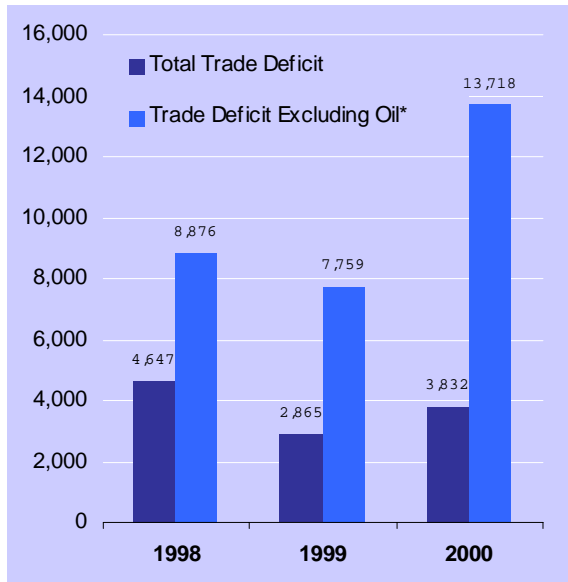
addition, the annual percentage growth in the accumulated deficit went from 13.4 percent in June to 33.7 percent in August. The significant increase in the value of petroleum exports has prevented an even greater deterioration in external accounts. Therefore, by excluding crude oil exports from external accounts, as well as gasoline, butane and propane imports, the non-oil trade deficit increased from a monthly average of 1.684 billion dollars in the second quarter to 2.049 billion dollars in the July-August period. Thus, the accumulated non-oil trade deficit as of August was 76.8 percent higher than that of the same period in 1999. In conclusion, the analysis of the monthly trade deficit points in the same direction, given that the trend series of the total and non-oil trade deficit widened considerably during the third quarter. This figure represents a deterioration with respect to that published in the *Inflation Report* of the second quarter.

The increase in the external financing requirements has not been reflected in exchange rate pressures, since these needs have been covered by a greater supply of external funds, principally long-term resources. In this sense, it should be emphasized that during the first half of the year, direct foreign investment financed 83 percent of the current account deficit.

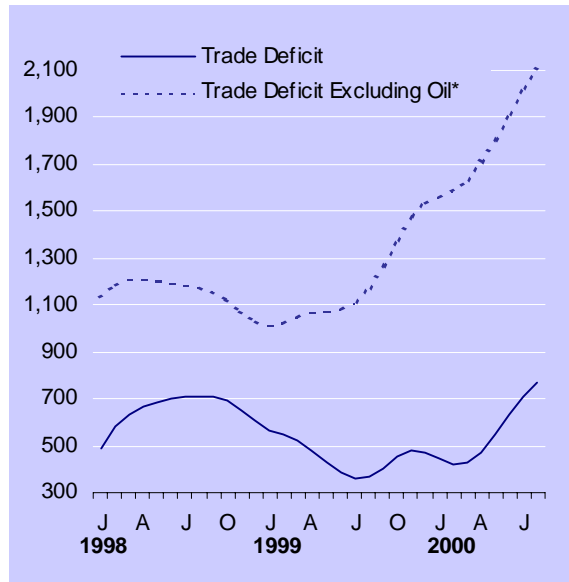
Consequently, the pressures to date on the trade balance caused by the vigorous growth in aggregate demand have been counteracted to a large extent by the substantial increase in the value of oil and manufacturing exports to the United States. In addition, as in previous years, the current account deficit has been financed primarily by long-term capital inflows. However, the dependence on oil revenues (currently very abundant) has caused the economy to be significantly more vulnerable to an eventual drop in crude oil prices or an abrupt deceleration in the US economy.

**Graph 14 Trade Deficit: Total and Excluding Oil**  
In millions of dollars

January - August



Trend



\* Oil exports as well as gasoline, butane and propane imports are excluded. Note that such imports were not excluded in previous reports.

Although domestic demand growth has been greater than that of production until now, no measurable impact has been detected on the behavior of most non-tradable goods prices. This conclusion is supported by the fact that the core inflation index for services has continued to fall at the same rate as during the first half of the year. The recent behavior of the annual inflation of the education prices sub-index, however, could be the first evidence of the impact of the vigorous domestic demand on the prices of non-tradable goods and services. Such pressures are possibly being reflected in the rigidity exhibited by contractual wages and higher unit labor costs. Therefore, demand growth has perhaps been affecting production costs, and the previously-mentioned increases could eventually be transmitted to consumer prices.

**II.2.4. Prices of Goods and Services Provided or Regulated by the Public Sector**

The prices of goods and services provided or regulated by the public sector have an important impact on inflation. Their effect is not only direct but also indirect, and is manifested through the influence exerted on the prices of goods and services as well as

through the revised inflation expectations of economic agents in response to such price changes.

The policy for the prices of goods and services provided or regulated by the public sector in the year 2000 was defined at the beginning of the year in accordance with the General Criteria for Economic Policy (*Criterios Generales de Política Económica*) and the Federal Revenue Law (*Ley de Ingresos de la Federación*). In addition, the price strategy for these goods and services responds to considerations other than short-term inflation targets. Such considerations include maintaining sound public finances and correcting distortions in relative prices.

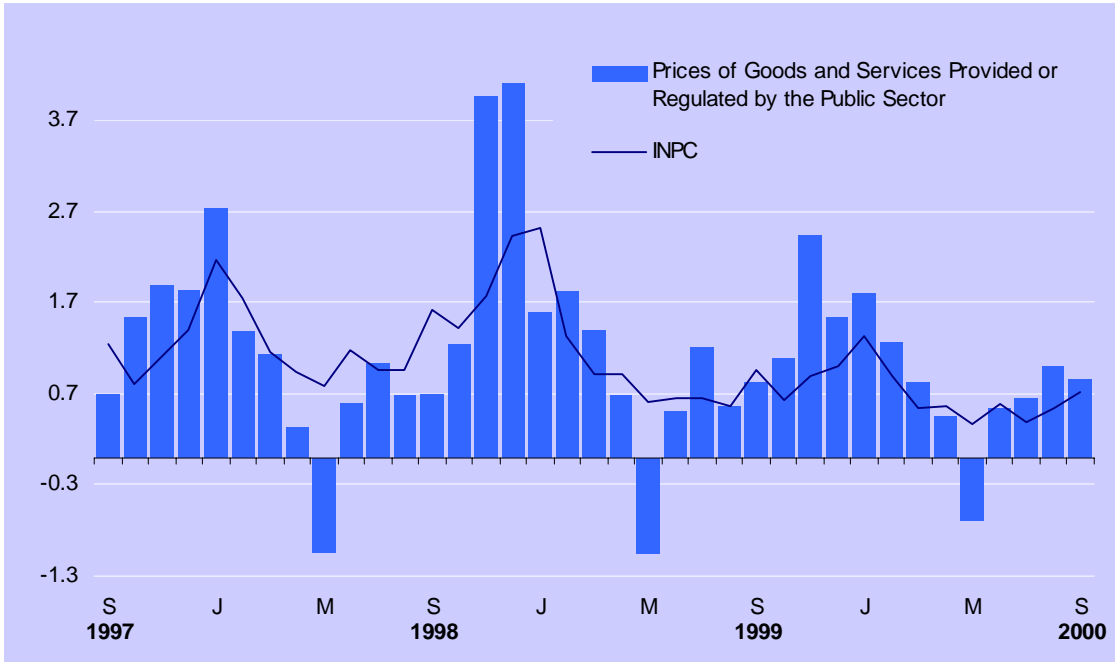
In July, August and September, the monthly changes in the sub-index of prices for goods and services provided or regulated by the public sector were 0.65, 1.00 and 0.84 percent, respectively. Meanwhile, during the same months, the corresponding increases in the INPC were 0.39, 0.55 and 0.73 percent (Graph 15). The growth in this sub-index during the quarter under study was due to the price hikes for the following goods and services: gasoline, LPG for domestic use, and urban bus fares. Most outstanding was the accumulated increase in the price of LPG.

During the first nine months of 2000, LPG prices in international markets rose by 44.4 percent and by 28.0 percent in the Mexican market (an annual rate of 48.0 percent as of the end of September). The behavior of LPG prices in Mexico responds to the need for minimizing the difference between domestic and international prices, in order to prevent a price lag that could have a significant impact on the public sector deficit. This year, approximately 36 percent of the total consumption of LPG has been satisfied with imports.



Graph 15

**Price Index for Goods and Services Provided or Regulated by the Public Sector and INPC**  
 Monthly percentage change



In the third quarter of 2000, the annual inflation in the index for prices for goods and services provided or regulated by the public sector was approximately 12 percent. This rate was noticeably larger than INPC growth during the same period. Therefore, for the second consecutive quarter, the increase in the prices of goods and services provided or regulated by the public sector was higher than general inflation, resulting in additional inflationary pressure. An additional cause for concern is the fact that the annual increase in the index has surpassed 12 percent in almost every month of the year.

### Fiscal Policy and Inflation

Public finance plays a fundamental role in the behavior of inflation. Through its revenues and expenditures, the government directly influences price movements in two ways: a) by contributing to the evolution of aggregate demand, and b) by affecting the behavior of the prices of goods and services provided by the public sector. In addition, government actions affect inflation indirectly by modifying economic agents' inflation expectations and their perception regarding the solvency of the public sector and the price levels of the goods and services it provides. A situation in which public finances are not perceived as sound and sustainable may have several effects on inflation. Described below are the channels through which the status of public finances influences inflation:

1) Solvency of the Public Sector. Since one of the traditional sources of financing for the public sector has been the inflation tax, economic agents could assume that in circumstances of growing fiscal requirements, the government would be tempted to resort to this type of financing, thereby causing an increase in general price levels. Such an action would result in higher inflation expectations and complicate future stabilization.

2) Current Fiscal Stance. Even if the public sector is solvent over the long term, a fiscal deficit in the short term could represent an obstacle for reducing inflation. For example, an expansive fiscal policy would generate aggregate demand pressures and push the prices of non-tradable goods upward. In addition, excess in government spending and the appearance of increased needs for public sector financing would put pressure on financial markets, especially in emerging economies. The result would be a deterioration of country risk, leading to depreciations in the exchange rate and higher domestic real interest rates. Exchange rate depreciations would very likely trigger an upward adjustment in the price of tradable products, and therefore higher inflation. In addition, increases in country risk and interest rates would raise the cost of the stabilization process.

The above two points further emphasize the usefulness of coordinating fiscal and monetary policy actions, in order to moderate price increases. In particular, the costs generated by declining inflation are minimized if the actions of monetary and fiscal authorities are congruent. In addition, the transition towards lower inflation rates would occur more quickly.

This fact is particularly important in small, open economies, since intensified monetary restriction would raise real interest rates, thus promoting an appreciation in the exchange rate and probably causing imbalances in the country's external accounts. Coordinated action by both policies would reduce external imbalances by promoting domestic savings and reducing the demand for imports.

If fiscal imbalances were to occur, they could be remedied through measures that affect the various expense and revenue components of the public sector's consolidated budget. The effects of fiscal adjustment on inflation would depend to a large degree on the instrument utilized. Actions such as reductions in government spending improve the public balance and limit growth in aggregate demand. Increases in indirect taxes would result in a one-time rise in the general price level. In this case, the monetary authority must remain vigilant and react in a preventive manner with regard to any indication of deterioration in medium-term inflation expectations. Adjustments could also be made through an increase in the prices of goods and services provided by the public sector. Generally, these products and services are important elements of the consumption basket as well as in the production process. Therefore, increases in these prices would generate significant secondary effects. In such a situation, the central bank would have to tighten monetary policy in order to prevent a deterioration in medium-term inflation expectations. An immediate effect of this type of measure would be higher real domestic interest rates, and a resulting increase in the federal government's debt service. This phenomenon would probably reduce, and could even eliminate, the positive fiscal effect of the initial rise in the prices of goods and services provided by the public sector.

In sum, a structurally sound fiscal situation is a necessary condition for reducing inflation and subsequently maintaining it at low levels. In general, the objectives of reduced inflation and price stability announced by the authorities are only credible in the context of a sound short- and medium-term fiscal stance. Moreover, the decline in inflation will be less costly and will occur more quickly if monetary and fiscal authorities act in a coordinated manner.

### II.2.5. Public Finances

During the first half of 2000, public finances were consistent with the corresponding program established at the

beginning of the year. From January to June, the public sector posted a 23,124 million peso surplus, 46.4 percent higher in real terms than the figure for the same period of the previous year. The federal government's non-oil revenues for the quarter increased by 6.6 percent in real terms, with respect to the same period of 1999. On the other hand, oil revenues grew by 26.4 percent in real terms. The above performance is consistent with the public deficit target for the year of one percent of GDP. In this regard, it is important to emphasize that the favorable evolution of the federal government's oil revenues has been partially offset by lower than anticipated non-recurring revenues.

#### **II.2.6. Transitory Phenomena that Affected Inflation**

In the third quarter of 2000, the accumulated increase in the index of education prices was 12.2 percent, reflecting the increase in tuition that occurs at the beginning of each school year. However, the recent performance of this index does not compare favorably against the 14.71 percent increase observed in the same quarter of 1999, since the decrease in the annual growth rate of this sub-index during the past twelve months was lower than that posted by the INPC and by the core inflation index for services.

**Considerations regarding the Demand for Education Services**

While inflation in general has decreased significantly, that of the prices of education services has declined only moderately. From January, 1999, to September, 2000, the annual growth rate in tuition fell slightly, from 16.76 to 15.09 percent. In contrast, the annual rate for the INPC fell from 19.02 to 8.83 percent.

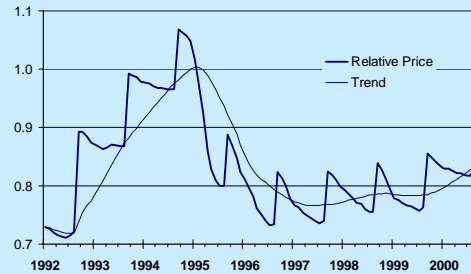
The difference in the dynamics of education prices and the INPC could reflect the education sector's specific demand pressures, probably associated with 1) the prolonged strike at the UNAM from 1999 to 2000, or 2) pressures derived from the expansion in aggregate demand. If the latter were the case, such pressures could arise in other markets as well. Thus, determining the origin of these pressures is important.

In order to evaluate both hypotheses, this insert analyzes the evolution of the items included in the sub-index of education prices, at both the national and regional level. The logic of the analysis is as follows: if the expansion in the demand for education services were due principally to the UNAM strike, then the growth rate of tuition for vocational education, language academies, high schools and universities should show have decelerated less than the inflation in tuition for other education levels. In addition, in this case, the rate of tuition increases in Mexico City would have decelerated at a slower rate than the inflation in tuition throughout the rest of Mexico.

On the other hand, if the increased demand for education services had been caused by the expanded aggregate demand, the changes in the growth rate of tuition prices would be similar in magnitude to those of other education levels and cities in Mexico. In this respect, the evidence indicates the following:

1. The crisis of 1995 produced an important lag in the relative price of education, which has been partially reversed (Graph 1). This recovery could be related to the strength of aggregate demand.
2. The inflation in kindergarten, elementary school and junior high school tuition has continued to be high. From January, 1999, to August, 2000, the rate was approximately 19 percent, and declined to 15.75 percent in September.

**GRAPH 1**  
RELATIVE PRICE OF EDUCATION COMPARED TO THE INPC



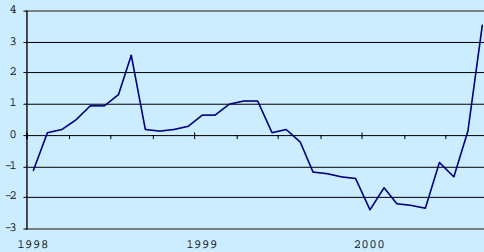
3. From April, 1998, to date, the annual inflation in tuition for universities, high schools and vocational education has been lower than for kindergarten, elementary schools and junior high schools. However, this gap narrowed during 1999, causing a rebound in the annual inflation in tuition for the first group, while that of the second group slightly decreased. In the year 2000, the difference between the growth rates in both groups has remained constant (Graph 2).

**GRAPH 2**  
DIFFERENCE BETWEEN THE ANNUAL INFLATION RATE OF UNIVERSITIES, HIGH SCHOOLS AND VOCATIONAL EDUCATION, AND THE ANNUAL INFLATION RATE OF KINDERGARTENS, ELEMENTARY SCHOOLS AND JUNIOR HIGH SCHOOLS  
Percent



4. From August, 1999, to July, 2000, the annual inflation in tuition for universities, high schools, vocational education and language academies in Mexico City was below that for the rest of Mexico.

**GRAPH 3**  
**DIFFERENCE BETWEEN THE ANNUAL INFLATION RATE FOR**  
**UNIVERSITIES, HIGH SCHOOLS AND VOCATIONAL EDUCATION IN**  
**MEXICO CITY, AND THAT OF THE REST OF MEXICO**  
 Percent

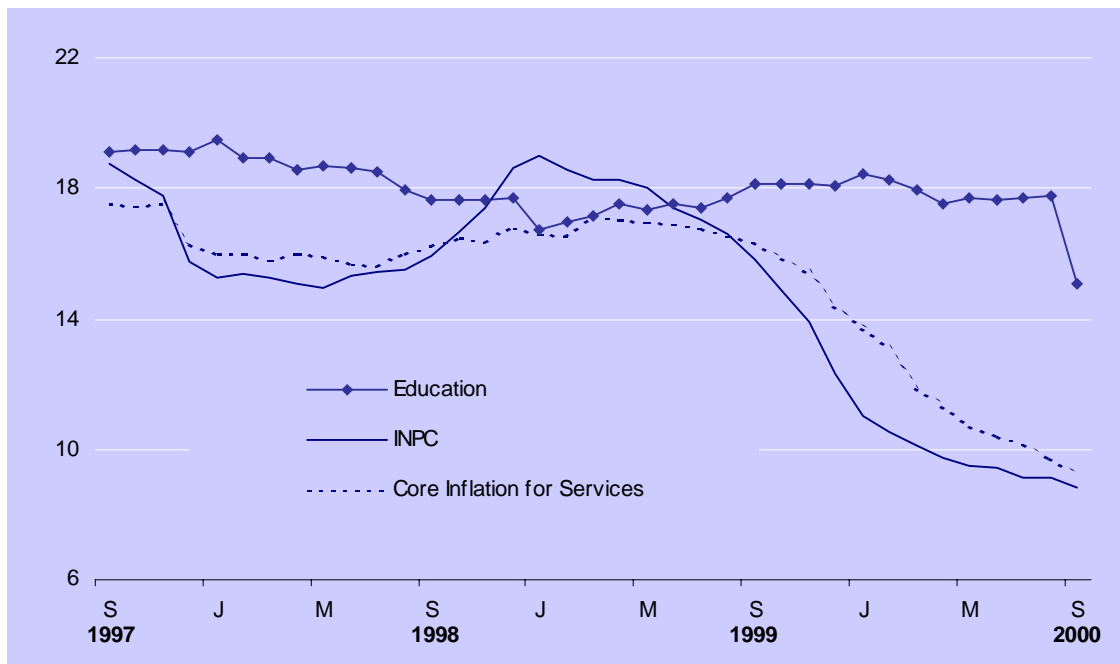


As of May, 2000, the difference had narrowed. However, in August and September of 2000 the tuition inflation rate for these institutions in Mexico City rebounded (Graph 3).

As a result, the evidence shows that even though the UNAM strike may have exerted upward pressure on tuition fees at universities, high schools, vocational education and language academies, the high growth rate of tuition at other education levels is not explained. Therefore, it is reasonable to conclude that the vigorous aggregate demand affected the demand for education services at all levels, translating into a slower decline in the inflation of the sub-index of education prices, and allowing the latter to recover part of the loss suffered in recent years.

Starting in 1999, annual inflation in the education sector remained close to 18 percent, falling to 15.08 percent in September of 2000. Yet, both general inflation and the core inflation index for services have shown a more pronounced downward trend (Graph 16). Therefore, adjustments in the prices of the education sector have not been in line with the drop in general inflation. This fact could be due to demand pressures arising from two mutually-supporting effects: a) a greater demand for private education at the high school and university level due to the prolonged strike at the National Autonomous University of Mexico (UNAM), and b) an additional increase in the demand for private education at all levels due to the strong economic growth registered throughout the year, as well as current optimistic expectations.

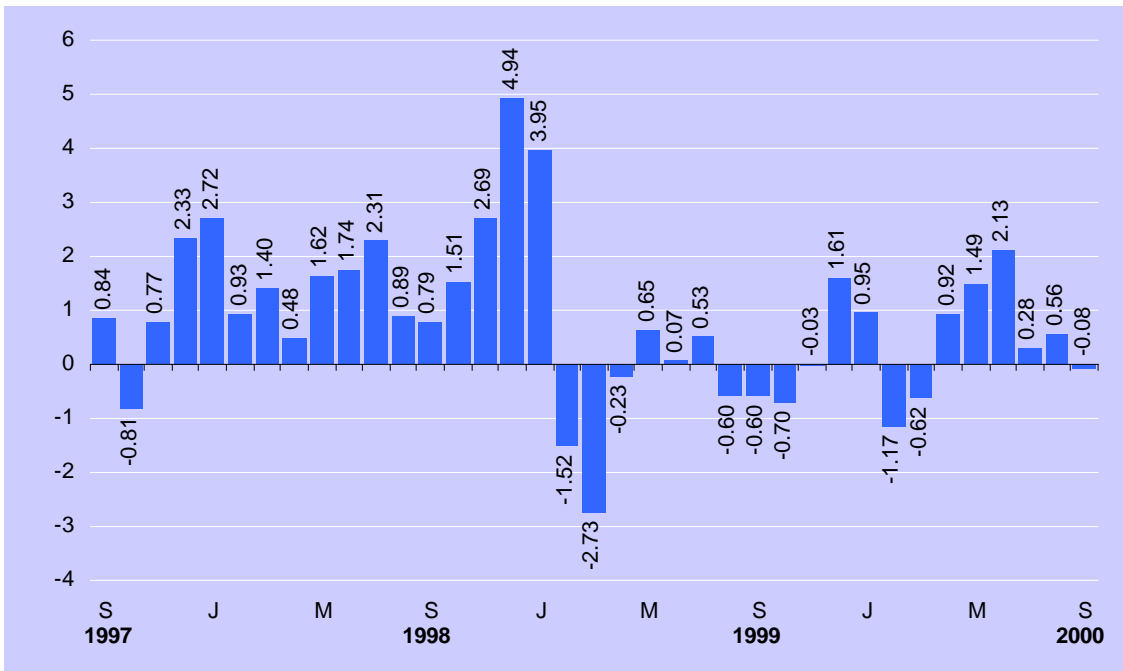
**Graph 16** **Index of Education Prices and the INPC**  
Annual percentage change



In September of 2000, the growth in the prices of agricultural and livestock products was noticeably lower than that of inflation in general. In addition, the accumulated increase in these prices during the quarter was lower than that of the INPC (Graph 17). However, while the annual inflation in general decreased in August and September, that of agricultural and livestock goods increased. August showed important growth in this sub-index, reaching a rate of 0.56 percent. During that month, the prices of tomatoes, avocados and oranges experienced abrupt increases, which were completely corrected in September.

Graph 17

**Price Index of Agricultural and Livestock Products**  
Monthly percentage change



### III. Monetary Policy during the Period

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Since monetary policy measures have quite a delayed impact on inflation, the abatement of growth in prices requires a careful and timely diagnosis of the inflationary pressures that may materialize in the future. This section presents the considerations that led Banco de México to adjust its monetary policy stance during the third quarter, as well as an evaluation of the effect of this adjustment on inflation expectations and on nominal and real interest rates. In addition, an analysis of the trajectory of the monetary base and the evolution of other aggregates that may be used for assessing inflationary pressures is included.

#### III.1. Monetary Policy Actions

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During the third quarter of the year, Banco de México decided to reinforce the restrictive monetary policy stance on a single occasion. On July 31, the “short” was increased from 230 to 280 million pesos, and was maintained at that level for the remainder of the quarter.

Although progress in abating inflation during the year has been greater than anticipated, the tightening of monetary policy has been necessary to bring about a correction in the growth of domestic demand and a faster reduction of inflationary expectations, in order to keep such expectations consistent with medium-term inflation objectives and allow Mexico's inflation to converge with that of its main trading partners by the end of 2003.

The inflationary pressures associated with rapid growth in aggregate demand could affect the evolution of price levels for the remainder of 2000 and throughout 2001. This fact has been reflected in inflation expectations for the following twelve months and for next year that are not yet in accordance with official medium-term goals. Therefore, in order to reach targeted inflation, and due to the delayed effect of monetary policy on prices, the tightening of monetary policy was considered necessary.

Just as previous increases in the “short” implemented during 2000, the modification of July 31 responded to considerations of a



preventive nature. The decision was a reaction to the persistent and vigorous growth in domestic demand, which was even greater than that anticipated in the last *Inflation Report*. The information available at the time of the monetary tightening indicated that domestic demand, and consumption in particular, continued to rise at high rates. Some illustrative facts in that respect are presented in the following paragraphs:

- (a) In June, the ANTAD reported a 12.9 percent annual increase in total store sales in real terms<sup>13</sup>. Thus, real annual growth for the second quarter of the year reached 11.3 percent, compared to 8.5 percent in the first quarter.
- (b) According to INEGI's survey, in May retail and wholesale sales showed annual growth of 12.5 and 12 percent in real terms, respectively.
- (c) The IGAE (Global Economic Activity Indicator, *Indicador Global de la Actividad Económica*) reported by the INEGI showed annual growth of 7.2 and 8.6 percent in April and May.
- (d) Preliminary foreign trade information indicated that the accumulated total and non-oil<sup>14</sup> trade deficits for the first semester had risen by 27 and 83 percent over the previous year. In addition, between the first six months of 1999 and same period of 2000, imports of consumer goods expanded by 41 percent.

This information was the basis on which the Central Bank anticipated that real annual growth in GDP and consumption would reach 7 and 9 percent in the second quarter of the year, respectively.

As examined in greater detail in the Aggregate Supply and Demand section of this Report, the data recently published by the INEGI confirmed the above estimations regarding the high rates of expansion in domestic demand and consumption. In fact, GDP and consumption increased 7.6 and 9 percent in annual terms during the second quarter, and 7.8 and 8.9 percent in the first half of the year.

The above indicates that the decision to widen the "short" in order to reduce the growth rate of domestic demand was based on

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<sup>13</sup> Total store sales, measured in real terms, of the 99 ANTAD members.

<sup>14</sup> Excluding oil exports only.

a correct diagnosis of the economy's future evolution. The objective pursued was, and still is, to encourage a continual decrease in inflation in order to lay the foundation for a sustainable and equitable development process. In this sense, the upward trend of the total and non-oil trade deficits underlines the importance of fiscal and monetary policies' coordinated implementation in order to limit the possibility of Mexico being exposed to increased vulnerability in the external accounts.

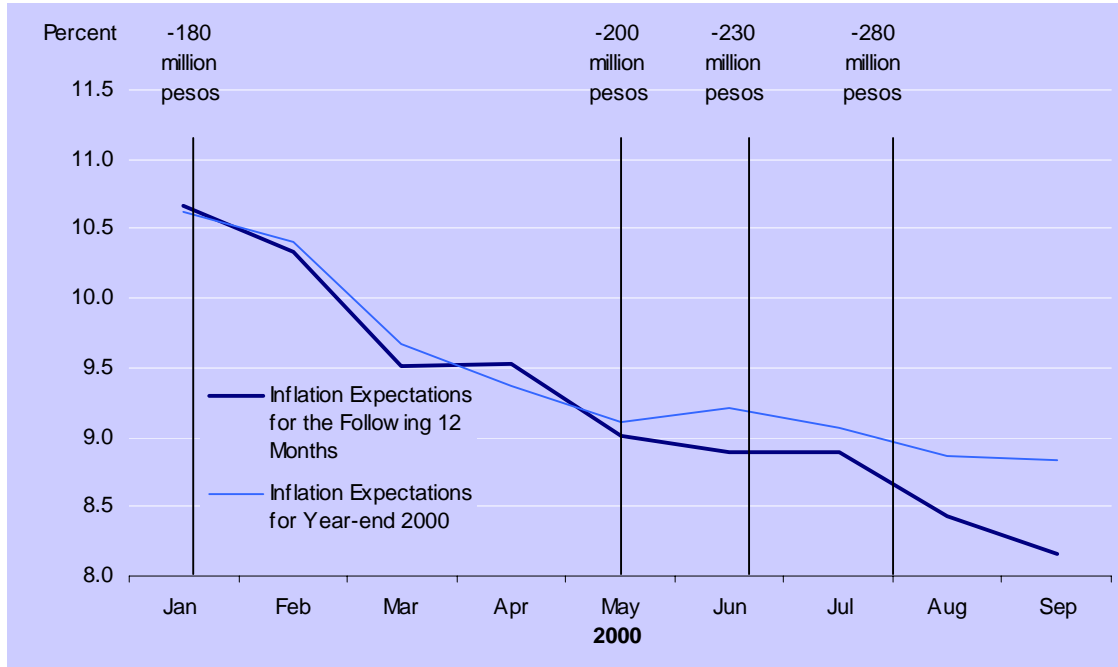
The evolution of inflation expectations has been an important element in identifying the presence of inflationary pressures and evaluating the results of monetary policy. In this respect, two elements of the evolution observed at the end of the second quarter and during the third quarter are noteworthy. Expected inflation for both the year 2000 and the following twelve months has generally presented a downward trend (Graph 18). However, in June, inflation expectations for the end of 2000 deteriorated. In addition, the downward trend in inflation expectations for the following twelve months weakened from May to July, and could hinder the attainment of medium-term goals. These elements, along with the factors mentioned in previous paragraphs, were highly relevant in determining the increases in the "short" implemented on June 26 and July 31<sup>15</sup>.

Following the July 31 increase in the "short", inflation expectations for the following twelve months showed a significant reduction along with a simultaneous reinforcement of the downward trend for the year. As a result, the inflation expectations for 2000 decreased from 9.21 percent in June to 8.84 percent in September, and the expectations for the following twelve months fell during the same period, from 8.89 percent to 8.16 percent.

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<sup>15</sup> The reasons behind the decision to increase monetary restriction on June 26 are detailed in the previous *Inflation Report, April-June, 2000*.

**Graph 18 Inflation Expectations and Accumulated Balances Objective (“Short”)**

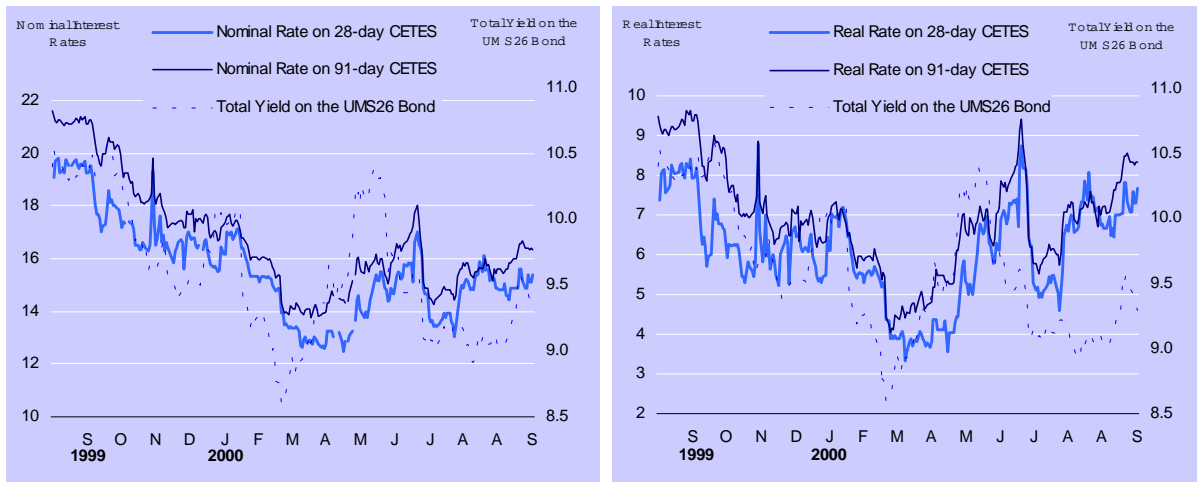


Source: Banco de México's Survey of the Expectations of Private Sector Economic Specialists.

The widening of the “short” on June 26 led to a one percentage point rise in the government funds rate. In the first week of July, after the uncertainty associated with the electoral process had dissipated, nominal and real interest rates declined significantly. However, in reaction to the tightening of the “short” on July 31, interest rates on 28- and 91-day Cetes rose by one percentage point between the week preceding the monetary adjustment and the week following it. For the remainder of the quarter, nominal and real interest rates on 28- and 91- day Cetes climbed approximately 150 and 50 additional basis points, respectively (as of August 21 and 22). Beginning on the latter date, rates showed a slight downward trend that came to a halt in late September. At the end of the quarter, real rates still remained at 258 and 228 basis points over the level reported before the last increase in the “short”. Thus, the monetary policy measures implemented, along with the response of financial market players, sent real interest rates to a higher level (Graph 19).

Graph 19

**Nominal Interest Rates, Real Interest Rates, and External Interest Rate\***  
Percent



\* Total yield on the UMS26 bond

The evolution of domestic interest rates was also influenced by external interest rates and by the perception of country-risk. The total yield on the Mexican external bond UMS26 stayed on a downward trend from the beginning of the quarter until September 5. Subsequently, the uncertainty that has been evident in international financial markets due to rising oil prices caused a new increase in the bond's yield.

Variations in external interest rates generally translate into movements in the same direction in domestic interest rates, as the supply of financial resources to the nation is modified. This correlation can be observed during most of the period under study (Graph 19), and explains the drop in domestic rates one week after the “short” was widened on June 26, as well as the increases reported in the last two weeks of September. Nevertheless, the July 31 change in the “short” caused an important dissociation between the movement of external and domestic rates; the gap between the two was widened due to the effectiveness of tighter monetary policy. Clearly, this measure more than offset the reduction in domestic rates that would have taken place as a result of the decline in external rates. In addition, the gap has remained relatively constant, suggesting that the “short” has had long-lasting effects.

### Monetary Regulation Bonds (BREMS)

In accordance with the monetary programs of recent years, Banco de México's transactions in the money market are designed to avoid excesses or shortages in the monetary base. In other words, the supply of primary money is adjusted to meet the demand for it at all times.

In order to reach this objective, Banco de México must compensate for the monetary impact of various operations carried out through its balance, including: a) changes in the public's demand for bills and coins; b) withdrawals from or deposits to the Federal Treasury's general account; c) currency exchange transactions; and d) credits granted to commercial banks and trust funds.

Until July 2000, Banco de México used three procedures to carry out its money market operations: a) deposit and credit auctions; b) compulsory deposits; and c) the purchase and sale of securities issued by the Federal Government.

Recent Banco de México operations, and in particular the sterilization of the monetary effects of larger international assets, have resulted in the Central Institute having a net debtor position vis-à-vis the money market. However, Banco de México has repeatedly manifested the usefulness of having a daily creditor position vis-à-vis the money market in order to have greater influence on short-term interest rates. Maintaining a creditor position compels banks to demand the liquidity provided by Banco de México in order to settle their current accounts daily without incurring overdrafts.

In its search for a mechanism conducive to a daily creditor position, Banco de México has been adopting diverse measures to finance its long-term debtor position and have surplus liquidity that may be returned to the market over the very short-term. Such measures have included compulsory deposits by banks in the Central Institute and the sale of long-term government securities. Thus, between late 1998 and July 2000, Banco de México placed large amounts of 28- and 91-day Federal Government Development Bonds (BONDES) to be serviced by the Central Bank. These securities were placed through

secondary market auctions, using part of the inventory of government securities held by Banco de México for monetary regulation purposes. The amount of these liabilities has been published in a timely manner in the Weekly Bulletin on Banco de México's Statement of Account, (*Boletín Semanal sobre el Estado de Cuenta del Banco de México*).

In addition, the Federal Treasury has made regular placements of BONDES, and as of March, 2000, the IPAB (*Instituto de Protección al Ahorro Bancario* – Institute for the Protection of Bank Savings) began to issue Bank Savings Protection Bonds (BPAS), which are similar to BONDES and have a 28-day adjustable rate. The result has been an important increase in the supply of securities that pay a floating interest rate.

The growing circulation of BONDES and similar securities evidenced the need for Banco de México to have a different instrument to withdraw excess liquidity from the money market. Thus, on August 3, and empowered by its law, Banco de México began issuing Monetary Regulation Bonds (BREMS). These securities have the following characteristics: a) a 100 peso nominal value; b) a three-year term (variable); c) weekly placements on the secondary market (same day– Thursday – value date); d) coupon paid every 28 days according to the one-day bank funds rate capitalized over the interest period; and e) the same operating and tax rules as government securities.

The issuing of BREMS meets financial intermediaries' demand for securities with lower price volatility in response to changes in interest rates. This goal is achieved by adjusting the interest rates paid on BREMS on a daily basis, in spite of their being medium-term securities. Therefore, by offering low risk interest rates, BREMS are attractive to financial intermediaries.

The weekly placement of BREMS has replaced the daily sales of BONDES that Banco de México used to make. Since their introduction, BREMS have been auctioned weekly among credit institutions for a nominal amount of 1 billion pesos and a three-year maturity.

In conclusion, it is clear that Banco de México's actions during the quarter resulted in increased interest rates, the purpose being to generate monetary conditions conducive to reaching the short- and medium-term inflation objectives. In the same manner,

the recent evolution of inflation and monetary policy actions have led to a reduction in expected inflation for this year and for the following twelve months. However, inflation expectations are not yet fully in agreement with the convergence of Mexico's inflation rate with that of its main trading partners, as targeted for the end of 2003.

## **III.2. Evolution of Monetary Aggregates**

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As previously mentioned<sup>16</sup>, the relationship between the growth of monetary aggregates and inflation becomes more unstable over the short run as inflation declines. Thus, while combating inflation, the Central Institute has resorted to observing the evolution of monetary aggregates as a supplementary reference in examining the other variables that influence price increases.

### **III.2.1. Monetary Base, Net Domestic Credit, and Net International Assets**

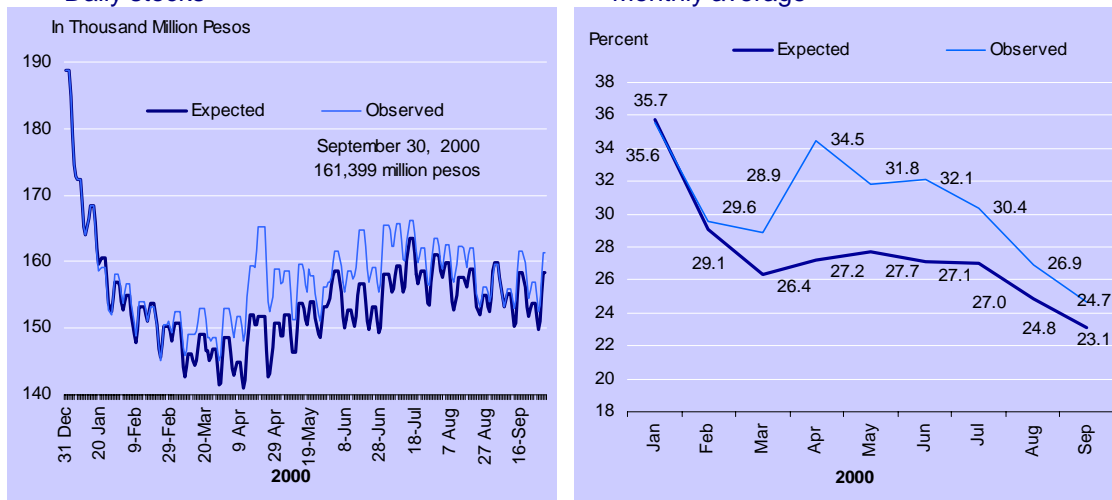
As of September 30, 2000, the monetary base stock contracted by 27,319 million pesos as compared with the end of the previous year. In this respect, the Monetary Program for 2000 predicted a reduction of 30,262 million pesos. Thus, a 1.9 percent deviation between the monetary base and its estimate was posted at the end of the third quarter (Graph 20a). Yet the deviation remained below the ceiling of the confidence interval announced for that annual forecast (+/-3.07 percent).

An additional way to evaluate the behavior of the monetary base throughout the year is by comparing the annual growth rate of its monthly average stock with the rate of growth estimated in the Monetary Program (Graph 20). This exercise shows that although the monetary base path has been higher than originally estimated, the difference has tended to narrow since July.

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<sup>16</sup> See the Monetary Policy Program for 2000 and *Inflation Reports* for the first and second quarters of 2000.

**Graph 20 Evolution of the Monetary Base as of the Third Quarter of 2000**  
 a) Expected and Observed Path Daily stocks  
 b) Annual Nominal Growth Rates Monthly average<sup>1/</sup>



<sup>1/</sup> Average of daily stocks throughout the month.

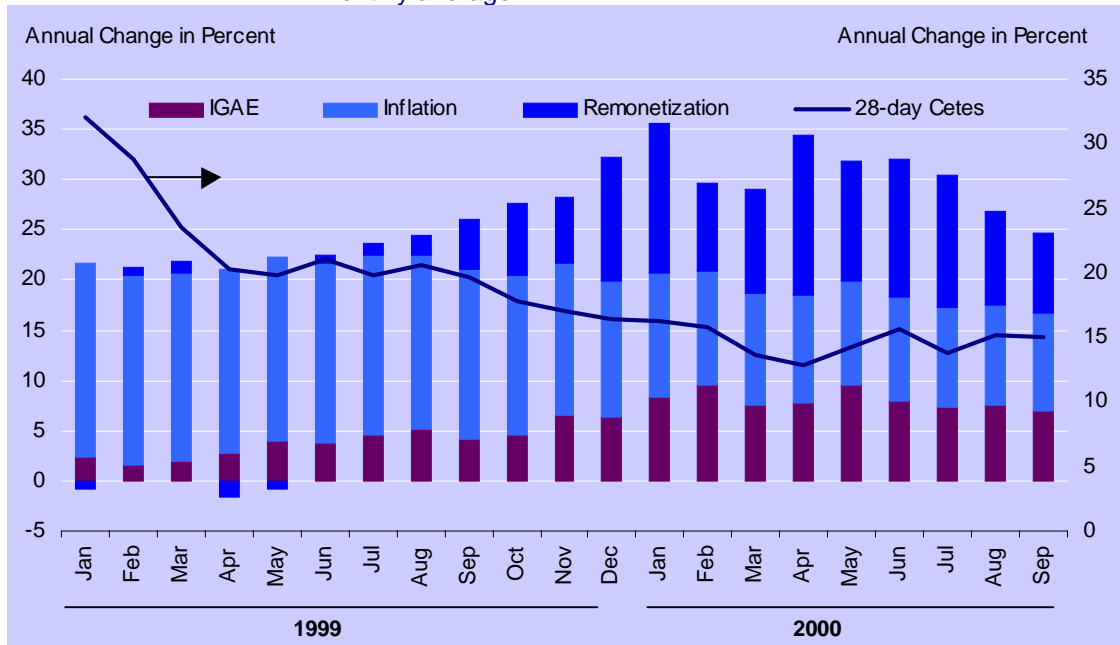
The forecast included in the Monetary Program for 2000, presented this past January, assumed that the monetary base would grow 20.6 percent over the year, with respect to its adjusted stock as of year-end 1999.<sup>17</sup> This increase is consistent with a GDP real growth rate of 4.5 percent, annual inflation not greater than 10 percent and a remonetization of approximately 4.9 percent by the end of 2000. However, the year-to-date evolution of these variables has shown economic growth, inflation and remonetization at levels different than those originally anticipated. In particular, the economy has grown more vigorously, which has caused a greater demand for real monetary balances. On the other hand, lower inflation has two effects on the monetary base: a) it causes a slower increase in the public's demand for nominal balances; and b) by contributing to lower nominal interest rates, it encourages greater remonetization. Thus, the combination of these factors has caused the average daily monetary base stock to grow at an annual rate of 24.7 percent in September, slightly higher than the figure anticipated for that month in the Monetary Program (23.1 percent).

Although the monetary base may seem to have been expanding at an excessively fast rate, this responds in part to a purely statistical effect. Due to lower inflation and interest rates, since the second semester of 1999 the Mexican economy has experienced an acceleration of the remonetization process (Graph

<sup>17</sup> The stock of the monetary base, adjusted for the effects of the Y2K problem, was 170,708 million pesos.

21). Therefore, a comparison between the monetary base stock subsequent to this remonetization and the stocks recorded in previous periods, results in high annual growth rates. The disappearance of the statistical effect will be reflected, towards the end of this year, in a reduction in the annual growth rate of the monetary base as well as in the remonetization, all in accordance with the forecasts contained in the Monetary Program for 2000.

**Graph 21** **Monetary Base: Growth Rates of its Main Explaining Variables and Interest Rates**  
Monthly average



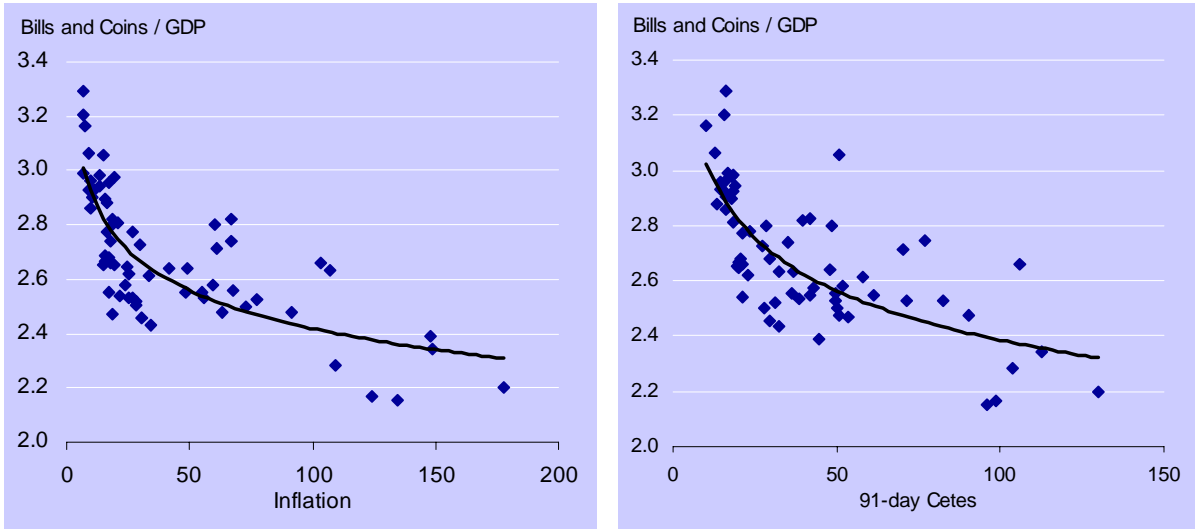
The remonetization that has occurred since 1999 is not an unprecedented phenomenon in the Mexican economy. The process has been observed in periods of decreasing inflation and interest rates (Graph 22). It can be affirmed that the current remonetization by no means has compromised the results of the disinflation effort.

On the other hand, evidence indicates that significant increases in interest rates lead to very modest contractions in the demand for monetary base. For example, it has been estimated that for the year 2000, average interest rates of approximately 32 percent would have been required to detain the remonetization process, i.e., to maintain the ratio of monetary base to GDP constant. Such levels of nominal interest rates would have resulted in extremely high real rates. Therefore, if a considerably more restrictive monetary policy had been adopted, it would have translated into an unnecessary and



costly obstacle for productive activity, employment and the population's well-being.

**Graph 22** Ratio of Bills and Coins in Circulation to GDP versus Inflation and Interest Rates Percent



In terms of the commitments made in the Monetary Program for the year, the limit established on the variation of net domestic credit was amply complied with at end of the third quarter, as well as the goal to prevent any reduction in net international assets. Thus, at the closing of September, net domestic credit had contracted by 91,339 million pesos, well below the -30,262 million peso limit established in the Monetary Program.<sup>18</sup> On the other hand, in the reference period, net international assets rose by 6.844 billion dollars. The main sources of this accumulation were the following: 4.099 billion dollars from currency exchange operations carried out with the Federal Government and Pemex; 1.372 billion dollars from operations with credit institutions (1.422 billion as a result of the auctioning of options to sell currency to the Central Bank; and -50 million from the activation of automatic dollar sales); and 1.373 billion dollars from other operations<sup>19</sup>.

Between December 1999 and September 2000, international reserves rose 1.136 billion dollars. The difference

<sup>18</sup> The negative limit refers to the fact that net domestic credit was expected to fall by at least the amount specified.

<sup>19</sup> Primarily interest earned on international assets and the purchase and sale of precious metals and securities.

between the variation in international reserves and that in net international assets was due primarily to the payments made by Banco de México to the International Monetary Fund (IMF), especially the early amortization of 2.991 billion dollars made on August 31, 2000.

### **III.2.2. Evolution of Monetary Aggregates M1a and M4a**

Given that the demand for money, and particularly for the most liquid aggregates, is linked to the level of transactions in the economy, monetary indicators can be used to make inferences about the evolution of consumption and income, even before specific information about these variables is available. In this respect, the data suggest that the growth in these aggregates is basically a reflection of vigorous economic activity.

In addition, the broader monetary aggregates permit the analysis of the levels of bank deposits and of securities issued on the domestic market. Thus, these aggregates are indicators of the amount of resources channeled through the financial system.

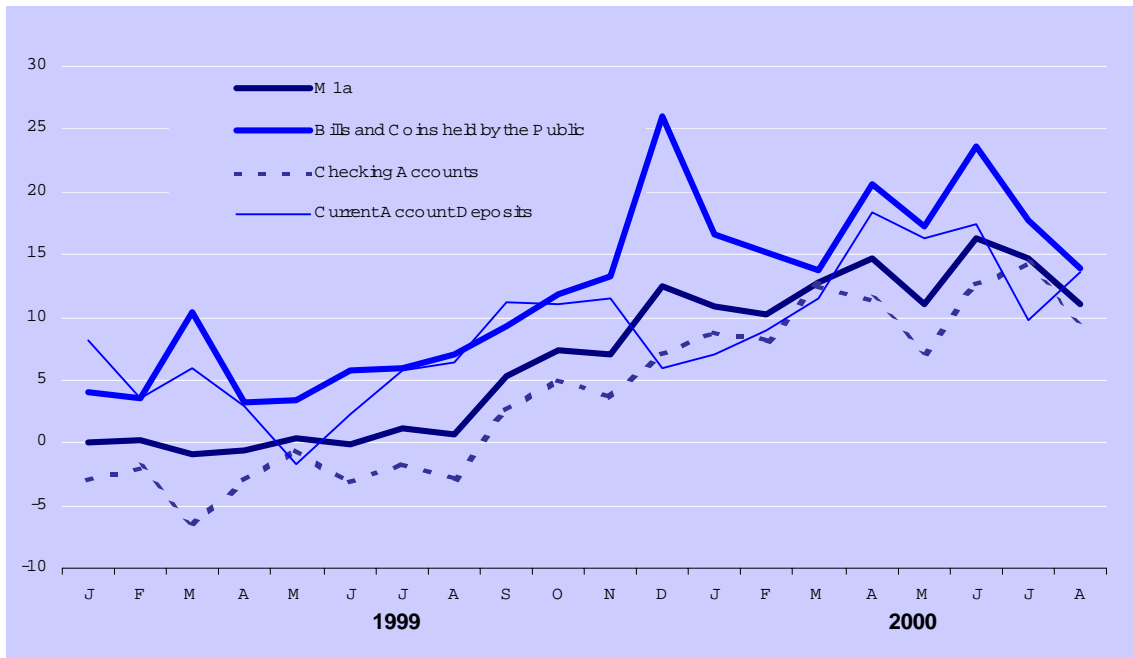
#### **III.2.2.1. Monetary Aggregate M1a**

The M1a aggregate is made up of the most liquid financial assets<sup>20</sup>. This variable represents the amount of resources required by households for their daily transactions, as well as a portion of the demand for working capital in the business and government sectors. Therefore, upward movements in M1a generally correspond to contemporaneous increases in transactions in the economy, or to the desire of economic agents to increase their holdings of liquid assets in their portfolios.

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<sup>20</sup> Mainly bills and coins held by the public and checking accounts denominated in domestic currency.

**Graph 23** **Evolution of Money Supply (M1a)**  
Annual real percentage change



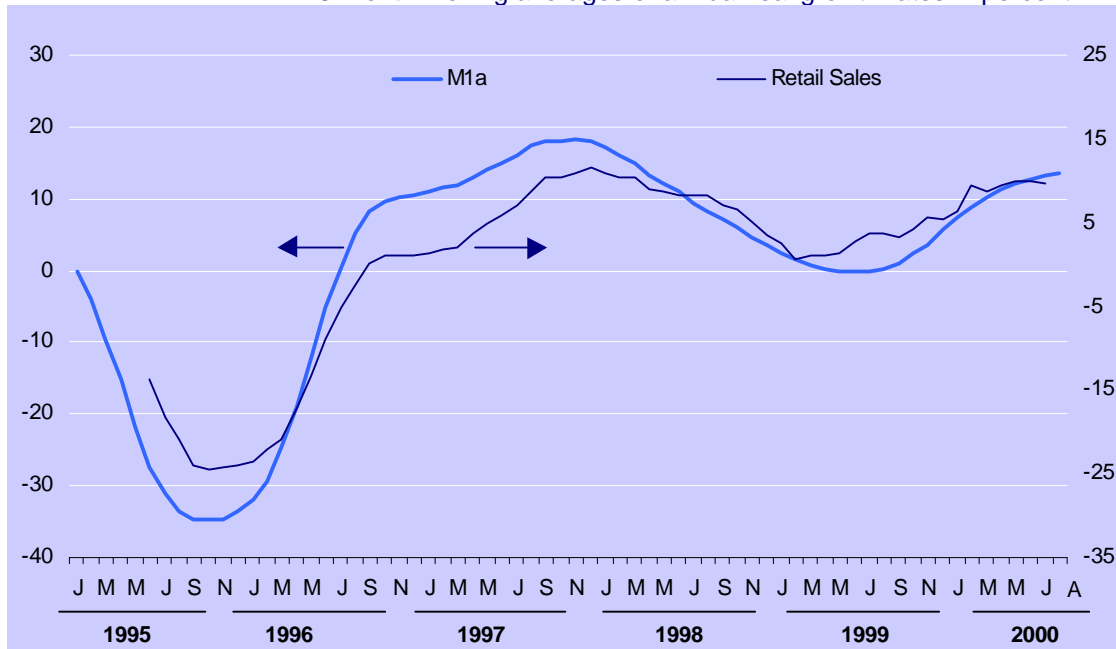
In August 2000, the M1a monetary aggregate reported an annual rate of growth of 11.1 percent in real terms, less than the 12.7 percent average recorded in the first six months of the year. It should be added that the slowdown observed in July and August was evident in all the major components of M1a (Graph 23). Nevertheless, it would be premature still to conclude that this reduction is the result of the lower growth rate of economic transactions stemming from the tighter money supply.

The lower growth posted by the M1a monetary aggregate in the third quarter is consistent with the moderation in consumer expenditures suggested by the recent evolution of retail sales (Graph 24). It should be remembered, nevertheless, that interest rates higher than those observed in the second quarter imply a larger opportunity cost of maintaining liquid monetary balances.

Graph 24

**Monetary Aggregate M1a and Retail Sales**

6-month moving averages of annual real growth rates in percent

**III.2.2.2. Monetary Aggregate M4a**

The broad monetary aggregate M4a<sup>21</sup> measures the magnitude of financial intermediation or financial savings in the economy. In the July-August period of 2000, M4a rose at an average annual rate of 7.1 percent in real terms, similar to the growth observed during the first six months of the year. The components of this monetary aggregate, however, have shown uneven behavior. On the one hand, in August 2000, bank deposits reported an annual decline of 9.0 percent in real terms, thus prolonging the contracting pattern of the previous nine months. On the other hand, bank deposits have been replaced by other savings instruments, primarily by government securities, which in August posted a 34.2 percent real annual rate of growth (Table 8). It is important to emphasize that banks have played a significant role in the intermediation of government securities. In particular, as of August, 47.4 percent of these securities held by the public were acquired through repurchase operations with banks.

<sup>21</sup> Includes bills and coins held by the public, bank deposits, securities issued by the public and private sectors and resources channeled to the retirement savings funds.

**Table 8 Monetary Aggregate M4a**

	End of Period Stocks			Annual Real Change			Contribution to Growth		
	Thousand Million Pesos			Percent			Percentage Points		
	Dec -99	Jul-00	Aug-00	Dec -99	Jul-00	Aug-00	Dec-99	Jul-00	Aug-00
M 4a	2,265.8	2,458.2	2,459.1	6.3	7.7	6.6	6.3	7.7	6.6
Bills and Coins Held by the Public	164.2	147.2	141.0	26.1	17.7	13.9	1.6	1.0	0.7
Deposits in Domestic Banks	1,241.4	1,238.9	1,227.4	-3.2	-6.7	-9.0	-1.9	-3.9	-5.3
Public Securities <sup>1/</sup>	538.7	699.0	718.4	39.1	43.1	44.7	7.1	9.2	9.6
Issued by the Federal Government <sup>2/</sup>	538.7	659.6	666.2	39.1	35.0	34.2	7.1	7.5	7.4
Issued by Banco de México (Brem s)	0.0	0.0	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Issued by the IPAB	0.0	39.5	47.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Securities Issued by Private Institutions <sup>3/</sup>	74.3	103.7	103.3	-9.4	33.2	30.2	-0.4	1.1	1.0
Retirement Savings Funds <sup>4/</sup>	173.6	205.3	206.7	13.7	16.5	17.5	1.0	1.3	1.3
Deposits in domestic banks' agencies abroad	73.7	64.1	62.3	-23.7	-25.5	-25.3	-1.1	-1.0	-0.9

1/ Includes securities issued by the Federal Government, Banco de México, and the IPAB (*Instituto para la Protección del Ahorro Bancario* –Institute for the Protection of Bank Savings).

2/ Includes securities held by companies, individuals, the public sector, and Siefores (Specialized Retirement Funds).

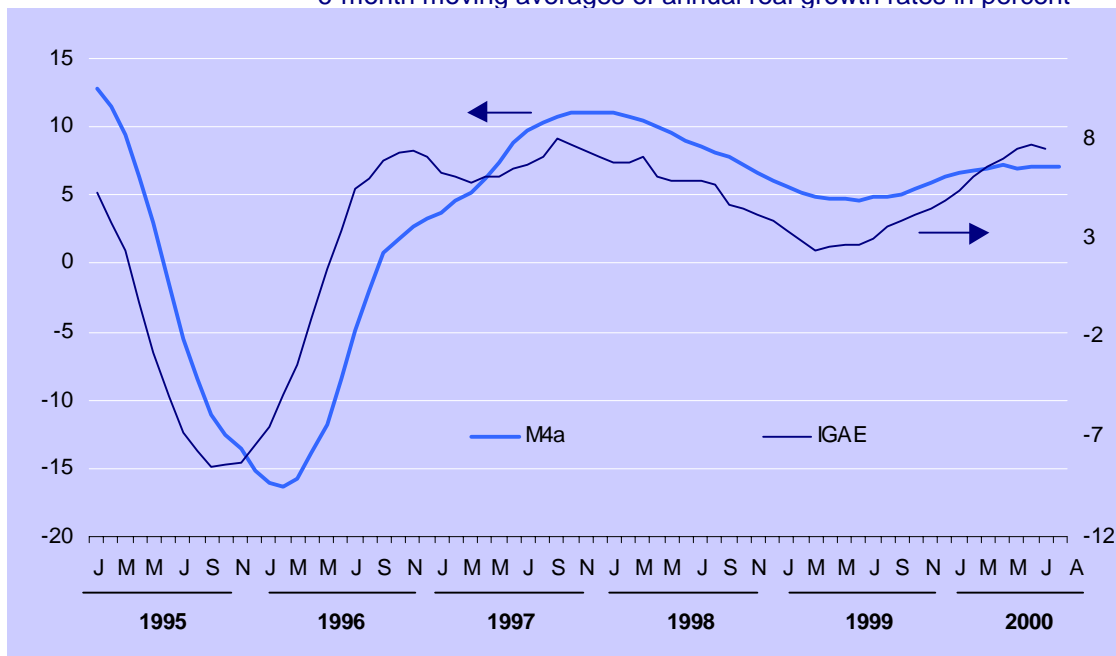
3/ Includes securities held by Siefores.

4/ Excludes Siefores investment in government and private-sector securities.

n.a. Not applicable

The behavior of the broad monetary aggregate, M4a, is closely related to economic activity. This year, the real growth rate of this aggregate has been high, consistent with the trajectory of IGAE (Graph 25).

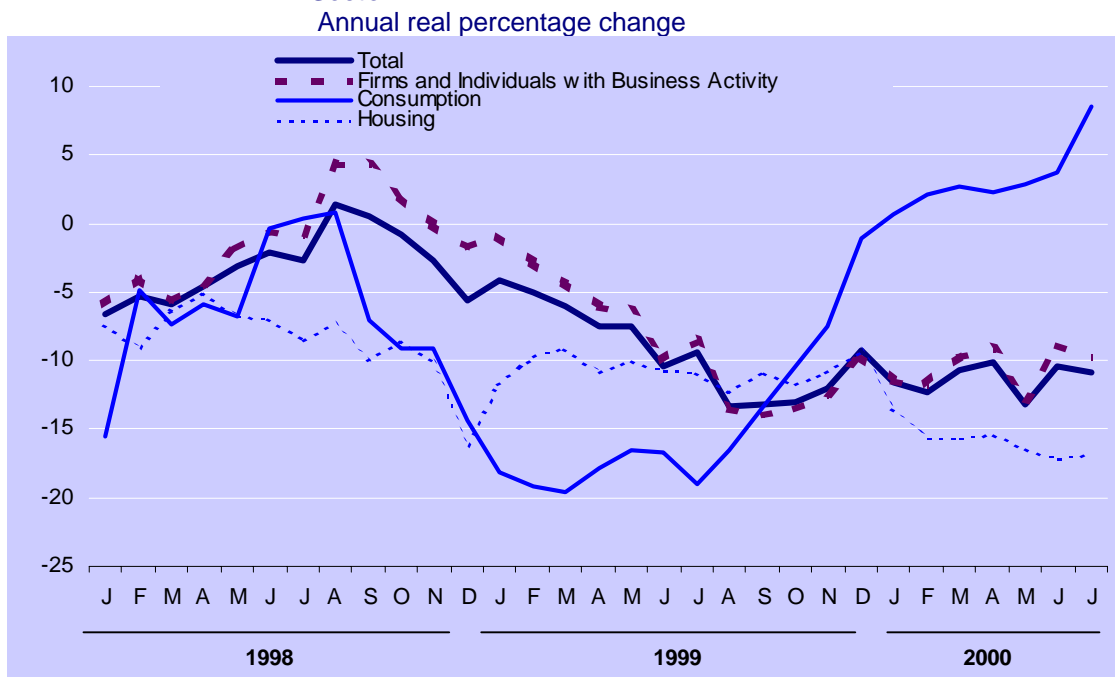
**Graph 25 Broad Monetary Aggregate M4a and Global Indicator of Economic Activity (IGAE)**  
6-month moving averages of annual real growth rates in percent



### III.2.3. Private Sector Financing

A weak demand for credit has been the result of the previously-discussed contraction in bank deposits. In July 2000, financing granted by commercial banks to the non-bank private sector reported an annual decline of 10.8 percent in real terms. In contrast, the dynamism of the consumer credit component is outstanding, since it posted an annual real increase of 8.6 percent during the same month (Graph 26).

**Graph 26** Financing Granted by Commercial Banks to the Non-bank Private Sector

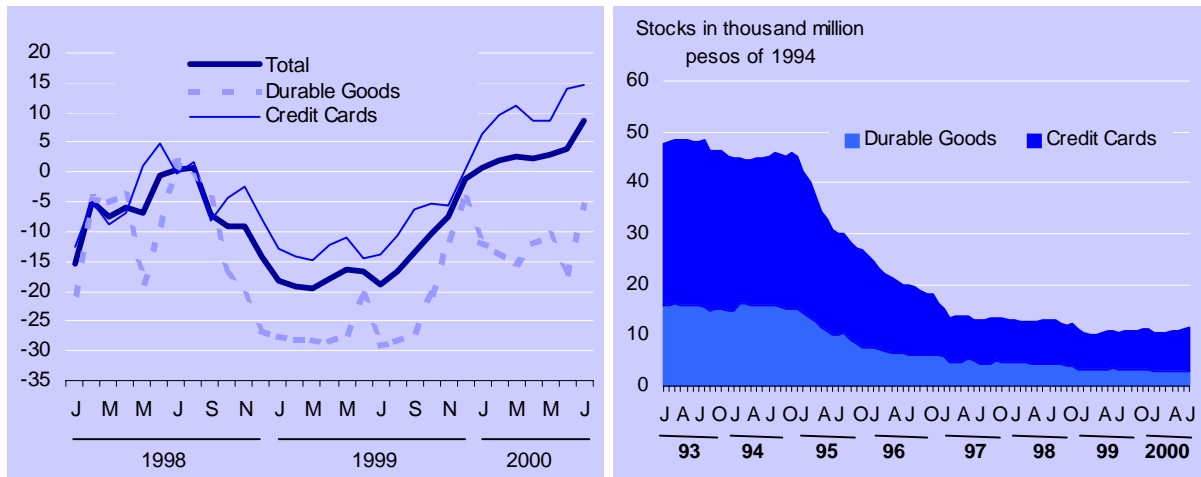


The expansion of consumer credit provided by commercial banks was channeled through credit cards, with a debit balance that registered an annual real increase of 14.6 percent in July 2000. In the same period, credit granted by banks for the acquisition of durable goods contracted 5.8 percent in real terms. It is important to point out that in spite of the recent recovery in consumer credit provided by banks, the amount in real terms is still at significantly lower levels than the stocks reported during the first half of the 1990's (Graph 27).

Since 1994, credit provided by commercial and development banks has been contracting significantly, forcing the private sector to search for alternate sources of financing. This fact

is corroborated by the Credit Market Evaluation Survey (*Encuesta de Evaluación Coyuntural del Mercado Crediticio*) prepared on a quarterly basis by Banco de México using qualitative data. For the second quarter of 2000, the main results of this survey were the following: a) supplier credit continues to be the source of financing most utilized by companies (49.7 percent of the responses), especially small and non-exporting firms (60.7 and 54.3 percent, respectively); and b) commercial banks were mentioned as a source of financing in only 23.7 percent of the responses, with noticeably limited utilization of this type of credit by small companies (18.7 percent).

**Graph 27** **Consumer Credit Provided by Commercial Banks**  
 Annual real change Real stocks



Financing granted by the principal non-bank sources has accelerated from an annual real rate of 6.0 percent in March to 10.6 percent in June of this year<sup>22</sup>. The major events regarding this source of credit as of the end of the first semester of the year were: a) the balance of consumer credit granted by non-bank entities grew at a 32.1 percent annual rate in real terms; b) mortgage financing provided by savings and loan associations, as well as by SOFOLES, increased at a real rate of 41.5 percent per year; and c) the financing provided by non-bank entities<sup>23</sup> to firms or individuals with a

<sup>22</sup> Financing from non-bank entities includes that provided by suppliers, non-bank credit card issuers, Savings and Loan Associations, SOFOLES, insurance companies, financial leasing companies, factoring companies, placement of commercial paper, credit unions, credit contracted by non-financial companies with foreign banks and foreign debt.

<sup>23</sup> Including suppliers, placements of commercial paper, SOFOLES, financial leasing companies, factoring companies, credit contracted by non-financial companies with foreign banks, insurance companies, credit unions, and placement of debt abroad.

business activity expanded at a real rate of 9.1 percent per year. The above figures indicate that credit sources other than bank credit continue to acquire importance in the economy's financing. Therefore, the evolution of non-bank financing must be monitored very closely, as it is extremely important that it be granted on the basis of adequate risk-evaluation criteria.



## IV. Private Sector Outlook

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### IV.1. Forecasts Regarding the Main Determinants of Inflation

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At the time this Report went to press, the predictions of most financial analysts regarding the future evolution of the main external variables that affect the Mexican economy's development continued to be generally favorable. Specifically, the following forecasts are noteworthy:

- (a) Estimated growth of 5.3 percent<sup>24</sup> in the United States' economy for the third quarter. The forecast for the year 2000 was revised upwards from 3.6 percent in January to 5.2 percent in September. In addition, due to the lack of signs of inflationary pressures, analysts expect the United States' economy to continue decelerating gradually to a 3.7 percent growth rate in 2001.<sup>25</sup>
- (b) The average price for Mexican oil exports was forecasted at 25.32 dollars per barrel for the fourth quarter and 20.85 dollars per barrel for 2001. Although these prices would be favorable for Mexico's external accounts, the repercussions of very high crude oil prices on worldwide economic growth and on the inflation of developed economies could affect Mexico's non-oil exports and foreign capital flows into the country. This fact would undoubtedly have an unfavorable effect on economic expansion.

During the first two months of the third quarter, the exchange rate expectations for the end of the year, as well as the current prices of peso futures, were adjusted downward. However, the volatility experienced by the spot exchange rate during the last two weeks of September (which were related to drops in the United States' securities market and to the rebound of long-term international interest rates) was reflected in more depreciated peso

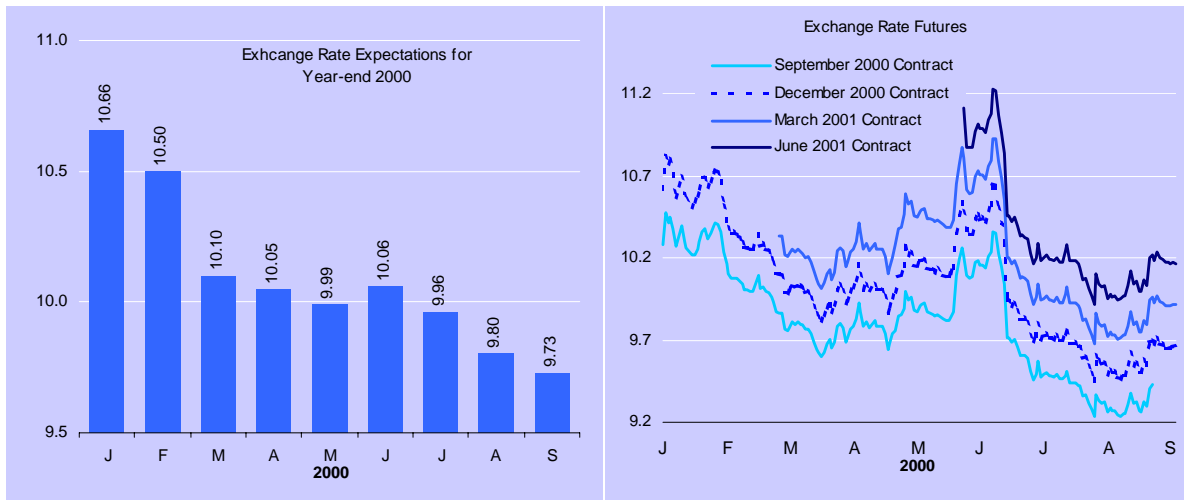
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<sup>24</sup> The expected growth rate for the third quarter of 2000 compared with the third quarter of 1999.

<sup>25</sup> The forecasts are those of the analysts' consensus published by *Consensus Forecasts*.

forecasts for year-end and in the current prices of peso futures. Thus, according to Banco de México's most recent survey, the private sector anticipates that the exchange rates at the end of October, November and December will be at 9.53, 9.66 and 9.73 pesos per dollar, respectively. In addition, according to the peso futures as of October 9, the exchange rate for December 2000 will be 9.66 pesos per dollar (Graph 28).

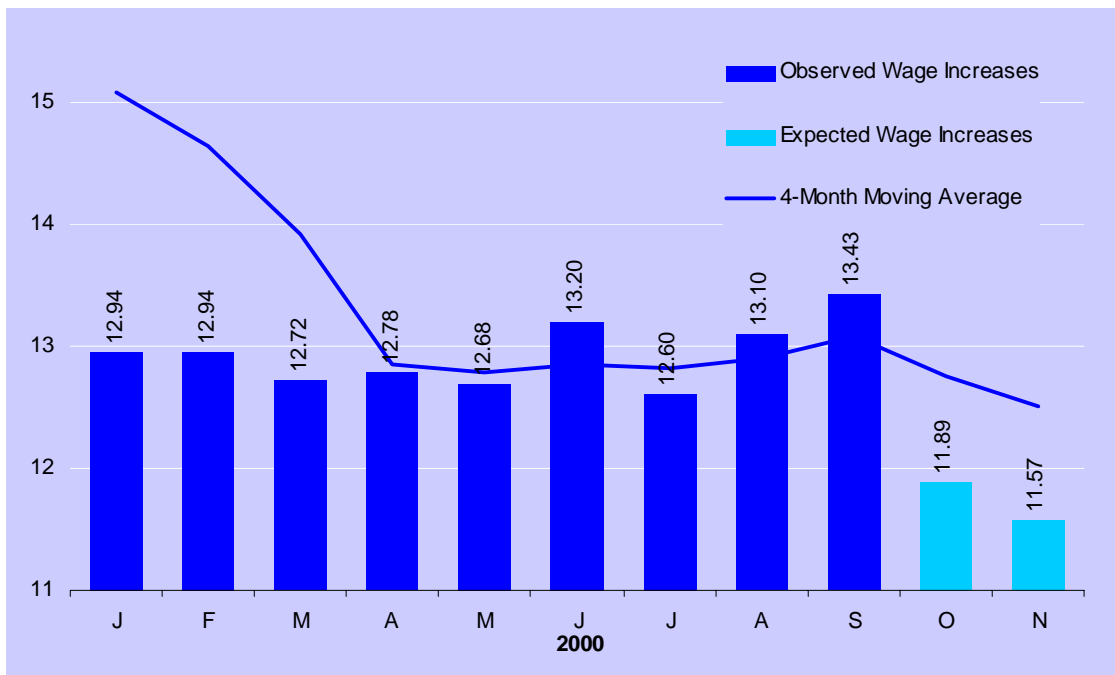
**Graph 28** Exchange Rate Expectations and Peso Futures Prices for Year-end 2000  
Pesos per dollar



Source: Bloomberg and Banco de México's Survey of the Expectations of Private Sector Economic Specialists.

As pointed out throughout this document, the evolution of wages is another variable that significantly influences inflation. The analysts consulted through Banco de México's surveys expect increases in contractual wages of 11.89 and 11.57 percent in October and November, respectively (Graph 29).

**Graph 29** **Increases in Contractual Wages**  
Percentages



Source: Ministry of Labor. October and November data correspond to private sector forecasts obtained through Banco de México's Survey of the Expectations of Private Sector Economic Specialists.

Modifications in the prices of goods and services provided or regulated by the public sector influence the inflation process and expected inflation as well. With respect to the expected evolution of these prices during the last three months of the year, it must be emphasized that high international fuel prices will probably continue to affect the evolution of the domestic price of LPG. On the other hand, due to compliance with fiscal goals, during the remainder of the year adjustments in the prices of other goods and services provided or regulated by the public sector are not expected to be higher than those already programmed.

Lastly, during the quarter, analysts made upward revisions to the expected growth rates for economic activity and domestic demand. As of the end of September, the private sector expected that GDP growth for 2000 would be 6.71 percent, while consumption and private sector investment would increase by 7.8 and 10.5 percent, respectively. Likewise, the business climate indicators compiled in Banco de México's survey showed considerable improvement over June: the percentage of consultants who believed that the business climate would improve in the

following six months rose from 26 percent in the May-June period to 38 percent in the third quarter. The percentage of consultants who expected the business climate to worsen fell from 22 to 9 percent in the same period. As of the end of September, the principal factors that could hinder economic activity during coming months include the availability of domestic financing, its high cost and the shortage of skilled labor.

## IV.2. Expected Inflation

In the survey compiled by Banco de México in September, monthly inflation forecasted for October-December was revised downward with respect to the June survey. Thus, the latest projections show that expected inflation accumulated for the fourth quarter is 2.44 percent (Table 9).

**Table 9**

**Expected Monthly and Annual Inflation**  
Percent

	Monthly	Annual
October	0.60	8.81
November	0.77	8.68
December	1.05	8.84

Source: Survey of the Expectations of Private Sector Economic Specialists, Banco de México. Since this survey did not incorporate the inflation rate actually observed in September, the datum on annual inflation for December does not correspond to monthly expectations.

According to this survey, inflation forecasts for the end of 2000 and for the following 12 months were adjusted downward during the quarter, to 8.84 and 8.16 percent, respectively. On the other hand, expected inflation for 2001 showed less favorable behavior, given that it was corrected to a smaller degree than in previous forecasts (Graph 30). Expected inflation for 2001 is a matter of concern since it exhibits relative stagnation at levels not in accordance with the Central Institute's medium-term targets.

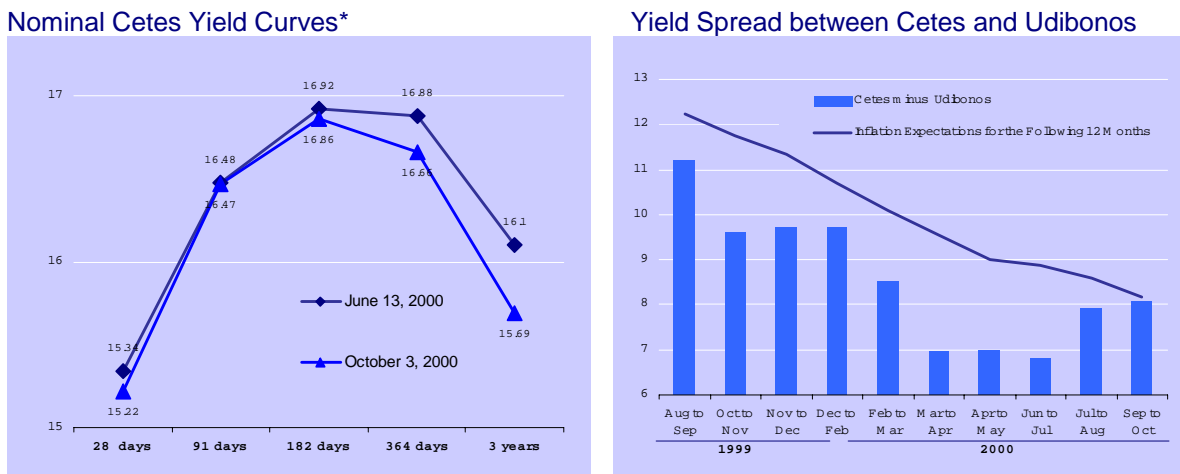
**Graph 30 Evolution of Expected Inflation Percent**



Source: Survey of the Expectations of Private Sector Economic Specialists, Banco de México.

The spread between Cetes and Udibonos interest rates increased during the period. This result may be reflecting greater monetary restriction, higher inflation expectations by financial market players, or expectations of greater exchange rate volatility. The Cetes yield curve has remained practically unchanged. However, there has been a slight drop in longer-term rates (Graph 31), which could indicate an improvement in expected inflation.

**Graph 31 Nominal Cetes Yield Curves and Spread between Cetes and Udibonos Rates**  
Primary auction rates in percentages



\* The 3-year instrument is issued with fixed-rate coupons.

In conclusion, the private sector's expectations regarding inflation, as measured by surveys and by the expectations implicit in the prices of financial assets, indicate that no significant decline in inflation is anticipated for 2001. Should this opinion persist, the

processes of price formation and wage determination could be affected.

Table 10

## Summary of Private Sector Expectations

Exchange Rate (January 2001 Average)	9.77 (pesos/dollar)	Real Growth in the U.S.A.* (I Q tr. 2000)	4.1%
Exchange Rate (year-end 2000)	9.73 (pesos/dollar)	Real Growth in the U.S.A. (2000)	5.2%
Exchange Rate (October Average)	9.53 (pesos/dollar)	Real Growth in the U.S.A.* (I Q tr. 2001)	3.8%
Exchange Rate (November Average)	9.66 (pesos/dollar)	Real Growth in the U.S.A. (2001)	3.7%
Wage Increases (October)	11.89%	Annual Inflation in Mexico (Year-end 2000)	8.84%
Wage Increases (November)	11.57%	Real Growth in Mexico (III Q tr. 2000)	6.0%
Oil Price (Q tr. IV 2000)	25.32 (dollars per barrel)	Real Growth in Mexico (IV Q tr. 2000)	5.4%
Oil Price (2001 Average)	20.85 (dollars per barrel)	Real Growth in Mexico (2000)	6.71%

Source: Survey of the Expectations of Private Sector Economic Specialists (Banco de México) and *Consensus Forecasts*.

\* Growth rate of the indicated quarter with respect to the same period of the previous year.

## V. Assessment of Risks and Conclusions

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During the third quarter of 2000, inflation maintained its downward trend, and at the close of the period the INPC annual growth rate was below 9 percent. However, some of the price sub-indices not included in the calculation of core inflation showed unfavorable behavior. These explain the deceleration observed in the declining rate of general inflation, while core inflation continues to decrease at rates similar to those observed in the first two quarters of the year. Although recent progress in inflation makes it possible to anticipate that the 2000 target will be comfortably met, the above-mentioned factors are a cause of concern due to the following reasons:

- (a) The downward inflexibility in annual inflation that has been shown by the sub-index of prices for goods and services provided or regulated by the public sector (which has remained at levels above 12 percent), and the recent increase in the annual inflation of the price index of agricultural and livestock prices, could negatively influence expected inflation and wage negotiations.
- (b) The 15.08 percent annual increase posted in September by the sub-index of educational prices was higher than that recorded by the core sub-index of services and by the INPC. Furthermore, during the past twelve months, the annual inflation of the sub-index of educational prices fell less than the INPC and the core sub-index of services. This fact could indicate that the increase in domestic demand has particularly affected the behavior of some prices in the economy.

Some of the elements that had been identified in the April-June *Inflation Report* as signs of the possible influence of vigorous domestic demand growth on production costs intensified in the third quarter. These elements include the following:

- (a) Unit labor costs rose in three out of the four production sectors for which information is available.

- (b) Nominal contractual wage increases have remained practically constant throughout the year, while inflation forecasts have been revised downward repeatedly. For this reason, expectations of real wage increases have been growing throughout the year and are clearly higher than the productivity gains sustainable in the near future.

Available information suggests that domestic demand has decelerated. However, the fact that its growth rate still exceeds that of production has translated into the previously-mentioned expansion of the trade deficit (total and non-oil) as well as in the high annual inflation of the sub-index of educational prices; eventually, it could also be reflected in the prices of non-tradables. Lastly, the rigidity shown by inflation expectations for 2001, which remain at levels incompatible with the medium-term target, could also increase the social cost of attaining this goal. Throughout the year, Banco de México has been intensifying the restrictive stance of monetary policy in order to induce a correction in these variables, and thus prevent possible inflationary pressures from hindering the consolidation of the stabilization process.

For the remainder of 2000 and the coming year, Banco de México believes that the external environment will continue to influence the progress of the domestic economy in a generally positive manner. However, the external environment is anticipated to be less beneficial in 2001 than it has been throughout 2000. Specifically, the Central Institute has incorporated the following assumptions into its forecasts:

- (a) The United States' economy will experience a gradual deceleration during the remainder of 2000 and 2001. According to the conservative forecasts of the IMF, the United States' growth rate in 2001 is expected to be 3.2 percent. It is anticipated that this adjustment will prevent further inflationary pressures in the United States' economy.
- (b) Oil prices will show a downward trend from now until the end of 2000 and throughout 2001. Although the average price forecasted for 2001 is lower than that for 2000, it will remain above its historical average.

In the domestic realm, the Mexican economy is anticipated to maintain a process of gradual deceleration, which will be more intense in production than in domestic demand. A significant



reduction in the public sector deficit is also expected for next year. The foreseeable result of the external and domestic scenarios will be an increase in the trade and current account deficits. However, if recent trends in the balance of payments prevail, it is likely that the above increases may not lead to financial difficulties.

In the basic scenario described above, the Central Bank is also assuming that the gap between targeted and expected inflation for 2001 will prevail during the remainder of 2000 and early 2001. This fact, along with the growth in domestic demand, supports the view that monetary policy must continue to be restrictive and possibly increasingly so, in order to attain the proposed targets. As part of the basic scenario, Banco de México foresees that although accumulated inflation will surely increase during the fourth quarter due to seasonal factors, annual inflation will continue to follow the downward trend it has shown since February 1999.

Since this forecast is subject to some uncertainty, the evaluation presented below describes the internal and external risks that the domestic economy will face in the near future. In addition, a presentation is made of the lines of action considered appropriate for confronting such possible disturbances.

The elements of external risk that could hinder further declines in inflation and limit economic expansion are the following:

- (a) sudden changes in oil prices;
- (b) a drastic deceleration in the United States' economy;
- (c) an unexpected increase in United States' interest rates; and
- (d) a collapse of the United States' stock market.

International prices of crude oil have moved recently in response to the dynamism of global demand and relative restrictions in its supply. In addition, the market has been influenced by OPEC's decisions to coordinate production increases and, most recently, by the United States' decision to use its strategic reserve to stabilize the price of crude oil.

Since the output of most oil-producing countries is about to reach the limits of their capacity, and inventories are relatively scarce, there is a risk that the prices of oil could rebound in the short-run.

It is obviously difficult to *a priori* determine the level that oil prices would have to reach in order to have a serious impact on the world economy. It is similarly complex to establish the level at which the indirect repercussions of higher oil prices on the Mexican economy would offset their direct positive effects. The damaging repercussions would result from the impact that oil prices could have on economic growth, inflation and financial markets in the United States as well as in the rest of the oil-importing developed economies.

In this case, the favorable effects of higher oil prices on Mexico's balance of payments would be counteracted by at least two factors: a substantially lower growth rate of non-oil exports and a reduction in both short- and long-term capital inflows. If such events were to occur, they would undoubtedly have a negative impact on the foreign exchange market. Faced with this perspective, monetary policy shall react to the first signs of deteriorated inflation expectations stemming from depreciations in the exchange rate. In this manner, the necessary adjustments in the real exchange rate would be facilitated while avoiding indirect pressures on inflation.

Over the medium term, the most relevant uncertainty with regard to oil prices is when will the expected adjustment towards their equilibrium level will take place. In light of the historic behavior of oil prices, such a correction will most probably be abrupt. Undoubtedly, the repercussion of this sort of events on the country's external and fiscal accounts could be considerable.

Lastly, in response to indications that the United States' economy is decelerating, markets have moderated their expectations of future increases in interest rates since May. In addition, the perception that growth in the United States could experience a soft landing has become more widespread. Therefore, the probability of the previously-described pessimistic scenario has diminished.

Nonetheless, the United States' economy still shows imbalances which, if not properly corrected, could have destabilizing consequences on international financial markets and overall economic growth. In particular, the recent United States' economic expansion has been accompanied by a considerable widening of the current account deficit, an important reduction in the rate of private savings, and a substantial appreciation of the dollar. As stated by various analysts, sudden changes in this situation could drastically affect international financial markets and the real sector of the

United States' economy. In addition, considerable gains in United States' productivity have led to high equity prices on stock markets. A possible downward adjustment in these markets —caused by a revision of expected future gains in productivity or increased interest rates— could also have damaging consequences for economic growth.

As discussed in previous *Inflation Reports*, should any of the described possibilities occur, the peso's real exchange rate would probably depreciate in response to foreign exchange shortages. In this situation, the ideal adjustment mechanism to move toward a more depreciated real exchange rate of equilibrium would be a depreciation in the nominal exchange rate. Due to the high historical correlation between exchange rate fluctuations and inflation in Mexico, possible adjustments in the peso's exchange rate would lead to a deterioration in inflation expectations, which would in turn affect the negotiation of all types of contracts in the economy. For this reason, should evidence indicate that exchange rate adjustments are causing upward revisions in medium-term inflation and affecting the behavior of the prices of non-tradable goods, monetary authorities would react quickly.

The corresponding monetary policy actions would not be intended to defend a specific exchange rate level. One of the main advantages of a floating exchange rate regime is that it provides the flexibility necessary for the real exchange rate to move towards a new equilibrium level in response to external or internal disturbances. However, because of the reasons indicated in the previous paragraph, the revision in inflation expectations that would probably result from depreciations in the exchange rate could raise the cost in terms of inflation of reaching a new real exchange rate equilibrium. Therefore, Banco de México's interventions would focus on attaining the necessary adjustment in the real exchange rate at the lowest possible cost in terms of inflation.

Under such circumstances, a fiscal adjustment would also be indispensable so that the public sector could contribute to generating the increased domestic savings necessary to face lower foreign exchange revenues from oil and non-oil exports and a reduction in external financing. In the event of a drop in oil prices, fiscal restrictions would also be required in order to reach the proposed public finance goals.

The basic scenario outlined in this section assumes that growth in domestic demand will be corrected in order to limit the expansion of the current account deficit and keep it at a level compatible with the supply of long-term capital. However, it is possible that the dynamism in the private sector's domestic demand could greatly surpass growth in domestic production, or that the necessary adjustment in public finances could not materialize. In these circumstances, the economy's dependence on short-term external financing would grow, thus increasing the disinflation process' vulnerability to international capital markets' volatility. The second internal risk factor is that inflation expectations could maintain their current rigidity for a prolonged period.

Should the aforementioned elements of internal risk materialize, there is a possibility that they could do so simultaneously, as the excessive growth in domestic demand would support the continued rigidity in inflation expectations. In this context, the macroeconomic policy challenge would be to achieve a rapid decline in the growth of domestic aggregate spending towards levels compatible with the economy's potential growth. To attain this objective, the coordinated action of fiscal and monetary policies would be imperative. As widely discussed in previous reports, an intervention of this nature would correct the growth in demand and deviations in inflation expectations, and probably reduce the current account deficit as well.

Due to the high cost implicit in the implementation of restrictive measures —both monetary and fiscal— a preventive use of both policies is highly recommendable when the external environment deteriorates, and especially so when there is a probability that any of the aforementioned risk factors may indeed materialize.

In particular, an adjustment in oil prices towards their long-term equilibrium level is only a matter of time. For this reason, Banco de México continues to believe that the most prudent course of action to confront the current situation is to start taking the appropriate measures now, in order to induce the necessary moderation in the growth of domestic demand that would allow the country to face an abrupt change in the external environment.

## VI. Monetary Policy Strategy and Inflation Targets

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### VI.1. The Price Stability Objective and Monetary Policy Strategy

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Banco de México's primary monetary policy objective is to attain the stability of the general price level. The corresponding constitutional mandate is a reflection of the overwhelming national and international evidence that illustrates the considerable damaging effects of high and even moderate inflation. Such effects have an impact on economic growth, real wages, job creation, income distribution, and the sound development of credit markets and public finances.

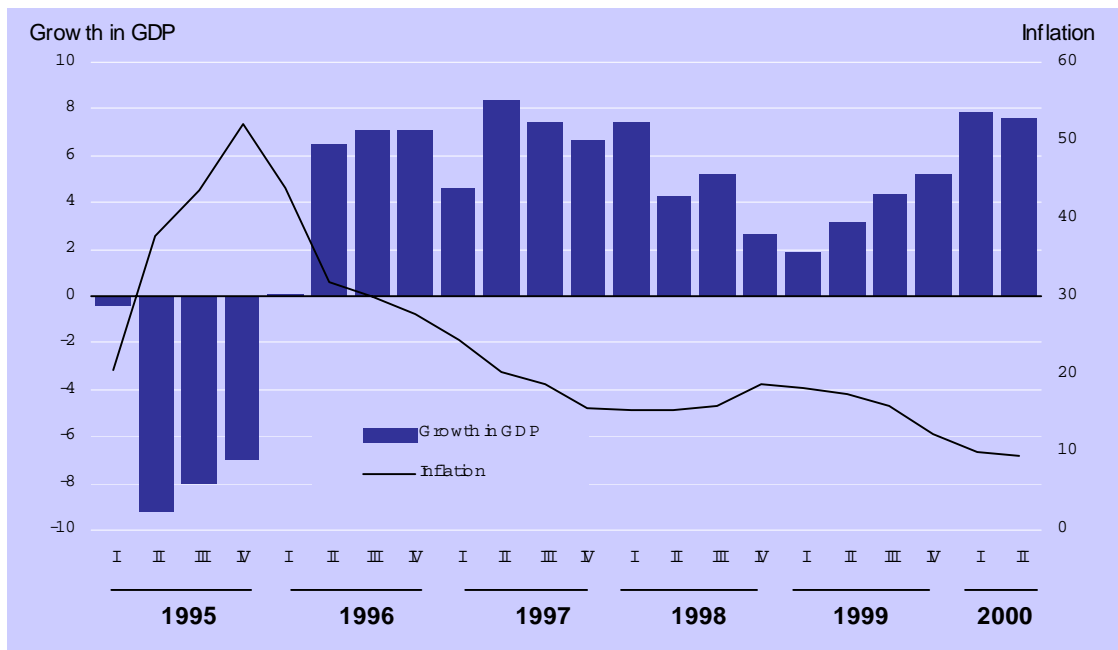
The evidence on the damages caused by inflation is so conclusive that it has led many countries to grant independence to their central banks and to confer upon them the primary objective of attaining and maintaining price stability. The consequences of these institutional reforms have been immediate. In the main industrialized countries, average inflation fell from 5 percent in the mid-1980's to 2 percent at present. This result has been observed with even greater intensity in Latin American economies, whose average inflation has declined from 102 percent in the 1980's to 9.5 percent in 1999.

The long-term inverse relationship between inflation and economic growth is heavily documented. This phenomenon is explained by several reasons, most of which are related to the uncertainty caused by high inflation. First, a rise in inflation leads to greater price variability, which distorts the information that producers and consumers obtain from the price system, complicating their decision-making process. Second, increased inflation is generally associated with greater uncertainty regarding its future trajectory. This uncertainty is reflected in financial markets through higher real interest rates and shorter maturities for all types of contracts. Higher real interest rates are a response to creditors demanding a premium to compensate them for the risk of higher than expected inflation rates. In addition, the increase in nominal interest rates that occurs to compensate creditors for the loss in the real value of their financial assets due to rising prices, forces debtors

to accelerate the amortization of the corresponding credits. Yet another way to reduce the risk implicit in greater inflationary uncertainty is to shorten the maturities of financial transactions. Therefore, when the phenomena described above intensify, the financial system enters into a disintermediation process. In turn, very high real interest rates, financial disintermediation and the greater variability of relative prices end up causing lower levels of saving and investment, and consequently slower economic growth.

As discussed in previous Banco de México Reports, the Mexican experience of the past 40 years clearly confirms the negative correlation between inflation and economic growth. Convincing proof is also provided by the evolution of the Mexican economy over the last six years: in the 1996–2000 period, the decline in inflation from 52 percent in December 1995 to an expected level below 9 percent in 2000 has been accompanied by average real growth in GDP of approximately 5.4 percent (Graph 32).

**Graph 32** Gross Domestic Product and National Consumer Price Index  
Annual percentage change



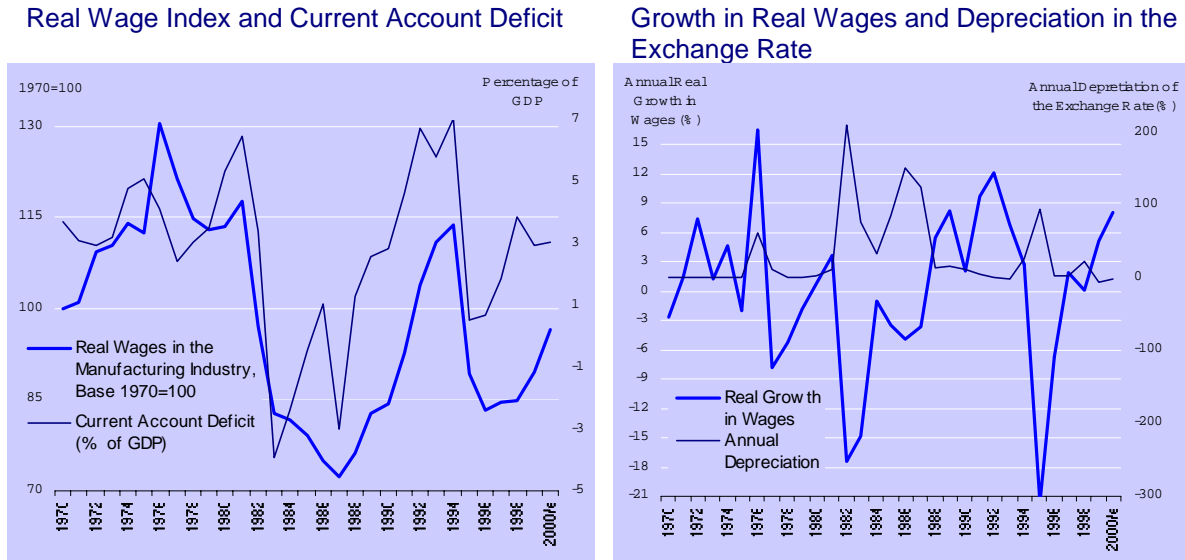
Domestic evidence also unmistakably reveals that high inflation and the recurring crises that have resulted from unsound

economic policies are among the main causes explaining the poor performance of real wages over the past 30 years.

In fact, during the last 50 years, two stages may be clearly distinguished in the evolution of real wages in Mexico. With the low and stable inflation of the first stage, from 1950 to 1969, real wages rose substantially and continuously. In this period, the annual average growth rate of real wages was 8.5 percent. In contrast, in the second stage, from 1970 to the present, real wages have shown erratic behavior as a reflection of the cycles of expansion and crisis undergone by the Mexican economy. As a result of these crises, decreases in real wages have been so severe that they have dropped to levels even below those prevailing before the expansions that preceded the crises.

It has not been unusual for real wages to deviate from their sustainable long-term trajectory. Over the past 30 years, real wages in Mexico have surpassed this trajectory when the economy has expanded at a faster pace than its potential growth thanks to the availability of external credit. During the 1970's, the government financed a high fiscal deficit by borrowing abroad. In the first half of the 1990's, the use of foreign credit once again increased substantially, but this time to finance private spending. In both cases, aggregate spending in excess of revenues allowed a temporary increase in real wages above their sustainable level. The situation was maintained until foreign capital inflows were interrupted and even reversed, resulting in a balance of payments crisis, abrupt devaluation and increased inflation that seriously affected real wages (Graph 33).

**Graph 33 Real Wages, Current Account Deficit and the Exchange Rate: 1970-2000**



Source: Banco de México and INEGI

The possibility of sustainable improvements in real wages is determined by the productivity of labor, *i.e.*, the value of the contribution of labor to the production of goods and services. This value, in turn, is directly related to workers' education and health, to the quality and amount of capital used, and to technological innovations.

Low and stable inflation encourages an environment favorable to economic growth, employment, investment, labor productivity gains, and continual improvement in real wages, as proven by the events observed between 1950 and 1970. Conversely, real wages in Mexico have drastically contracted when there have been considerable decreases in GDP and sharp hikes in inflation (Graph 34).



**Graph 34** **Growth in Real Wages, GDP and Inflation**  
Annual Percentage

Growth in Real Wages and GDP  
1950-1999



Growth in Real Wages and Inflation  
1950-1999



When nominal wages grow at a pace incompatible with inflation expectations and gains in labor productivity this may be an early indicator of inflationary pressures. For this reason, in order for real wage increases to be permanent, it is crucial that wage negotiations be conducted taking inflation expectations and viable productivity gains into account.

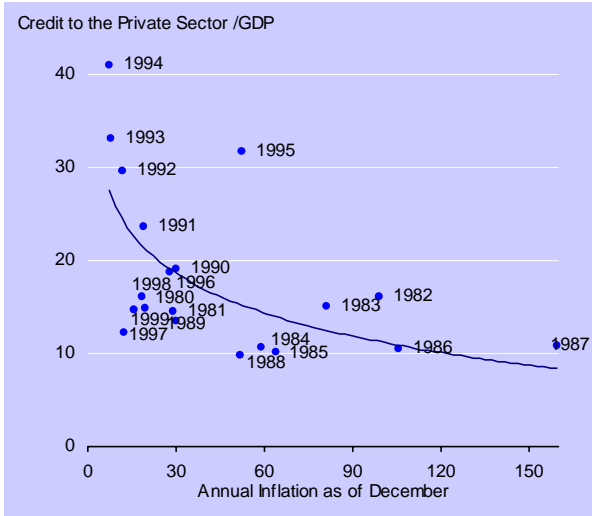
By recommending consistency among nominal wage increases, targeted inflation and expected productivity gains, Banco de México pursues the objective of attaining and preserving the conditions of stability that are indispensable for continual growth in real wages, while preventing the setbacks and costs in social welfare associated with crises.

The pernicious consequences of inflation are also reflected in the financial system and the soundness of public finances. The impact of inflation on financial intermediation is evidenced by the evolution of the Mexican financial system in recent years (Graph 35).

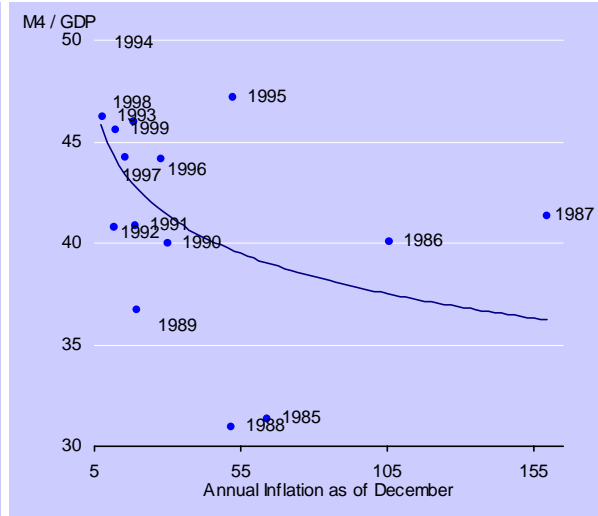
Graph 35

**Credit to the Non-bank Private Sector, Inflation and the Ratio of M4 to GDP**  
Percent

Credit to the Private Sector and Inflation  
1982-1999



Ratio of M4 to GDP and Inflation  
1985-1999



Inflation has an influence on government solvency as well: since the Mexican public sector is a net debtor, higher nominal and real interest rates that arise along with increasing inflation elevate the public debt service and lead to a deterioration in government finances. In addition, government revenues are also unfavorably affected by inflation as the real value of tax revenues is eroded between the time the tax is due and the time it is actually paid.

Economic uncertainty and high inflation rates are among the factors that explain Mexico's unequal distribution of income. Since inflation unfavorably affects the evolution of real wages, it obviously influences income distribution. In addition, individuals with limited resources do not have access to financial instruments in order to protect their savings and income from the detrimental repercussions of inflation. Consequently, in times of high and even moderate inflation, the savings and income of society's least fortunate sectors are undermined by price increases.

This brief account of the considerable damaging effects that high inflation has had on Mexico's economic performance clearly illustrates that the objective of price stability is not pursued as an end in itself. By achieving stable prices, monetary policy seeks to improve the well-being of the population.

In 1999, the convergence of Mexico's inflation with that of its main trading partners by the year 2003 was established as a medium-term monetary policy objective, in order to comply with the corresponding constitutional mandate. In addition, the Board of Governors of Banco de México is convinced that the Central Bank makes its greatest contribution to economic development by achieving the lasting stability of the national currency's purchasing power.

Since inflation in Mexico is still high, the Board of Governors has determined that in order to permanently reduce the growth in prices while minimizing the social costs of the process, a gradual strategy is preferable. Evidence collected from economies that have reduced their inflation from levels similar to those currently observed in Mexico, confirm the relevance of the Central Institute's determination. Thus, in order to implement this strategy in the most transparent way possible, presented below are the inflation targets that will guide monetary policy decisions in the year 2001 and over the medium term.

## **VI.2. Inflation Target for the Year 2001 and the Medium-Term Objective**

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A fundamental determinant of the costs implicit in the disinflation process is how credible the monetary authority's announcements are to the public. The actions of economic agents will be in agreement with the authority's targeted inflation inasmuch as these announcements succeed in influencing the determination of prices and wages in the economy. Therefore, a consensus in the appropriate direction would minimize the monetary restriction necessary to attain the goal. However, if congruity is absent and prices and wages are determined based on inflation expectations higher than the authority's target, then the monetary policy stance will have to be more restrictive. The purpose of a tighter monetary policy stance would be to weaken the excessive growth of domestic demand and labor market pressures, which would eventually limit price and wage increases and reestablish their compatibility with official targets.

The ideal means to improve the credibility of the objectives established by the monetary authority is to meet the proposed targets permanently. However, in order to promote trust, the monetary authority must announce specific goals and act in a timely manner to

guarantee their attainment. Therefore, the results obtained in the past two years —having reached inflation levels below the targets originally established— have been essential in building the credibility of future inflation targets.

Should inflation deviate from short-term targets due to phenomena other than the implementation of monetary policy, the Central Bank will explain in detail the causes of the deviation. The monetary authority must also attempt to estimate, to the degree possible, the impact of its actions as well as the expected delay for inflation to return to the originally planned path.

Based on this approach, in addition to its annual inflation target, Banco de México's Board of Governors decided to incorporate a medium-term goal into the Monetary Program for the year 1999: the convergence of Mexico's inflation with that of its main trading partners by the year 2003. The Monetary Program for 2000 also announced the publication of quarterly inflation reports, in order to provide precise and timely information about the evolution of prices and the implementation of monetary policy. In addition to the above, these reports present a detailed discussion of the expected trajectory of inflation and of the risks that could hinder monetary management in the near future.

In order to provide parameters to evaluate the conduction of monetary policy over the short and medium term, the Board of Governors of Banco de México has agreed to establish an annual inflation rate not exceeding 6.5 percent as its goal for 2001. For December 2003, there will be an attempt to maintain the annual growth rate of the INPC at 3 percent. In line with these objectives, the inflation target for 2002 (which will be announced in a timely fashion next year) will be approximately 4.5 percent.

Monetary policy must be evaluated with a long-term view. Over the short-term, inflation is determined primarily by monetary policy measures adopted in the past and by disturbances in the economy's key prices, such as the exchange rate, wages and the prices of goods and services provided or regulated by the public sector. Yet, given that the determinants of inflation are affected by monetary policy actions with a certain lag, decisions in this matter are often made more than one year in advance.

It should be noted that since inflation may be affected over the short term by factors other than the implementation of monetary policy, it may be impossible to reach the established target in any

given year. Under such circumstances, the medium-term objective serves as the system's nominal anchor: upon recognizing that the short-term target may not be achieved, the monetary authority must apply the appropriate measures in order to attain the originally proposed medium-term target. These actions would limit the deterioration of inflation expectations and would reestablish inflation's downward trend.

Discussed below are the factors that could cause inflation to deviate from established targets over the short term, as well as the monetary policy actions that should be implemented in response to this type of disturbances.

Since inflation is a monetary phenomenon, its eradication requires the application of monetary policy so as to reduce the growth in prices. However, the implementation of an extremely restrictive monetary policy may obtain the desired results over the short term, although at a high social cost or by generating imbalances in some markets. The eventual correction of these imbalances could cause future inflationary pressures, in which case the initial abatement of inflation could not be sustainable.

Due to the existence of downward rigidity in prices, unexpected inflationary pressures will appear in periods that require important changes in relative prices. As in the past, the domestic economy could experience two major disturbances of this type: increases in the prices of goods and services provided or regulated by the public sector, and the depreciation of the real exchange rate. Either of these disturbances would produce an immediate upward impact on the general price level. Under such circumstances, should the monetary authority decide to pursue its short-term inflation target at any cost, it would have to induce an offsetting movement in the remainder of the economy's prices, of a large enough magnitude to compensate for the inflationary impacts of the previously-mentioned increases. Due to the downward inflexibility shown by most prices, this adjustment would be practically impossible to make in the short term without overly high costs. Therefore, in such a scenario, following the practice of most of the world's central banks, Banco de México would not compensate for the direct inflationary impact of the adjustments, and thus a transitory deviation of inflation from short-term objectives would ensue. Nevertheless, Banco de México would tighten monetary policy to the degree necessary to prevent secondary effects on inflation expectations and on inflation itself. In this manner, such disturbances would have only a temporary impact

on inflation, and the growth in prices would return to the originally established trajectory once such disturbances had been absorbed.

As mentioned in other sections of this document, wage increases incompatible with the growth in productivity and with inflation objectives would considerably raise the social cost of the disinflation process. The underlying reason is that wage increases would cause company production costs to rise. After having exhausted the possibility of absorbing higher costs by reducing profits, firms would attempt to transfer higher costs to consumers through increased prices. If the monetary authority were to accommodate these increases, inflation would also rise and the intended gains in real wages would be reduced or annulled.

Conversely, if the monetary authority were to respond restrictively, the result would be a contraction in company profits, investment and employment. In short, the economy would find itself in a situation of low or zero growth. The official disinflation target would be attained, but the cost of the adjustment would be high.

The above argument clearly illustrates the need to conduct contractual wage negotiations based on inflation expectations compatible with the monetary authority's targets. The cost of the disinflation process could thus be reduced, and the process itself could continue to progress as planned.

A fundamental factor that has contributed to reaching the inflation targets established over the last two years has been the prudent handling of public finances. As stated in several forums, however, current fiscal strength is partially based on high oil revenues. This fact reveals the vulnerability of the macroeconomic framework and of future reductions in inflation in the event of an abrupt decline in oil prices. The excessive dependence of public revenues on oil is one of the most serious deficiencies of Mexico's fiscal structure. Therefore, it is extremely important to strengthen public finances through tax reforms that will reduce the dependence on oil.

Should upward pressures on prices arise from fiscal reform, inflation would temporarily deviate from established targets in the short term. However, just as in the case of relative prices discussed above, if the monetary authority's measures succeed in preventing secondary effects, inflation will return to the original targets over the medium term. In addition, once the probable short-term revision of inflation expectations has been contained, the

process of curbing inflation will be reinforced by a more solid fiscal position. Therefore, even if such a fiscal reform were to have short-term effects on inflation, the viability of attaining medium- and long-term goals would be increased.

The above discussion clearly illustrates the elements considered necessary to attain the inflation target for 2001, as well as the 3 percent convergence target of 2003:

- (a) adjustments in the prices of goods and services provided or regulated by the public sector based on targeted inflation;
- (b) wage increases compatible with sustainable productivity gains and targeted inflation;
- (c) absence of serious external disturbances, such as reductions in the supply of foreign capital or deteriorations in the terms of trade that would require substantial adjustments in the real exchange rate; and
- (d) a structurally sound fiscal policy —in this respect, it must be reiterated that an integral fiscal reform will probably have to be implemented in order to ensure such soundness, although in the short term upward pressures on prices may arise as a result of it.

If any of these conditions were not to be met, Banco de México would present in its quarterly *Inflation Reports* an evaluation of the possible consequences. In addition, an attempt would be made to forecast the speed at which the inflationary disturbance could be absorbed. Obviously, this exercise would be subject to a considerable degree of uncertainty. In the event of a fiscal reform or adjustments in the prices of goods and services provided or regulated by the public sector, the monitoring of core inflation would acquire greater importance: by excluding the direct effects of such disturbances, the evolution of core inflation would be a very useful reference in determining the magnitude of indirect inflationary effects. Under these circumstances, monetary policy would very probably have to be tightened so that general inflation could return to levels compatible with medium-term targets. Thus, the role of targeted inflation as a nominal anchor would be reinforced, and the contamination of medium- and long-term inflation expectations would be prevented.