

# Inflation Report

October – December 2009

and

# Monetary Program

for 2010

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BANCO DE MÉXICO

JANUARY 2010

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*BOARD OF GOVERNORS*

**Governor**

AGUSTÍN GUILLERMO CARSTENS CARSTENS

**Deputy Governors**

ROBERTO DEL CUETO LEGASPI

GUILLERMO GÜÉMEZ GARCÍA

MANUEL SÁNCHEZ GONZÁLEZ

JOSÉ JULIÁN SIDAQUI DIB



## **FOREWARNING**

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*Unless otherwise stated, this document has been prepared using data available as of January 26, 2009. Figures are preliminary and subject to change.*



## CONTENTS

### Inflation Report October – December 2009

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Recent Developments in Inflation .....</b>	<b>4</b>
2.1. Inflation.....	4
2.2. Producer Price Index .....	7
2.3. Wages.....	7
<b>3. Main Determinants of Inflation.....</b>	<b>9</b>
3.1. International Environment.....	9
3.1.1. World Economic Activity .....	9
3.1.2. Commodity Prices.....	11
3.1.3. World Inflation Trends.....	11
3.1.4. Financial Markets.....	13
3.1.5. Outlook.....	16
3.2. Developments in the Mexican Economy.....	18
3.2.1. Economic Activity.....	18
3.2.2. Financial Saving and Financing.....	26
<b>4. Monetary Policy .....</b>	<b>33</b>
<b>5. Inflation Forecasts and Balance of Risks .....</b>	<b>45</b>
<b>6. Monetary Program for 2010.....</b>	<b>51</b>

### Boxes

<b>1. Some Considerations on the Gaps Between Domestic and International Prices of Gasoline and Propane .....</b>	<b>41</b>
<b>2. One-off Price Increases and their Effects on Inflation .....</b>	<b>43</b>







## 1. Introduction

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During the October-December 2009 period, the recovery of the world economy strengthened. Nevertheless, various countries have just started to recover and the global economy is still vulnerable to new shocks. The expansionary economic policies together with the gradual reduction of difficulties in the financial systems of the major advanced economies have been the main factors behind this recovery.

The U.S. economy continued growing during the quarter, while both Eurozone and Japanese economies recovered but at a more moderate rate. The main emerging economies -like China, India and Brazil- have recovered more rapidly and during the crisis they grew at significantly smaller rates than in advanced economies

Despite the fact that both world economic activity and trade flows have increased, in the short term, the rate of growth of the global economy is expected to recover moderately due to a weak domestic demand in advanced economies, which is anticipated to persist as long as: 1) the income, employment, and financial situation of households in those economies continues to improve slowly; 2) firms continue operating with a high idle capacity; and, 3) credit conditions remain tight. For these reasons, the output gap in these economies might take some years to close.

After having been in negative territory for several months in most advanced economies, inflation registered positive figures during the last quarter of 2009, albeit still remaining at low levels. In emerging economies, prices increased at a relatively moderate rate during the same period, although with important differences among countries, and with some of them experiencing a certain price rebound. During the last three months of the year, the monetary policy stance continued to be accommodative in practically all economies, both advanced and emerging. However, some countries began the process of withdrawing the monetary stimulus.

International financial markets improved between October and December of 2009, following the trend observed since the second quarter of the year. Nevertheless, conditions that still prevail in these markets have not fully gone back to normality. In particular, the world financial markets are still vulnerable to any setbacks that could hamper the world's economic recovery. Furthermore, the extended period of the monetary stimulus could translate into asset prices that do not fully reflect the economic fundamentals, raising the probability of a sudden correction once the interest rates in advanced economies increase.

Indeed, low interest rates in the U.S. and other advanced economies, expectations that these rates will remain low for a long period, and the weakness of the US dollar, have allowed, together with an improved outlook for growth in most emerging economies, the reemerging of carry-trade. This is basically the search for higher yields through cheap financing in advanced economies' currencies. These operations have led to a significant increase in capital flows to emerging economies because they offer higher interest rates. This situation could become a factor of risk and instability in the future and lead to a scenario where

capital flows could suddenly revert, once the stimulus measures in advanced economies are withdrawn.

In order to grow at higher and more sustainable rates in the medium and long terms, the composition of the world demand is foreseen to adjust. The sustained recovery of countries with large current account deficits, like the U.S., will depend on the growth of their net exports and domestic savings, which will imply lesser exports from the rest of the world to that country. As for those economies with high current account surpluses, such as the Asian emerging economies –particularly China- they need to raise their levels of domestic demand and reduce those of saving. Only after the currencies of the referred Asian countries led by China appreciate, a change in the current balance of world spending would be observed, which would in turn boost world economic growth.

As for productive activity in Mexico, most recent indicators confirm that, during the last quarter of 2009, it continued following the same increasing trend observed since the third quarter. As a consequence, GDP is estimated to have grown during the fourth quarter of 2009 at a quarterly seasonally adjusted rate of above 1 percent. The rebound in economic activity since the third quarter was essentially fueled by the recovery of the world economy, which has led to an upturn in manufacturing exports and to a gradual transmission of this recovery to other sectors of the economy, such as the services sector. Nevertheless, in contrast to the significant increase in external demand, available indicators of domestic demand are just starting to improve. In general terms, the economy continues operating under slack conditions, below its potential growth levels.

During the fourth quarter, annual headline inflation continued following the same downward trend observed since the beginning of 2009. Both core and non-core inflation components account for this result. This reduction in inflation was widespread across all subindices and is inherent to all aspects surrounding the current phase of the business cycle, the absorption of the supply shocks that took place previously, and the price setting policies adopted by the different levels of government. Nevertheless, it is important to point out that the degree of core inflation inertia in Mexico is still high.

In 2010, inflation is expected to reflect the effects of the tax changes approved by Congress and of the adjustments in both federally and locally determined public price policies. In both cases, the direct impact on inflation is usually temporary. The rebound of inflation in 2010 is expected to be transitory, to affect the price level one time only and then fade throughout 2011. Worth mentioning is that annual headline inflation is forecasted to come close to the 3 percent target during the fourth quarter of 2011.

Notwithstanding the above, the risk of second round effects on inflation prevails. These effects would materialize if expectations for longer terms are affected, which would also affect the economy's price formation process. Up to now, these expectations have remained relatively stable and there are no signs of widespread pressures on inflation, although expectations continue to be above the 3 percent target. It is important to mention that the latter situation has also been framed by the slackness that prevails in the economy and by foreign capital flows. Both factors are expected to perform similarly during 2010.



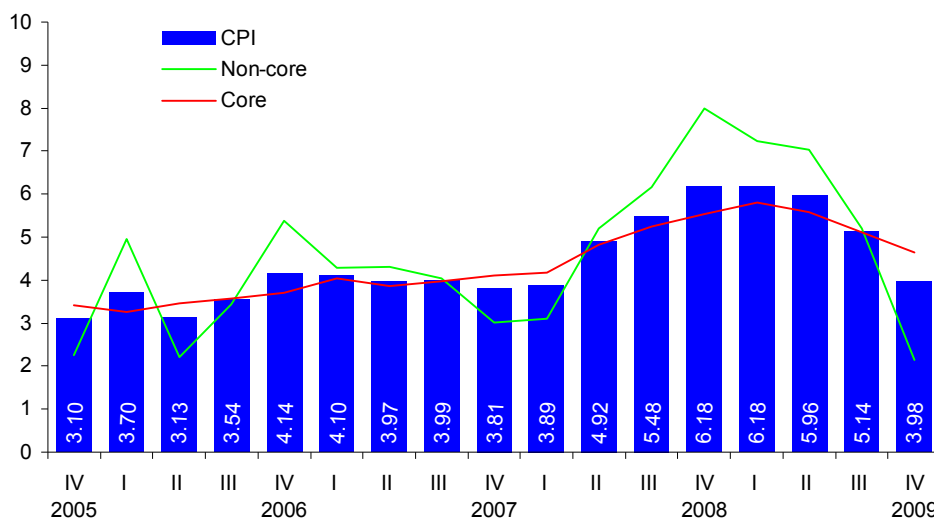
Under such an environment, in January 2010, Banco de México's Board of Governors left the target for the Overnight Interbank Rate unchanged at 4.5 percent. Nevertheless, the Board has mentioned that it will monitor the pattern followed by medium and long-term inflation expectations, and other indicators that could alert on any unexpected and widespread pressures on prices. The central bank is thus expected to adjust its monetary policy in order to reach the 3 percent inflation target by the end of next year. The framework under which the Board of Governors will base its monetary policy decisions is explained fully in detail in the last section of this Report, which describes the Monetary Program for 2010.

## 2. Recent Developments in Inflation

### 2.1. Inflation

During the fourth quarter of 2009 annual headline inflation continued to follow the downward path it had exhibited since the start of that year, reaching 3.98 percent (5.14 percent in the preceding quarter and 6.18 percent in the last quarter of 2008, Graph 1 and Table 1). Thus, at the end of 2009 annual headline inflation was 3.57 percent, figure 1.32 percentage points below that observed at the end of the third quarter and 2.96 percentage points lower than that registered in December 2008.

**Graph 1**  
**Consumer Price Index**  
 Annual change (percent)



The above reduction in headline inflation responded to the performance of both CPI's core and non-core components. The contribution of the latter was particularly noteworthy during the fourth quarter. In fact, during the quarter analyzed in this report, average annual non-core inflation was 2.15 percent, after having been 5.20 percent in the preceding quarter and 7.99 percent during the fourth quarter of 2008. Meanwhile, average annual core inflation was 4.65 percent as compared to 5.11 percent during the third quarter and 5.33 percent during the last quarter of 2008 (Table 1).

The downward trend followed by core inflation throughout 2009 responded to the following factors:

1. The weakness of economic activity during the year which had a greater impact on services prices. In this regard, the average annual growth of the services subindex during the fourth quarter was 3.35 percent (3.78 percent in the preceding quarter and 4.97 percent during the last quarter of 2008).

2. The gradual disappearing of the supply shocks that took place during 2008 and affected the annual inflation of processed foods' price quotes. The average annual variation of this group during the fourth quarter was 6.55 percent (7.24 percent in the preceding quarter and 8.92 percent at the end of 2008).
3. The appreciation of the exchange rate around the second half of the year allowed for the fading of one of the most significant obstacles to the deflationary process in 2009.<sup>1</sup> This was mainly reflected in a reduction in the average annual core inflation of non-food prices, which reached 5.62 percent during the fourth quarter (5.99 percent during the third quarter).

**Table 1**  
**Consumer Price Index and Components**  
Annual change (percent)

	Annual Change (Percent)				Average Annual Change (Percent)	
	Sep-2009	Oct-2009	Nov-2009	Dec-2009	III-Q 2009	IV-Q 2009
	<b>CPI</b>	<b>4.89</b>	<b>4.50</b>	<b>3.86</b>	<b>3.57</b>	<b>5.14</b>
<b>Core</b>	<b>4.92</b>	<b>4.90</b>	<b>4.59</b>	<b>4.46</b>	<b>5.11</b>	<b>4.65</b>
<b>Merchandise</b>	<b>6.38</b>	<b>6.50</b>	<b>6.06</b>	<b>5.57</b>	<b>6.55</b>	<b>6.04</b>
Foods	7.00	7.34	6.60	5.73	7.24	6.55
Remaining merchandise	5.88	5.81	5.62	5.45	5.99	5.62
<b>Services</b>	<b>3.56</b>	<b>3.42</b>	<b>3.22</b>	<b>3.41</b>	<b>3.78</b>	<b>3.35</b>
Housing	2.97	2.70	2.48	2.65	3.02	2.61
Education	4.13	4.12	4.12	4.13	4.93	4.13
Remaining services	4.01	3.95	3.69	3.99	4.17	3.88
<b>Non-core</b>	<b>4.82</b>	<b>3.38</b>	<b>1.90</b>	<b>1.20</b>	<b>5.20</b>	<b>2.15</b>
<b>Agricultural</b>	<b>12.76</b>	<b>8.76</b>	<b>4.41</b>	<b>1.66</b>	<b>12.16</b>	<b>4.88</b>
Fruits and vegetables	20.28	11.86	3.67	-1.12	16.68	4.61
Livestock, poultry, and fish	8.03	6.79	4.90	3.52	9.32	5.05
<b>Administered and regulated</b>	<b>0.80</b>	<b>0.69</b>	<b>0.64</b>	<b>0.97</b>	<b>1.68</b>	<b>0.76</b>
Administered	-0.32	-0.77	-0.32	0.28	0.57	-0.26
Regulated	1.92	2.21	1.68	1.72	2.79	1.87

The downward path of non-core inflation also responded to three main factors. The first two persisted throughout 2009, while the third mostly affected the last quarter of the year:

- i) The Mexican government's pricing policy which led to the freezing of gasoline prices and the reduction of prices of both propane and natural gas and of peak rate electricity fees, resulted in a significant reduction in the growth of prices of administered and regulated goods and services. During the fourth quarter, the average annual variation of this price subindex was -0.26 percent in contrast to the 0.57 percent and 8.21 percent observed in the preceding quarter and in the last quarter of 2008, respectively.
- ii) The gradual absorption of supply shocks which took place during 2008 and affected the annual growth of price quotes for livestock products

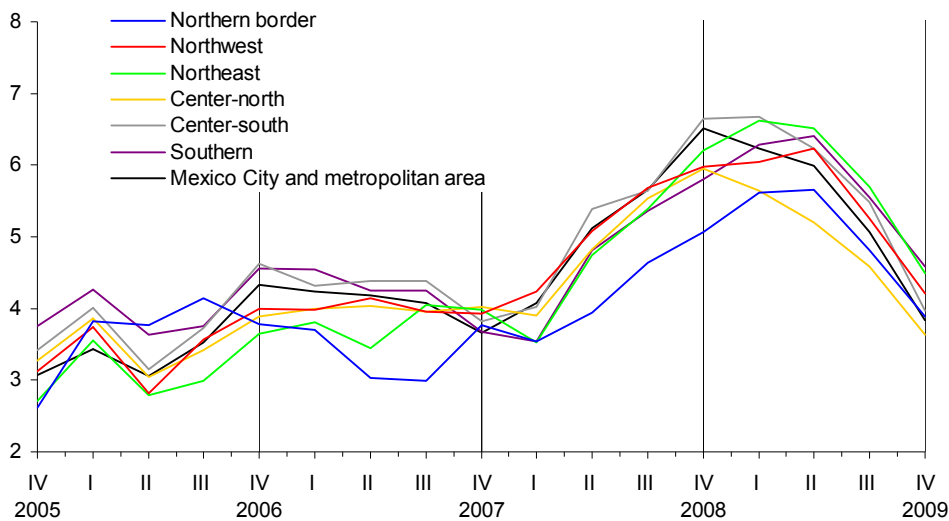
<sup>1</sup> The Inflation Report of April - June 2009 included the results of a business climate survey conducted among industrial and services entrepreneurs where they indicated that most of the price adjustment associated with the exchange rate depreciation had taken place during the last quarter of 2008 and the first half of 2009.

and public transportation in 2009. Thus, the average inflation of the former group was 5.05 percent during the fourth quarter of 2009, while it had been 9.32 percent during the third quarter and 10.94 percent during the last quarter of 2008. Meanwhile, the behavior of public transportation fees influenced the average annual inflation of regulated prices, which reached 1.87 percent in the last quarter of 2009 (2.79 percent in the preceding quarter and 6.19 percent during the fourth quarter of 2008).

- iii) A substantial fall in the growth of the fruits and vegetables price index during the fourth quarter. The annual average variation of this subindex in the referred quarter was 4.61 percent, after having been 16.68 percent during the third quarter. It is important to mention that the fruits and vegetables' subindex is subject to a high level of volatility given that the supply of both fruits and vegetables is usually affected by the frequent changes in weather conditions which lead to sudden shifts in the prices of these products.

It is important to emphasize that inflation followed a downward trend in all regions of Mexico during the period analyzed.<sup>2</sup> In fact, during the fourth quarter, annual average inflation was below 4 percent in the three central regions of the country shown in Graph 2 (Mexico City area, northern and southern central regions), as well as in the northern border region. On the other hand, the southern region reached the highest level of inflation in that quarter, registering an average level of 4.59 percent.

**Graph 2**  
Regional Consumer Price Indices  
Average annual change (percent)



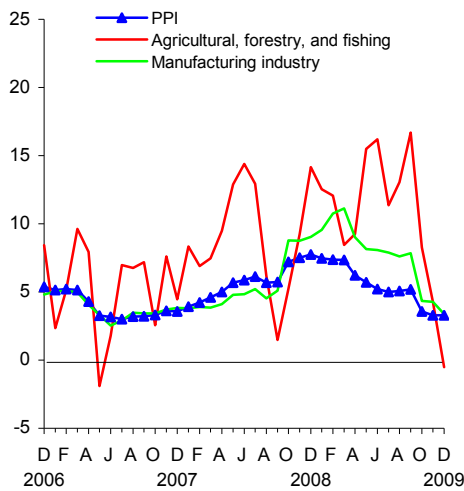
<sup>2</sup> Mexico's regions used in this section are: Northern border, which includes Tijuana, Cd. Juárez, Mexicali, La Paz, Matamoros and Cd. Acuña; Northeast region, which comprises Hermosillo, Tepic, Culiacán and Huatabampo; Northwest region, which includes Monterrey, Torreón, Chihuahua, Tampico, Durango, Monclova, Jiménez and Fresnillo; North-central region, which includes Guadalajara, León, San Luis Potosí, Aguascalientes, Querétaro, Morelia, Colima, Cortázar, Jacona and Tepatitlán; Southern-central region, which is made up of Puebla, Acapulco, Veracruz, Córdoba, Toluca, Cuernavaca, Tlaxcala, San Andrés Tuxtla, Tulancingo and Iguala; and, Southern region, which includes Mérida, Tapachula, Campeche, Villahermosa, Oaxaca, Chetumal, and Tehuantepec.

## 2.2. Producer Price Index

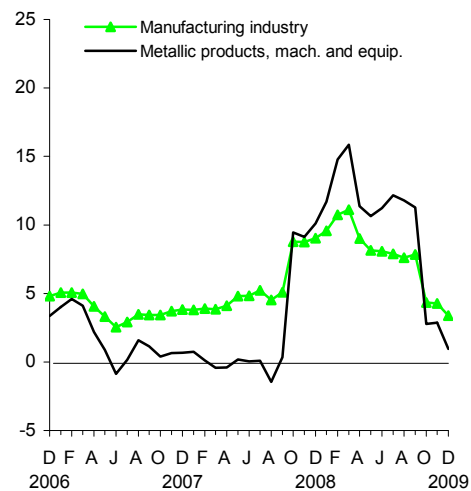
The non-oil producer price index of final goods and services continued to follow a downward path during 2009, registering an annual average variation of 3.38 percent during the fourth quarter (5.09 percent in the previous quarter). The reduction in the latter quarter mainly obeyed to the slower growth in prices of manufactured goods and agricultural products (Graph 3a). In the case of the former, the contribution of metal products, machinery and equipment was outstanding (Graph 3b).

**Graph 3**  
**Non-oil Producer Price Index**  
 Annual change (percent)

a ) PPI, Manufactures, and Transport



b) Manufactures and Metallic Products



## 2.3. Wages

The growth of both the IMSS average reference wage and contractual wages slowed during the fourth quarter of 2009.<sup>3</sup> The first of these indicators recorded an annual average variation of 3.0 percent in the October - December period of 2009 (4.0 percent during the preceding quarter, Table 2). As for contractual wages, firms under federal jurisdiction negotiated an average increase of 4.1 percent during the period analyzed (4.2 percent in the same quarter of the previous year). Wage settlements in privately and publicly-owned firms recorded average increases of 4.6 and 3.9 percent, respectively (4.7 and 4.0 percent during the fourth quarter of 2008, Table 2).

<sup>3</sup> The IMSS reference wage considers the daily average earnings by workers insured by this institution during a certain period, and some fringe benefits (e.g. end-of-year bonuses, vacation bonuses and commissions). Contractual wages, on the other hand, include only direct increases to the salary rate negotiated by workers of firms under federal jurisdiction that will be in effect for a year. The monthly composition of this indicator is based on information from firms that were engaged in wage settlements, usually during the same period of the year. For this reason, this indicator follows a seasonal behavior. As a result, when analyzing the reference wage it is preferable to compare successive time periods, while in the case of contractual wages, annual periods.

**Table 2**  
**Main Wage Indicators**  
**Annual change (percent)**

	2008					2009				
	I	II	III	IV	Jan-Dec	I	II	III	IV	Jan-Dec
<b>IMSS average reference wage</b>	4.9	5.2	5.6	5.7	5.3	5.3	4.6	4.0	3.0	4.2
Primary sector	3.3	4.3	5.7	5.8	4.8	5.0	4.0	3.5	2.3	3.7
Secondary sector	5.8	6.2	6.5	7.1	6.4	6.7	5.7	5.4	3.1	5.2
Tertiary sector	4.3	4.7	5.0	4.8	4.7	4.5	4.0	3.3	3.1	3.7
<b>Total contractual wages</b>	4.4	4.4	4.8	4.2	4.4	4.4	4.4	4.7	4.1	4.4
Publicly-owned	4.3	4.3	4.8	4.0	4.3	4.6	4.8	4.9	3.9	4.3
Privately-owned	4.4	4.5	4.7	4.7	4.5	4.4	4.3	4.6	4.6	4.4

Source: Prepared by Banco de México with data from IMSS and Ministry of Labor.

In December 2009, the Minimum Wages Commission (*Comisión Nacional de los Salarios Mínimos*, CONASAMI) agreed on an average increase of 4.85 percent for the minimum wage (*Salario Mínimo General*, SMG) in the three geographical regions during 2010 (as compared with 4.6 percent on average in 2009). The minimum wage was thus set at 55.77 pesos per day (Table 3).

**Table 3**  
**Minimum Wages**  
**Pesos per day and annual change in percent**

Period	Pesos per day				Annual change (percent)			
	Average	Geographic region			Average	Geographic region		
		A	B	C		A	B	C
2005	45.24	46.80	45.35	44.05	4.50	3.50	3.70	4.60
2006	47.05	48.67	47.16	45.81	4.00	4.00	4.00	4.00
2007	48.88	50.57	49.00	47.60	3.90	3.90	3.90	3.90
2008	50.84	52.59	50.96	49.50	4.00	4.00	4.00	4.00
2009	53.19	54.80	53.26	51.95	4.62	4.20	4.51	4.95
2010	55.77	57.46	55.84	54.47	4.85	4.85	4.85	4.85

Source: Minimum Wages Commission (*Comisión Nacional de Salarios Mínimos*, CONASAMI).



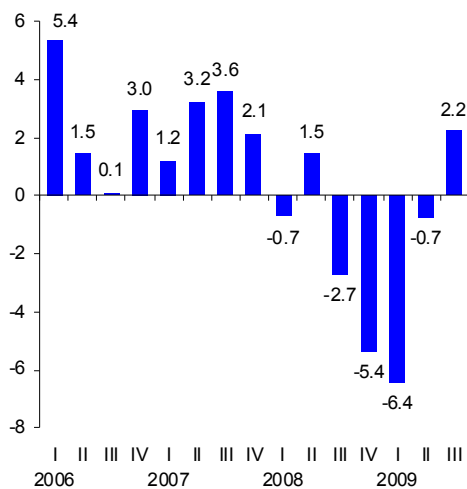
### 3. Main Determinants of Inflation

#### 3.1. International Environment

##### 3.1.1. World Economic Activity

The U.S. economy grew 2.2 percent in annualized quarterly terms during the third quarter of 2009. This result represents the first positive GDP growth since the second quarter of 2008 (Graph 4a). The latest available information suggests U.S. economic activity continued to recover during the fourth quarter. Industrial production continued to improve substantially, growing 7.0 percent in annualized quarterly terms during the period (6.3 percent after excluding motor vehicles and auto parts, Graph 4b).

**Graph 4**  
**U.S. Economic Activity**  
Annualized quarterly change in percent; seasonally adjusted figures  
a) GDP Growth                      b) Industrial Production



Source: BEA.



Source: Federal Reserve.

During the fourth quarter, consumption in the U.S. continued to expand at modest rates in response to the sluggish recovery of personal disposable income and the weak labor market. An additional factor which hampered the growth of consumption was the loss of households' net wealth.<sup>4</sup> Although household assets recovered slightly during the second and third quarters of 2009, cumulative losses since the middle of 2007 amounted to around 12.6 trillion US dollars (Graph 5a).<sup>5</sup> Analysts also expect households to continue cleaning up their financial situation instead of increasing their expenditure, implying that the rate of saving could remain far above levels seen before the crisis (Graph 5b). Meanwhile, although the labor market is still extremely weak, it showed signs of

<sup>4</sup> Households' net wealth is defined as total assets less financial liabilities. Assets include both real assets (such as real estate and consumer durables) and financial assets.

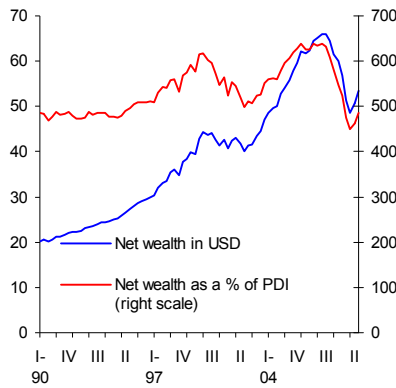
<sup>5</sup> Between the second quarter of 2007 and the third quarter of 2009, household wealth decreased from 6.4 to 4.9 times the personal disposable income.

stabilizing during the fourth quarter of the year.<sup>6</sup>

Although credit approval conditions in the U.S. have improved, they are still relatively tight (Graph 5c). At the third quarter of 2009, Federal Reserve flow of funds accounts showed a further reduction in the stock of financing to households and firms. Meanwhile, financing to the public sector continued to increase significantly.

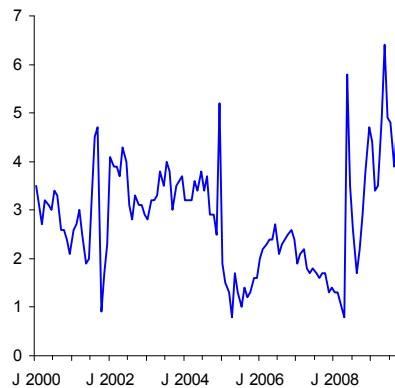
**Graph 5**  
**U.S.: Households' Net Wealth, Savings Rate, and Credit Conditions**

**a) Households' Net Wealth**  
Trillion USD and percent of PDI<sup>1/</sup>



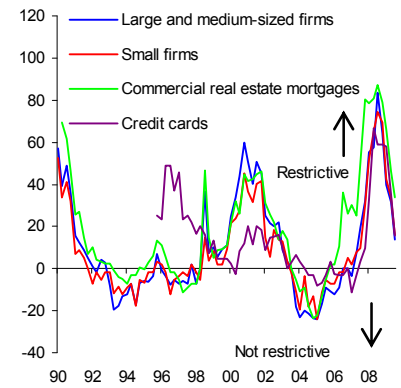
Source: Federal Reserve.  
1/ PDI: Personal disposable income.

**b) Savings Rate**  
Percent of PDI<sup>1/</sup>



Source: BEA.  
1/ PDI: Personal disposable income.

**c) Credit Granting Conditions**<sup>1/</sup>  
Balance of responses, in percent



Source: Federal Reserve.  
1/ The net percentage is equal to the percentage of banks that reported having tightened their credit conditions minus the percentage that reported having eased them.

Firms' reduction of their inventory levels slowed, while their expenditure on equipment and software began to show signs of improvement during the fourth quarter of 2009 in response to their healthier financial positions. Nonetheless, industrial sector capacity use remained extremely low.<sup>7</sup> The real estate sector also continued its recovery buoyed by the program of tax credits for home purchases.

The U.S. economy has recovered faster than anticipated a few months ago and stronger than the European and Japanese economies. This is partly explained by the more ambitious fiscal and monetary stimulus measures implemented in the U.S. However the authorities in that country believe it is still too early to start withdrawing such measures due to the persistent weakness of the economy, as well as the uncertainty surrounding the sustainability of the recovery. In line with the aforementioned, at the start of November the US government unveiled a new package of fiscal stimulus measures to support growth and employment.<sup>8</sup>

The recessive phase of the business cycle also seems to have ended in other advanced economies during the third quarter of 2009. Leading indicators

<sup>6</sup> The decline of non-farm employment shifted from monthly averages of 691 and 428 jobs during the first and second quarters, to 69 thousand during the fourth quarter.

<sup>7</sup> Installed capacity use was 68.3 percent during the last quarter of 2009, as compared with the historic average of around 81.2 percent.

<sup>8</sup> These measures include tax exemptions for small companies, the extension of unemployment insurance benefits and healthcare plans, as well as the extension and widening of the program of tax credits for home buyers.

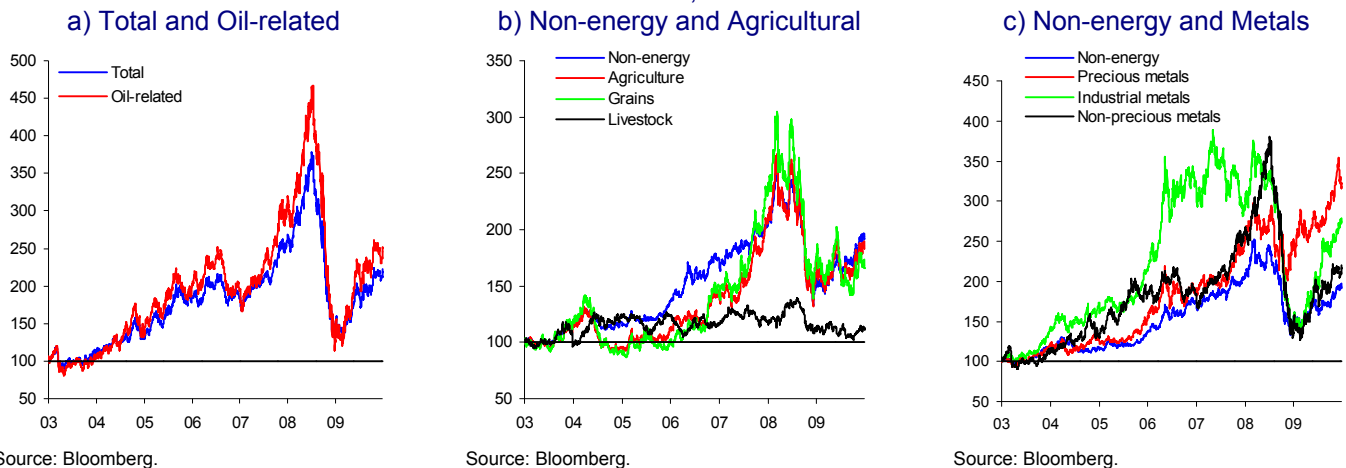
available for the fourth quarter, as well as business confidence and purchase managers indices, suggest that the Eurozone economy will continue recovering at a modest pace. The U.K. economy registered sluggish growth during the last quarter of 2009, after having contracted in the previous six months. Fragile economic recovery continued in Japan. In particular, although the Tankan business confidence indicator followed an upward trend, it remained in negative territory during the fourth quarter of 2009.

Emerging economies have recovered more rapidly than advanced nations, particularly in the cases of China, India and Brazil. In China, GDP expanded 10.7 percent in annual terms during the fourth quarter of 2009, as compared with the upward revised figure of 9.1 percent in the previous quarter. Economic activity in Latin America recovered slightly in the second half of the year, buoyed by higher public expenditure, low interest rates and improved world demand.

### 3.1.2. Commodity Prices

Prices of both energy and non-energy commodities rebounded within an environment of high volatility during the fourth quarter of 2009. Nonetheless, such prices are still below the average levels observed in 2008. The recovery was influenced, among other factors, by: 1) an improvement in the outlook for the world economy; 2) favorable liquidity conditions in financial markets and low interest rates, which boosted financing for replacing inventories; and 3) the weak US dollar, which fostered investment in commodities. In the case of energy commodities, OPEC’s production cuts and adverse weather conditions also contributed to price increases. Within the group of non-energy commodities, the increases in prices of grains and industrial metals were outstanding (Graph 6).

**Graph 6**  
**Commodity Prices**  
December 31, 2002=100



### 3.1.3. World Inflation Trends

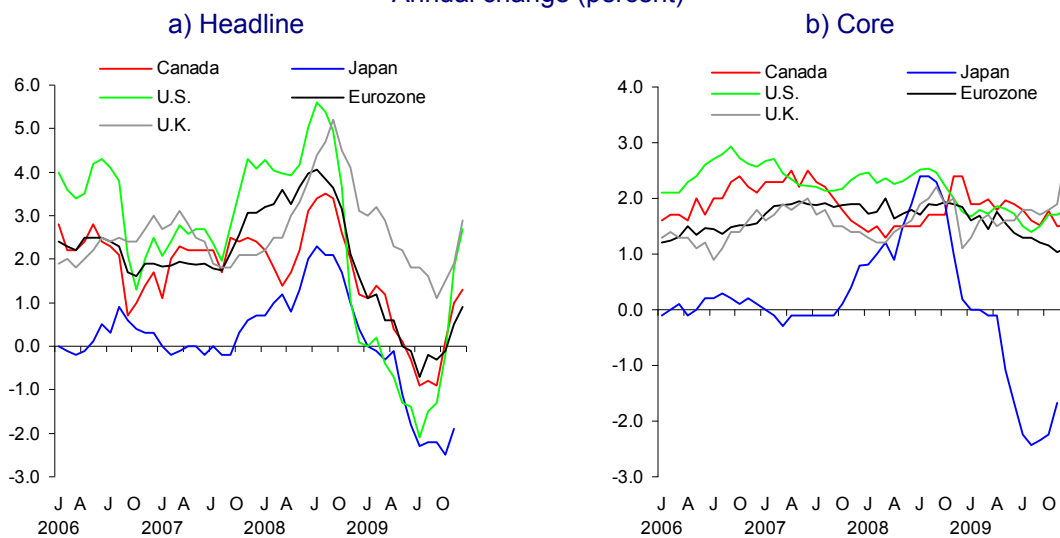
During the fourth quarter, annual CPI inflation in most advanced economies began to post positive figures, after having being in negative ground for several months (Graph 7). Core inflation generally continued to follow a downward path in these countries, if at a more modest pace. Given the absence

of inflationary pressures and the meager growth of domestic demand, and in spite of the improved outlook for recovery, the monetary policies of the major central banks remained loose.<sup>9</sup>

In the U.S., headline CPI inflation rebounded sharply in the fourth quarter of 2009, shifting from -1.3 percent in annual terms during the third quarter to 2.7 percent in December. This mainly responded to the arithmetic effect from the decline in energy prices during the last quarter of 2008. Core inflation increased slightly during the fourth quarter, but remains at low levels. The Federal Reserve Bank maintained an extremely loose monetary policy stance, considering that both inflation and inflation expectations would remain well anchored. Furthermore, in its press release of last December, the Federal Reserve (Fed) reiterated its intention to keep its federal funds rate at low levels for an extended period.

Headline CPI inflation in the Eurozone also turned out to be positive in November 2009, after having registered negative figures since June of that year. Core inflation continued to decline in the last quarter of 2009, reaching its lowest level in just over 9 years. Under these conditions, the European Central Bank kept its policy rate unchanged. In the U.K., both headline and core inflation rose during the fourth quarter. Nevertheless, taking the widening output gap into account, the Bank of England also left its reference interest rate unchanged. In Japan, the deflationary process which started at the start of 2009 continued into the fourth quarter. For this reason, the Bank of Japan decided to keep its benchmark interest rate on hold.

**Graph 7**  
**Inflation in Selected Advanced Economies**  
 Annual change (percent)



Source: Country's statistics bureaus.

Source: Country's statistics bureaus.

In emerging economies, inflation remained at relatively low levels during the last quarter of 2009. However, there were significant differences among these

<sup>9</sup> In most advanced economies, policy interest rates have remained at low levels, between 0.25 percent (e.g. in Canada and the U.S.) and 1.0 percent (e.g. in the Eurozone). In general terms, these central banks continue to use unconventional methods to supply liquidity to their economies and support their financial systems.

countries and prices even rebounded slightly in some of them. It is important to mention that, although inflation generally remained low in Asian emerging economies, rising share prices and sharp increases in real estate values are seen as signs of a possible price bubble and not just as a reflection of economic recovery. In Latin America, inflationary pressures were contained. In the main South American countries, annual CPI inflation was either within or below its target band in December 2009. Particularly noteworthy is the case of Chile, which underwent deflation throughout the fourth quarter of last year. During that period, monetary policy in practically all emerging economies remained loose with some central banks, such as that of Colombia, Russia, Turkey and Uruguay, cutting their reference interest rates even further (Table 4).

It is important to emphasize that some countries, including advanced economies, either began or continued the process of withdrawing monetary stimulus measures in response to the growing risks of inflationary pressures and a rebound in inflation expectations. Thus, the Reserve Bank of Australia and the Central Bank of Norway hiked their reference interest rates for the third and second consecutive times, respectively, in December. After an initial increase in August, the Bank of Israel once more began the process of withdrawing monetary stimulus measures, raising its policy interest rate in November and December. Both India and China kept their reference interest rates on hold during the fourth quarter, although the Central Bank of India adjusted its liquidity requirements upwards last November, while the People's Bank of China raised its RMB deposit reserve ratio in January 2010.

**Table 4**  
**Monetary Policy Rates of Selected Emerging Economies**  
 In percent and percentage points

Country	Monetary policy rate	Level at end of 2007	Net Changes in Monetary Policy Rate								Level at Jan.26, 2010
			2008				2009				
			I	II	III	IV	I	II	III	IV	
Brazil	Selic rate	11.25	(=) 0.00	(+) 1.00	(+) 1.50	(=) 0.00	(-) 2.50	(-) 2.00	(-) 0.50	(=) 0.00	8.75
Colombia	Base rate for growth auctions	9.50	(+) 0.25	(=) 0.00	(+) 0.25	(-) 0.50	(-) 2.50	(-) 2.50	(-) 0.50	(-) 0.50	3.50
Chile	Monetary policy rate	6.00	(+) 0.25	(+) 0.50	(+) 1.50	(=) 0.00	(-) 6.00	(-) 1.50	(-) 0.25	(=) 0.00	0.50
China	One-year financial institutions lending rate	7.47	(=) 0.00	(=) 0.00	(-) 0.27	(-) 1.89	(=) 0.00	(=) 0.00	(=) 0.00	(=) 0.00	5.31
India	Repo rate	7.75	(=) 0.00	(+) 0.75	(+) 0.50	(-) 2.50	(-) 1.50	(-) 0.25	(=) 0.00	(=) 0.00	4.75
Perú	Reference rate	5.00	(+) 0.25	(+) 0.50	(+) 0.75	(=) 0.00	(-) 0.50	(-) 3.00	(-) 1.75	(=) 0.00	1.25
Russia	Refinancing rate	10.00	(+) 0.25	(+) 0.50	(+) 0.25	(+) 2.00	(=) 0.00	(-) 1.50	(-) 1.50	(-) 1.25	8.75
South Africa	Repurchasing rate	11.00	(=) 0.00	(+) 1.00	(=) 0.00	(-) 0.50	(-) 2.00	(-) 2.00	(-) 0.50	(=) 0.00	7.00
Turkey	Overnight central bank lending rate	15.75	(-) 0.50	(+) 1.00	(+) 0.50	(-) 1.75	(-) 4.50	(-) 1.75	(-) 1.50	(-) 0.75	6.50

Source: Central banks and Bloomberg.

### 3.1.4. Financial Markets

World financial conditions stabilized during the last quarter of 2009, reflecting both government support measures and positive feedback from

improvements in the world economy. Although uncertainty decreased, investor confidence is still susceptible to sudden changes.<sup>10</sup>

The major central banks of advanced economies continued to use unconventional tools to bolster their respective financial markets during the fourth quarter. The U.S. Federal Reserve announced it would continue purchasing mortgage-backed securities and debt issued by government-sponsored enterprises.<sup>11</sup> However, it also signaled that most liquidity facilities<sup>12</sup> and currency swap agreements with different central banks would come to an end on February 1, 2010. The Bank of England announced an increase in its program to purchase financial assets, which will be terminated at the end of February 2010. The European Central Bank modified some of its refinancing operations in advance of the withdrawal of its special liquidity facilities. In contrast, the Bank of Japan maintained its temporary financial sector stimulus measures and unveiled the creation of a new liquidity facility.

As mentioned previously, the monetary policy stance in advanced and emerging economies generally remained loose during the last three months of 2009. Nonetheless, the relative policies and their bias varied according to particular macroeconomic conditions. The lesser impact of the international financial crisis on emerging economies has meant policy interest rates in these countries are higher and more likely to increase than those in advanced countries. This has translated into financial investment opportunities resulting from interest rate spreads and expectations that emerging economies' currencies will continue to appreciate. It also goes some way to explaining the increase observed in capital flows to emerging countries (Graph 8a and b).

The surge in these so called "carry trade" operations has led to concerns among authorities that a new speculative bubble is being created. This is due to the fact that rising asset prices could be due more to the search for higher yields than to improved economic fundamentals.

Interest rates on 3-month U.S. Treasury bills decreased during the fourth quarter of 2009, while those for longer terms rose. The widening of this spread responded to expectations that the policy interest rate would remain at low levels for an extended period, further indications of economic recovery and the markets' negative perception of the extraordinary fiscal expansion. The latter contributed to the largest steepening of the yield curve for the last thirty years during the last quarter of 2009.

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<sup>10</sup> For instance, the markets underwent a period of volatility due to Dubai World's temporary suspension of its debt payments at the end of November and then again in December when Greece's sovereign debt rating was lowered.

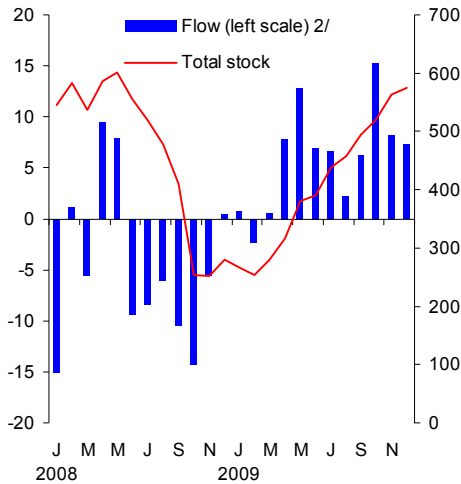
<sup>11</sup> Purchases of these securities have declined in order to guarantee a gradual transition in these markets. This process is expected to be completed at the end of the first quarter of 2010.

<sup>12</sup> These are the Asset-Backed Commercial Paper Money Market Fund Liquidity Facility (AMLF), the Primary Dealer Credit Facility (PDCF), the Commercial Paper Funding Facility (CPFF) and the Term Securities Lending Facility (TSLF). For certain types of loans the Term Asset-Backed Securities Loan Facility (TALF) will be maintained for a longer period of time.

**Graph 8**

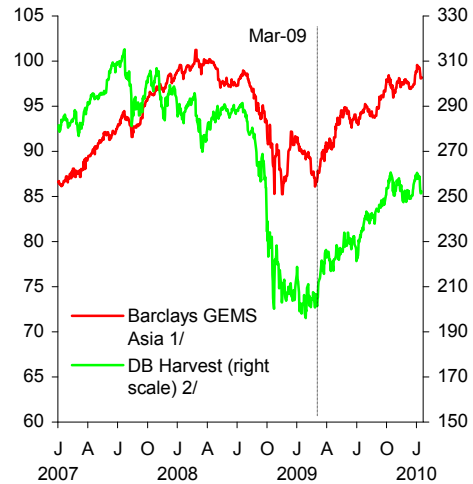
**Investment in Emerging Markets**

**a) Funds for Emerging Economies (Equity and Bonds)<sup>1/</sup>**  
Billion USD



Source: Emerging Portfolio Fund Research.  
 1/ The sample covers funds used for the purchase-sale of equity and bonds of emerging economies, registered in advanced economies' markets.  
 2/ Flows exclude portfolio results and exchange rate fluctuations.

**b) Carry Trade Returns Indices**



Source: Deutsche Bank and Barclays.  
 1/ Base July 2001 = 100. This index reproduces a strategy of investment in the money market of 8 Asian countries, calculating the yield in USD of investments in those currencies.  
 2/ Base March 1993 = 100. This index, which is constructed with G10 currencies, reflects the yield of investing in currencies with high interest rates and financing in currencies with low interest rates.

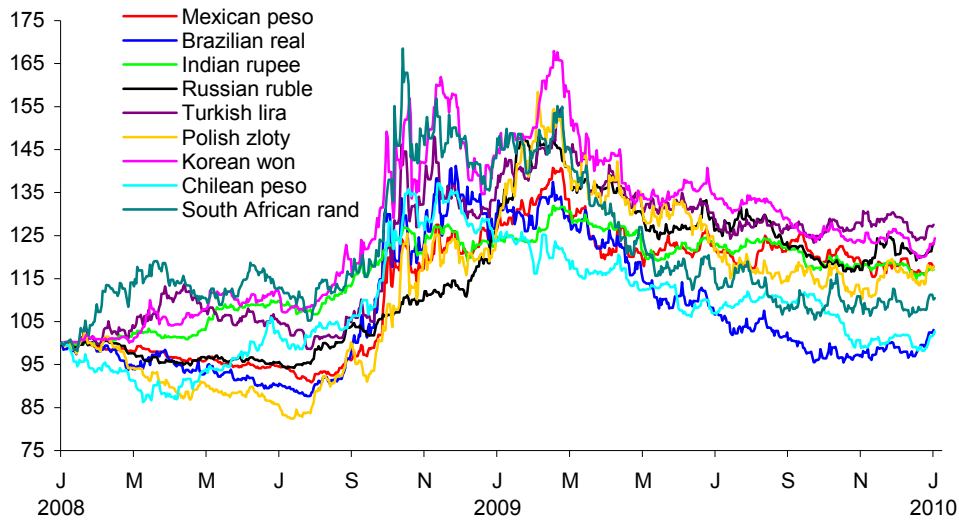
During the fourth quarter of 2009, the depreciation of the US dollar slowed and this currency even registered gains against some of the main currencies. This performance was partly explained by the greater strength of the U.S. economy, which could lead to monetary stimulus measures being withdrawn sooner than had been expected. In general terms, the exchange rates of the main emerging economies continued to appreciate as a result of the significant inflows of capital. For instance, from the beginning of March to December 31, the South African rand, the Brazilian real and the Polish zloty appreciated 30.4, 26.9 and 23.9 percent, respectively.<sup>13</sup> The Mexican peso also appreciated 14.9 percent during the same period (Graph 9). Once again, country risk indicators and credit default swaps (CDS) for emerging economies declined significantly during the period analyzed.

Stock markets of both advanced and emerging economies continued rising during the fourth quarter of 2009. However, the gains observed were not as large as those observed during the two previous quarters (Graph 10a). Uncertainty, measured by the volatility implicit in stock options, also decreased substantially (Graph 10b).

<sup>13</sup> In general terms, emerging economies' exchange rates stopped depreciating at the beginning of March, when world financial conditions began to return to normal as risk aversion decreased.



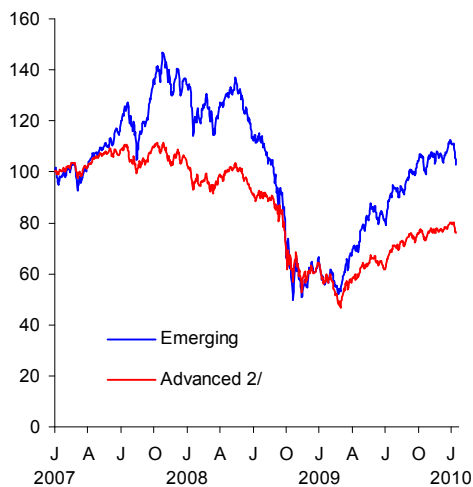
**Graph 9**  
**Exchange Rate of Emerging Economies' Currencies vs. US dollar<sup>1/</sup>**  
 31/12/2007 = 100



Source: Bloomberg.  
 1/ An increase in the index equals a USD appreciation.

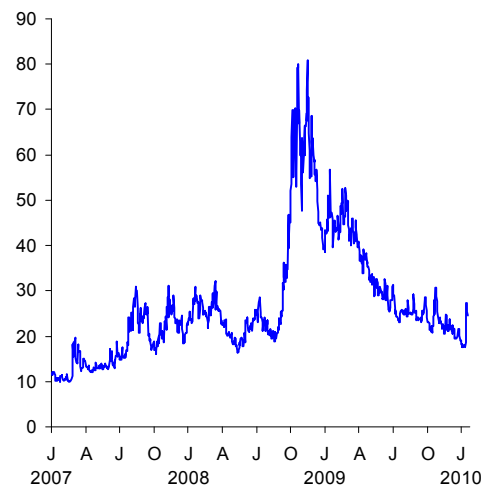
**Graph 10**  
**Index and Volatility of Stock Markets**

a) Index<sup>1/</sup>



Source: MSCI.  
 1/ Index 01/01/2007 = 100.  
 2/ Refers to G7.

b) Volatility<sup>1/</sup>



Source: Bloomberg.  
 1/ The CBOE VIX measures market expectations on the short term volatility implicit in the price index of options over stock of S&P500.

### 3.1.5. Outlook

The IMF expects world economic growth of around 3.9 percent in 2010, after an estimated contraction of 0.8 percent during 2009. Emerging economies will lead this recovery, expanding 6.0 percent in 2010, while advanced countries are predicted to grow just 2.1 percent. The IMF anticipates the world economic rebound will continue in 2011, when it forecasts a growth rate of 4.3 percent, figure similar to the expansion observed in years before the crisis. Nevertheless, it



is important to remember that under this scenario the output gaps in advanced economies could take several years to close.

Fiscal stimulus measures have made a significant contribution to economic growth in many countries during 2009. This has been to such extent as to generate concerns over whether the unwinding of such measures will substantially curb economic recovery. Several countries face considerable fiscal challenges and they will necessarily have to make significant adjustments in the coming years in order to reduce their government debt to levels in line with strong and sustainable long-term growth.<sup>14</sup>

In the monetary arena, low interest rates in the U.S., as well as in other advanced economies, and the recent depreciation of the US dollar have led investors to use the US currency to finance operations offering higher yields but also implying greater risk. This phenomenon cannot be permanent. The prolonged period of support measures could result in imbalances between the prices of some assets and fundamental economic conditions, raising the possibility of a sudden adjustment once interest rates in advanced economies are raised. This is undoubtedly one of the most important risk factors for emerging economies which have experienced a significant rise in capital inflows.

Difficulties in the financial sector have still not completely disappeared and this could be reflected in a continued weakness of commercial bank credit in most advanced economies. Problems of indebtedness also persist in some important sectors, such as that of commercial real estate. In addition, households are still going through the process of reducing their indebtedness, which could imply increased levels of saving and reduced spending. The latter affects economies where recovery rests strongly on sales to their main export markets, such as the case of Mexico with regard to the U.S.

Adjustments in the composition of world demand as well as different approaches to the unwinding of stimulus measures will be required in order to ensure higher world economic growth over medium and long-term horizons. In particular, it is important for economies with high levels of growth and with considerable current account surpluses, such as China, to increase domestic demand and reduce savings. Economies with excessive current account deficits and which have registered significant increases in their public debt, such as the U.S., will not be able to increase domestic spending at the same rate as they had been doing in years prior to the crisis.

Finally, inflationary pressures are expected to remain modest in the main advanced economies in an environment of persistent output gaps. As for emerging economies, inflation is foreseen to remain low, although there will be important differences among these countries.

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<sup>14</sup> According to IMF forecasts, government debt in advanced economies will reach almost 120 percent of GDP in 2014.

**Table 5**  
**GDP Growth Forecasts**  
Percent

	2008	2009		2010		2011	
		IMF	WB	IMF	WB	IMF	WB
<b>World Economic Growth</b>	<b>3.0</b>	<b>-0.8</b>	<b>-1.0</b>	<b>3.9</b>	<b>3.5</b>	<b>4.3</b>	<b>4.0</b>
<b>Advanced economies</b>	<b>0.5</b>	<b>-3.2</b>	<b>-3.3</b>	<b>2.1</b>	<b>1.8</b>	<b>2.4</b>	<b>2.3</b>
U.S.	0.4	-2.5	-2.5	2.7	2.5	2.4	2.7
Eurozone	0.6	-3.9	-3.9	1.0	1.0	1.6	1.7
U.K.	0.5	-4.8	n.a.	1.3	n.a.	2.7	n.a.
Japan	-1.2	-5.3	-5.4	1.7	1.3	2.2	1.8
<b>Emerging and developing economies</b>	<b>6.1</b>	<b>2.1</b>	<b>1.2</b>	<b>6.0</b>	<b>5.2</b>	<b>6.3</b>	<b>5.8</b>
<b>Asia</b>	<b>7.9</b>	<b>6.5</b>	<b>6.8</b>	<b>8.4</b>	<b>8.1</b>	<b>8.4</b>	<b>8.2</b>
China	9.6	8.7	8.4	10.0	9.0	9.7	9.0
India	7.3	5.6	6.0	7.7	7.5	7.8	8.0
<b>Latin America</b>	<b>4.2</b>	<b>-2.3</b>	<b>-2.6</b>	<b>3.7</b>	<b>3.1</b>	<b>3.8</b>	<b>3.6</b>
Brazil	5.1	-0.4	0.1	4.7	3.6	3.7	3.9
Mexico	1.3	-6.8	-7.1	4.0	3.5	4.7	3.6
<b>Central and Eastern Europe</b>	<b>3.1</b>	<b>-4.3</b>	<b>-2.5</b>	<b>2.0</b>	<b>1.3</b>	<b>3.7</b>	<b>3.5</b>
<b>Independent state community</b>	<b>5.5</b>	<b>-7.5</b>	<b>-8.1</b>	<b>3.8</b>	<b>3.1</b>	<b>4.0</b>	<b>3.3</b>
Russia	5.6	-9.0	-8.7	3.6	3.2	3.4	3.0

Source: World Bank (BM), Global Economic Perspectives, January 2010; IMF (FMI), World Economic Outlook Update, January 2010.  
n.a./ Not available.

Fixed weights based on the purchasing power of 2005 GDP.

## 3.2. Developments in the Mexican Economy

### 3.2.1. Economic Activity

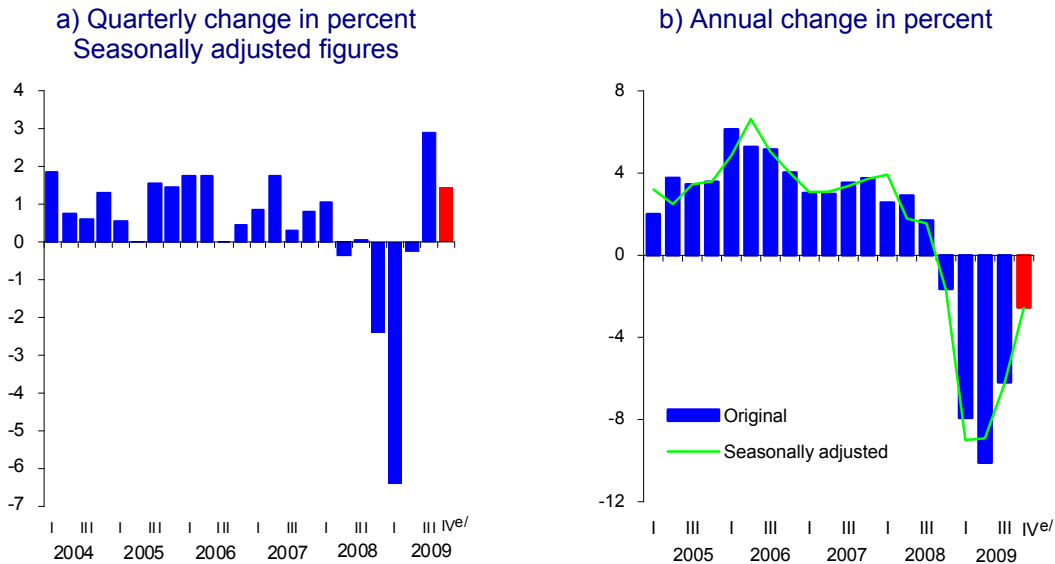
Most recent indicators suggest that, during the fourth quarter of 2009, seasonally adjusted GDP in Mexico expanded by more than 1 percent from its level of the preceding quarter. This would represent the second positive variation after three consecutive quarters of economic contraction (Graph 11a).<sup>15</sup> This result would also imply an annual reduction in GDP of less than 3 percent during the fourth quarter, comparing favorably with falls of 6.2 and 9 percent recorded in the third quarter and first half of that year, respectively (Graph 11b). Thus, the economic recovery which began in the third quarter would have continued in the last three months of 2009 and GDP would have contracted less than 7 percent during the year as a whole.

The rebound in Mexican economic activity during the second half of 2009 was mainly driven by a more dynamic world economy and, particularly, the U.S. manufacturing sector. This led to a significant increase in Mexican manufacturing exports. The increase has been widespread and has been observed in exports of both the automotive sector and the remaining manufactures (Graph 12). Greater external demand has also boosted services, particularly those which depend more directly on manufacturing production. Thus, during the second half of the year, mainly during the last quarter, manufacturing

<sup>15</sup> This figure was estimated on the basis of available information at the time of publishing this report, which includes the Economic Activity Indicator (*Indicador Global de la Actividad Económica*, IGAE) up to October 2009, industrial activity up to November, and foreign trade figures up to December as well as other timely indicators for different economic activities. The latter indicators include figures up to December on extraction of crude oil and natural gas; sale of electricity; tons/km transported by the main railway companies; sea freight cargo; number of air travel passengers; occupancy in main resorts; automobile production; and, commercial sales of ANTAD members.

production grew significantly and higher levels of activity also began to be gradually observed in the services sector (Graph13).<sup>16</sup> Nonetheless, the growth in production registered by the aforementioned partly reflects the fading of the effects of the outbreak of the influenza A (H1N1) virus on the demand faced by some of these sectors during the second quarter of the year. It is also worth mentioning that some economic activities more associated with domestic demand, such as the construction industry, have not yet shown signs of recovery. As will be seen below, the latter is linked to the negative trend still exhibited by investment expenditure.

**Graph 11**  
**Gross Domestic Product**



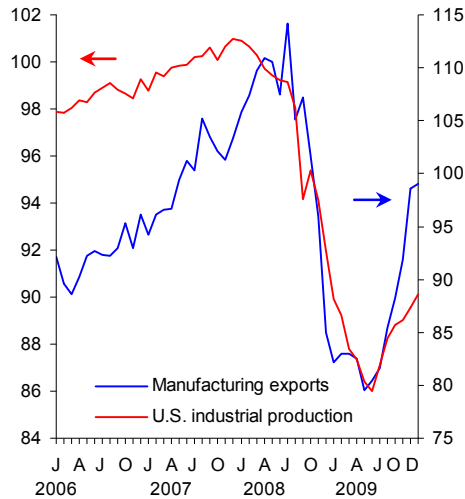
Source: INEGI.  
e/ Banco de México's estimates.

The rebound in economic activity during recent months is related to the partial reversal of the shocks which were mainly responsible for pushing the Mexican economy into a severe recession. The fundamental shock which initially led to the slump in Mexican economic activity since September 2008 was closely related to the world economy's sudden entrance into a recession of unprecedented magnitude in the last few decades. This event led to a sudden decline in the levels of external demand faced by Mexico. In the same way, the current boost that has driven a return to positive quarterly economic growth since the third quarter of 2009 stems from the recovery of external demand.

<sup>16</sup> Seasonally adjusted manufacturing production in October-November was 5.9 and 3 percent higher than levels registered in the second and third quarters, respectively. Likewise, in October the seasonally adjusted IGAE of services was 4.1 and 0.4 percent above figures observed in the second and third quarters of 2009.

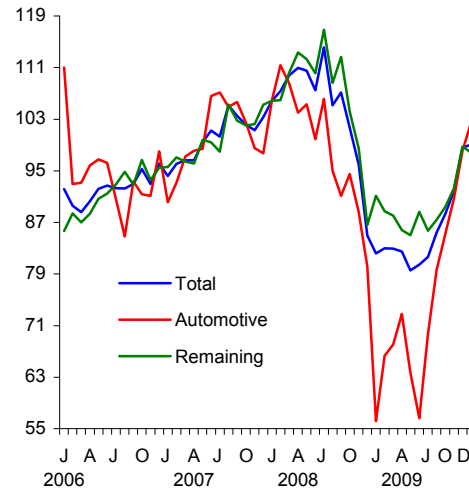
**Graph 12**  
**Manufacturing Exports and Industrial Production in the U.S.**  
 Index 2007=100; seasonally adjusted figures

a) Manufacturing Exports and Industrial Production in the U.S.



Source: Banco de México and U.S. Federal Reserve.

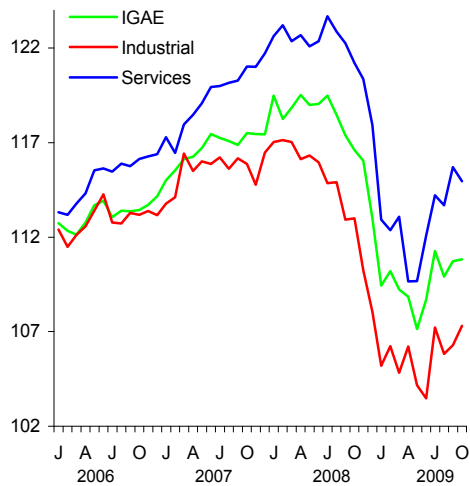
b) Manufacturing Exports



Source: Banco de México.

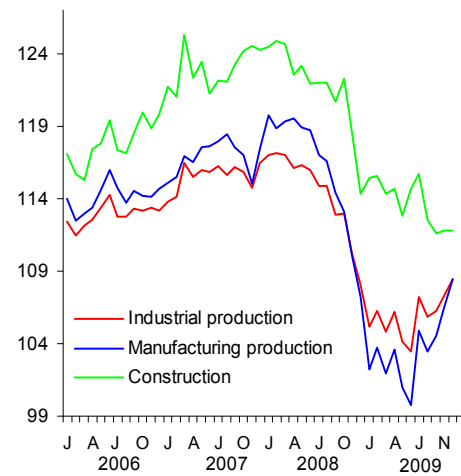
**Graph 13**  
**Economic Activity Indicators**  
 Index 2003=100; seasonally adjusted figures

a) Economic Activity Indicator (IGAE)



Source: INEGI.

b) Industrial and Manufacturing Production



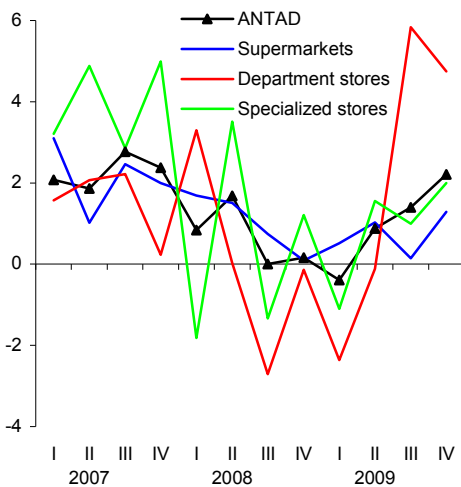
Available indicators on domestic demand show the recovery of this aggregate has been meager and has not been translated to the different components of domestic spending. In fact, although private consumption would seem to have started an expansive phase since the third quarter of the year, more timely indicators for private investment suggest that this continues to follow a negative trend. Regarding these aggregates, it is important to mention the following:

- i) Total ANTAD sales continued to increase gradually during the fourth quarter of 2009. Measured in real terms and using seasonally adjusted figures, these sales grew 2.2 percent as compared to the preceding quarter. This figure compares to quarterly growth rates of 0.9 and 1.4 percent observed in the second and third quarters, respectively (Graph 14a).
- ii) In contrast, the trend of spending on capital formation remains unchanged. In fact, using seasonally adjusted figures, investment spending contracted at a monthly rate of 1.6 percent in October. This decline was observed after the said aggregate had registered a monthly decline in September (1.4 percent) and modest monthly increases in the three previous months. As a result of this behavior, total investment, measured using seasonally adjusted figures, continued to be 16.7 percent below maximum levels reached in July 2008 (Graph 14b).

It is worth mentioning that the negative path of gross fixed capital formation described above mainly responds to the contraction of private investment. In contrast, the public component of spending in capital formation has continued to follow an upward trend throughout the current business cycle. During the third quarter of 2009, private investment contracted 19.3 percent in annual terms, while that of the public sector expanded 11.4 percent at an annual rate (Graph 15a). Likewise, government consumption rose 2.6 percent in annual terms during the third quarter of 2009, in contrast to the 5.2 percent contraction in private consumption during the same period (Graph 15b). These results mainly reflect countercyclical government measures to curb the impact of falling external and private demand on production levels in Mexico.

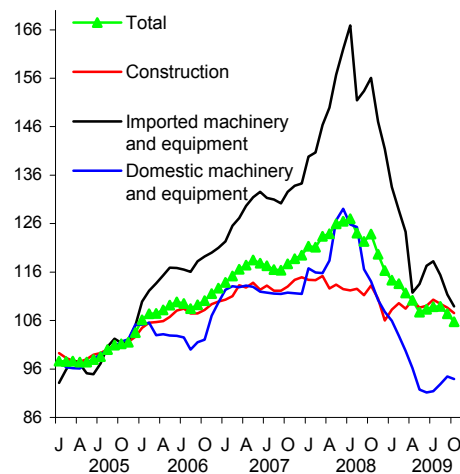
**Graph 14**  
**Domestic Demand Indicators**  
 Seasonally adjusted figures

a) ANTAD Sales in Real Terms<sup>1/</sup>  
 Quarterly change in percent



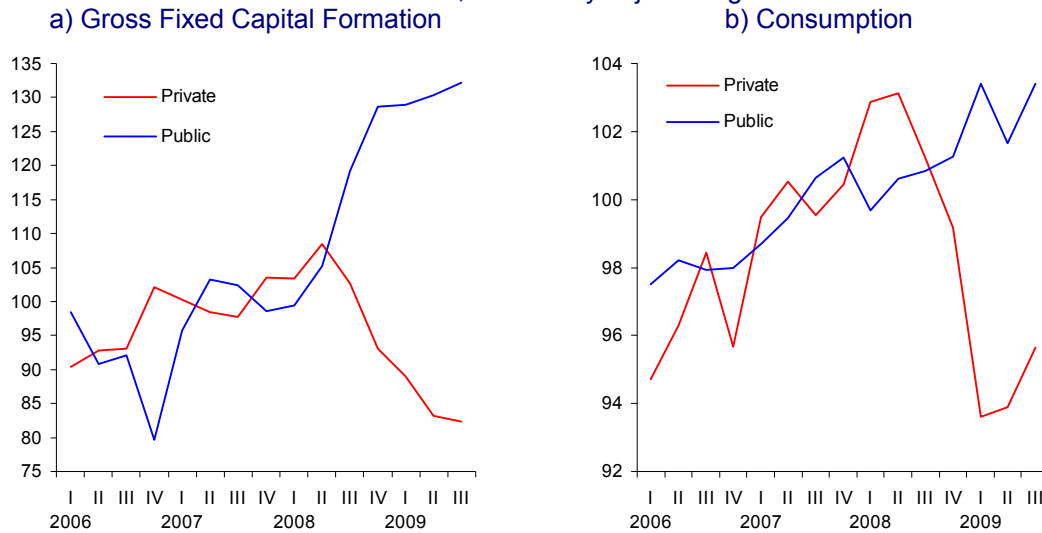
Source: ANTAD.  
 1/ Seasonal adjustments by Banco de México.

b) Gross Fixed Investment and Components  
 Index 2005=100; 3-month moving average, except since 2008



Source: INEGI.

**Graph 15**  
**Gross Fixed Capital Formation and Consumption**  
 Index 2007=100; seasonally adjusted figures



Source: INEGI.

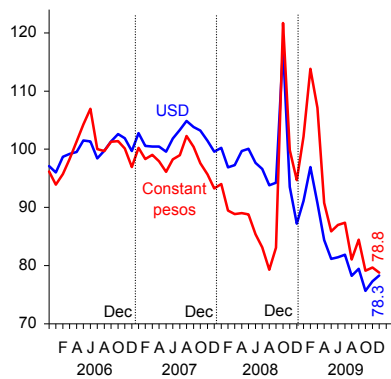
The most recent performance of some indicators of domestic expenditure is still unfavorable and has contributed to the weak recovery of domestic demand. First, both the real total wage bill and the consumer confidence index remain at particularly low levels. Revenues from workers' remittances also continue to follow a negative trend (Graph 16).<sup>17</sup> Another factor contributing significantly to the reduced strength of domestic spending is the performance of commercial banks' credit to consumption, which, during the October-November period, contracted 20.7 percent in real annual terms, figure similar to that observed in the third quarter (21.5 percent). In this regard, financing through credit cards and that channeled to purchases of consumer durables contracted 27.1 and 14 percent in annual terms, respectively.

The differences exhibited by external and domestic demand can be seen in the automotive sector. In fact, measured using seasonally adjusted figures, during the fourth quarter of 2009 this industry's exports continued to follow the upward trajectory they had shown since July of that year, mainly in response to the recovery of U.S. demand for vehicles produced in Mexico. The rebound in automobile exports has also led to an improvement in the number of units produced by the industry. Thus, in seasonally adjusted terms, in December 2009, automotive industry production and exports surpassed their previous maximum levels reached in August and October 2008, respectively (Graph 17a). In contrast to this, domestic vehicle sales still remain at particularly low levels. In December 2009, measured using seasonally adjusted figures, these sales were 33.3 percent below their previous maximum level recorded in May 2008 and still do not show any signs of a change in trend (Graph 17b).

<sup>17</sup> In December 2009, the real wage bill and the consumer confidence index were 4.3 and 29.4 percent lower than maximum seasonally adjusted levels posted in May 2008 and October 2006, respectively. Revenues from workers' remittances contracted 12.2 percent in annual terms during December 2009 and therefore continued to follow the negative trend they had followed since September 2007.

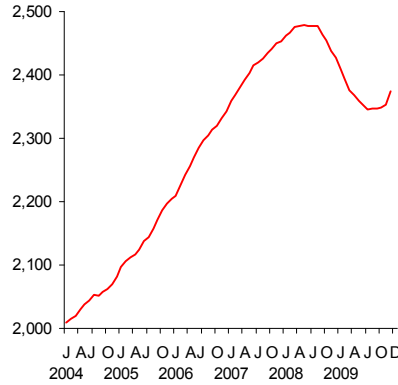
**Graph 16**  
**Workers' Remittances, Wage Bill, and Consumer Confidence Index**  
 Seasonally adjusted figures

a) Workers' Remittances  
 Million USD and million constant pesos



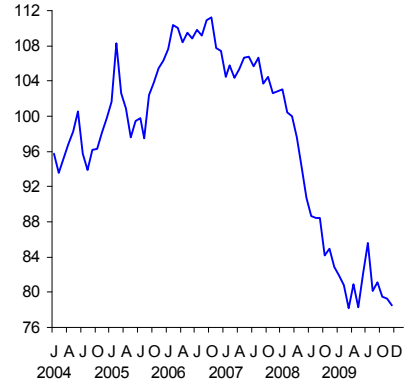
Source: Banco de México.

b) Wage Bill in the Formal Sector  
 Million pesos



Source: Prepared by Banco de México with data from IMSS.

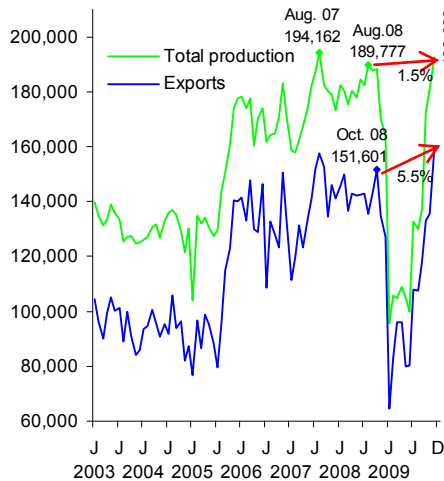
c) Consumer Confidence Index  
 January 2003=100



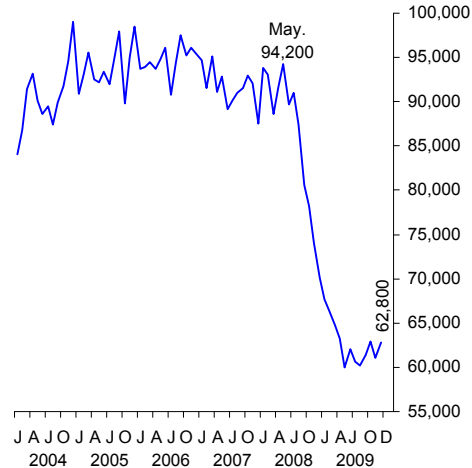
Source: INEGI and Banco de México.

**Graph 17**  
**Automotive Industry**  
 Units per month; seasonally adjusted figures

a) Vehicle Production and Exports



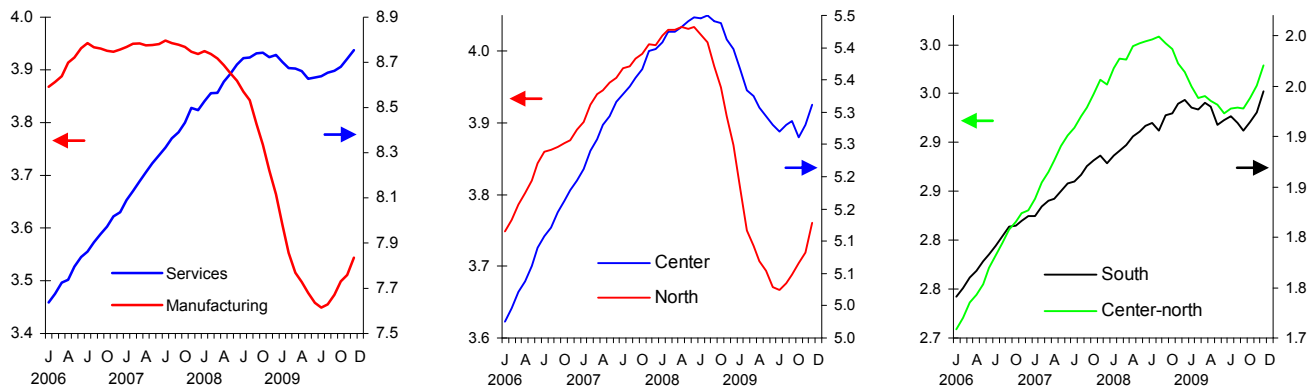
b) Domestic Retail Sales of New Vehicles



Source: Prepared by Banco de México with data from AMIA and ANPACT.

Nonetheless, formal employment in Mexico has begun to improve. In December 2009, the number of IMSS-insured workers was 13,881,281, an increase of 138,057 workers with respect to the previous month and represents the third consecutive increase of this indicator in seasonally adjusted terms. Although the expansion of formal employment has been gradually seen across the different sectors and regions, it has been more evident in the manufacturing sector and in the north of Mexico (Graph 18). This once again suggests that the initial boost which has led to higher levels of activity stems from increased external demand.

**Graph 18**  
**IMSS-insured Workers**  
 Million workers; seasonally adjusted figures  
 a) By Sector  
 b) By Region<sup>1/</sup>



Source: Prepared by Banco de México with data from IMSS.

1/ Mexico's regions used in this section are: the northern region, which includes Baja California, Chihuahua, Coahuila, Nuevo León, Sonora and Tamaulipas; the center-north region, which considers Baja California Sur, Aguascalientes, Colima, Durango, Jalisco, Michoacán, Nayarit, San Luis Potosí, Sinaloa and Zacatecas; the center region, which includes Distrito Federal, Estado de México, Guanajuato, Hidalgo, Morelos, Puebla, Querétaro and Tlaxcala; and, the south region, which includes Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco, Veracruz, and Yucatán.

Given the above results, in annual terms, the average number of IMSS-insured workers declined 3.1 percent during 2009 (-442,193 workers) as compared with the average registered in 2008. This reduction is in contrast to the forecasted fall of just under 7 percent in annual GDP. The fact that the contraction of employment was proportionally smaller than that of economic activity was partly due to measures adopted to support it, such as the Program to Encourage Growth and Employment and the National Agreement in favor of the Household Economy and Employment.

The information on the evolution of economic activity described above allows evaluation of the slack conditions currently prevailing in the Mexican economy. The fact that the world economy and particularly that of the U.S. are still operating at below potential, has meant that, although exports and manufacturing production have rebounded they are still below levels observed before the global financial crisis. Furthermore, as has been mentioned, domestic spending has not yet exhibited a widespread recovery. In this context, aggregate demand continues at relatively low levels, meaning the economy is operating at below its considered potential (Graph 19a). This is in line with the behavior of various indicators suggesting that both aggregate spending and labor market conditions remain loose. In particular:

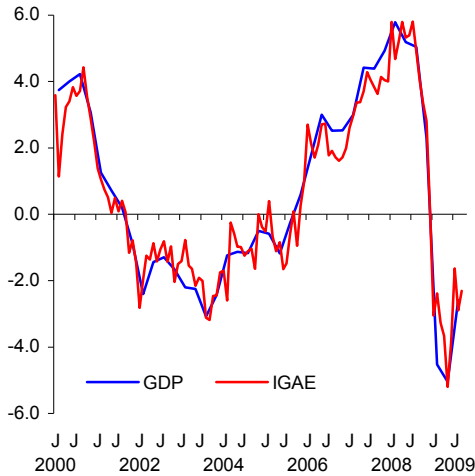
- i) The use of installed capacity remained significantly below levels observed before the international crisis, although it has followed a growing trend in recent months (Graph 19b). However, it is foreseeable that, as levels of external demand are reestablished, the use of manufacturing industry installed capacity will again reach levels seen before the crisis.
- ii) As detailed above, the considerable rebound in exports together with the still modest recovery of domestic expenditure, have meant the current account deficit has continued at low levels. In the fourth quarter of 2009, the said deficit is expected to be 0.6 billion US dollars (0.2 percent of



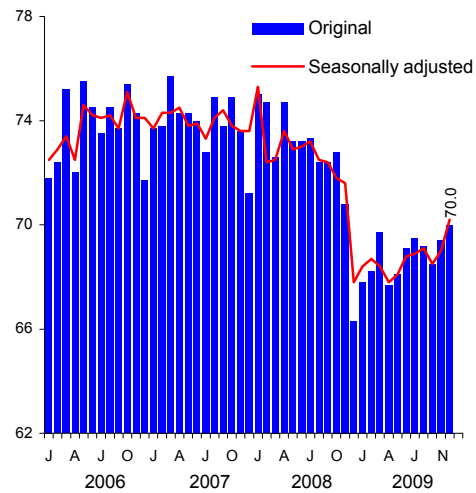
GDP). This suggests that aggregate demand has not constituted a strong pressure on Mexico's external accounts.

**Graph 19**

**Output Gap and Use of Installed Capacity in the Manufacturing Sector**  
a) Output Gap Estimates<sup>1/</sup>  
Annual change in percent



b) Use of Installed Capacity  
Percent



Source: Banco de México.

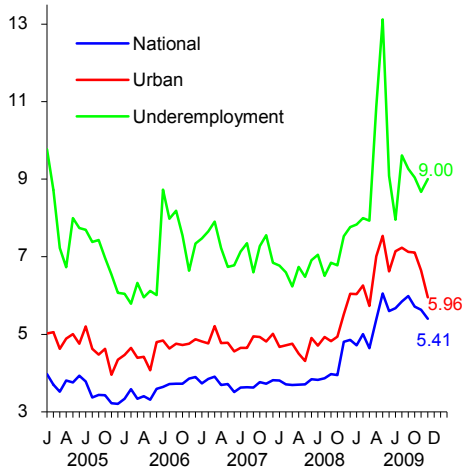
1/ The output gap was estimated using the Hodrick-Prescott (HP) method with tail corrections; see Banco de México (2009), "Inflation Report April-June," p.69.

- iii) Different indicators suggest that conditions in the labor market remain loose. In fact, although the number of seasonally adjusted IMSS-insured workers has followed a positive trend during the last three months, unemployment and underemployment rates continue to be at high levels (Graph 20a). Furthermore, according to the results of Banco de México's Monthly Survey of Manufacturing Sector Activity, the manufacturing industry has not faced difficulties to hire skilled labor during recent months (Graph 20b).

Finally, it is worth mentioning that there is less uncertainty surrounding the Mexican economy's external financing requirements due to the fact that the current account deficit is at low levels, the fiscal stance has remained at sustainable levels and the federal government has gone a long way towards covering its external financing requirements for 2010. This, in an environment where international financial conditions have continued to stabilize, has led to improved access to financing. The indicators discussed above as well as those described in the section Financial Saving and Financing of this report, suggest the Mexico does not currently face important financing restrictions. This is corroborated by the fact that a significant accumulation of international reserves took place during the fourth quarter of 2009 (14,716 million US dollars), presumably as a result of a large surplus in the balance of payments capital account which must have more than covered the current account deficit.

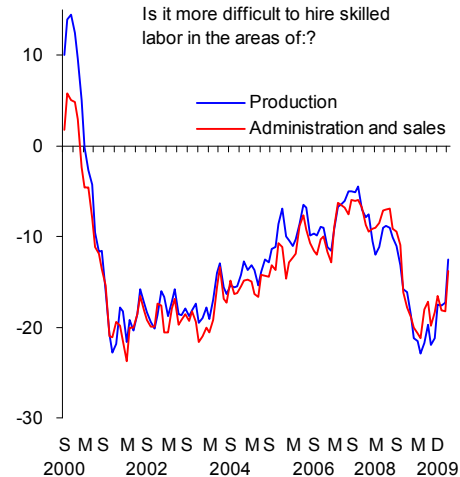
**Graph 20**  
**Labor Market Indicators**

a) Unemployment and Underemployment Rates  
Seasonally adjusted figures



Source: INEGI.

b) Labor Shortage Indicators  
Two-month moving average of balance of responses



Source: Banco de México.

### 3.2.2. Financial Saving and Financing

Improved international financial conditions, as well as reduced uncertainty concerning the Mexican economy's financing requirements and capacity helped to increase access to external financing and domestic financial markets during the second half of 2009.

Two main factors contributed to reduce the uncertainty about Mexico's financial situation. First, as mentioned in Section 3.2.1, it was clear that the economy would have the resources necessary to finance its current account deficit, which declined considerably in response to the adjustment in domestic spending. Second, the Mexican government's fiscal package for 2010 implied a deficit of just 0.75 percent of GDP, which, unlike other G-20 economies, does not represent important borrowing requirements. In this setting, more orderly conditions prevailed in the foreign exchange market, except from a brief period of high volatility as the market discounted the changes made by some rating agencies to the rate of Mexico's sovereign debt. Consequently, the Foreign Exchange Commission decided to suspend the daily US dollar auctions without announced minimum price on October 1. Only the mechanism to auction US dollars with announced minimum price continues after this date.<sup>18</sup> During the fourth quarter of 2009, Banco de México significantly reduced its sale of US dollars (511 million as compared to a quarterly average of 5,245 million in the three first quarters of 2009).<sup>19</sup> The temporary pattern of international reserve accumulation concentrated towards the end of the year, through US dollars

<sup>18</sup> A total of 250 million US dollars were sold through the latter mechanism at a minimum exchange rate 2 percent above the immediate previous business day's exchange rate. Additionally, the Foreign Exchange Commission still has the option to carry out extraordinary US dollar sales if market circumstances require it. See Foreign Exchange Commission press release of September 1, 2009.

<sup>19</sup> In the fourth quarter, a total of 511 million US dollars were tendered through auctions. However, sales of 611 million US dollars were registered in the gross reserves. This difference is explained in note 3, Table 7, p.35.

inflows mainly associated with revenues from the federal government's oil hedging in international markets (5,085 million US dollars) and from financing received by the public sector from international financial organizations. As a result, Banco de México's international reserves rose by 5,397 million US dollars in 2009.<sup>20</sup>

In the second half of 2009, saving and credit conditions in the Mexican economy were influenced by factors operating in different directions. On the one side, regarding economic activity, the weakness still exhibited by the total wage bill and the level of employment had a negative impact on the sources of domestic saving, while the continued contraction of private investment limits firms' demand for financing. On the other side, the more stable financial environment and appetite for risk have improved liquidity conditions and the availability of financing in international and domestic debt markets. These effects have been reflected in a greater availability of financing for firms which are able to issue debt, although net financing to the non-financial private sector has contracted.

Information available up to the third quarter of 2009 on the sources and uses of financing shows a significant reduction in the availability of financial resources expressed as a percentage of GDP. This was reflected in both domestic sources as well as external indebtedness. Changes were also observed in the use of available resources. The public sector increased its use of financing as a result of the fall in public, oil, and tax revenues, as well as the implementation of government stimulus measures designed to counteract the effects of the economic crisis. On the other hand, there was a reduction in financing to the non-financial private sector which could have resulted from: i) less demand for resources due to the slackness of the economy; ii) tighter credit underwriting conditions than in the previous year; and, iii) the reduced availability of financial resources (Table 6).

Information available up to the fourth quarter, however, shows an increase in external sources of financing for both the public sector and that related to the private sector's placement of securities abroad.

As mentioned in Section 3.1.4, in general terms, reduced risk aversion, the improved outlook for the economy, and investors' search for yields, taking advantage of low financing costs in advanced economies in order to invest in emerging economies, have increased flows of portfolio investment towards the latter economies and have implied an improvement in local financial market conditions and a recovery in the prices of financial assets. As a result, the growth of financial saving (M4 less banknotes and coins held by the public) in Mexico during recent months has been sustained by the flow of non-residents' investment and the expansion of compulsory saving. The increase in the latter source of financing is mainly due to the recovery in the price of financial assets in retirement funds, particularly medium and long-term government securities.<sup>21</sup> In contrast, the growth of residents' voluntary saving continues to decelerate in response to low employment and the modest total wage bill (Graph 21).

<sup>20</sup> The latest update of the Foreign Exchange Commission's forecasts for the current account foresees an increase of 1,627 million US dollars in international reserves in 2009 (see Foreign Exchange Commission press release of September 1, 2009).

<sup>21</sup> The return (loss) on domestic fixed interest assets held by Siefores (return on the total portfolio excluding floating interest rate, structured debt, UMS, and external securities) up to November 2009 amounted to 39.7 thousand million pesos, while in November 2008 estimated losses totaled 10.9 thousand million pesos. The stock of Siefores portfolio invested in M4 instruments at November 2009 was 907.9 thousand million pesos, accounting for 12.9 percent of this aggregate.

**Table 6**  
**Total Funding for the Mexican Economy (Sources and Uses)**  
 Percentage of GDP

	Annual Flows to September of:				Stock	
	2006	2007	2008	2009	Sep-09	% structure
<b>Total sources</b>	<b>5.4</b>	<b>4.7</b>	<b>5.3</b>	<b>3.7</b>	<b>76.5</b>	<b>100.0</b>
Domestic sources <sup>1/</sup>	5.5	5.6	5.5	4.2	58.5	76.4
Foreign financing <sup>2/</sup>	-0.2	-0.8	-0.1	-0.6	18.0	23.6
<b>Total uses</b>	<b>5.4</b>	<b>4.7</b>	<b>5.3</b>	<b>3.7</b>	<b>76.5</b>	<b>100.0</b>
Public sector <sup>3/</sup>	0.3	1.2	1.4	3.8	39.5	51.6
States and municipalities	0.0	0.0	0.2	0.5	1.8	2.4
Private sector	3.4	4.5	3.0	-0.7	31.0	40.6
Households	2.3	1.6	1.2	-0.2	12.9	16.9
Consumption	1.3	0.9	0.3	-0.8	3.9	5.2
Housing <sup>4/</sup>	1.0	0.7	0.9	0.5	9.0	11.7
Firms	1.1	2.9	1.8	-0.5	18.1	23.7
International reserves <sup>5/</sup>	0.5	0.6	0.9	-0.9	8.8	11.5
Other <sup>6/</sup>	1.2	-1.4	-0.3	0.9	-4.6	-6.0

Note: Figures may not add up due to rounding. Figures expressed as a percentage of average GDP of the last four quarters. The information on revalued flows is stripped from the effect of exchange rate fluctuations.

1/ Annual revalued flows of Domestic sources exclude the effect of the reform to the ISSSTE Law on the monetary aggregate M4. Information on the stock of Domestic sources corresponds to the monetary aggregate M4 (including the effect of this reform).

2/ Includes foreign financing for the federal government, public institutions and entities, and financed investment projects (PIDIREGAS), commercial banks' foreign liabilities and financing to the non-financial private sector.

3/ Public Sector Borrowing Requirements (*Requerimientos Financieros del Sector Público*, RFSP). The stock as a percentage of GDP refers to Public Sector Borrowing Requirements' historical stock (SHRFSP, for its acronym in Spanish) as reported by the Ministry of Finance (SHCP). Figures of revalued flows exclude the impact of the reform to the ISSSTE Law on PSBR. Information on SHRFSP does include the effect of this reform on the public debt.

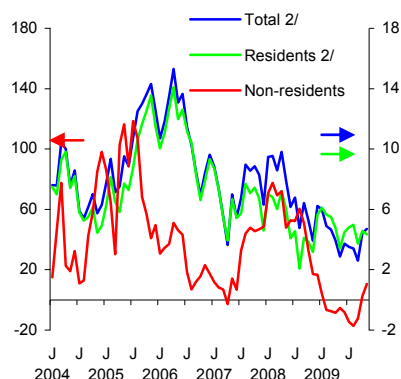
4/ Total portfolio from financial intermediaries and from the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit). Includes debt-restructuring programs.

5/ As defined by Banco de México's Law.

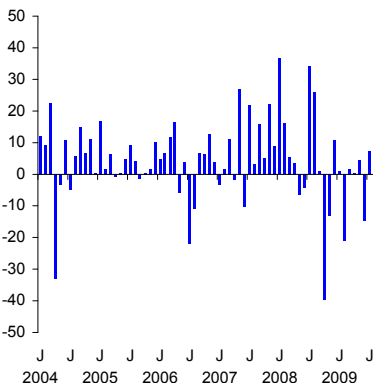
6/ A positive flow (negative) of this concept refers to a use (source) of financial funds.

**Graph 21**  
**Financial Saving**

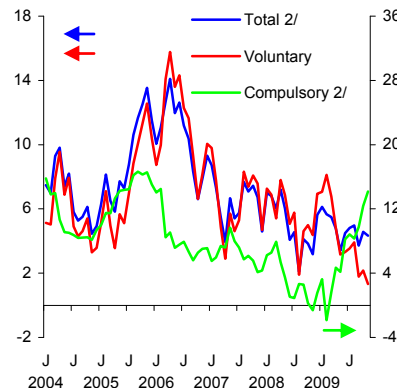
a) Domestic Financial Saving <sup>1/</sup>  
 Real annual change (percent)



b) Non-residents' Domestic Financial saving monthly flows in thousand million pesos



c) Residents' Domestic Financial Saving  
 Real annual change (percent)



Source: Banco de México.

1/ Defined as M4 minus the stock of currency outside banks.

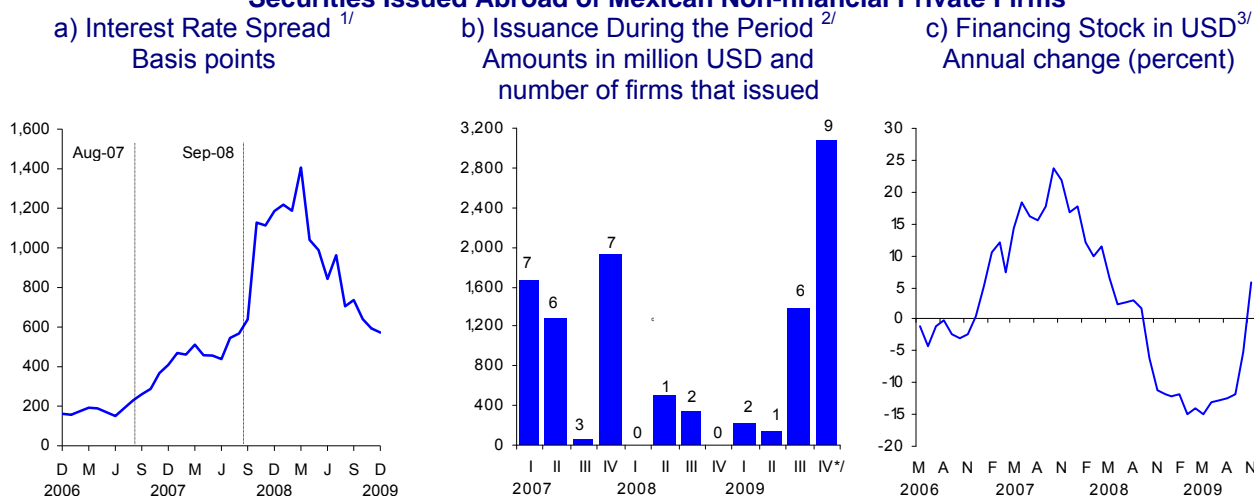
2/ Excludes the impact of the ISSSTE-law reform on this aggregate.

The improvement in financial market conditions has raised the possibility of financing through instruments placed on international and domestic,

private debt markets. This has meant less tight credit conditions for firms with access to these markets. Nonetheless, and in line with the developments in other countries, commercial bank loans to the private sector continued to contract, limiting the availability of financing for households and smaller firms.

Firms' possibilities to obtain financing through debt placements in international markets have improved. On the one hand, indicators on the cost of financing through debt placement have continued to follow a downward path since the second quarter of 2009, reaching by the end of that year levels similar to those observed before Lehman Brothers' collapse (Graph 22a). On the other, based on the number of debt issuance as well as the amount of debt placed during the second half of the year, Mexican non-financial private firms' access to financing in these markets has improved (Graph 22b and c).<sup>22</sup>

**Graph 22**  
**Securities Issued Abroad of Mexican Non-financial Private Firms**



1/ Average interest rate spread on issues greater or equal to 300 million USD in relation to the risk-free rate on 5-year Treasury bill. Prepared by Banco de México with data from Bloomberg.  
 2/ The number above the columns refers to the number of firms that placed securities during the quarter. Prepared by Banco de México with data from Bloomberg.  
 3/ Source: Banco de México.  
 \*/ Preliminary figures of December 2009.

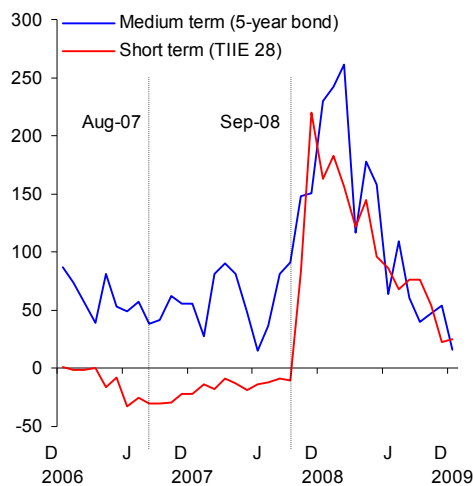
The worsening of the international financial crisis after October 2008 was accompanied by a significant deterioration of financing conditions for non-financial private firms in the domestic debt market. However, the reestablishment of more orderly credit conditions in recent months, together with greater liquidity, have reduced the costs and increased the availability of financing. The spreads between the cost of financing for non-financial private firms in the domestic debt market, for both short and medium term placements, and their corresponding risk-free interest rates (28-day TIIE for short term and 5-year federal government bond for medium term) have narrowed considerably, reaching levels similar to those observed before Lehman Brothers' bankruptcy (Graph 23a). After a significant decline in the possibility of issuing medium-term debt between the last quarter of

<sup>22</sup> As for the change in firms net indebtedness in this market, while between September 2008 and June 2009 it decreased by 2,470 million US dollars, between June and November 2009 it rose by 2,160 million US dollars. According to preliminary information for debt issues in December 2009, during the second half of the year, 15 firms made new placements in international financial markets for a total of 4,461 million US dollars, while in the six previous quarters only six firms issued securities abroad for a total of 1,210 million US dollars.

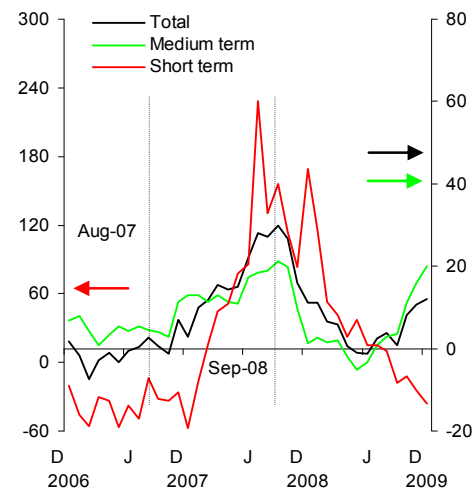
2008 and the first 5 months of 2009, the reestablishment of greater conditions of certainty has allowed firms the possibility of longer-term financing. As a result, since June 2009, a significant amount of medium-term debt has been issued. As for short-term financing, the share of non-financial private firm security placements backed by development bank guarantees has decreased considerably. Thus, while during the fourth quarter of 2008 the average share of these placements was 12.4 percent of the total, during the same period of 2009 it was just 0.8 percent. Under these conditions, the real annual growth of total financing through the private debt market was 12 percent, while that of the medium-term debt market was 20 percent (Graph 23b).

**Graph 23**
**Domestic Issuance of Non-financial Private Firm Securities**

a) Interest Rate Spread on Non-financial Private Firm Securities in the Domestic Market <sup>1/</sup>  
Basis points



b) Stock of Non-financial Private Firm Securities in the Domestic Market  
Real annual change (percent)



Source: Banco de México.

<sup>1/</sup> Spread in relation to 28-day Interbank Equilibrium Interest Rate (28-day TIIE) and 5-year federal government bond.

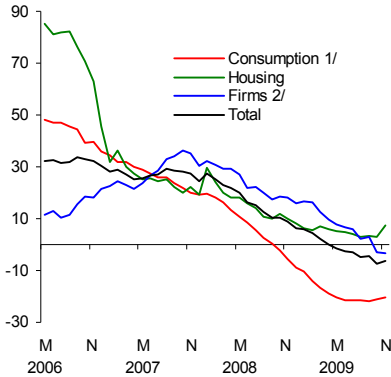
Commercial banks' performing loans to the non-financial private sector contracted 6.8 percent in real terms during the October-November period of 2009. This occurred in spite of improved financial market conditions and the fact that the Mexican banking system has remained well capitalized and without important funding problems during the international financial crisis. In fact, during the referred period, commercial banks' performing loans to firms contracted in real annual terms for the first time since May 2004 (-3.2 percent on average). Meanwhile, the sharp contraction of consumer credit continues (-20.7 percent on average), as well as the slowdown of mortgage credit, after removing the effect of transferring the portfolio of restructured loans (UDIs Trusts) to the commercial banks' balance sheet (Graph 24a).<sup>23</sup> Although delinquency rates improved during the second half of the year, their behavior was mainly influenced by commercial banks' decisions on non-performing loans write-offs, particularly regarding their

<sup>23</sup> During the October-November 2009 period, commercial banks' mortgage portfolio grew 5.1 percent on average. Nonetheless, this growth is the result of one commercial bank's transfer of its UDIs Trust mortgage portfolio to its balance sheet in November. After the effect of this transfer is excluded, performing mortgage loans registered real average annual growth of 2.5 percent during the October-November 2009 period.

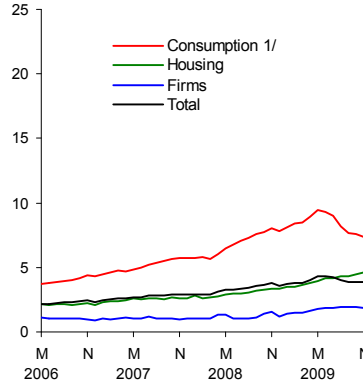
consumer credit portfolio (Graph 24b). Nevertheless, after considering commercial bank write-offs, adjusted delinquency rates show that delinquency rates on private sector credit have stopped growing. However, adjusted delinquency rates remain at high levels, especially those corresponding to consumer credit (23.9 percent, Graph 24c).<sup>24</sup>

**Graph 24**  
**Commercial Banks' Credit to the Non-financial Private Sector**

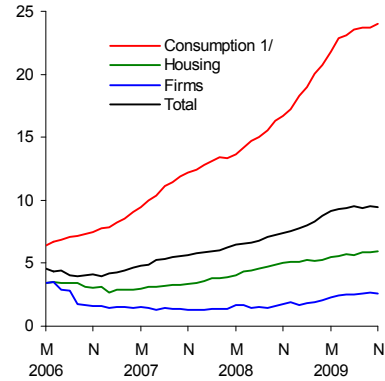
a) Performing Loans to the Non-financial Private Sector  
Real annual change



b) Non-financial Private Sector  
Delinquency Rates<sup>3/</sup>



c) Non-financial Private Sector  
Adjusted Delinquency Rates<sup>4/</sup>



Source: Banco de México and CNBV.

1/ Figures as of March 2008 include total consumer credit portfolio of commercial banks' subsidiaries Sofom E.R. Since February 2009, figures are affected by the reclassifying of credit granted to small and medium-sized firms (PyMES, for its acronym in Spanish) from consumer credit to credit granted to non-financial firms.

2/ As of February 2009, figures are affected by the reclassifying of credit granted to small and medium-sized firms (PyMES, for its acronym in Spanish) from consumer credit to credit granted to non-financial firms.

3/ The delinquency rate is defined as non-performing portfolio divided by total loan portfolio.

4/ The adjusted delinquency rate is defined as the sum of non-performing loans plus any write-offs or losses recognized by banks during the twelve previous months divided by total loan portfolio plus the abovementioned write-offs or losses.

Although it is difficult to determine what proportion of the contraction of commercial banks' performing loans to the private sector is the result of supply or demand factors, the following might have contributed to such a contraction:

- i) The recovery of financing from domestic and external debt markets has reduced the demand of some large firms for commercial bank credit. Additionally, uncertainty surrounding the speed of economic recovery and the weakness of investment has led to a decrease in firms' demand for financing. Meanwhile, households' demand for credit could have been affected by the deterioration of consumer confidence as well as the weakness of the total wage bill and employment.
- ii) Regarding the supply of commercial banks credit, the sharp contraction of economic activity and the uncertainty that still surrounds the pace of recovery have generally affected firms' balance sheets and increased credit risks. The financial margin of credit to households, particularly destined to consumption, has been reduced by high delinquency rates

<sup>24</sup> The delinquency rate is the ratio of non-performing portfolio to total loan portfolio. However, since this indicator is affected by banks' decisions on loans write-offs for this portfolio, a more accurate indicator of debtors' liabilities going into non-performing default is used: the adjusted delinquency rate. The adjusted delinquency rate is defined as the stock of non-performing loans plus charges or losses acknowledged by banks during the twelve months divided by total loans plus charges or losses aforementioned (see Financial System Report 2007, p.50, Box 21, and Inflation Report of July - September 2008).



and the implementation of new regulations on non-performing loan write-offs, thus making it less attractive for commercial banks. These factors could be contributing to change the structure of commercial banks' assets, as reflected by the larger holdings of debt securities and the reduced credit portfolio.

The behavior of the financial system variables analyzed in this section could have different repercussions on economic activity and inflation. The more orderly conditions that have prevailed in financial markets and expectations that inflows of external financing to the Mexican economy will continue, make it possible to anticipate that lower exchange rate volatility will contribute to improve inflation expectations.

Financing to the private sector remains weak due to the contraction in commercial bank loans to consumption and firms. The latter, despite that financing to firms through domestic and external markets has improved in recent months.<sup>25</sup> Thus, during the current phase of the business cycle, conditions are still far from a situation where credit could be driving the growth of spending, which would then lead to widespread inflationary pressures.

Furthermore, judging from the other subsections of this chapter, both the performance of the world and the domestic economy, as well as external inflation and commodity prices, constitute an environment which allows to foresee the absence of significant inflationary pressures in the future.

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<sup>25</sup> Residents' financial saving continued to grow due to the recovery in the prices of retirement fund financial assets and therefore did not represent an effective flow for financing higher expenditure.

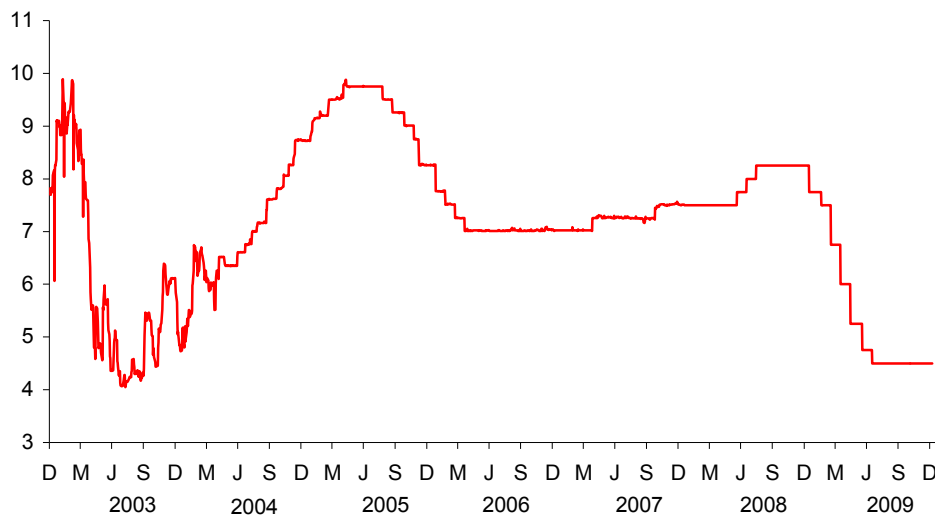


## 4. Monetary Policy

Banco de México supplies on a daily basis the liquidity needed by the market, adjusting its supply of primary money in order to match it with its demand. Open market operations are therefore carried out in order to make the aggregate balance of commercial banks' current accounts total zero at the end of the day. To obtain such balance, Banco de México supplies or withdraws the needed or excess liquidity from the system through these operations

The central bank has defined the Overnight Interbank Rate as its operating target to guide monetary policy implementation.<sup>26</sup> The central bank signals its monetary policy stance via the price at which it provides liquidity to the market. During the fourth quarter of 2009 and during the month of January 2010, Banco de México's Board of Governors did not change the target for the Overnight Interbank Rate, keeping it at 4.5 percent, which is the same level since July 17, 2009 (Graph 25).

**Graph 25**  
**Overnight Interbank Rate<sup>1/</sup>**  
 Annual percent



<sup>1/</sup> The target for the Overnight Interbank Rate (Banco de México's operating target) is shown since January 21, 2008.

During the last quarter of 2009, the annual growth of the monetary base continued following a downward trend (9.4 percent at the end of the year), as a result of the fading of temporary factors that had increased the demand for banknotes and coins in preceding quarters.<sup>27</sup> As for net international assets, they decreased during the first half of the year and increased in the second half of the year. This implied that net domestic credit flows were very high during the first half and then reverted during the second half of the year, ending the year with an annual flow of 12,044 million pesos (Table 7).

<sup>26</sup> See Appendix 3 of the Inflation Report July-September 2007.

<sup>27</sup> Among these factors the most noteworthy were the effect of the Tax on Cash Deposits (*Impuesto a los Depósitos en Efectivo*, IDE) on the composition of portfolio between cash deposits and bank term deposits, and the greater use of cash that usually takes place during the years of federal elections.

**Table 7**  
**Monetary Base, International Assets, and Net Domestic Credit**  
 Millions

	Stock		Annual Change	Flows in 2009				Accumulated at Dec.31, 2009
	At Dec.31 2008	At Dec.31 2009	At Dec.31 2009	Quarter				
				I	II	III	IV	
(A) Monetary base (pesos)	577,543	632,032	9.4	-43,723	-2,189	-6,844	107,246	54,490
(B) Net international assets (pesos) <sup>1/ 2/</sup>	1,317,292	1,304,892	-0.9	-138,775	-57,350	83,857	154,713	42,445
Net international assets (USD) <sup>2/</sup>	95,232	99,870	4.9	-9,564	-4,158	6,318	12,042	4,638
(C) Net domestic credit (pesos) [(A)-(B)] <sup>1/</sup>	-739,750	-672,860	-9.0	95,052	55,160	-90,701	-47,467	12,044
(D) Gross reserves (USD)	95,302	99,893	4.8	-9,665	-4,160	6,330	12,086	4,591
Change due to:								
Pemex				2,716	2,092	4,739	1,982	11,529
Federal government				-4,714	-429	773	10,137	5,768
Foreign exchange market operations <sup>3/</sup>				-5,715	-5,920	-4,000	-611	-16,246
Other <sup>4/</sup>				-1,952	97	4,818	579	3,541
(E) Liabilities with less than six months to maturity (USD)	9,861	9,055	-8.2	-3,080	515	4,389	-2,629	-805
(F) International reserves (USD) [(D)-(E)] <sup>5/</sup>	85,441	90,838	6.3	-6,585	-4,675	1,941	14,716	5,397

1/ Net international assets' cash flows in pesos are estimated using the exchange rate applied to each transaction.

2/ Net international assets are defined as gross reserves plus funding arrangements with foreign central banks with more than six months to maturity, minus total liabilities payable to the IMF and funding arrangements with foreign central banks with less than six months to maturity.

3/ Corresponds to US dollars sold to commercial banks in this market through the following mechanisms: i) daily US dollar auctions at an exchange rate of at least 2 percent above the exchange rate of the previous business day; ii) daily US dollar auctions without announced minimum price. Does not consider the sale of currencies pending to be liquidated, which usually is done the second business day after the auction. For this reason, there is a discrepancy between the change in net reserves and the auctions held, which amounted to 5,915 million US dollars during the first quarter, 5,820 million during the second, 4,000 million during the third quarter, and 511 million US dollars during the fourth quarter.

4/ Includes yields on net international assets and other transactions.

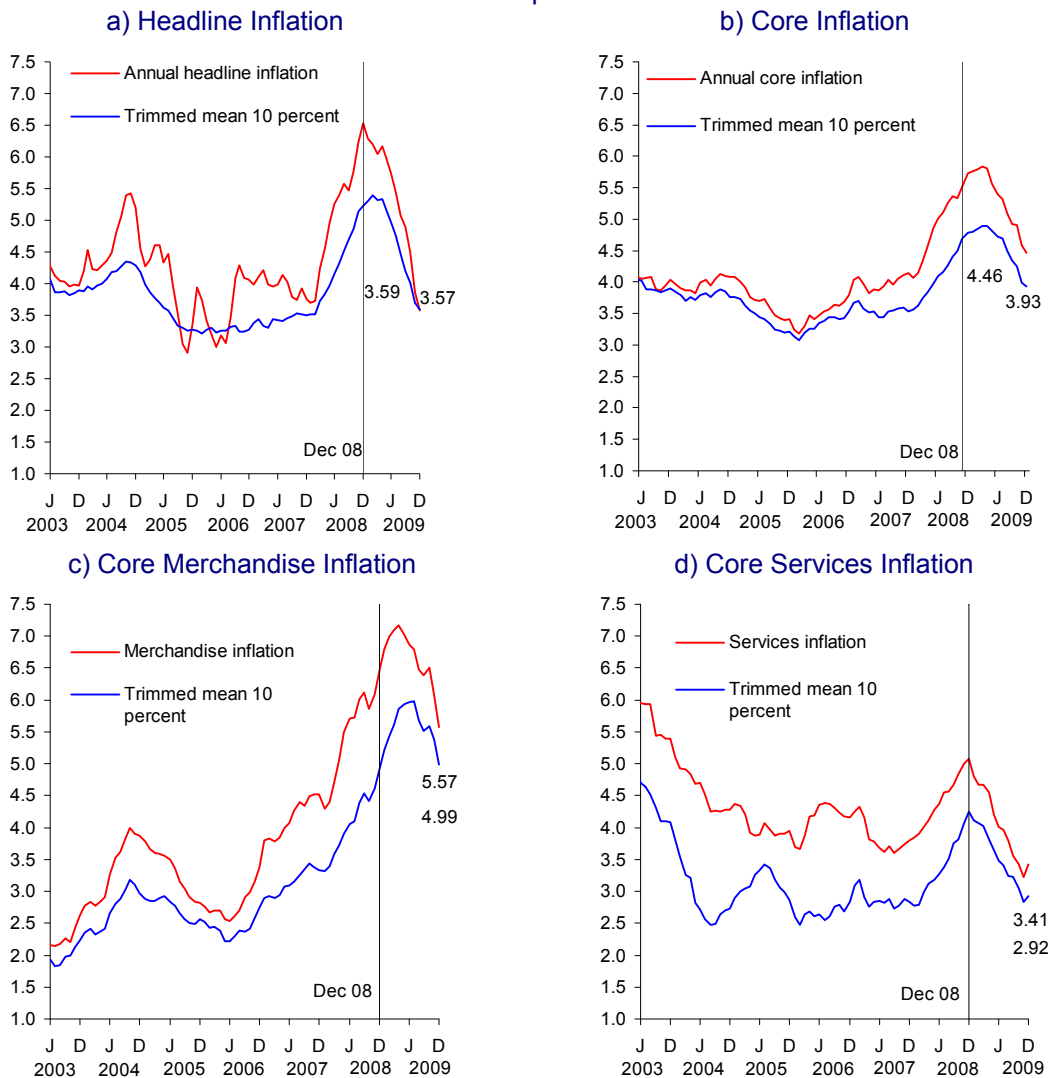
5/ As defined by Banco de México's Law.

Monetary policy conduct allowed headline inflation to continue declining during the last quarter of 2009. Indeed, during such quarter, inflation fell at a higher rate, accumulating during the year a reduction of 2.96 percentage points to reach 3.57 percent in December. This improvement was consistent with the forecasts released by Banco de México in its previous Inflation Reports of the first three quarters of 2009, including the Addendum to the Inflation Report of July-September 2009. As pointed out in section 2.1 of this Report, this reduction obeyed, among other factors, to the slack in economic activity, the greater stability of the exchange rate observed since the third quarter of 2009, and to the public price policy of freezing several energy goods' prices.

The decline in inflation was widespread. In the case of headline inflation, the trimmed mean indicator continued its downward trend during the fourth quarter, by falling from 4.20 percent in September to 3.59 percent in December (Graph 26a). As for the core subindex, its trimmed mean indicator declined during the same period, from 4.35 to 3.93 percent (Graph 26b). This resulted from, on the one side, a decline in the corresponding indicator for the core merchandise subindex from 5.38 to 4.99 percent during the same period (Graph 26c); and, on the other hand, a reduction in the core services subindex, from 3.23 percent in September to 2.84 percent in November, although it slightly rose to 2.92 percent in December (Graph 26d).<sup>28</sup>

<sup>28</sup> Among the items that contributed to the slight increase in the trimmed mean of core services inflation from November to December 2009 are: restaurants, sport shows, and pubs. Despite having increased in

**Graph 26**  
**Annual Inflation and Inflation Indicators Excluding the Contribution of Extreme Upper and Lower Price Variations Trimmed at 10 Percent**<sup>1/</sup>  
 Annual percent



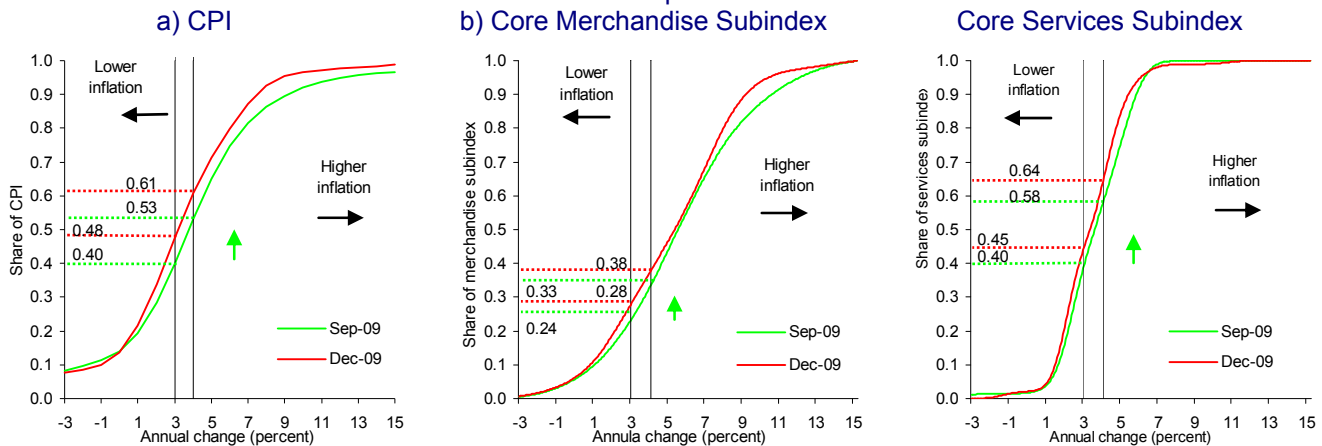
<sup>1/</sup> The trimmed mean excludes the contribution of extreme variations in certain items' prices from headline inflation. To strip these variations, the following calculations are done: i) monthly seasonally adjusted variations of CPI prices are arranged in descending order; ii) the items with the highest and lowest variation are excluded, considering up to 10 percent of the CPI basket, respectively, in each distribution tail; and, iii) with the remaining items, which, by construction, are located at the center of the distribution, the trimmed mean is constructed.

When analyzing the cumulative distribution of the annual price variations of each item of the CPI and core merchandise and services subindices, similar results are obtained: during the fourth quarter, the share of CPI items with annual price variations equal or below 3 percent rose from 40 to 48 percent between September and December 2009 (Graph 27a). In addition, the share of CPI items with annual price variations equal or below 4 percent rose from 53 to 61 percent

December more than during the preceding quarters, the prices of these items were not sufficiently high to position themselves in the right tail of the distribution (items with higher price variations).

during the same period. Similar results are obtained in the cases of the core merchandise subindex (Graph 27b) and the core services subindex (Graph 27c).<sup>29</sup>

**Graph 27**  
**Cumulative Proportion of the Price Index According to its Items' Annual Price Variations<sup>1/</sup>**  
 Annual percent



1/ The cumulative distribution of a price index items' annual price variations is calculated as follows: i) an empirical density function of an annual price variation of the index's items is obtained; ii) this cumulative distribution considers the weights of each item's price within the subindex, from the minimum value of the item's annual price variations to the maximum value.

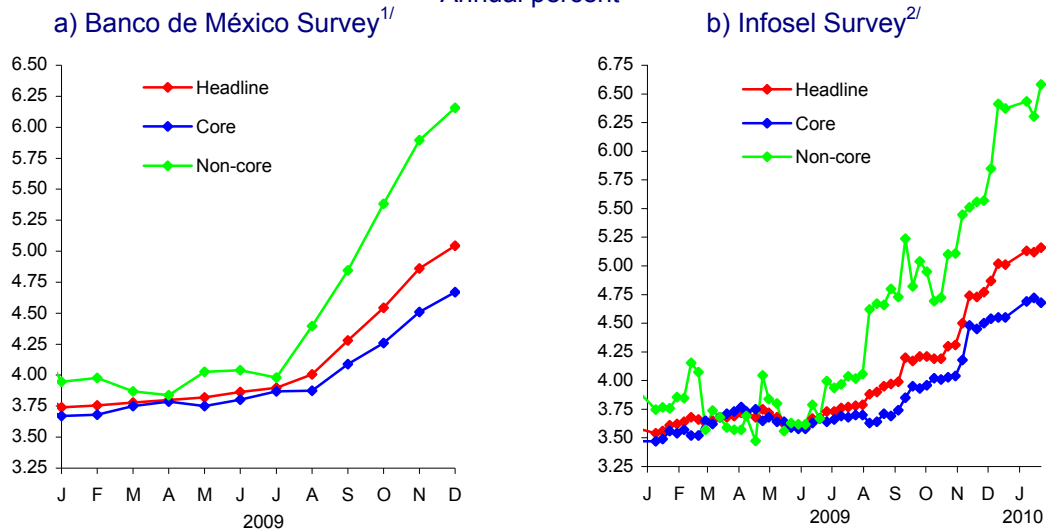
Summing up, the development of many indicators shows that in the last year, inflation registered a clear generalized downward trend.

Nevertheless, as pointed out, this trend will be interrupted in 2010 due to the effects that the fiscal changes and the policy of public prices and fees are expected to have on the CPI. Most of the increases in inflation are anticipated to be temporary and to revert in 2011. In particular, the fiscal changes are expected to have a one-time only effect on the price level. Also, the change in the policy of public prices and fees implies a correction in relative prices, as their gaps in relation to their international references tend to close (Box 1). Insofar as the adjustment in these prices and fees only reflects this correction in relative prices, its effect on inflation is also expected to be temporary (Box 2).

Considering the two previous elements, inflation expectations for the end of 2010, obtained by diverse surveys among private sector economic analysts, were revised upwards in the last two quarters. In the case of Banco de México's survey, the consensus (mean) for headline inflation expectations for 2010, increased from 3.90 percent in the survey of July 2009, to 5.04 percent in the survey of December (Graph 28a). In the case of Infosel's survey, the consensus increased from 3.79 percent on July 31, to 5.16 percent on January 22, 2010 (Graph 28b).

<sup>29</sup> In the case of the core merchandise price subindex, the basket's share with annual price variations below or equal to 3 percent rose from 24 to 28 percent between September and December 2009, while the share with annual price variations equal to or below 4 percent rose from 33 to 38 percent during the same period. In the case of the core services price subindex, the share of the basket with annual price variations below or equal to 3 percent increased from 40 to 45 percent during the quarter, while that for price variations below or equal to 4 percent, from 58 to 64 percent.

**Graph 28**  
**Expectations for Annual Headline Inflation for the End of 2010**  
 Annual percent



1/ Monthly periodicity.

2/ Weekly periodicity.

As recalled, during the second half of 2009, the fiscal measures aimed at strengthening public finances in Mexico were discussed and approved. On November 5, the Mexican Congress approved the Federal Budget (*Ley de Ingresos de la Federación*, LIF-2010) and on November 17, the Federal Expenditures for 2010 (*Presupuesto de Egresos de la Federación*, PEF-2010). In line with these events, inflation expectations for the end of 2010 started to be revised upwards since the third quarter of the previous year, while the consensus for expectations corresponding to non-core inflation for the end of 2010 rose from 4.06 percent on July 31 to 5.56 percent on November 20 (Infotel survey),<sup>30</sup> while that for core inflation increased from 3.70 to 4.45 percent during the same period (Graph 28b).<sup>31</sup> As shown, the upward revision in inflation expectations for the end of 2010 during this period seems to have responded to the anticipated effect of the fiscal measures on inflation and to the prospects of changes in the policy of public prices and fees.

Later in 2009, analysts' inflation expectations for the end of 2010 continued to be revised upwards: the consensus for those corresponding to non-core inflation changed from 5.56 percent on November 20 to 6.58 percent on January 22, 2010; while that for core inflation changed from 4.45 to 4.68 percent during the same period. This additional increase could be mainly attributed to the adjustments in the forecasts for inflation of the economic analysts, as a result of more accurate information on the expected increases in public prices and fees.

Although inflation expectations for 2010 have been revised upwards in the last months, the recent development of those for longer horizons suggests that the anticipated increase in inflation is perceived to be temporary. Indeed, the latest inflation expectations for 2011 are at levels considerably lower than those

<sup>30</sup> Similar results are obtained in the case of Banco de México's survey, although with monthly periodicity.

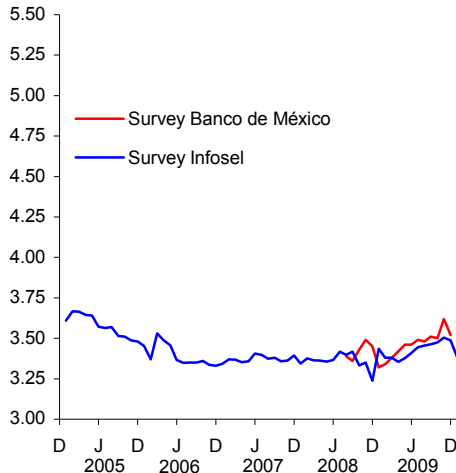
<sup>31</sup> It is important to mention that core inflation expectations were revised moderately upwards, from 3.70 percent on July 31 to 3.85 percent on September 11. Nevertheless, as economic analysts began to incorporate the effect of the tax changes into their inflation expectations, expectations for core inflation rose to 4.45 percent in the survey of November 20.



### Graph 30 Expectations for Annual Headline Inflation, and Compensation for Inflation and Inflationary Risk on Long-term Bonds

Annual percent

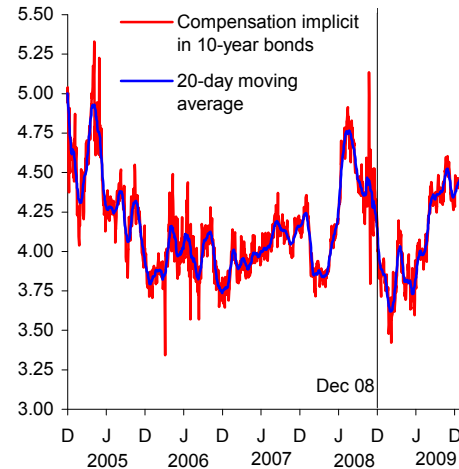
a) Expectations for Annual Average Headline Inflation for 5 and 8 years<sup>1/</sup>



Source: Banco de México and Infosel Surveys.

1/ In the case of Infosel Survey, a monthly average of the weekly surveys is used.

b) Compensation for Inflation and Inflationary Risk on Long-term Bonds<sup>2/</sup>



Source: Bloomberg.

2/ Compensation for inflation and inflationary risk implicit in 10-year bonds are calculated on the basis of nominal and real interest rates from the secondary market.

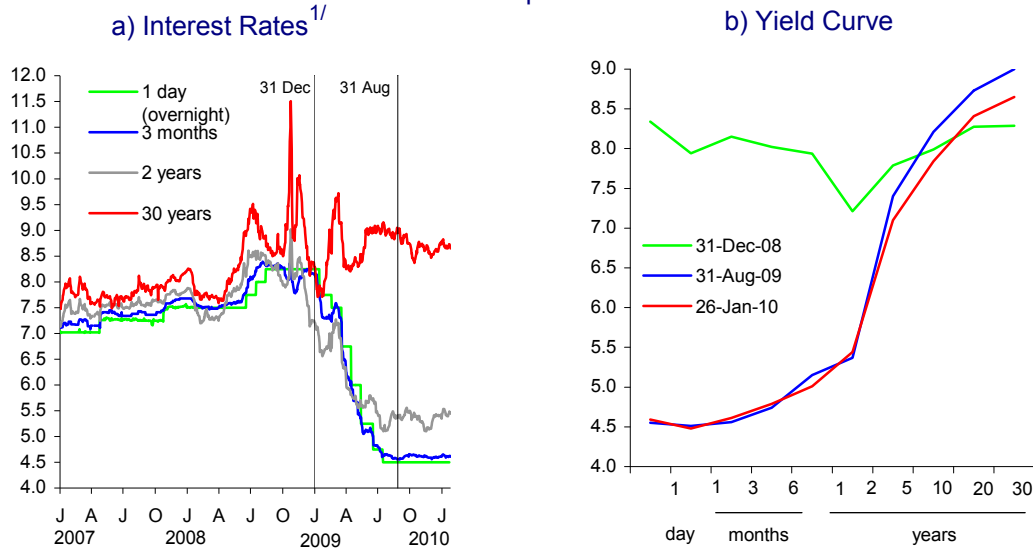
The pattern followed by the yield curve has been consistent with that of the mentioned indicators, which suggest that the expected increase in inflation is perceived to be temporary and that long-term inflation expectations remain anchored. On the one hand, and as mentioned in previous Inflation reports, since the reduction in the target for the Overnight Interbank Rate during the first seven months of 2009, the short part of the yield curve decreased significantly (Graph 31b). Shorter term interest rates have not changed significantly since then. In particular, 3-month interest rates have remained around 4.60 percent since the end of August. On the other, the development of the medium and long portion of the yield curve has been consistent with the perception that the upturn in inflation will be temporary. In particular, 2-year interest rates have fluctuated around 5.4 percent since the end of August of last year, while longer term rates even decreased during that period, thus suggesting that long term expectations remain anchored: the yield on the 30-year government bond has declined from levels close to 9 percent at the end of August of last year to around 8.65 percent in the last days.<sup>33</sup>

Summing up, inflation expectations for shorter term horizons have been fundamentally affected by the foreseen impact on the price level of the tax changes approved, as well as the changes that are anticipated and have been announced in both federal and local public price policies. Nevertheless, currently analysts consider these impacts to be in general terms temporary, given that although they anticipate a rebound in inflation in 2010, they also foresee that inflation will resume a downward trend in 2011. Medium and long-term expectations obtained from the economic analysts' surveys, the financial

<sup>33</sup> As pointed out, the indicator of compensation for inflation and inflationary risk has remained stable in the last months. As a result, the real yield on long-term debt indexed instruments has performed, in general terms, similarly to the nominal yield on longer term instruments considered in the yield curve.

instruments surveys, and those that can be inferred from the pattern followed by the yield curve, indicate that such expectations have remained anchored, albeit above the inflation target.

**Graph 31**  
**Interest Rates in Mexico**  
 Annual percent



1/ Since January 21, 2008, the one day series corresponds to the target for the Overnight Interbank Rate (Banco de México's operating target).

Banco de México's Board of Governors has pointed out that it will monitor the path of medium and long-term inflation expectations, and other indicators that might alert for unexpected and widespread pressures on prices. The latter, so that the central bank can adjust its monetary policy and attain the 3 percent inflation target by the end of next year.



**Box 1**

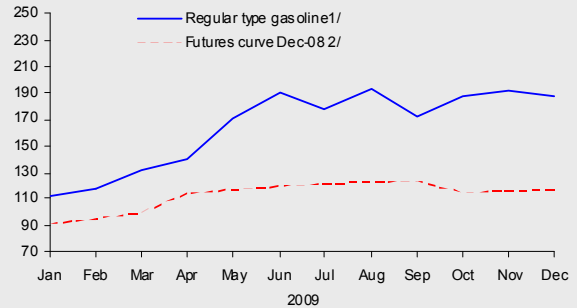
**Some Considerations on the Gap Between Domestic and International Prices of Gasoline and Propane**

This box analyzes the misalignment that prevails between domestic and international energy prices, and its implications on the Mexican economy. Such misalignment entails three main difficulties for the optimal functioning of the economy. First, the gap between domestic prices and their international references generates distortions in relative prices and, therefore, in agents' optimal decisions, which leads to an inefficient allocation of resources in the economy that in turn reduces both the level and dynamism of economic activity in relation to its potential level. Second, when domestic prices are below their international references, both explicit and implicit subsidies are generated, which may entail a high cost for public finances. Third, energy subsidies are regressive given that they mostly benefit the sector of the population with the highest deciles of income, generating low social returns as compared with other alternatives aimed at fighting poverty.

Currently, there is a significant gap between domestic and international energy prices. In the case of low-octane gasoline prices, the gap that prevailed during the fourth week of January 2010 as compared with the average price of gasoline in California and Texas was 21 percent. On the same date, the domestic price of propane was 35 percent below its international reference price (Graphs 1a and 1b).

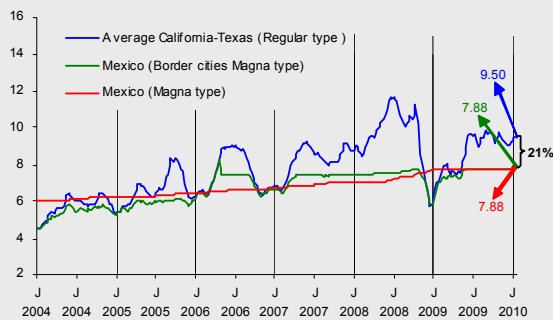
international energy commodity prices were above those anticipated by future markets in December 2008, when the government determined the price policy for these products (Graphs 2a and 2b).

**Graph 2**  
**Observed and Future Energy Prices**  
US cents per gallon  
**a) Regular Gasoline**

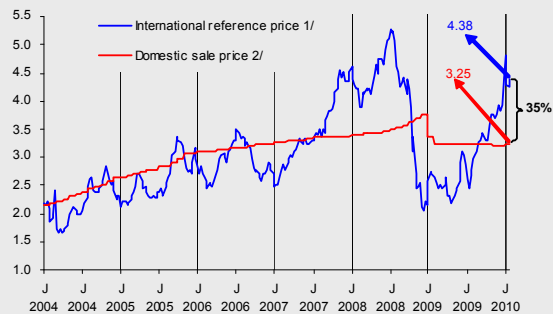


1/ Reformulated RBOB of the Gulf Coast.  
2/ Future Dec-08: average price for future contracts of the last 10 days of December 2008.

**Graph 1**  
**Domestic and International Prices: Selected Energy Products**  
Pesos per liter  
**a) Gasoline**



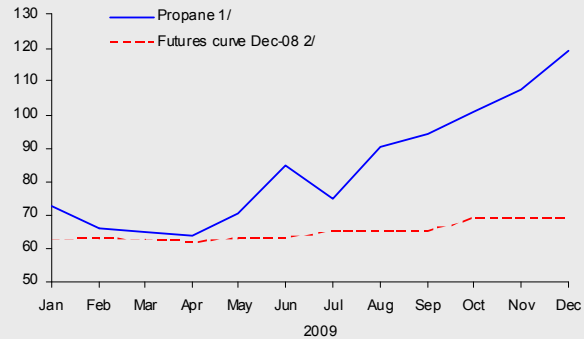
**b) Propane**



1/ Mont Belvieu.  
2/ Pemex. First hand average sale price.

These differences arose when gasoline prices were frozen in non-border Mexican cities during most of 2009 and propane prices began to decrease throughout the country and were later frozen. All of the aforementioned in an environment where

**b) Propane**



1/ Mont Belvieu.  
2/ Future Dec-08: average price for swap contracts of the last 10 days of December 2008.  
Source: Energy Information Administration (EIA) and Bloomberg.

The misalignment between domestic and international energy prices has different implications for the economy, among which the following stand out:

- Distortions in Optimal Decisions on Consumption and Investment.** When domestic prices differ from their international references, resources are not allocated efficiently, creating market distortions, given that prices do not reflect the opportunity cost of goods and services and therefore consumption is not optimal. Firms, on the other hand, make their investment decisions based on prices different from those in the market, which creates distortions in the allocation of resources in the economy.
- Public Finances.** Insofar as domestic energy prices are below their international references, explicit and implicit subsidies on these products are generated, which translates into the federal government channeling resources and stop obtaining additional revenues which could be destined to activities with high social returns.

Explicit subsidies represent the difference between the price

at which the imported fraction of any energy product is bought in international markets and the price at which the referred fraction is sold in the domestic market. In the case of gasoline, the share of imports in domestic consumption was 42 percent in 2009. Implicit subsidies, on the other hand, are related to the opportunity cost of domestic production, because when these products are sold below their international reference prices, the government stops obtaining revenues.

The referred subsidies translate into a loss of efficiency given that the profits of both producers and consumers resulting from these subsidies are, in general terms, lower than the opportunity cost of the revenues that the government stops obtaining.

3. **Income distribution.** In periods where domestic energy prices are below their international references, subsidies are positive. Subsidies on energy products are regressive because they mostly benefit those sectors of the population that destine a higher share of spending to these items.

According to the Households' Budget Survey 2008 (*Encuesta Nacional de Ingresos y Gastos de los Hogares*, ENIGH, 2008), the highest decile of the population accounts for 33 percent of the total spending in low octane gasoline, while the lowest decile accounts for 1 percent of the total spending in this fuel. In the case of high octane gasoline, these differences are even greater: the highest decile of the population accounts for 53 percent of the total spending in this fuel and the lowest decile, only 0.5 percent. As for propane, these figures are 18 and 4 percent, respectively, for the highest and the lowest decile of the population (Table 1).

Table 1 presents the distribution of spending in gasoline and propane by income decile. This information shows that the highest deciles of income distribution are those that benefit the most from this policy of subsidies on gasoline and propane given that, by granting one peso of subsidy to the lowest decile of the population in the case of low octane gasoline, the government must grant a subsidy equivalent to 32 pesos to the highest decile of the population. For the case of high octane gasoline, for each peso of subsidy granted to the lowest decile of the population, 103 pesos are granted to the highest decile of the population, and, in the case of propane, for each peso granted to the lowest decile of the population, 5 pesos are transferred to the highest decile of the population.

**Table 1**  
**Distribution of Spending in Selected Energy Products by Income Decile**  
 Figures in percent

Decil	Propane (residential use)	Low octane gasoline	High octane gasoline
I	3.67	1.05	0.52
II	5.81	2.07	0.67
III	7.54	3.11	1.27
IV	8.44	4.16	1.90
V	9.61	5.76	3.79
VI	10.17	7.17	3.89
VII	11.02	10.49	8.06
VIII	12.39	13.07	8.22
IX	13.66	19.77	18.28
X	17.69	33.34	53.39
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: ENIGH 2008, INEGI.

The policy of goods and services with government-administered prices for 2010 determines price increases in the energy goods that it regulates, such as gasoline, gas, and electricity. The price increases forecasted for 2010 will contribute to narrow the current gaps that are observed between domestic and international energy prices. In particular, the gradual increase in the foreseen prices for 2010 will contribute to reduce the implicit subsidies and make domestic and international prices align themselves better, fostering a more efficient allocation of resources in the Mexican economy.

As for its impact on inflation, the realignment between domestic prices and their international references will affect inflation temporarily. A policy that keeps energy prices low through artificial mechanisms would eventually need of a sudden adjustment in prices, with greater consequences for inflation.

Considering the aforementioned, it would be convenient for the federal authorities to set their energy prices in line with their international references in order to prevent distortions in the allocation of resources. The cost of opportunity is the concept that needs to be used to guarantee an efficient use of fuel/energy products or of any other good or service, given that the subsidies that are granted by interfering with the prices for a long time usually affect the optimal allocation of resources in the economy and are not the best mechanism to destine resources to the lowest income population.

### Box 2 One-off Price Increases and their Effects on Inflation

In practice, inflation is measured through a change in a price index. When this index has a monthly periodicity, the change in the price level as compared with that observed the immediate preceding month is known as monthly inflation. Annual inflation, on the other hand, is calculated as the change in the price index as compared with its level of the same month of the previous year. These changes are usually expressed in percentage terms.

In Mexico, the most common indicator of inflation is calculated through the Consumer Price Index (*Índice Nacional de Precios al Consumidor*, INPC). This index is measured through the prices of an ample set of goods and services offered in the economy and consumed by the population. This set of goods and services is broken down into groups of goods and services with similar features, which are called items. The weights used to average the prices of the different items, which are obtained periodically from the country's representative cities, are defined based on the Survey on Households' Income and Expenses (*Encuesta Nacional de Ingresos y Gastos de los Hogares*, ENIGH), drawn by the Bureau of Statistics (*Instituto Nacional de Estadística y Geografía*, INEGI).<sup>1</sup>

A one-off increase in the price of a good or service (or of a group of goods and services) leads to a change in the relative price of such good or service in relation to the rest of the goods and services in the economy. Thus, for example, if during a certain month, adverse weather conditions negatively affect the production of a certain agricultural product, the resulting product scarcity would be expected to lead to an increase in its price. Nevertheless, since the conditions in the markets of the rest of the goods and services in the economy are not affected by this event, its prices remain unchanged. In this case, the agricultural product price registers an increase in relation to the price of the rest of the goods and services; that is, an increase in its relative price.

The effect caused by an increase in the relative price of a good or service (or of a group of these) as that described above is

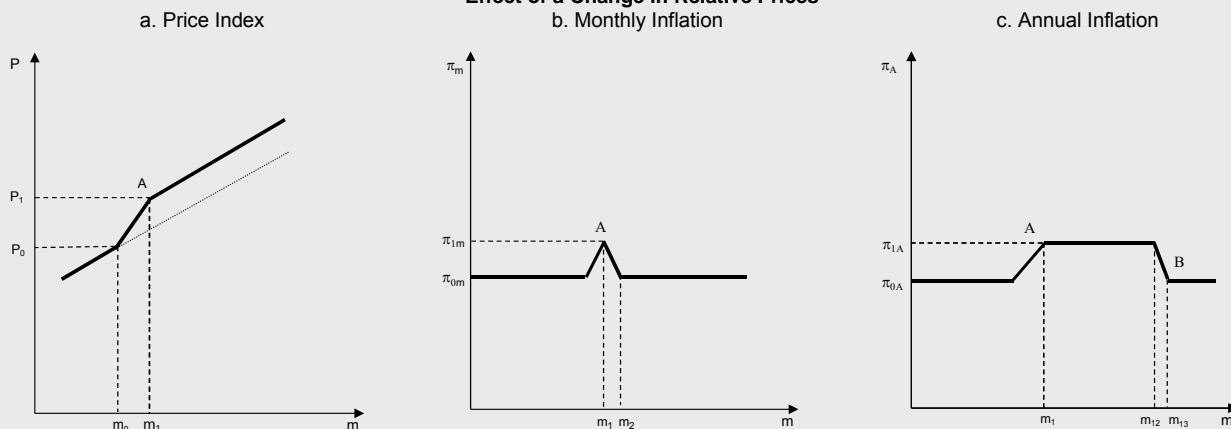
shown in Graph 1. First, panel a) of this chart displays the monthly evolution of the price index. In this case, point A illustrates the increase in the relative price of a good or service in a month ( $m_1$ ), which makes the price index ( $P$ ) rise from an initial level  $P_0$  to level  $P_1$ . This generates a step effect in the price index that, in absence of new shocks, does not take place again. Thus, the effect on this index is one-time only and takes place exclusively during one period. A similar case would take place in response to a change in taxes, given that it affects the price of the good or service taxed one-time only.

Panel b) of Graph 1 describes the effect of a one-off change in the price index on monthly inflation ( $\pi_m$ ). Point A of this graph illustrates that, given the one-off increase in the price index, monthly inflation increases in month  $m_1$ , from  $\pi_{0m}$  to  $\pi_{1m}$ . Nevertheless, the monthly inflation indicator returns to its original level ( $\pi_{0m}$ ) in the following month ( $m_2$ ) and remains in that level during the following periods ( $m_3, m_4, \dots$ ).

Panel c) of Graph 1 shows the effect of a one-off change in the price index ( $P$ ) on annual inflation ( $\pi_A$ ). As can be observed, the step effect on the price index during the month ( $m_1$ ) illustrated in point A affects the development of annual inflation during the twelve months following the initial impact (periods  $m_1$  to  $m_{12}$  in panel 1c). Annual inflation increases from level  $\pi_{0A}$  to level  $\pi_{1A}$ , and then returns back to level  $\pi_{0A}$  in month  $m_{13}$  (point B).

Thus, the change in relative prices that results from the price increase in a good or service is reflected in a one-off increase in the price index, which affects inflation temporarily (one month for monthly inflation and one year for annual inflation). In this situation, if people and firms perceive correctly that the change in relative prices implies a one-off adjustment in the price index, they do not modify their monthly inflation expectations for the months following  $m_1$  and instead revise their expectations for annual inflation only for the twelve months following the adjustment.

**Graph 1**  
Effect of a Change in Relative Prices



<sup>1</sup> For more information about measuring the INPC see *El Índice Nacional de Precios al Consumidor: Características y Actualización de su Base al Año 2002* (available only in Spanish), June 2002, Banco de México, at <http://www.banxico.org.mx/tipo/MaterialEducativo/PolMon/INPC.html>.

This way, the one-off price increases do not imply by themselves a widespread price increase. Under these conditions, the monetary authorities usually do not offset these temporary changes in inflation. Such decision is based on two lines of reasoning. The first one, macroeconomic, is that monetary policy affects prices, through its different channels, with a certain lag. This entails the possibility that the corrective measure goes into effect at a time when it is no longer needed; that is, when the temporary effect from the change in relative prices has already faded. In order to affect inflation in a time before twelve months, the monetary authority would need to raise interest rates considerably in order to reduce expenditure in the economy almost immediately and thus impact prices rapidly, which appears to be inconvenient. The second reason, microeconomic, is that in order to offset the arithmetical effect on inflation, the central bank would need to reduce inflation of the prices of those goods and services whose relative prices did not increase. This is difficult to accomplish and would imply a significant change in relative prices. This change, just like that taking place when inflation increases, generates distortions and an inefficient allocation of resources. The latter takes place, for example, if producers interpret the changes in the aggregate level of prices generated by the central bank actions as changes in the relative price of their products. Moreover, in order to prevent inefficiencies, the central bank would need to see that the relative prices of the goods and services that have not been directly affected remain unchanged, which is a rather impossible task to accomplish.

Nevertheless, in the event of an increase in relative prices, it might be the case that some firms would continue to raise their prices or that they would modify the prices of goods and services other than those initially affected (second round effects). In such a case, the one-off increase could become a sustained and widespread price increase. These types of effects are illustrated in Graph 2.

Panel a) of Graph 2 exemplifies the change in a price index ( $P$ ) that would take place if second round effects occur. As in the previous case, point A illustrates the step effect of the price index in month  $m_1$ , moving from an initial level  $P_0$  to level  $P_1$ .

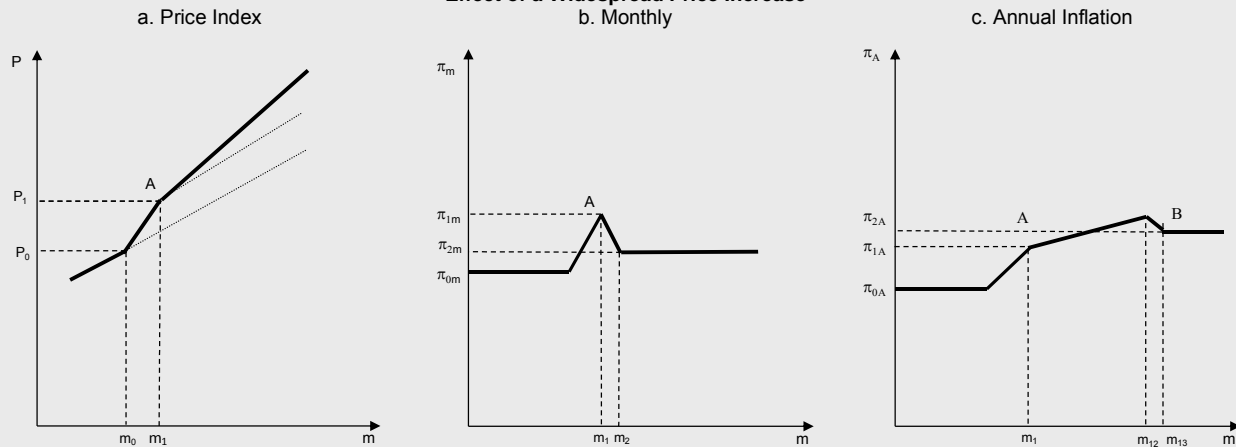
However, the pass-through to other prices makes inflation, starting this point, rise at a higher growth rate as compared with a situation without a pass-through.

Panel b) of Graph 2 shows the widespread impact on prices on monthly inflation ( $\pi_m$ ). As point A reveals, monthly inflation initially increases from  $\pi_{0m}$  to  $\pi_{1m}$  due to the change in relative prices (step effect). Later, it reaches a level  $\pi_{2m}$ , which is above the initial level  $\pi_{0m}$ .

Finally, panel c) of Graph 2 shows the effect of the widespread price increase on annual inflation. Just as in the previous case, point A shows the immediate increase in annual inflation in month  $m_1$ , from level  $\pi_{0A}$  to level  $\pi_{1A}$  generated by the step effect. Nevertheless, annual inflation would show every time a higher level, due to the pass-through effect to other prices, and would not return to its initial level ( $\pi_{0A}$ ) after the first twelve months. Instead, as shown in point B, once the step effect disappears, annual inflation decreases to level  $\pi_{2A}$ , which is higher than at the initial level  $\pi_{0A}$ .<sup>2</sup>

The previous example illustrates a case where price increases would be generalized and lead to an extended period of high inflation, in turn raising the possibility that medium and long term inflation expectations are affected. This could also put additional pressure on the price formation process in the economy, and the objective of price stability could be jeopardized. Nevertheless, to prevent that a scenario such as that described herein could materialize and therefore attain the inflation target, the central banks monitor that the price formation process is not contaminated. In particular, in the event of adjustments in relative prices where a temporary increase in inflation is foreseen, that no afterward and generalized price increases take place. Thus, when the monetary authority perceives such process could become contaminated, it takes the necessary measures to prevent it from happening and therefore ensure that inflation meets its target.

**Graph 2**  
Effect of a Widespread Price Increase



<sup>2</sup> Level  $\pi_{2A}$  must be above  $\pi_{0A}$ . Nevertheless, it can be either below, above or at the same level as the annual inflation reached in  $m_{12}$ .

## 5. Inflation Forecasts and Balance of Risks

The macroeconomic scenario forecasted by Banco de México is based on the following considerations, which have been analyzed in all sections comprising this Report:

- i) The U.S. economy will continue to recover during the following quarters as a result of the fiscal and monetary stimulus policies and the positive feedback between real activity and financial conditions. Nevertheless, it is probable that households' loss of wealth, the slow recovery of the labor market, and households' debt reduction, imply that the economy would recover moderately over the next years. For 2010 and 2011 the consensus among analysts is that GDP growth will be around 2.8 and 3.1 percent, respectively, and that industrial production will grow 4.2 and 4.4 percent, respectively.
- ii) International financial markets are expected to continue recovering just as they have done so since the third quarter of 2009 and gradually gain more relevance as an aid in the recovery of the world economy. Nevertheless, conditions in these markets have not fully gone back to normal and are still susceptible to unexpected changes.

Based on the aforementioned, Banco de México foresees the following macroeconomic scenario for the Mexican economy:

**GDP Growth:** as mentioned in section 3.2 of this Report, GDP is expected to have grown during the last quarter of 2009 above 1 percent in seasonally adjusted terms as compared with the previous quarter (a contraction below 3 percent in annual terms). Thus, for the year, GDP is expected to have contracted below 7 percent in annual terms.

For 2010 and 2011, GDP is anticipated to grow between 3.2 and 4.2 percent, respectively. This forecast is mainly determined by the rebound of the world economy and, especially, by the anticipated upturn in U.S. industrial activity. This rebound will be gradually transmitted to the domestic market. Thus, in seasonally adjusted terms, GDP is expected to grow gradually faster at a quarterly rate in 2010 (Graph 32a).<sup>34</sup> Given the particularly low levels of economic activity registered during the first half of 2009, GDP is anticipated to register higher annual variations in the first two quarters of 2010 than in the last two quarters of the same year (Graph 32b).

Despite the foreseen expansion, productive activity is expected to remain below its potential level and, therefore, the output gap would remain negative in 2010 and 2011 (Graph 33).<sup>35</sup> This is due to two factors. On the one hand, the recent development of private investment still does not show a change

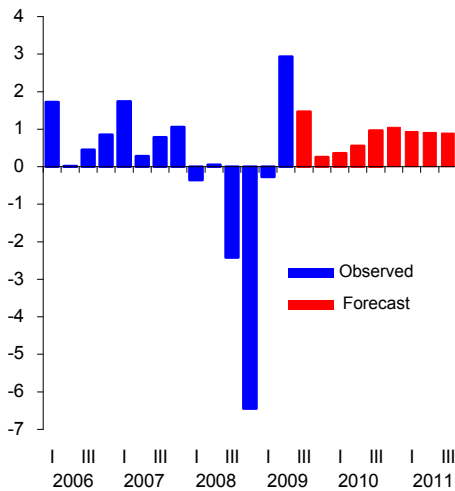
<sup>34</sup> As mentioned in the Addendum to the Inflation Report of July-September 2009, quarterly growth during the fourth quarter of 2009 might still be reflecting a certain "rebound" as compared with the low levels of activity that have been observed in certain sectors of the economy and therefore would be above the quarterly growth rates that are foreseen for 2010.

<sup>35</sup> These estimates were obtained using the Hodrick-Prescott (HP) method with tail corrections and model of non-observed components. These methods are described in the Inflation of the second quarter of 2009. See Banco de México (2009), "Inflation Report April – June 2009", p.69.

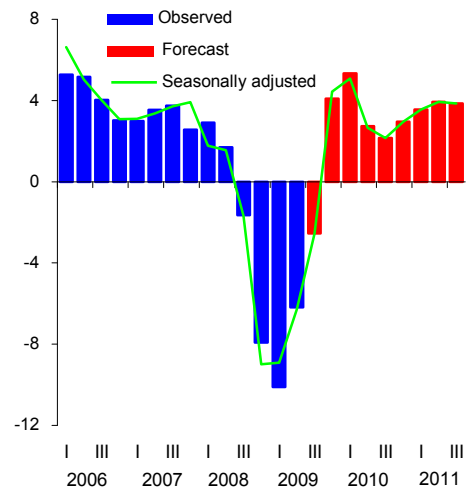
of trend, while various determinants of private consumption, such as consumer confidence levels and the wage bill, suggest that domestic demand will recover moderately in 2010. On the other hand, U.S. potential output could possibly have been affected and therefore its output gap would take a relatively long period before it closes, which would in turn affect the dynamism of Mexico's external demand. As for this second issue, it stems from the loss of wealth of households and households' debt reduction, the slow recovery of the labor market in that country, and financial institutions' need to restructure their balances.

**Graph 32**  
**Gross Domestic Product**  
Quarterly change (percent)

a) Quarterly change (percent); seasonally adjusted figures

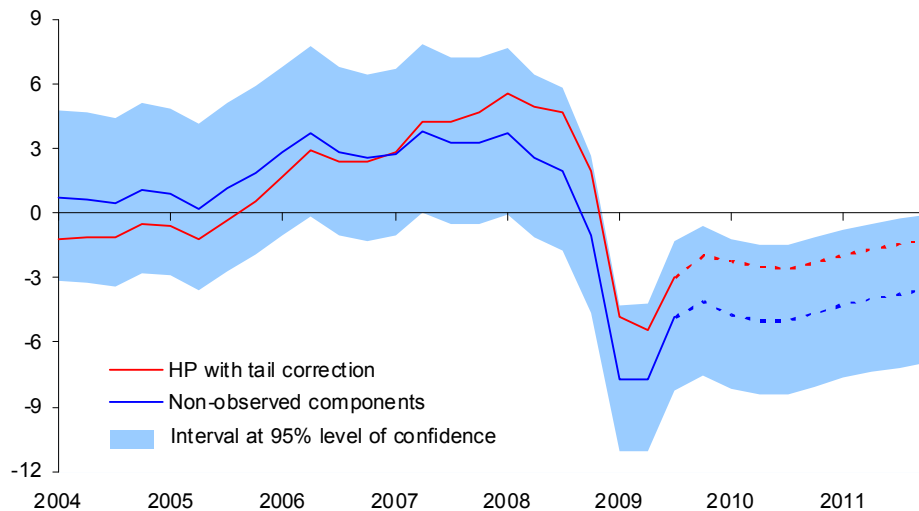


b) Annual change (percent)



Source: INEGI.  
Banco de México forecast since IV-2009.

**Graph 33**  
**Output Gap Estimates**  
Percent



**Employment:** on the basis of the recovery in the number of IMSS-insured workers at the end of 2009, and expected growth in GDP for 2010, employment is anticipated to increase by 350 thousand and 450 thousand jobs in 2010. Moreover, the expected development of economic activity in 2011 is anticipated to lead to an increase of between 500 thousand and 600 thousand formal jobs in that year.

**Current Account:** on the basis of the 4.7 billion dollar deficit in the trade balance (0.5 percent of GDP) observed in 2009, the current account deficit for that year is expected to have been around 5.2 billion dollars (0.6 percent of GDP). These deficits reflect the adjustment in domestic expenditure during 2009, which led to a significant contraction in imports of goods and services.

For 2010, both the greater dynamism of domestic demand and productive activity are foreseen to raise the levels of imports of goods and services. The effect of the latter on the trade balance and the current account would be partially offset by the growth of exports of goods and services stemming from the world economic recovery. Thus, for 2010, the trade balance and the current account are anticipated to register higher deficits than those observed in 2009. Nevertheless, they still remain moderate (11.7 billion dollars or 1.2 percent of GDP, in both cases).<sup>36</sup>

The economy is not expected to face foreign financing problems in 2010. This is mainly attributed to the combination of different factors such as: 1) the anticipated relatively small deficit of the current account; 2) the high level of international reserves to date; 3) the fact that the federal government has made significant progress in covering its refinancing needs for 2010; and, 4) the flow of foreign financing that is expected to continue, as long as the world economy gains momentum and international financial conditions improve.

Notwithstanding the above, the foreseen base scenario for the world economy in 2010 is not exempt from risks, which, despite not being imminent, must be considered thoroughly. Among these are:

- a) The effect that the withdrawal of fiscal and monetary stimulus measures in advanced economies could have on the still weak economic recovery. In particular, the fiscal stimulus in most advanced economies is expected to not last much longer, since significant adjustments will be needed to reduce the level of government debt to levels consistent with sustainable growth in the long term.
- b) The eventual withdrawal of the monetary stimulus measures could lead to a sudden correction in asset prices. Undoubtedly, this is one of the most important risk factors for emerging economies, which have experienced a sharp increase in capital inflows and an appreciation in their currency's exchange rate.
- c) Attaining higher and more sustainable growth rates worldwide in the medium and long terms will require adjustments in the composition of world demand. In order for this scenario to materialize, among other

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<sup>36</sup> The fact that the current account deficit is estimated to be similar to the trade balance deficit in 2010 has its origin on the surplus in the transfers' balance, which is expected to offset the deficits of the balances of both factor and non-factor services.



factors, the exchange rate of those economies with higher current account surpluses, particularly China, would need to appreciate.

**Inflation:** the annual headline inflation forecast for the next two years is the same as that released in the Addendum to the Inflation Report of July - September 2009. This forecast considers an increase in annual headline inflation for 2010, as a result of the effect on the CPI of the tax changes approved by Congress, and the realignment of energy prices with their international references as well as the price increases determined by the local governments, such as the subway fares in Mexico City. This rise in headline inflation is expected to revert in 2011, and position itself close to the 3 percent target during the fourth quarter of the same year (Table 8 and Graph 34). The downward path inflation is anticipated to follow in 2011 is mainly based on three considerations:

1. Tax changes usually have a temporary effect on the growth rate of prices. Thus, although consumer prices are expected to be revised during the first months of this year, the effect would disappear from annual inflation estimates during the same period of next year.
2. The freeze in gasoline prices in non-border cities during practically all 2009 and the reduction in propane and natural gas prices, as well as in peak rate electricity fees, generated a high fiscal cost. The reestablishment of the policy of gradually adjusting energy prices on a monthly basis in 2010 will contribute to reduce such cost. Likewise, in 2011, the annual inflation of the subindex of administered prices would not be expected to resent the arithmetical effect associated with the low base of comparison generated by a policy for energy prices with no monthly adjustments, unlike in 2010.
3. The expected adjustments for 2010 in the prices and fees determined by local governments must be reflected in a more efficient use of the economy's resources. Insofar as a considerable number of adjustments are implemented this year, prices could grow at slower rates the following year.

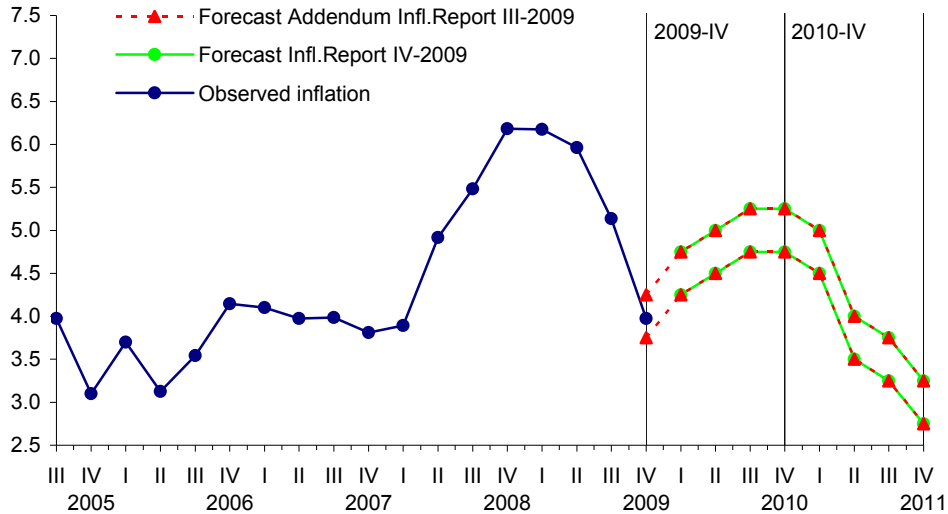
**Table 8**  
**Base Scenario Forecast for Annual Headline Inflation**  
Quarterly average (percent)

Quarter	Forecast Addendum to Inflation Report 2009-III		Forecast Inflation Report 2009-IV	
	2009-IV	3.75	- 4.25	3.98 <sup>1/</sup>
2010-I	4.25	- 4.75	4.25	- 4.75
2010-II	4.50	- 5.00	4.50	- 5.00
2010-III	4.75	- 5.25	4.75	- 5.25
2010-IV	4.75	- 5.25	4.75	- 5.25
2011-I	4.50	- 5.00	4.50	- 5.00
2011-II	3.50	- 4.00	3.50	- 4.00
2011-III	3.25	- 3.75	3.25	- 3.75
2011-IV	2.75	- 3.25	2.75	- 3.25

<sup>1/</sup> Observed figure.



**Graph 34**  
**Forecasts for Annual Headline Inflation**  
 Quarterly average (percent)



It is important to point out that the supply shocks that are expected to affect inflation in 2010 will be mitigated by the slack in economic conditions which, as already explained, the Mexican economy is anticipated to face. Inflation expectations for longer terms have also remained stable and there are no signs of widespread pressures on inflation.

Thus, the recent developments in inflation and economic activity, the outlook for economic activity for the following two years and, finally, some adjustments to the assumptions previously considered in the Addendum to the Inflation Report of July - September 2009 to obtain the previous inflation forecast, reveal a trajectory for annual headline inflation for the following eight quarters that falls within the intervals published in the referred Addendum.

Nevertheless, the forecasted path for headline inflation is subject to diverse risks, among which the most noteworthy are:

- i) An upward revision in long-term inflation expectations due to the expected rebound in inflation. This could generate second-round effects on inflation if firms pass the increase in their costs to consumer prices of those goods and services that are not directly affected.
- ii) A magnitude different from that estimated for the foreseen adjustments to administered and regulated prices.<sup>37</sup>
- iii) A pass-through to prices different from that expected from the tax changes approved by Congress, as a result of the uncertainty

<sup>37</sup> The Addendum to the Inflation Report July - September 2009 describes the foreseen effects on inflation of administered and regulated prices.

associated with all parameter estimates based on econometric methods.<sup>38</sup>

- iv) Weather conditions that might affect the supply of fruits and vegetables.
- v) A rate of recovery in economic activity different from that expected would definitely affect the inflation path. If such a path were to be slower, inflation pressures would ease. On the contrary, if the rebound would take place rapidly, the opposite would be observed.
- vi) A reversal in capital flows which would adversely affect the exchange rate.

Despite the fact that the slackness in the output gap is expected to diminish the effect on consumer prices of the fiscal measures and of the adjustments in public prices and fees, it will be of utmost importance for the monetary authority to remain vigilant that other prices are not contaminated. In this regard, in order for inflation to resume a downward trend conducive to the 3 percent annual inflation target, inflation expectations for the medium and long terms need to remain well anchored, and no widespread inflationary pressures must be present. This will allow, once the foreseen rebound in inflation disappears, inflation to decline significantly throughout 2011 and then come close to the 3 percent annual target at the end of that year.

In addition to having a central bank vigilant on price stability, the feasibility of attaining low and stable inflation, as well as how efficiently it can be achieved, increases insofar as the country has a flexible economy that responds more rapidly to the changing domestic and external conditions. In particular, a greater degree of competition and flexibility in domestic markets prevents rigidities in the price formation processes. In addition, the institutional arrangements that affect productivity are crucial for determining the economy's supply conditions and, therefore, the population's cost of living. Considering the aforementioned issues, the possibility that U.S. potential growth might have been affected and that the economy of that country could recover at a relatively slow rate –therefore hindering the contribution of external demand to the domestic economy's dynamism- raises the urgent need to resume the structural reforms' agenda that would boost the development of Mexico's domestic growth sources.

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<sup>38</sup> The Addendum to the Inflation Report July - September 2009 describes the framework for estimating the effect of the tax changes on consumer prices.

## 6. Monetary Program for 2010

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Article 51 of Banco de México's governing law establishes that in January of each year the central bank must send to both the President and Congress a document on the monetary policy to be implemented the following year. In order to fulfill this legal responsibility, this section describes the monetary policy guidelines for 2010.

Since 2001, Banco de México has crafted monetary policy under an inflation targeting regime, which has been considered the most effective in making the central bank comply with its constitutional mandate of guaranteeing the stability of the country's money value. The Monetary Program for 2001 presents some considerations on the convenience for using this type of regime. Specifically, the central bank's medium-term goal is to attain an annual consumer price inflation of 3 percent.

Nevertheless, and even when monetary policy is conducted in line with the attainment of such goal, there is still a margin of uncertainty about how accurate and how precise it can achieve it, given the variety of factors that affect inflation. Considering this degree of uncertainty, a variability interval has been determined of plus/minus one percentage point around the 3 percent target. This range does not mean that the monetary authority is setting a margin of indifference or tolerance around the inflation target. Rather, it is practical way of representing the uncertainty associated with the development of inflation and, therefore, with the attainment of the target.

The constitutional mandate that establishes that Banco de México's main goal is to safeguard the country's money value is based on very good reasons to keep inflation under control. Among the most important are:

1. Inflation is one of the most regressive taxes, because by reducing the real value of money (banknotes and coins), it affects, more than anyone else, the low income population that have a higher share of disposable income in cash; that is, inflation exerts a greater burden on those who own less.
2. High inflation induces firms to change their prices frequently, generating costs for them. In an environment of high inflation, any change in prices is not uniform or constant; that is, goods and services are not equally affected nor at the same time. This means that the higher the inflation, the greater the variability in relative prices, which creates severe distortions and inefficiency when allocating resources. This could take place if, under those conditions, producers mistake changes in the aggregate level with changes in the relative price of their products. The inefficiency surrounding the allocation of resources is thus translated into a loss of competitiveness and activity.
3. As price changes become more frequent, more widely dispersed, and are of greater magnitude, all economic agents (households, firms, and social and government institutions) inevitably end up reducing their planning horizons. This hampers productive investment and

employment, wealth and savings' formation, as well as the building of infrastructure, which takes a long time to be planned and executed.

4. Throughout the history and in diverse countries, evidence reveals that periods of high inflation coincide with those of meager growth and employment, stagnation, and even a decline in economic activity. Thus, the inference that inflation to a certain extent fosters economic growth seems to lack foundation; on the contrary, the stability of money value is a necessary condition, although not sufficient, for sustained growth.

Indeed, keeping inflation contained is not a goal that jeopardizes economic growth. On the contrary, high inflation has coincided with periods of low growth in diverse countries, and very clearly in Mexico. This is due to the fact the social costs originated by inflation increase when inflation rises and they can have a significant collective effect on economic growth. Likewise, these costs are small while inflation is low, which generates the proper conditions for the development of productive activities. It is very evident that if there was a positive relation between inflation and economic growth, there just would not be countries with development or poverty problems.

In light of these reasons, in this monetary program for 2010, Banco de México's Board of Governors reiterates the key importance for Mexicans' wealth and economic growth of having a monetary policy whose unfailing priority is to preserve, in the long and medium run, the value of money.

In order to attain the inflation target, the central bank must consider that the monetary policy actions affect the economy, and specially, prices with a lag, and that these lags are variable. For this reason, the monetary authority must make its decisions after carefully assessing the current economic environment and considering the prevailing monetary and financial conditions as well as the outlook for inflation, among other factors.

In this regard, Banco de México adjusts its monetary policy when it perceives that the inflation forecasted for the medium term deviates from the 3 percent annual target. The central bank's monetary policy tool is the Overnight Interbank Rate, also known as reference rate.

The monetary policy transmission mechanisms can be illustrated through the following examples.

A first example would be to show how an increase in the reference rate would respond in the event of an excessive growth in aggregate demand. That is, an increase in aggregate demand of such magnitude that would allow for anticipating that the growth in total expenditure exceeds that which would otherwise be consistent with the potential output of the overall economy. This excess demand would generate widespread pressures on prices, which in turn would make medium-term inflation expectations deviate from the 3 percent annual target. In such an event –which certainly is not the current one prevailing in the Mexican economy- the central bank could respond by raising its target for the short-term interest rate.

How would the monetary policy tool, i.e. the reference rate, operate under the previous example? By raising the target for the Overnight Interbank

Rate, the monetary authority affects the conditions under which it provides liquidity to the money market, which usually affects interest rates for all terms. Nevertheless, the most affected interest rates would be those for short terms, while the least affected would be those for longer terms. The impact on interest rates for different terms mainly depends on three factors: 1) the expected path of short-term interest rates in the future; 2) the long-term inflation expectations; and, 3) the risk premia determined in financial markets. These factors are also influenced by the central bank's credibility in terms of its commitment to maintaining price stability. In the event of an increase in the interest rate target, longer term interest rates would face lesser upward pressures as the central bank gains more credibility. The previous fact would be the outcome of medium and long-term inflation expectations remaining anchored. In fact, very high credibility could make long-term interest rates change very little, and even, decline, which in turn makes the yield curve "flatten" when the target for short-term interest rates increases.

Following the example of excess aggregate demand, monetary policy, through its different channels, would look to moderating this expansion in aggregate demand in such a way that it is consistent with the economy's potential output. The central bank would thus prevent the upsurge of widespread pressures on prices and could in turn achieve the inflation target.

The first monetary policy channel is transmitted directly through interest rates. An increase in real interest rates affects household and firms' decisions on savings and investment. This takes place because households have more incentives to postpone their consumption, given that real interest rates reflect the relative prices of present consumption vs. future consumption, which reduces the present aggregate demand. Firms, on another front, are faced with higher financing costs and therefore tend to reduce their investments.<sup>39</sup> These effects mitigate the growth rate of aggregate demand, helping to reduce any generalized pressures on prices.

The increase in interest rates can also affect aggregate demand through the supply of credit via two possible channels: the bank credit channel and the broad credit channel. Regarding the former, it is possible that those debtors willing to take higher interest loans would also take riskier projects and therefore banks could restrict credit granting. The conditions for credit supply could also be affected through a broader credit channel. Higher interest rates could generate changes in firms' expected net revenues and in their balance sheets in such a way that their risk would increase and therefore they would need to pay an additional risk premia for their loans.<sup>40</sup> In both channels, the reduction of financing also reduces aggregate demand pressures on prices.

Monetary policy also affects inflation through the exchange rate. In a small economy with free capital mobility, when domestic interest rates rise in relation to their international references, the exchange rate would be expected to appreciate at the margin. The latter, given that the financial instruments in domestic currency are more attractive than those in foreign currency. Under this

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<sup>39</sup> Nevertheless, since investment depends more on long-term interest rates, if the increase in short-term interest rates flattens the yield curve, investment could shrink less than in a situation where inflation expectations are not anchored.

<sup>40</sup> The increase in interest rates might affect the balances of firms by reducing their cash flow, increasing the value of their debt, and reducing their asset prices.

situation, two transmission channels arise: a supply channel and a demand channel. As for the supply channel, an appreciation of the exchange rate might generate a price reduction of firms' imported inputs and therefore contribute to mitigate inflationary pressures. As for the demand channel, an appreciation of the exchange rate might put up the price of domestic goods in relation to those produced in other countries. This might lead to a decline in net exports, which eventually translates into a reduction of aggregate demand and, thus, into lower inflation.

The increase in interest rates might also contribute to reduce spending through an additional channel: the asset price channel. This channel is present due to the fact that interest rate increases might change the price of assets such as public and private debt securities, and equity and real estate. An interest rate increase that reduces the price of these assets might reduce spending of both households and firms by affecting their wealth. This reduces aggregate demand and generates lesser pressures on prices. This channel operates more intensively in advanced economies, where their financial systems exchange a broader range of financial and real estate assets, some of which might be used as collateral to finance consumer and investment expenditure. For example, in some advanced economies this channel operated in the years prior to the recent financial crisis by allowing households, prior to the upsurge of problems in the subprime sector, to finance a large part of their spending in consumption using their assets as collateral, mainly real estate assets, and in an environment where interest rates remained low for a long period.

Monetary policy also affects price formation through inflation expectations. Monetary policy transmission through this channel depends on the central bank's credibility in terms of its commitment to maintaining price stability. When the central bank has high credibility, and when inflationary pressures are perceived, households and firms anticipate the central bank will implement the necessary measures to offset such pressures, and based on these perceptions they determine their prices. In this way, the credibility on monetary policy serves to anchor inflation expectations in addition to allowing the other monetary policy transmission channels to operate more rapidly and changes in the interest rate target to have a greater effect on inflation. The latter contributes to reduce the costs related to fighting inflation.

The previous paragraphs analyzed the monetary policy transmission mechanism in light of an excessive growth of aggregate demand. Another shock to the inflation path could arise if, for any reason, both medium and long-term inflation expectations are revised in such a way that they jeopardize the convergence to the goal of price stability. In this regard, any change in inflation expectations could affect the trajectory of inflation. The latter could take place, for example, when there is a change in taxes. In general terms, tax changes have a one-off effect on relative prices and therefore affect inflation only temporarily.

Since the effects of monetary policy on inflation take some time to materialize, it is hardly effective that a central bank tries to offset a temporary increase in inflation such as that generated by a change in taxes and public prices and, moreover, any intention to offset such an increase might have unwanted effects on the economy and on domestic financial markets (Box 1). Nevertheless, the risk that the adjustment in relative prices affects people's perception about the general price level prevails, deteriorating its inflation expectations. This could lead

to second-round effects on inflation, which would otherwise take place if firms pass on their higher costs to the prices of goods and services which are not directly affected. Under these circumstances, the central bank could adjust its target for the short-term interest rate to affect, through its different channels, inflation expectations and the path of inflation so that the latter is consistent with its target.

This second example is relevant for 2010, given that the downward trend followed by inflation in 2009 will be interrupted as a result of the effects on the CPI of the fiscal changes and the policy of public prices and fares. Under this environment, the following elements associated with the expected inflation for 2010 need to be considered:

- i) Despite the economic recovery foreseen for this year and the following, the output gap is expected to remain negative and therefore that the slackness in the economy will contribute to reduce the price increases stemming from the fiscal changes and from the change in the policy of public prices and fares.
- ii) Since capital flows to the country are foreseen to continue in the near future, the pattern followed by the exchange rate is expected to contribute to improve the outlook for inflation in 2010.
- iii) The foreseen increase in inflation for this year reflects the recently-approved fiscal changes. These measures imply an improvement in terms of the strengthening of public finances. As is well known, a sound fiscal stance contributes to reduce the perception of risk in the economy. This contributes to maintain inflation expectations anchored and to reduce inflationary risk premia. As a result, long-term interest rates would decrease, creating a favorable environment for economic growth.

Despite the previous considerations, given the outlook for a rebound in inflation, there is the risk that in 2010 second-round effects on inflation arise and medium and long-term inflation expectations deteriorate, just as mentioned in the second example previously described. In this case, the price stability goal could be at risk. For this reason, it is extremely important that in episodes like this one, in which inflation is expected to increase temporarily, the central bank remains alert in order to prevent the economy's price formation process from becoming contaminated.

Considering the monetary policy transmission channels, in 2010, Banco de México will carefully monitor the development of inflation and its expectations in relation to the set target. Should there be a significant difference between both that is not caused by temporary shocks, such as those related to fiscal changes, the central bank will adjust its monetary policy through its target for the Overnight Interbank Rate. By following these actions, Banco de México will comply with its constitutional mandate.