

Inflation Report

January – March 2010



BANCO DE MÉXICO

APRIL 2010

BOARD OF GOVERNORS

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Unless otherwise stated, this document has been prepared using data available as of April 27, 2010. Figures are preliminary and subject to change.

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1. Introduction

The world economy continued to recover during the first quarter of 2010 more rapidly than anticipated, although differently among regions and countries. Advanced economies have grown at a considerably more moderate rate than emerging economies and continue to depend to a great extent on the stimulus from accommodative macroeconomic policies, a factor which has also increased fiscal vulnerability. The rebound of these economies has also relied on the growth of net exports and, in general, on the recovery of inventories. Besides showing sound economic fundamentals, emerging economies have benefited from the expansion of foreign trade as well as the strong world demand for commodities.

Conditions in international security markets have gradually improved. In particular, access conditions to these markets regarding costs and terms have been rapidly recovering. Nevertheless, bank lending is still weak, particularly in advanced economies. Thus, the sustainability of the recovery of international economic activity will mainly depend on the banking sector's capacity to refinance itself, strengthen its balances, and grant credit to the private sector.

Inflationary pressures have been contained in most advanced economies, basically as a result of lower than potential production, the consequent idle capacity, and the high levels of unemployment, which have contributed to maintain inflation expectations low and stable. In light of the need to continue boosting the recovery and improving financial systems, the central banks of these economies decided to leave their monetary policy stances unchanged. In contrast, emerging economies which were less affected by the global crisis and therefore exhibit less slackness in their economies, have started to withdraw their monetary and credit stimuli.

Emerging economies continued registering high capital inflows, partly boosted by expectations that interest rate spreads relative to advanced economies will remain high in the near future. Prospects of a continuous appreciation of their exchange rates and higher growth in relation to advanced economies have also contributed to this phenomenon. In fact, the extremely accommodative monetary and fiscal policy stance in advanced economies is a factor that could complicate macroeconomic management in emerging economies.

In Mexico, manufacturing production continued following a positive trend during the first quarter of 2010. The greater dynamism of industrial activity in the U.S. contributed to such a trend, which also raised the trade volume of Mexican exports. In contrast, domestic expenditure has rebounded at a slower pace, especially private investment, which has hardly recovered. Under these conditions, the economy continues operating below its productive potential level.

Annual headline inflation rose from 3.98 percent on average during the fourth quarter of 2009 to 4.75 percent during the first quarter of 2010, placing itself in the upper limit of the forecast interval published by Banco de México in the Addendum to the Inflation Report of July-September 2009 in November of that year. Upward pressures on headline inflation concentrated mainly on the CPI's non-core component, given that the core component –which reflects to a greater extent the medium-term inflation trend- decreased. The increase in non-core



inflation was affected by the policy of monthly adjustments in fuel prices and in prices and fares determined by local governments, as in the case of subway and water supply services in Mexico City. This trajectory was also influenced by the extraordinary rise in the prices of certain vegetables originated by the adverse weather conditions that affected their production. As for the reduction of core inflation, it was influenced by the exchange rate appreciation which lessened the impact of the recent tax adjustment on prices, in an environment where wages adjusted slightly and medium and long-term inflation expectations remained relatively stable.

The forecast for inflation for the remainder of 2010 and 2011 remains unchanged in relation to the last forecast published by Banco de México. The forecast remains unchanged considering that the impact of the tax changes, the policy of monthly price adjustments in fuels, and the change in prices and fares determined by local governments has been as expected, and that no inflationary pressures from the demand side seem to exist in view that the economy continues operating below its potential and that the exchange rate has significantly appreciated.

Nevertheless, the price formation process still faces risks that could modify the expected trajectory of inflation. Among the main risks is a sharp and abrupt change in capital flows, which could lead to a sudden exchange rate adjustment. Likewise, as the slackness in the economy diminishes, it will start to contribute less to reduce inflationary pressures.

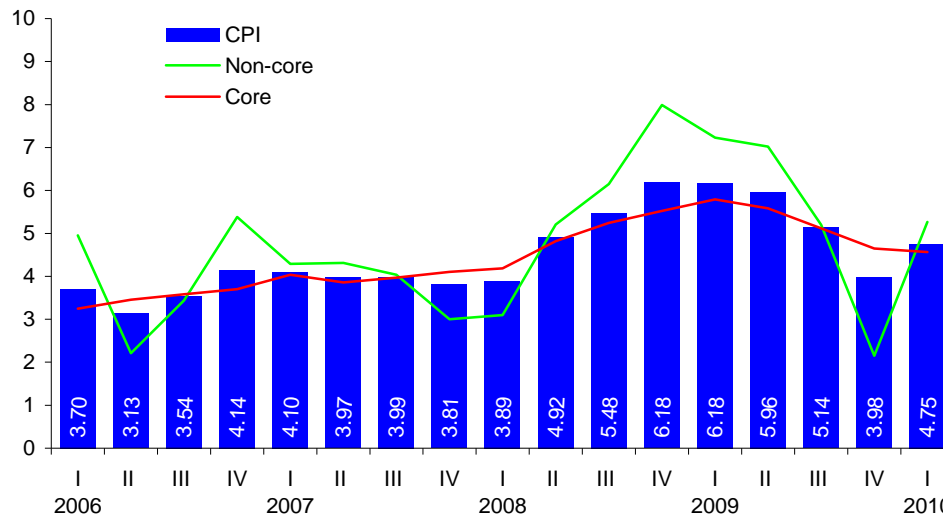
Under this environment, from the beginning of this year to date, Banco de México's Board of Governors has kept its target for the Interbank Interest Rate (Banco de México's operational target) at 4.5 percent. Nevertheless, the Board has mentioned that it will monitor the development of inflation expectations for the medium and long terms, as well as other indicators that could signal unexpected and widespread inflationary pressures. In particular, it will remain attentive of how fast the output gap closes so that, if necessary, the central bank adjusts monetary policy in order to attain the 3 percent inflation target by the end of next year.

2. Recent Developments in Inflation

2.1. Inflation

During the first quarter of 2010, average annual headline inflation was 4.75 percent, as compared with 3.98 percent during the previous quarter (Graph 1 and Table 1). As a result, inflation reached the upper level of the forecast interval, from 4.25 to 4.75 percent.

Graph 1
Consumer Price Index
 Annual average change (percent)



Source: Banco de México.

The rise in headline inflation is attributed to CPI's non-core component. Annual non-core inflation rose to 5.26 percent during the first quarter of 2010 (as compared with 2.15 percent during the fourth quarter of 2009). This result was due to the combination of three factors: i) the resuming of the policy of monthly adjustments in fuel prices; ii) the increase in the prices and fares determined by local governments; and, iii) the significant price increase of some vegetables. Of the 77 basis points that headline inflation rebounded during the first quarter of 2010, the first two factors, which were anticipated in the Addendum to the Inflation Report July-September 2009, contributed with 63 basis points (Table 1). As for the third factor, the possibility that a significant price increase in fruits and vegetables would materialize was forewarned in that document. The following considerations must be made regarding these factors:

1. The resuming of the policy of fuel price adjustments has been oriented to mitigate the fiscal and economic cost from the lack of alignment between domestic prices of gasoline and LP gas and their international references (Graph 2a). By correcting relative prices and strengthening public finances, these measures will help to attain lower levels of inflation in the future.

Table 1
Consumer Price Index and Components
 Annual average change per quarter (percent)

	Average Annual Change		Incidence ^{1/}		
	per				
	Quarter		Q-IV	Q-I	Difference
	2009	2010	2009	2010	(b-a)
	(a)	(b)	(a)	(b)	(b-a)
CPI	3.98	4.75	3.98	4.75	0.77
Core	4.65	4.57	3.40	3.34	-0.06
Merchandise	6.04	5.46	2.13	1.94	-0.19
Foods	6.55	5.81	1.04	0.94	-0.11
Remaining merchandise	5.62	5.17	1.08	1.00	-0.08
Services	3.35	3.72	1.27	1.40	0.13
Housing	2.61	2.78	0.44	0.47	0.03
Education	4.13	4.15	0.26	0.26	0.00
Remaining services	3.88	4.62	0.57	0.67	0.11
Non-core	2.15	5.26	0.58	1.42	0.84
Agricultural	4.88	7.15	0.44	0.65	0.21
Fruits and vegetables	4.61	16.31	0.17	0.56	0.39
Onion	-28.02	157.02	-0.06	0.18	0.25
Tomato	7.12	38.83	0.04	0.14	0.10
Livestock	5.05	1.62	0.28	0.09	-0.19
Administered and regulated	0.76	4.29	0.14	0.76	0.63
Administered	-0.26	3.99	-0.02	0.37	0.39
Electricity	-0.30	6.46	-0.01	0.19	0.20
Gas for residential use	-4.93	0.65	-0.13	0.02	0.14
Low octane gasoline	3.06	4.32	0.10	0.14	0.04
High octane gasoline	2.83	3.51	0.01	0.02	0.00
Regulated	1.87	4.61	0.16	0.40	0.24
Urban bus	7.23	11.08	0.10	0.16	0.06
Subway or electric transportation	0.56	42.74	0.00	0.04	0.04
Water supply fees	6.48	10.55	0.05	0.09	0.04

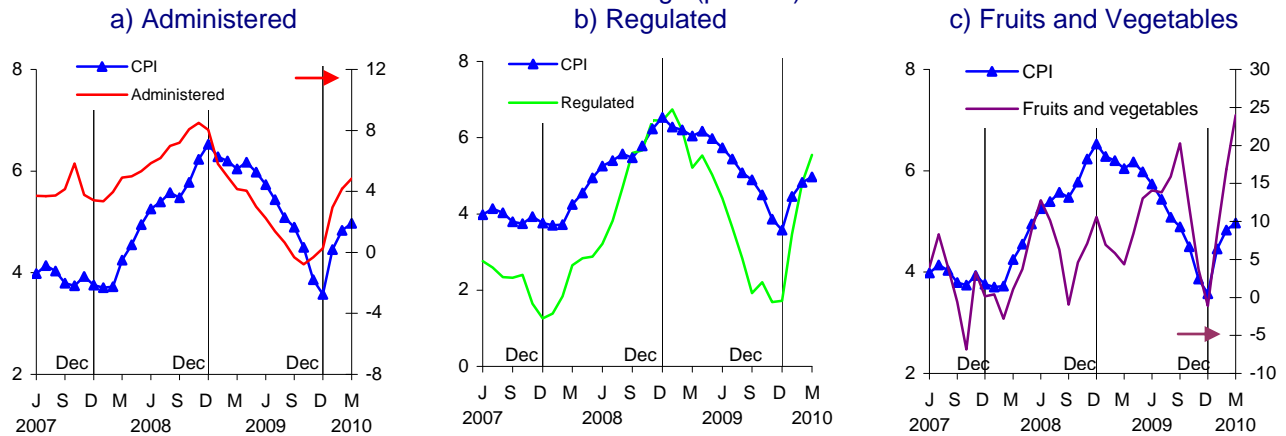
Source: Banco de México.

1/ The incidence refers to each CPI components' contribution (in percentage points) to headline inflation. It is calculated using the weights of each CPI subindex, and relative prices and their respective changes. In some cases, the sum of the components of a certain group of subindices may not add up due to rounding.

2. As for the increase in the prices and fares determined by local governments, reflected in the subindex of goods and services with regulated prices, the most noteworthy cases were those of subway fares, urban bus fares, and water supply service fees in the Mexico City metropolitan area.¹ Urban bus fares also rose and had a high incidence on inflation in Guadalajara, Campeche, and Veracruz (Graph 2b).
3. As for the price increase of vegetables, these were unexpectedly high in the case of tomato and onion (38.8 and 157.0 percent), due to a lesser supply originated by adverse weather conditions, which have already started to revert (Graph 2c).

¹ The weights of the subway, the urban bus and water supply services in the CPI are 0.13396, 1.31665 and 0.74243, respectively.

Graph 2
CPI and Selected Items of the Non-Core Component
 Annual change (percent)



Source: Banco de México.

As for core inflation, its annual average declined from 4.65 percent during the fourth quarter of 2009 to 4.57 percent during the first quarter of this year (Table 1). This reduction was the result of two opposite effects: first, a downward contribution of merchandises due to lower pressures on production costs of processed foods (by registering agricultural commodity prices a decline during the quarter) and an appreciation of the exchange rate; and, second, to the impact of the price increase in goods and services originated by the tax measures, without this having originated second-round effects on the price formation process (Box 1).

The aforementioned was reflected within core inflation in a downward contribution from the merchandise price subindex, which exerted a dominant effect, and an opposite effect from the services price subindex. The latter's average growth rate increased from 3.35 percent during the fourth quarter of 2009 to 3.72 percent during the first quarter of 2010 (Table 1). This increase was mainly influenced by the change in the Easter holiday this year as compared with the previous year –which affected item prices related to tourism- Moreover, the effect on the prices of various goods associated with the 1 percentage point increase in the Value Added Tax (VAT) escalated due to the specific impact on this price subindex of the setting of the 3.0 percent Excise Tax (*Impuesto Especial sobre la Producción y Servicios* or IEPS, for its acronym in Spanish) on cable and satellite TV services.

Complementary indicators of inflation confirm that the rebound exhibited during the analyzed quarter concentrated on a reduced number of goods and services. That is, the faster rate of growth of the CPI has not been the result of a rapid and widespread growth of prices in the economy, but rather of high price increases in a reduced number of items that make up the CPI's non-core price index.

Box 1
Evidence on the Absence of Second-round Effects on the Price Formation Process Associated with the Tax Adjustments for 2010 Approved by Congress

This box analyzes the development of the item prices that make up the Consumer Price Index (CPI),¹ in an effort to identify any possible second-round effects from the tax adjustments for 2010 approved by Congress on the price formation process.² In particular, the frequency and magnitude of price increases during the first quarter of 2010 is compared with the average during the same quarter of the period between 2003 and 2009.³

The analyzed evidence suggests that up to now no second-round effects have affected the price formation process. This is based on the following considerations:

- i) Within the group of goods and services that are not subject to the Value Added Tax (VAT) or the Excise Tax (*Impuesto Especial sobre Producción y Servicios* or IEPS, for its acronym in Spanish. For the purpose of this box, it will be known as the *group excluding VAT and IEPS*), price increases during the first quarter of 2010 registered similar frequency and magnitude as in the average for the first quarter of the 2003-2009 period (which, for the purpose of this box, will be referred to as the *reference period*).
- ii) Within the group of goods and services taxed under the VAT, which includes some goods and services that are also subject to the IEPS (and which, for the purpose of this box, will be known as the *group including VAT and IEPS*), the magnitude of the price increases was smaller during the most recent quarter as compared with that of the reference period (this, which might seem counterintuitive, responds to a change in the composition of this group, as explained in Section 2.2 of this box). Although the price adjustment frequency rose, this pattern took place primarily in January of 2010, given that in the following months, the price increase frequency tends to converge with that registered during the reference period.

1. Data

Figures used in this analysis correspond to items quoted by Banco de México to estimate the CPI from June 2002 to March 2010. Information used in this study excludes quotes of goods and services with administered and regulated prices given that they do not necessarily respond to market conditions, as well as to figures attributed or which are not quoted directly (in particular, in the case of car insurance, the average variation of the premia is applied to all items). According to its weight, the database of this study thus accounts for 68 percent of the CPI basket. In the literature specialized in analyzing the frequency and magnitude of price adjustments it is a common practice to exclude

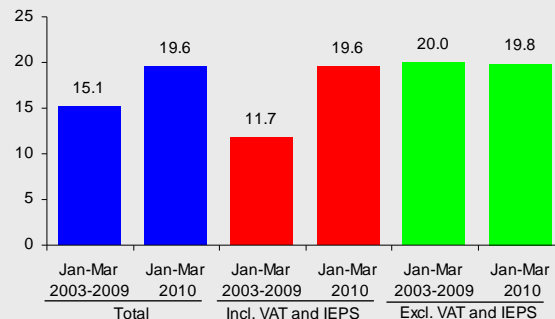
information with the aforementioned features.⁴ Slightly above 223,000 monthly price observations were included in the database used for this study.⁵

Within the basket of analyzed items, the group including VAT and IEPS accounts for 59.5 percent, while the group excluding VAT and IEPS, the remaining 40.5 percent. The latter group includes the following items: foodstuffs, medicines, medical consultations, and education.

2. Results
2.1. Frequency of Price Increases

During the first quarter of 2010, the average for monthly upward price adjustments for the total basket of goods and services analyzed was 19.6 percent. In contrast, during the reference period, the average frequency was 15.1 percent (Graph 1). This increase is attributed exclusively to the group of goods and services taxed under the VAT and IEPS, given that the frequency in the upward price adjustment in the group excluding VAT and IEPS declined, from 20.0 percent during the reference period to 19.8 percent during the January-March 2010 period.

Graph 1
Frequency of Upward Price Adjustments
 Figures in percent



The greater price increase frequency in the group of goods and services including VAT and IEPS is observed in the first month of the quarter. In particular, in January 2010, 32.0 percent of the items registered price increases, while between 2003 and 2009 the average was 12.0 percent. In the following months, the price increase frequency converged gradually to that of the reference period. Thus, in March 2010, the frequency was 12.6 percent while the average for the same month from 2003 to 2009 was 11.4 percent (Table 1).

¹ An item is the basic unit of a price quote. Each item is unique and is classified according to the city and the store/location where it is quoted, the CPI group to which it belongs, and a detailed description of the good or service being quoted.

² The Addendum to the Inflation Report of July-September 2009 includes a detailed description of the referred tax adjustments.

³ The price adjustment frequency is defined as the percentage of items exhibiting price adjustments during a month as compared with the previous one. The price increase frequency refers to the percentage of items with upward price adjustments during a month vs. the previous one. The average magnitude of adjustment considers only those items exhibiting price adjustments and is calculated as the growth rate of price quotes as compared with those observed during the previous month. Both frequency and magnitude are calculated as a weighted average according to the weight of goods and services that make up the CPI.

⁴ See Álvarez, L. and Hernando, I., (2004), "Price Setting Behaviour in Spain. Stylised Facts Using Consumer Price Micro Data", ECB Working Paper No. 416; Baumgartner J., Glatzer, E., Rumler, F. and Stiglbauer, A., (2005), "How Frequently do Consumer Prices Change in Austria? Evidence from Micro CPI Data", ECB Working Paper No. 523; and, Gagnon, E., (2009), "Price Setting During Low and High Inflation: Evidence from Mexico", The Quarterly Journal of Economics, Vol. 124, 3, 1121-1263.

⁵ Excludes quotes of watches, jewellery and imitation jewellery; home rentals; own housing; car insurance; hotels; and, goods and services with administered and regulated prices.

Table 1
Frequency of Price Increases
Figures in percent

	January		February		March	
	2003-09	2010	2003-09	2010	2003-09	2010
Total	15.7	28.8	15.2	15.7	14.4	14.4
Including VAT and IEPS	12.0	32.0	11.8	14.1	11.4	12.6
Excluding VAT and IEPS	21.1	24.2	20.2	18.0	18.9	17.1

2.1. Magnitude of Upward Price Adjustments

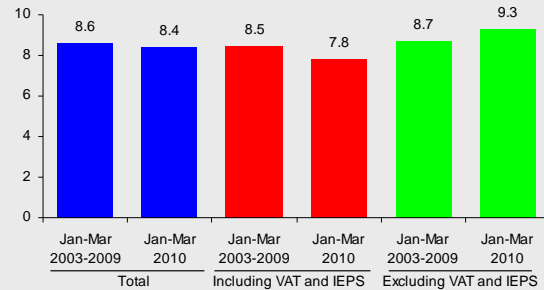
The magnitude of price increases observed in the total basket of goods and services analyzed during the first quarter of 2010 was 8.4 percent (during the reference period it was 8.6 percent). This decline is attributed mainly to the group including VAT and IEPS, whose upward adjustment magnitude decreased to 7.8 percent (as compared with 8.5 percent during the reference period, Graph 2). The adjustment magnitude in this group decreased as a result of the inclusion of items that adjust their prices usually during a quarter other than the first one, and therefore their price increases mostly correspond to the 1 percentage point increase in the VAT and, in the event of having to correspond to it, to the IEPS (in both cases, the figure is smaller than the average magnitude during the reference period).⁶

As for the increase in the magnitude of upward price adjustments of the group excluding VAT and IEPS, it responds mainly to the higher variations of a reduced number of agricultural products (tomato, onion, ground meat, and other vegetables) whose weight in the group excluding VAT and IEPS is of 4.8 percent. When the referred foodstuffs are excluded from average magnitude estimates of the price increases in the group excluding VAT and IEPS, the figures are very similar between the two analyzed periods (8.4 vs. 8.5 percent, Table 2).

⁶ CPI goods registering an increase in the IEPS were beer (1.5 percentage point increase), alcoholic beverages above 20°GL (3 percentage point increase), cigarettes (4 cents per cigarette), and telephone services and cable and satellite TV (3 percentage point increase in both cases).

Summing up, the evidence presented in this box shows that although the fiscal adjustments (VAT and IEPS increase) influenced the price revisions in the economy, the group of goods and services taxed under the VAT and the IEPS were the only ones affected. Moreover, this group has only been affected once, given that the frequency of upward price adjustments has gradually converged to the historical experience. Thus, the results point to an absence of second-round effects in the economy's price formation process.

Graph 2^{1/}
Magnitude of Upward Price Adjustments
Figures in percent



1/ Excludes negative and zero price adjustments.

Table 2
Magnitude of Upward Price Adjustments: Group Excluding VAT and IEPS and Items with Extreme Price Adjustments^{1/}
Figures in percent

	Jan - Mar 2003-2009	Jan - Mar 2010
Total	8.6	8.4
Including VAT and IEPS	8.5	7.8
Excluding VAT and IEPS (excl.tomato, onion, ground meat, and other vegetables)	8.4	8.5

1/ Items excluded account for 4.8 percent of the group basket excluding VAT and IEPS.

The trimmed mean indicator for annual headline inflation was, on average, 4.00 percent during the first quarter of 2010,² 0.22 percentage points above the figure of the fourth quarter of 2009 (Graph 3a). During the same period, annual headline inflation rose by 0.77 points (from 3.98 to 4.75 percent), which suggests that the increase in headline inflation mostly obeyed to the extreme price variations of a small number of goods and services.

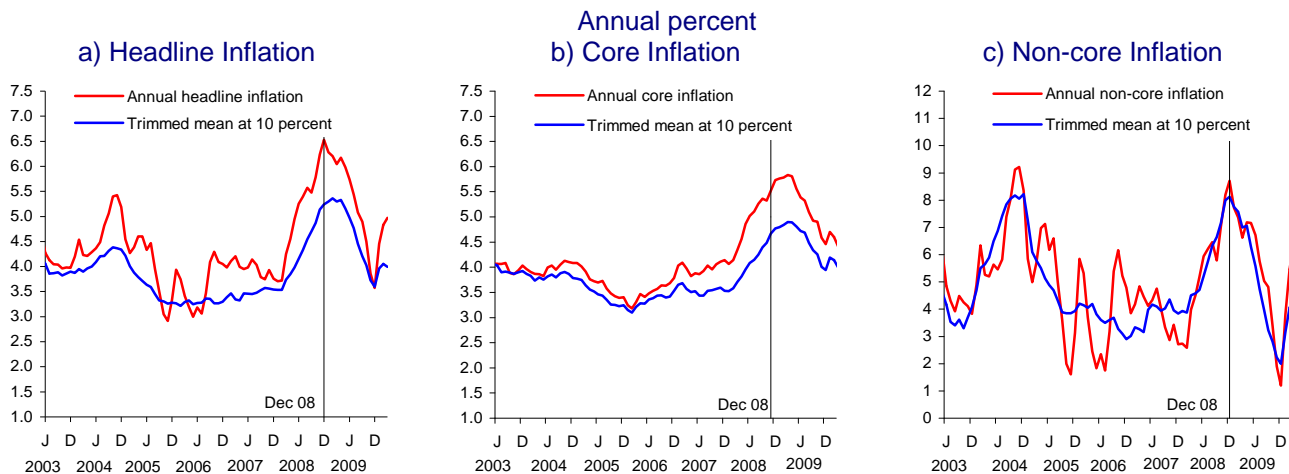
In the case of the trimmed mean of core inflation, it changed slightly during the reference quarter, from 4.07 percent on average during the fourth quarter of 2009 to 4.11 percent on average during the first quarter of 2010 (Graph 3b). Such change suggests that annual core inflation was not affected by the extreme price variations of some goods and services included in this subindex. Indeed, the change in the prices of most items of this subindex was consistent

² The trimmed mean excludes the contribution of extreme variations in certain goods and services' prices from headline inflation. To strip these variations, the following calculations are done: i) monthly seasonally adjusted variations of CPI goods and services' prices are arranged in descending order; ii) the goods and services with the highest and lowest variation are excluded, considering up to 10 percent of the CPI basket, respectively, in each distribution tail; and, iii) the trimmed mean is constructed with the remaining goods and services, which, by construction, are located at the center of the distribution.

with an annual change which remained relatively stable during the first quarter of the year.

On the contrary, the trimmed mean of non-core inflation increased significantly, from 2.35 percent on average during the fourth quarter of 2009 to 3.87 percent on average during the first quarter of 2010. These results suggest that the significant increase in non-core inflation which, as mentioned, rose from 2.15 to 5.26 percent during the same period, reflected the considerable price increases in some items of this subindex (Graph 3c). Nevertheless, the trimmed mean rebounded significantly below core inflation, thus indicating that within this group, a small number of goods and services registered extreme price increases, especially in the case of local phone services and water supply fees during the analyzed period.

Graph 3
Annual Inflation and Inflation Indicators Excluding the Contribution of Extreme Upper and Lower Price Variations Trimmed at 10 Percent



Source: Banco de México.

Summing up, goods and services' prices that increased significantly during the first quarter of the year were mainly those of the non-core subindex. This, together with annual core inflation following a moderate downward trend, suggests that the rebound in non-core inflation has not contaminated the price formation process of those items of the core subindex.

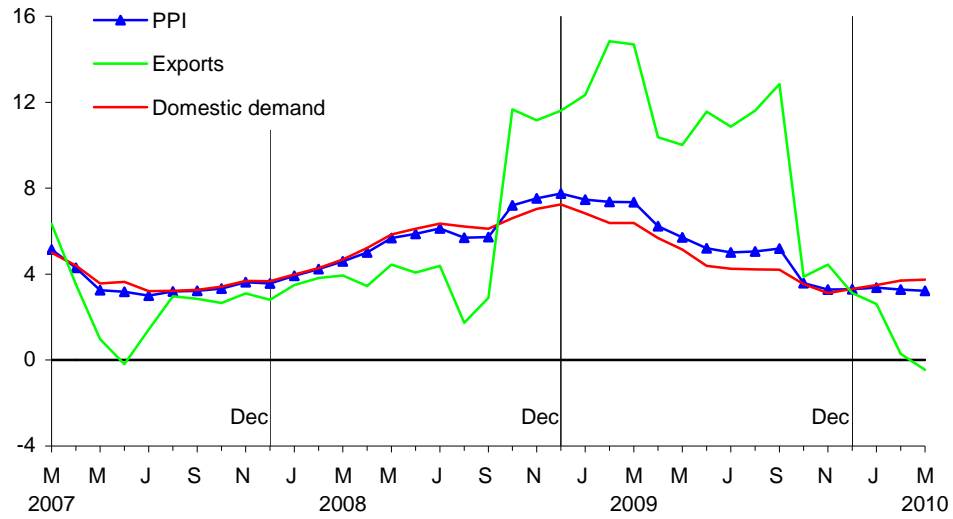
2.2. Producer Price Index

The growth rate of the Non-oil Producer Price Index (PPI) followed a different pattern from the CPI by decreasing during the analyzed period. This result was due mainly to two factors: first, the direct effect that the appreciation of the exchange rate had on the price quotes of export goods; and, second, the fact that, in contrast with the CPI, PPI price quotes exclude the VAT and the Excise Tax and therefore the increase in the general rate of this tax did not affect it.³ In particular, the PPI of finished goods and services, excluding oil, registered an annual average variation of 3.29 percent (as compared with the 3.38 percent figure of the previous quarter, Graph 4). As explained in Box 2, information from

³ The IEPS is included only in the case of PPI price quotes of diesel and gasoline due to the lag between publishing such prices and using them to update the costs of public works.

the PPI is useful to forecast CPI inflation. On this occasion, information from the PPI suggests that the CPI does not seem to be subject to upward pressures from the PPI.

Graph 4
Non-oil Producer Price Index
 Annual change (percent)



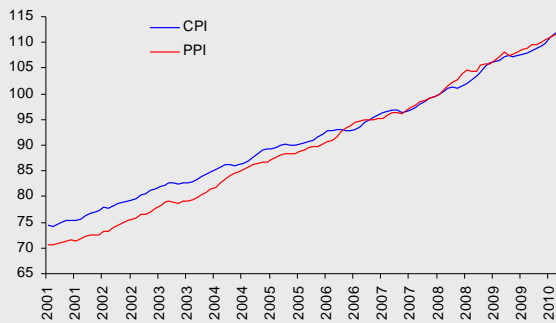
Source: Banco de México.

Box 2
Producer Prices' Relevance in Identifying Inflationary Pressures
Introduction

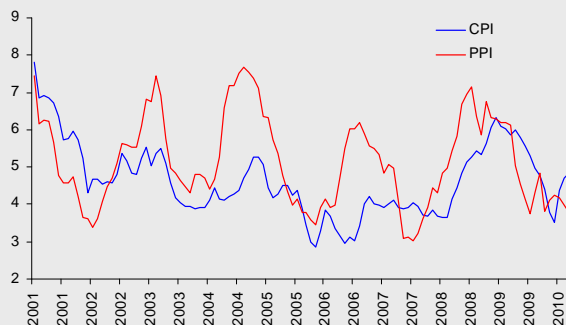
It would be natural to expect that as shocks to producer prices spill over through the productive chain, they should have some effect on consumer prices. This should hold true for "cost-push" shocks that are expected to appear during the initial stages of the productive process. Considering the latter, information from producer prices could be useful to identify shocks that can affect the overall economy and, therefore, to improve the forecasts on the future pattern of Consumer Price Index (CPI) inflation.

Banco de México's recent experience in identifying inflationary pressures using the Producer Price Index (PPI) seems to support the aforementioned considerations. As shown in Graph 1a, both PPI and CPI seem to move together through time, which suggests a possible long-term relationship between both series. Graph 1b shows that in some of the recent episodes in which the path of CPI inflation changed, the PPI seems to have signaled early on the inflection points of inflation dynamics. Thus, the lesser growth of producer prices in relation to the growth of consumer prices during the first quarter of 2010 could indicate that, recently, supply-related inflationary pressures on producer prices have eased.

Graph 1
PPI vs. CPI
a) CPI and PPI level
Jan-08=100



b) CPI and PPI Inflation
Annual change in percent



Source: Banco de México.

Nevertheless, the international experience suggests that the relationship between producer prices and consumer prices is not as close as the previous considerations seem to imply. For example, empirical studies for the U.S. (Clark, 1995; Blomberg and Harris, 1995) show that the producer price index does not have a significant predictive content on the future developments of consumer price inflation. In the case of Canada, Dion (1999)

finds some evidence about producer prices for electrical products being useful to monitor inflationary pressures; however, after analyzing other components of the industrial PPI, this evidence fades.

The lack of robust evidence on the causal relationship between producer and consumer prices, along with the fact that most central banks frame their monetary policies with inflation targets based on some measure of consumer prices, has led some central banks to underestimate the importance of producer prices as a relevant indicator to identify inflationary pressures. This argument is reinforced through a casual review of the publications of 24 central banks during the 2007-2009 period, such as inflation reports, press releases, and minutes. From these publications, 19 mention producer prices; however, only 6 of them refer to producer prices as indicators of inflationary pressures (e.g., cost-push pressures or inflation in the "pipeline").¹

1. Methodological Considerations Regarding the Impact of the PPI on the CPI

Among the main limitations of the previous international studies, two deserve mention: the first refers to the construction and measure of both producer and consumer price indices; the second refers to the statistical methodology used to estimate the causal relationship between price indices. As will be explained further in this box, these limitations can be solved in the case of Mexico due to both the way in which the PPI and the CPI are calculated periodically by Banco de México and the empirical methodology to identify statistical properties and dynamic relationships of both PPI and CPI time series.

As for the measure of price indices in previous analyses, in many countries the basket of goods included in both producer and consumer price indices differs significantly, complicating any systematic comparison among them. In fact, in the international experience it is common that the basket included in producer price indices comprises only production goods, while consumer price indices usually include a broad set of goods and services.

Mexico does not have the same difficulty as other countries in terms of comparing the basket of goods and services included in producer and consumer price indices, due to the wide array of goods and services considered in Banco de México's monthly calculations of the PPI. Although the PPI began computing in 1981, it was only until 1996 and since then that the PPI began to include more items and cover all sectors of the economy, including the services sector. Thus, the range of goods and services included in both indices is similar. In addition, the methodology used to calculate both price indices has been homogeneous since 1996 and considers all geographic regions in the country in order to ensure territory representativity when measuring prices in Mexico.²

¹ The central banks reviewed include the U.S. Federal Reserve, the Bank of Japan, and 22 central banks operating under an inflation targeting framework: Australia, European Central Bank, Brazil, Canada, Chile, Colombia, South Korea, Philippines, Hungary, Indonesia, England, Israel, Norway, New Zealand, Perú, Poland, South Africa, Sweden, Switzerland, Thailand, Turkey, and Czech Republic.

² Nevertheless, both CPI and PPI are constructed with different baskets, weight structures, and samples of goods and services. In the former case, the price quotation is done with retailers at the point of sale, whereas in the latter it is done directly with producers and does not consider taxes or transportation costs.

Regarding the methodological limitation to identify the causal relationship between the PPI and the CPI, the previous literature has not given sufficient relevance to the role played by the statistical properties and the dynamic interactions between time series of producer and consumer prices. Previous studies do not consider the equilibrium relationship that might exist between these price indices and, therefore, any results based on such studies could be biased. These studies also focus on measuring the causal relationship using only the inflation rates of both producer and consumer prices and not considering that there could be a causal relationship between PPI and CPI levels which, if omitted, could lead to biased conclusions.

2. Empirical Evidence for Mexico

In order to evaluate the causality of the PPI on the CPI, an econometric model is used to identify both the effect on inflation and the price levels between both indices.³

All estimates consider the period from June 2000 to December 2009, a subsample characterized by the stationarity condition of both inflation rates, which is inferred using a test for changes in persistence. This evidence is consistent with the results for México shown in Chiquiar et al. (2007) and in Capistrán and Ramos-Francia (2009), of a change of persistence in CPI inflation, from a non-stationary to a stationary regime around 2000.⁴

2.1. Equilibrium Relationship between Price Levels

First, an econometric model is estimated to determine if, in addition to the possible relationship between PPI and CPI inflation, there is an equilibrium relationship between price index levels. If this relationship is confirmed, it would reveal that previous studies omit a relevant pass-through mechanism to analyze the causality of the PPI on the CPI.

The results of this exercise show that there is a long-term relationship between both price indices and that the degree of relationship between PPI and CPI levels in Mexico is of around 80%. This equilibrium relationship suggests a possible level of pass-through from producer prices to consumer prices which, although being incomplete (i.e. 100%), could make the PPI exert a considerable impact on the CPI. This scenario could take place, for example, under a framework of monopolistic competition among firms with a substantial fixed-cost structure.

2.2. Statistical Causality

Given the presence of an equilibrium relationship among the analyzed time series, an Error Correction Model (ECM) is used to search for the presence of statistical causality of the PPI -in both

³ The econometric methodology used to evaluate the predictive content of the PPI on the CPI is the Granger causality test (1969), whose purpose is to identify if the information included in producer prices can help to forecast the future pattern of consumer prices. First, the existence of an equilibrium relationship (i.e. cointegration) between the PPI and the CPI is tested using the methodology proposed by Engle and Granger (1987). In order to evaluate the presence of possible statistical causality, for both short and long terms, an error correction model (ECM) is used, which estimates both the pass-through and velocity of adjustment of a temporary shock to producer prices on consumer prices. For a detailed assessment of the methodology applied, see Banco de México's Working Paper "A Note on the Predictive Content of PPI over CPI Inflation: The Case of Mexico" (Sidaoui et al., 2009).

⁴ The methodology developed by Leybourne et al. (2007), which allows for estimating changes in the persistence of a time series on a consistent basis, was implemented. The results of this exercise indicate that CPI inflation follows a stationary process since May 2000, while PPI inflation, since April 2000.

its inflation rate and price level- on CPI inflation.

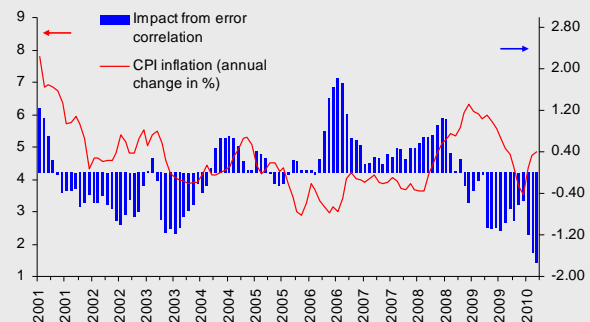
The estimated model shows that a positive shock to the producer price level temporarily raises CPI inflation until the equilibrium relationship is reestablished. This mechanism is corrected by approximately 7% each month in such a way that the total effect on CPI inflation is completed in about a year.

Apparently, PPI inflation does not exert any influence on CPI inflation. Nevertheless, CPI inflation seems to respond temporarily to supply shocks that generate disequilibrium in the relationship between both price indices. In fact, this adjustment mechanism seems to be exclusively from the PPI to the CPI and not vice versa, which reveals PPI's relevance as a leading indicator of inflationary pressures.

2.3. Correction Mechanism

Graph 2 presents the development of annual CPI inflation since January 2001, together with the impact the disequilibria in the long-term relationship between the CPI and the PPI have had on annual CPI inflation. Thus, positive PPI values mean upward pressures on CPI inflation in the future, because CPI inflation will increase until the long-term relationship is reestablished. On the contrary, when the impact is negative, it suggests downward pressures on CPI inflation, because the CPI level is increasing above its long-term relationship with the PPI and therefore CPI inflation has to adjust downwards until it reaches its equilibrium point.

Graph 2
CPI Inflation and Long-term Relationship between PPI and CPI



Source: Banco de México.

This evidence suggests a possible long-term response of consumer prices to shocks to producer prices that imply temporary adjustments in CPI inflation until the long-term relationship is reestablished.

On the basis of the statistical causality exercise, Graph 2 indicates that in the first quarter of 2010, no inflationary pressures from cost-related shocks on producer prices seem to have taken place, given that the impact of the error correction mechanism on CPI inflation is negative.

2.4 PPI Ability to Forecast CPI Inflation

The evidence presented in the previous section suggests the possibility of using information from the Producer Price Index to forecast CPI inflation more accurately.

In order to calculate PPI's marginal predictive power on CPI inflation, two forecast models are used. The first one is a simple autoregressive model that uses only former values of CPI inflation as forecast indicators. The second one is a model that, in addition to including information from the first model, considers PPI inflation and its lags, as well as the equilibrium relationship between price indices.

The feasibility of these models to forecast CPI inflation for $t + 1$, 4, 8 and 12 months ahead was evaluated. The results indicate that for short-term horizons (less than 8 months), the model that is enlarged by the information included in the PPI has the same predictive power than the simple autoregressive model. However, the model expanded by the information included in the PPI generates more accurate forecasts in horizons over 8 months. In particular, in horizons over 12 months, the forecast ability of this model has a significant gain of 30% over the simple autoregressive model.⁵

Final Remarks

The results suggest that the information contained in the PPI is useful to forecast CPI inflation. This causal relationship seems to have its origin in CPI inflation's response to shocks to the equilibrium relationship between producer prices and consumer prices. In light of a positive shock to producer prices, CPI inflation increases temporarily until the level of the CPI adjusts to the equilibrium relationship it has with the PPI. On the contrary, a lesser increase in the PPI in relation to the CPI, such as that observed during the first quarter of 2010, suggests downward pressures on CPI inflation in the future.

This box has described producer prices' importance in identifying inflationary pressures, considering that there seems to be a pass-through from producer prices to consumer prices. Nevertheless, although producer prices have predictive power over the development of consumer prices, it is not possible to generate monetary policy responses to changes in producer prices exclusively through it, because information from the PPI needs to be assessed jointly with that provided by other relevant indicators of inflationary pressures and with the relative importance they have under the current economic environment. The approach described herein only reveals that, from the set of indicators that might be considered, the PPI seems to be a valuable source of information to identify inflationary pressures that appears to improve the forecasts for CPI inflation in medium-term horizons.

⁵ In order to evaluate the forecasts, statistical tests of forecast ability are considered, using a mean quadratic error as a criterion to evaluate the analyzed models. For more information on these tests, see Sidaoui, et al. (2009).

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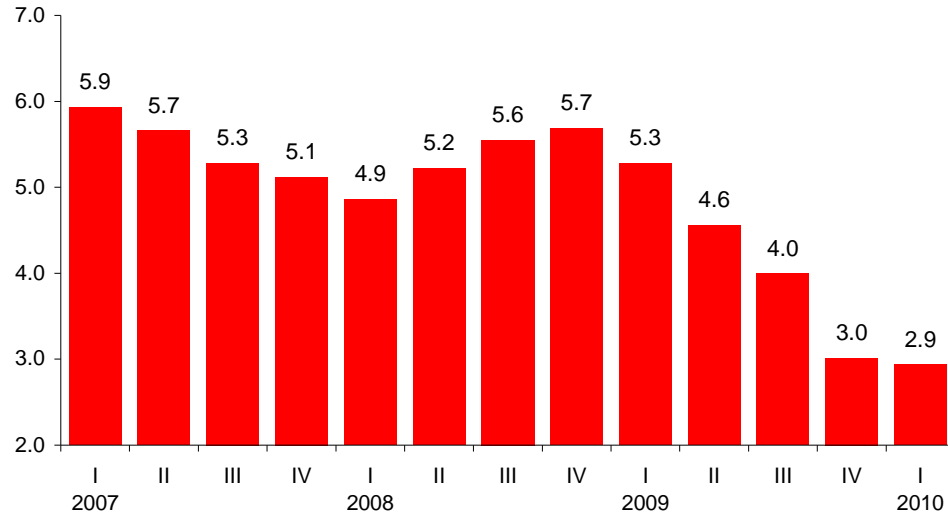
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2.3. Wages

During the analyzed period, workers' wages were not a source of cost pressures for firms. During the first quarter of 2010, the IMSS reference wage (*Salario Base de Cotización*, SBC) and contractual wages rose similarly as in comparable previous periods. The SBC grew at an annual average rate of 2.9 percent during the first quarter of 2010, as compared with 3.0 percent during the last quarter of the previous year (Graph 5 and Table 2). During the same period, contractual wages grew on average 4.5 percent, as compared with 4.4 percent during the first quarter of the previous year (Table 2).⁴

⁴ 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,

Graph 5
IMSS Reference Wage^{1/}
 Annual change (percent)



Source: Estimates by Banco de México based on data from IMSS and INEGI.

1/ This indicator considers IMSS-insured workers. Coverage: 14.0 million insured workers on average during the first three months of 2010, representing 34.4 percent of total remunerated workers.

Table 2
Main Wage Indicators
 Annual change (percent)

	2009					2010
	Jan-Dec	I	II	III	IV	I
IMSS reference wage	4.2	5.3	4.6	4.0	3.0	2.9
Primary sector	3.7	5.0	4.0	3.5	2.3	2.1
Secondary sector	5.2	6.7	5.7	5.4	3.1	2.7
Tertiary sector	3.7	4.5	4.0	3.3	3.1	3.2
Total contractual wages	4.4	4.4	4.4	4.7	4.1	4.5
Publicly-owned	4.3	4.6	4.8	4.9	3.9	4.0
Privately-owned	4.4	4.4	4.3	4.6	4.6	4.6

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

usually during the same period of the year and, for this reason, it follows a seasonal pattern. 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.

As for the SBC, this statistic defines higher wages/salaries as being equivalent to 25 minimum wages, and therefore does not exactly reflect wage/salary dynamics of those workers who earn more than 25 minimum wages. In March 2010, 1.7 percent of workers insured by IMSS received an SBC higher or equivalent to 25 minimum wages.

3. Economic and Financial Environment

3.1. International Environment

3.1.1. World Economic Activity

The international environment continued to be characterized by a global economic rebound, although with different growth rates among countries. Most advanced economies registered moderate rates of growth, while emerging economies, particularly in Asia, expanded at faster rates. The recovery of real activity and the greater financial stability have fed back favorably, although bank lending, particularly in some sectors of advanced economies, has continued to contract.

In the main advanced economies, economic activity continues to depend on accommodative macroeconomic policies. Their recovery also relied on an increase in net exports and in an inventory upsurge. Nevertheless, domestic demand is expected to continue growing moderately as compared with the levels prior to the crisis. In particular, private expenditure in the U.S., the Eurozone, and Japan is expected to remain at low levels due to the high levels of unemployment, the private sector's need to improve its balances, and the still very tight conditions to grant credit (Graph 6a). For this reason, the output gap in these economies is expected to take some years to close.

GDP in the United States rose 5.6 percent at an annualized quarterly rate during the fourth quarter of 2009 (Graph 6b). This increase reflected the strong impulse given by the inventories component, which contributed with almost four percentage points to GDP growth, an increase in expenditure of firms specialized in equipment and software and, more moderately, the recovery of private consumption and residential investment. During the first quarter of 2010, industrial production continued growing soundly as it has done so since the second half of 2009, supported by the rebound in exports and, to a lesser extent, by the referred increase in investment expenditure in equipment and software.⁵ Nevertheless, the low levels of capacity utilization in both the industrial and the services sectors, as well as the high rate of unemployment, indicate that the U.S. economy will continue to operate under slackened conditions for some time.

Private consumption expenditure grew at a higher rate during the first months of 2010 as compared with the second half of 2009, as a result of an increase in wage income and the growth of households' net wealth. Although private consumption has contributed to GDP growth with more than one percentage point each quarter since the third quarter of 2009, its contribution remains below historic standards.

As for investment, spending in non-residential construction remained weak during the first quarter of 2010, while investment and equipment and software continued growing, although at slower rates than in the previous quarter.

⁵ Industrial production grew at an annualized quarterly rate of 7.8 percent during the first quarter of 2010, as compared with 6.9 percent during the fourth quarter of 2009.

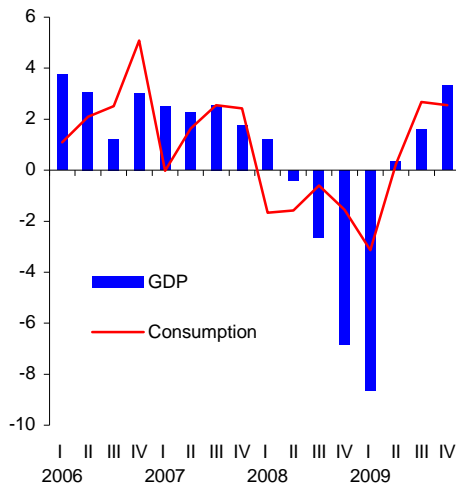
Regarding the latter item, worth mentioning is the greater dynamism exhibited by high-tech investment. Spending in capital goods signals that the recovery of non-residential fixed investment continues due to an improvement in firms' financial position. Spending in residential construction, on the other hand, weakened during the period, after having rebounded during the second half of 2009 as a result of the temporary fiscal credit boost to purchase real estate.⁶

Graph 6

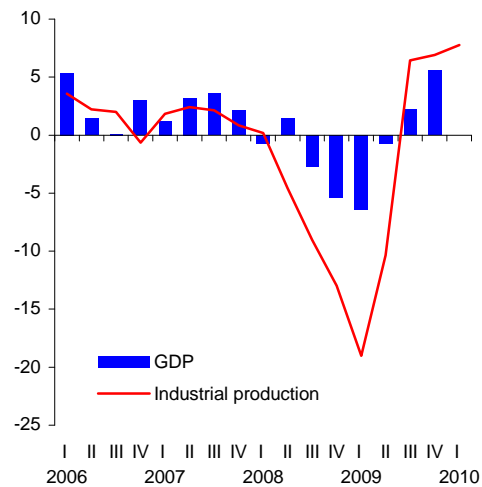
Economic Activity in Main Advanced Economies

Annualized quarterly change in percent; seasonally adjusted figures

a) Private Consumption and GDP in G3 Economies^{1/}



b) U.S.: GDP Growth and Industrial Production



Source: BEA, Eurostat, Japan Cabinet Office, and IMF.
1/ Weights based on purchasing power. Includes U.S., Japan, and Eurozone.

Source: BEA and Federal Reserve.

Labor market conditions have started to improve. Private non-farm payroll seems to have stabilized at the beginning of 2010 and rose significantly in March, although it is still at levels similar to those of 1999. The unemployment rate declined slightly in relation to its still very high levels.

Other advanced economies recovered but at more moderate rates. The Eurozone performed weakly during the fourth quarter of 2009, and the outlook for the first quarter of 2010 is of a moderate recovery, given that the process of repaying debt in various sectors prevails and low capacity utilization continues to affect investment expenditure. In particular, growth of domestic consumption in this region has lagged behind that of the U.S. and Japan. This is largely due to the high level of unemployment and the fact that considerable problems still prevail in the banking sector. The U.K. economy stopped contracting during the fourth quarter of 2009.

GDP in Japan grew substantially during the last quarter of 2009, fueled by net exports, public expenditure in infrastructure, and consumer spending in

⁶ The American Recovery and Reinvestment Act of 2009 granted fiscal credit for up to 8,000 US dollars to first-time home buyers during the January-November 2009 period. In November 6, 2009 the program was extended to homes purchased or under contract up to April 30, 2010 and the program extended to grant credit for up to 6,500 US dollars to families that having lived in their current homes for at least 5 years, wished to purchase it.

durable goods. Available indicators suggest other sectors also grew during the first quarter of 2010. Most recent figures of activity and the last business surveys indicate greater activity in the small business sector and the growth of capital expenditure.

The main emerging economies, particularly the Asian, have been the ones that have grown the most and, in some cases, their levels of output have already exceeded those registered prior to the crisis. This is mainly due to the recovery of world trade, the strong demand for commodities, and the growth of domestic demand. In some cases, the improvement in local credit conditions has also contributed to the economic rebound. The Chinese and Indian economies have continued to expand considerably, with industrial production growing at two digit annual rates during the first quarter of 2010 in both cases. During the last months of 2009, economic activity in the main Latin American economies grew at positive annualized quarterly rates. Industrial production indicators reveal that the region continued to recover during the first quarter of 2010.

3.1.2. Commodity Prices

During the first quarter of 2010, the prices of most commodities continued following the same upward trend exhibited since the second half of 2009, related with the recovery of emerging economies, although at more moderate rates. The latter has taken place in a setting of relatively high inventories. Nevertheless, significant differences were observed among products (Graph 7). While the prices of energy goods and metals for industrial use continued increasing during the first quarter of 2010 (3.4 and 5.4 percent from the end of 2009 to March 31, 2010, respectively), reflecting to a great extent the greater confidence in the recovery of the world economy, agricultural prices declined (16.9 percent during the referred period).

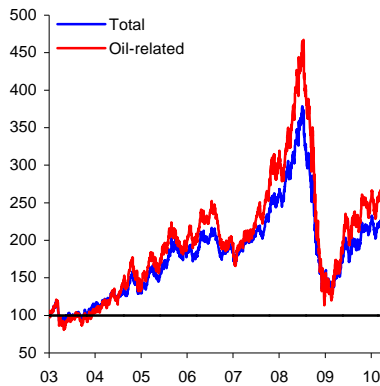
IMF forecasts for commodity prices show increases during the first three quarters of 2010 for crude oil and metals, although they still would be far below their highest levels reached in mid 2008, while the prices of foods, beverages, and agricultural commodities would fall moderately.⁷ Under this environment, the scenario surrounding the incidence of commodity prices on global inflation is unequal, although with upward risks due to the greater effect of energy prices on inflation.

⁷ See International Monetary Fund, World Economic Outlook, April 2010.

Graph 7 Commodity Prices

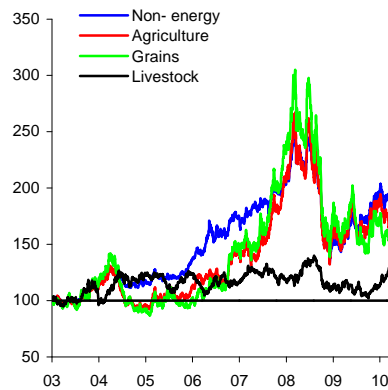
Index December 31, 2002=100

a) Total and Oil-related



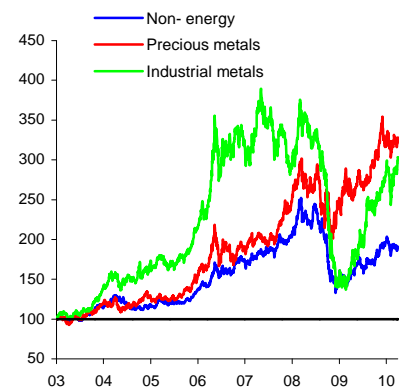
Source: S&P GSCI.

b) Non-energy and Agricultural



Source: S&P GSCI.

c) Non-energy and Metals



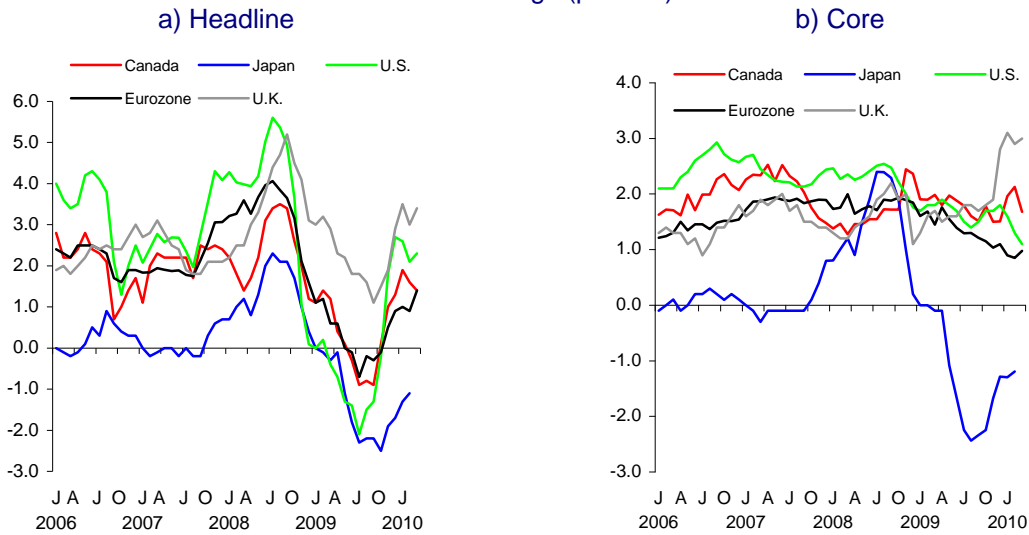
Source: S&P GSCI.

3.1.3. World Inflation Trends

Consumer inflation in the main advanced economies remained relatively low during the first quarter of 2010, although to a certain extent affected by the impact of the price increases of energy commodities. Due to the weakness of economic activity, core inflation remained low (Graph 8b). In line with the aforementioned, inflation expectations have remained relatively stable in these countries, due to the significant idle capacity and the high levels of unemployment.

In the U.S., headline consumer inflation decreased during the first quarter of the year, registering 2.3 percent in annual terms in March. In light of lesser inflationary pressures, the slackness in the economy, and the incipient recovery of the financial system, the Federal Reserve Bank kept its target for the reference rate close to zero, and reasserted that it will keep it at that level for a long period. In the Eurozone, annual inflation began to grow rapidly in March, reaching 1.4 percent and boosted by the increase in oil prices. However, core inflation continued to weaken by registering in March an annual growth of 1.0 percent, close to its lowest level since the index for this region began computing. The European Central Bank kept its policy rate unchanged. In Japan, during the first quarter of 2010, both headline and core inflation remained on negative territory. For this reason, the Bank of Japan kept its monetary policy rate unchanged at 0.1 percent.

Graph 8
Inflation in Selected Advanced Economies
 Annual change (percent)



Source: National Statistics Office.

Source: National Statistics Office.

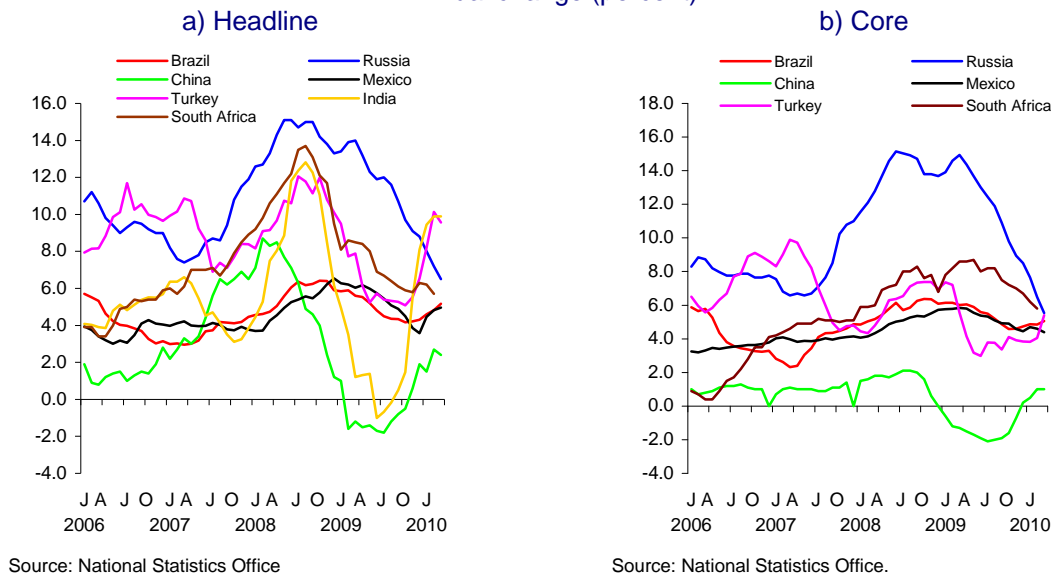
In various emerging economies that were less affected by the global crisis and which, initially, had less slackness in their economies, inflation rose during the first quarter of 2010. As a result, the authorities of some of these economies have started to withdraw the monetary stimulus policies (Graph 9). In March, consumer prices in China increased 2.4 percent in annual terms, after having been in negative territory for most of 2009. Under this environment, although the People's Bank of China kept its policy rate unchanged, it has continued to sterilize excess liquidity through open market operations, raising the level of reserve requirements and tightening its credit guidelines.^{8,9} In India, inflationary pressures escalated at the end of the quarter and wholesale prices rose 9.9 percent in annual terms, the highest growth since October 2008. The Central Bank of India increased both its reference rates and reserve requirements in March and April.¹⁰ In Russia, inflation continued to slow down, in a context of a strong fall in economic activity. As a result, its central bank cut its policy rate. Consumer inflation in Latin America (excluding Colombia), began to grow slightly during the first quarter of 2010. Nevertheless, the central banks of this region kept their policy rates unchanged.

⁸ The level of reserve requirements rose by 50 basis points in January and February, respectively, and reached 16.5 percent.

⁹ In mid April, the State Council announced a series of measures to reduce the growth of the mortgage market and the rapid increase in real estate prices. Among the most important of these are: higher down payments and a higher minimum interest rate to purchase homes; suspending applications for a third mortgage in regions registering a high growth in real estate prices and in the case of non-resident buyers; and, discretionary limits to the number of homes to be acquired during a certain period of time.

¹⁰ The repo rate and the reverse repo rate rose by 25 basis points in both March and April, reaching 5.25 and 3.75 percent, respectively. As for reserve requirements, in each one of those months they rose by 25 basis points and reached 6.0 percent.

Graph 9
Inflation in Selected Emerging Economies
 Annual change (percent)



3.1.4. World Financial Markets

External financial conditions have gradually improved worldwide, although access to credit has still not gone back to normal. The increase in the issuance of securities contrasts with the weakness of bank lending. The recovery of bank lending to the private sector will be fundamental to consolidate the recovery of the world economy.

As for the various stimulus programs for the financial system, some of the main advanced economies have continued to withdraw these programs gradually. The U.S. Federal Reserve carried out the scheduled closing of all facilities to supply liquidity, except for the Term Asset-Backed Securities Loan Facility (TALF).¹¹ In Europe, the European Central Bank carried out its last refinancing operation for a 6-month term at the end of the first quarter of 2010. The Bank of England decided to raise its asset-purchase program. During the first months of 2010, financial institutions' demand for special facilities created by the central banks of the main advanced economies continued to decrease. For example, in the U.S., the lesser participation of banking institutions in the Temporary Auction Facility (TAF) continued during the first months of 2010. This program closed on March 8, 2010.

In the main advanced economies, markets expect accommodative monetary policies to continue for some time given that, on the one side, economic activity still exhibits excess capacity and, on the other, inflation expectations have remained stable at low levels. The reduced maneuvering margin of public finances in these countries has influenced these expectations. This monetary policy stance is helping domestic demand to recover and to rebuild the financial system. In

¹¹ The Federal Reserve also concluded at the end of March its program to purchase 1,250 billion US dollars in mortgage-backed securities from government agencies and for about 175 billion US dollars of debt from these agencies.

particular, the spread between lending and borrowing rates and throughout the entire yield curve has supported banks' funding.

In contrast, as mentioned previously, in some emerging economies, the authorities have started to withdraw both the monetary stimulus and lending support facilities as a result of the dynamism exhibited by the economic recovery. The different adjustment cycles of monetary policy of the main advanced and emerging economies could have an influence on the monetary policy decisions of the latter.

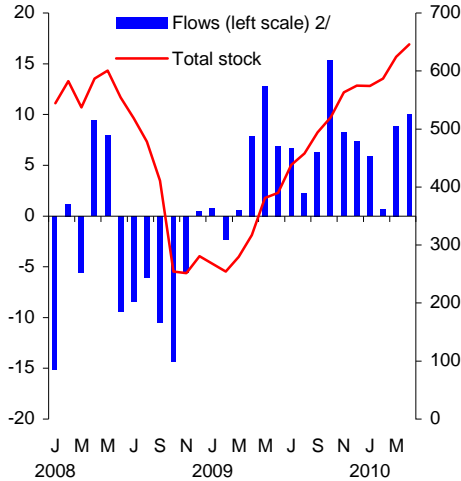
Expectations of interest rate spreads remaining high, together with the foreseen depreciation of the U.S. dollar and the outlook of a continuous appreciation of the exchange rates and of higher growth in emerging economies, continues to be reflected in significant capital inflows to these economies, magnified by "carry trade" operations in financial markets (Graph 10b).¹² Under this environment, the surcharge over sovereign debt (EMBI) decreased significantly, despite the episodes of higher risk aversion originated by the crisis in Greece (Graph 11a and Graph 11b). The stock markets of emerging economies registered gains, although some volatility was observed during the quarter (Graph 11c).

Indeed, capital inflows to emerging economies have led to a significant increase in financial asset prices, for the most part, and in an exchange rate appreciation. The currencies of various emerging economies appreciated against the US dollar. In particular, the Mexican peso was one the currencies that appreciated the most: 6 percent during the first quarter of 2010 (Graph 12). Under this setting, the appreciation of the exchange rate has helped to lessen inflationary pressures in these economies, and to foster less relaxed monetary conditions. Nevertheless, since it is probable that part of the capital flows could be responding to a renewed search for yields in international capital markets, the significant increase in asset prices –which, in the short term, could propitiate the upburst of a bubble- could suddenly revert if external conditions change. This reversal could take place as soon as the economies begin to withdraw their monetary stimulus or the markets perceive this withdrawal as ineludible. For this reason, the central banks of emerging economies should be particularly vigilant of the external environment in the following months. Although there is a low probability that advanced economies will withdraw their monetary stimulus in the short term, there is always uncertainty as to when they will begin to withdraw it. If the fiscal and debt renewal problems faced by some Southern European countries, like Greece, worsen, this situation could also generate more turbulence and greater risk aversion.

¹² "Carry trade" operations consist basically in financing in a currency at a low interest rate and investing the amount in another currency with a higher interest rate. These operations are profitable in terms of the relative appreciation between both currencies (appreciation of the currency in which the investor takes a long position in relation to the currency in which it funds the operation, that is, the currency with which the investor takes a short position) and the interest rate spread. The main risk associated with these operations is that the exchange rate fluctuates in opposite direction to that expected, in such a way that the yield on interest rate spreads disappears.

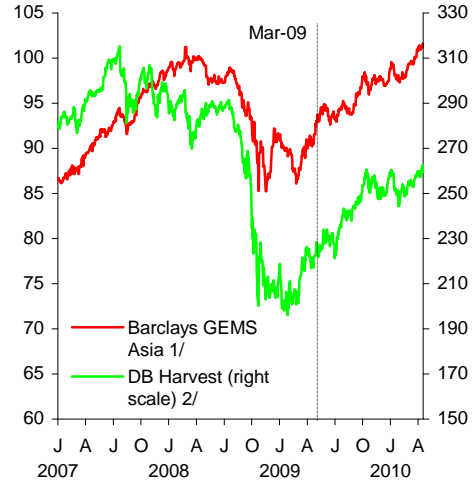
**Graph 10
Investment in Emerging Markets**

a) Dedicated Funds to Emerging Economies (Equity and Bonds)^{1/}
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.

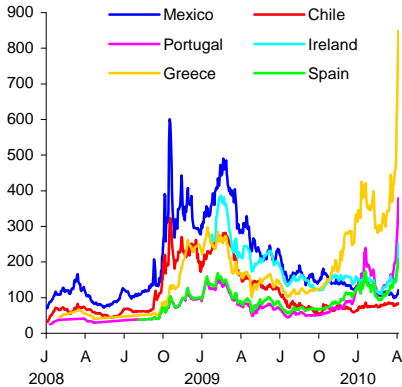
b) Carry Trade Returns Indicator Indices



Source: Deutsche Bank and Barclays.
1/ Base July 2001 = 100. This index reproduces an investment strategy in the money market of 8 Asian countries, calculating the yield of investments (in USD) 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.

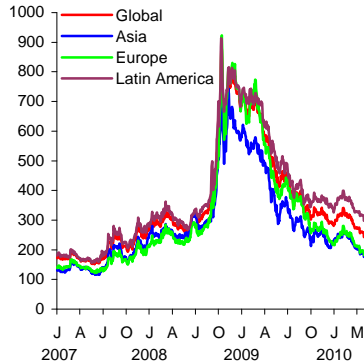
**Graph 11
Risk Indicators and Asset Prices**

a) Credit Default Swaps
Basis points



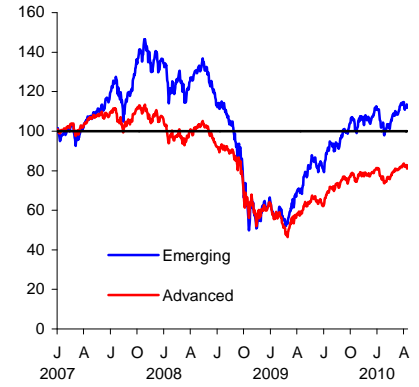
Source: Bloomberg.

b) Sovereign Risk Spreads (EMBI)
Basis points



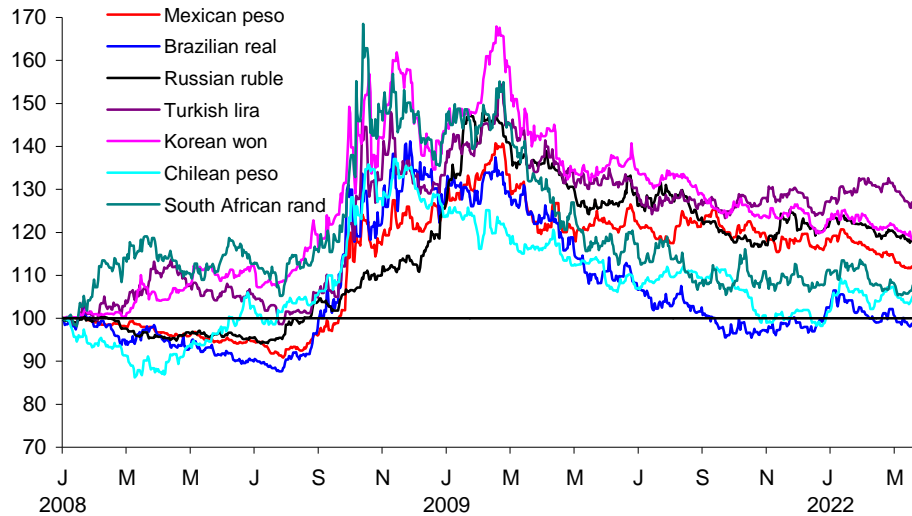
Source: Bloomberg.

c) Stock Markets Index 01/01/2007=100



Source: MSCI.

Graph 12
Exchange Rates of Emerging Economies' Currencies vs. US dollar^{1/}
 Index 31/12/2007 = 100



Source: Bloomberg.

1/ An increase in the index equals a depreciation of the US dollar.

3.2. Developments in the Mexican Economy

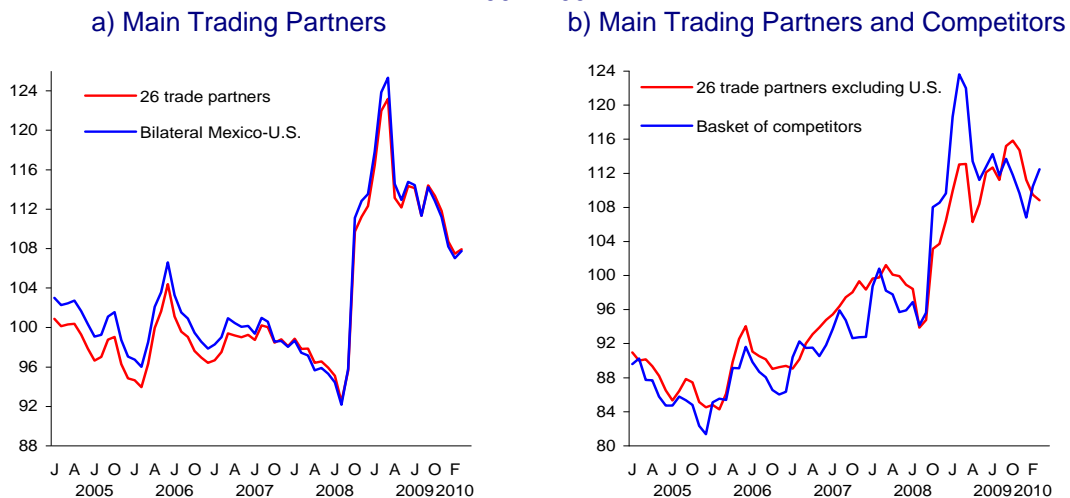
3.2.1. Economic Activity

The world financial crisis that broke out as a result of the problems in the U.S. subprime mortgage market translated into a sharp fall in economic activity and world trade, and in a considerable astringency in financial markets. As a result, export revenues contracted significantly and foreign financing tightened, especially at the end of 2008 and in the first half of 2009. A shock to the terms of trade, which made the price of Mexican crude oil export mix fall, and the upburst of the epidemic caused by the A(H1N1) virus exactly a year ago, also added to the aforementioned.

The impact of these shocks on economic activity, particularly on domestic expenditure, depends on several elements, among others, if shocks are perceived to be permanent or temporary. It is clear that part of the shocks will revert rapidly. For example, part of the external demand shock would tend to revert as the global economy recovers. Nevertheless, other shocks would be expected to take longer to recover. This is the case of: i) the volume and price of Mexican crude oil exports, which are expected to remain below the levels observed prior to the crisis; ii) the lesser flow of workers' remittances, which could continue to be affected by the slow recovery of the construction sector in the U.S.; iii) the lesser dynamism of the demand for Mexican exports, given expectations that consumption in the U.S. will grow at a slower rate than that observed prior to the crisis; and, iv) the difficulty to access foreign financing, due to a greater competition in the next years as a result of the fiscal crisis the advanced economies are currently facing. Summing up, compared with pre-crisis conditions it is probable that, in the future, the shocks that affected the overall economy will imply lesser flows of resources to finance domestic expenditure in the following years.

Under such conditions, the necessary economic policy response to make this process operate orderly and at lower costs must be public finance strengthening, which indeed was done with the fiscal measures for 2010. On another front, when the economy is in a situation where a lesser dynamism in foreign revenues and a reduction in the growth rate of domestic expenditure are expected, relative prices adjust and the prices of internationally-traded goods increase in relative terms to the prices of domestic inputs and domestically-produced non-tradable goods. This price adjustment makes production of internationally-traded goods, such as manufactures, more attractive, as compared with production of goods destined exclusively for the domestic market. This way, productive resources are reallocated to sectors such as manufacturing, and the economy eventually raises both exports and production of this type of goods. This process describes how the real exchange rate adjusts, when the economy faces the type of shocks Mexico had to overcome at the time of the crisis (Graph 13).¹³ It was therefore expected that the response of the Mexican economy, especially after the external demand started to recover, would consist in a faster reestablishing of economic activity in the manufacturing sectors than in the rest of the economy.

Graph 13
Real Exchange Rate Indices^{1/}
 2004=100



Source: Banco de México and IMF.

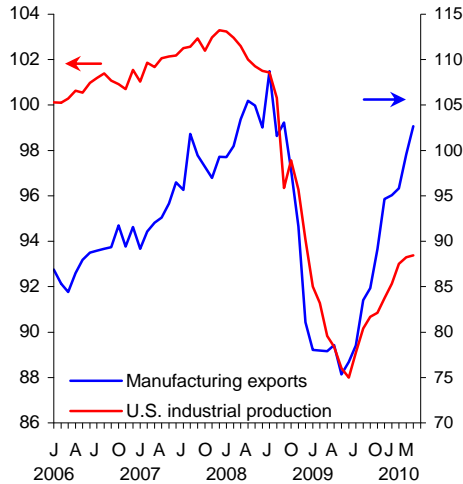
1/ An increase in the index represents a depreciation of the domestic currency in real terms.

Indeed, during the first quarter of 2010, the positive pattern followed by Mexican manufacturing exports continued, reflecting the greater dynamism of the world economy -and particularly, of industrial production in the U.S.- and the depreciation of the peso in real terms at the end of 2008 and the beginning of 2009. These developments made manufacturing production follow a positive pattern during the first quarter of 2010 (Graph 14).

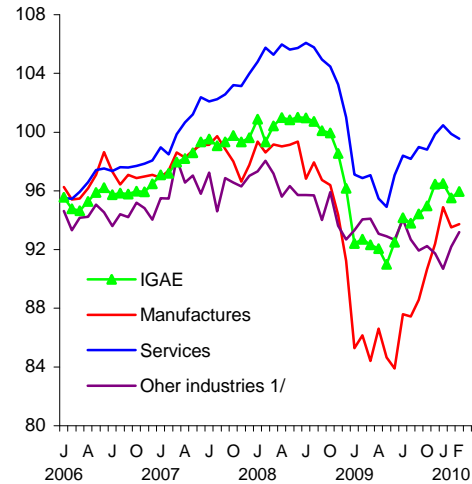
¹³ The real exchange rate index for the 26 main trading partners that is used in Graph 13a includes Germany, Argentina, Belgium, Brazil, Canada, Chile, China, Colombia, South Korea, Costa Rica, Ecuador, El Salvador, Spain, United States, France, Guatemala, Netherlands, India, Italy, Japan, Panama, Peru, United Kingdom, Dominican Republic, Switzerland and Venezuela. These countries were selected because they are the main destination markets for Mexican exports, representing approximately 97 percent of the total value of exports. The index of Mexico's competitors in the U.S. market used in Graph 1b includes China, South Korea, Philippines, Hong Kong, Hungary, Indonesia, Malaysia, Poland, Portugal, Thailand, and Turkey.

Graph 14
Manufacturing Exports, Industrial Production in the U.S. and Economic Activity
 Index 2008=100; seasonally adjusted figures

a) Manufacturing Exports and Industrial Production in the U.S. b) Economic Activity Indicator and Industrial Production



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



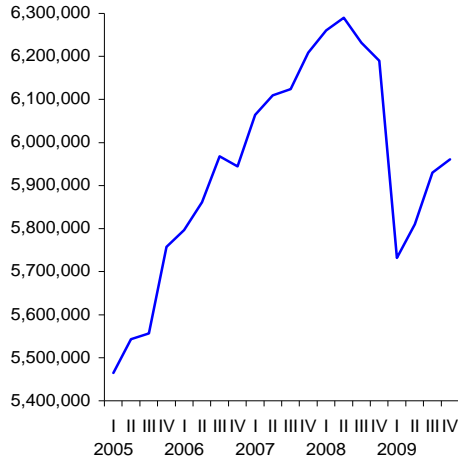
Source: INEGI.
 1/ Includes construction, mining and electricity, water and gas supply.

In contrast with the recovery of external demand, domestic expenditure has recovered more slowly, remaining at relatively stagnant levels. Indeed, although private consumption started to grow since the second quarter of 2009, its quarterly growth in the last three quarters of 2009 was relatively small and therefore its levels are still below those observed prior to the crisis (Graph 15a). Timely indicators on investment suggest it has not recovered significantly (Graph 15b). As will be explained further, this situation is the result of a decline in investment from the private sector.

In relation to the aforementioned, worth considering is the role that credit might be playing in the development of aggregate demand. It is difficult to identify the causality between the low levels of credit and the weakness of the recovery of domestic expenditure. Although the conditions of astringency regarding bank lending (see next Section of this Report) could be limiting the recovery of some items of expenditure, it is also possible that the low demand for financing originated by the unfavorable results of the rest of the determinants of domestic expenditure could be leading to lower credit flows (and, possibly, to downward pressures on interest rates). In this regard, a crucial challenge for the economy is to channel external capital flows currently entering the economy preferably to productive projects.

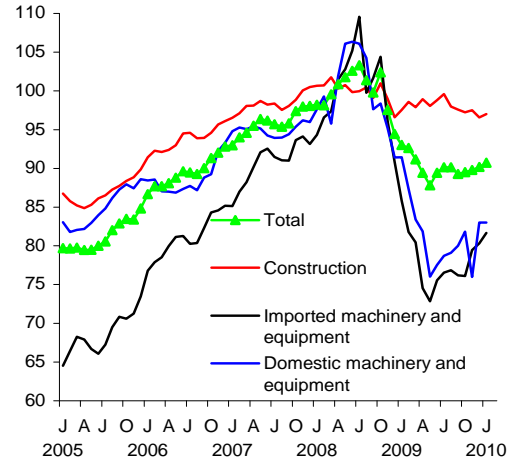
Graph 15
Domestic Expenditure
 Seasonally adjusted figures

a) Private Consumption
 Million pesos of 2003



Source: Mexico's National Accounts (INEGI).

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

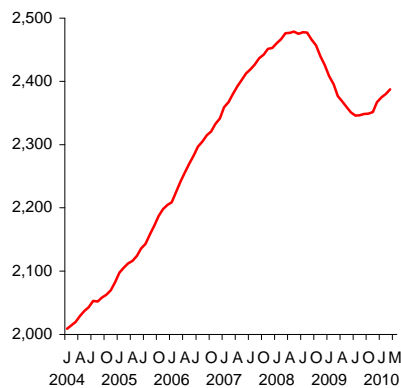


Source: INEGI.

The weak recovery of domestic expenditure reflects that various of its determinants have continued to perform unfavorably (Graph 16). In particular, the wage bill in the formal sector of the economy remains at levels below those observed prior to the crisis. Workers' remittances have only registered a small change of trend in the last months, while this pattern is still not followed by bank lending to both households and firms.¹⁴ Finally, consumer confidence levels are still low.

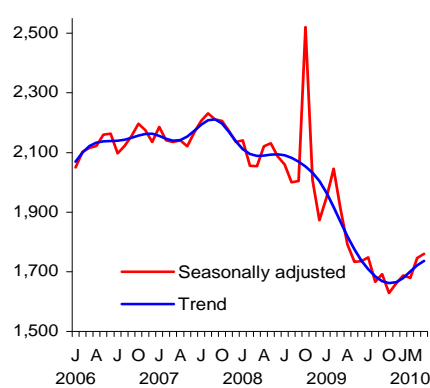
Graph 16
Wage Bill, Workers' Remittances, and Consumer Confidence Index
 Seasonally adjusted figures

a) Wage Bill in the Formal Sector
 Million pesos



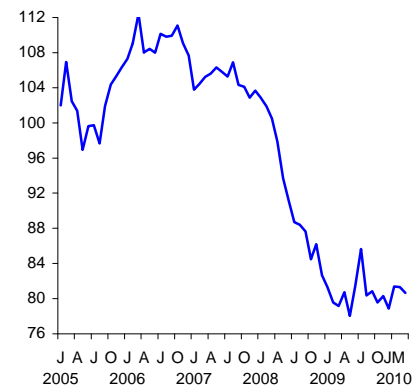
Source: Prepared by Banco de México with data from IMSS.

b) Workers' Remittances
 Million US dollars



Source: Banco de México.

c) Consumer Confidence Index
 January 2003=100



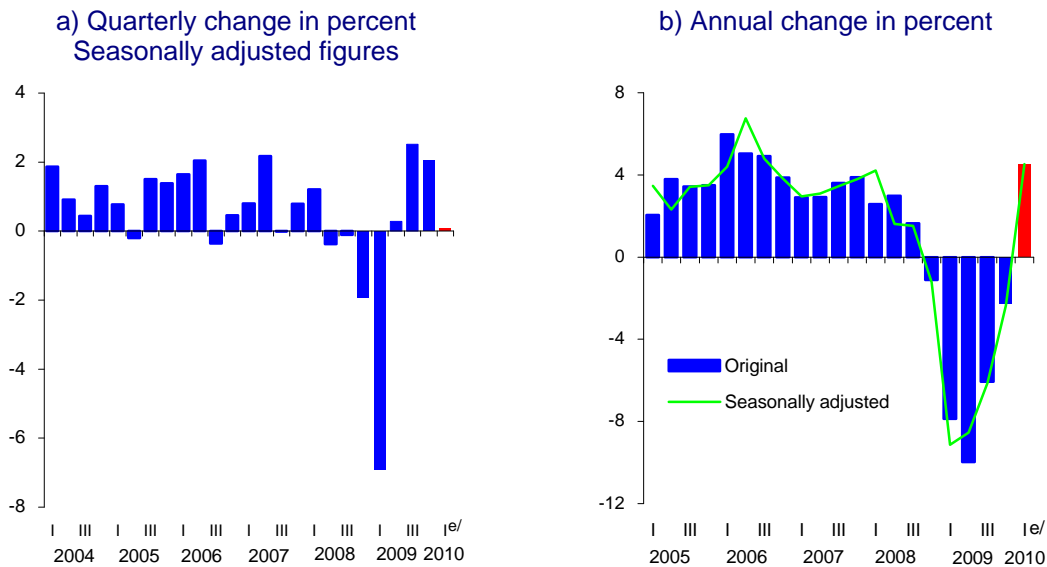
Source: INEGI and Banco de México.

¹⁴ In particular, revenues from workers' remittances amounted to 1,950 million US dollars in March 2010, which implies an annual reduction of 7.3 percent.

In light of the aforementioned factors, various sectors that produce non-tradable goods have recovered at a relatively slow pace or, as in the case of construction, have not even started to recover. This weakness made productive activity perform during the first two months of 2010 with less dynamism than in the last two quarters of 2009. Indeed, in January, the Economic Activity Index (*Indicador Global de Actividad Económica*, IGAE) contracted 1.03 percent in relation to the previous month, in seasonally adjusted terms. Although this contraction was influenced by a monthly decline of 4.05 percent in primary sector production, the industrial and services sectors also fell at a monthly rate in seasonally adjusted terms, 0.14 and 0.60 percent, respectively. In February, the IGAE rebounded 0.46 percent in monthly terms; however, this mainly reflects the reestablishing of higher levels of activity in the primary sector (3.17 percent in monthly terms) and an increase of the industrial sector (0.59 percent in monthly seasonally adjusted terms), given that the services sector fell once more by 0.33 percent in monthly terms.

In light of these results, during the first quarter of 2010, seasonally adjusted GDP is expected to have remained at levels similar or even below those observed during the previous quarter, which contrasts with the high quarterly changes observed during the two previous quarters (2.51 and 2.03 percent during the third and fourth quarters of 2009, respectively; Graph 17a). During the first quarter of 2010, GDP growth (original figures) is expected to have been between 3.5 and 4.5 percent. It is relevant to point out that this would be the first annual positive change for GDP, after having contracted for five consecutive quarters (Graph 17b).

Graph 17
Gross Domestic Product



Source: INEGI. Seasonal adjustments to the first quarter of 2010 by Banco de México.
e/ Estimates.

Finally, it is relevant to mention that in the last months the exchange rates of several emerging economies have appreciated due to significant capital inflows. In the case of México, this phenomenon has partially reverted the depreciation of the peso in real terms observed at the end of 2008 and the beginning of 2009. If the parity continues to appreciate in real terms as a result of a greater search for yields through “carry trade” operations, it could complicate the

adjustment of relative prices described at the beginning of this section and therefore affect the rate at which manufacturing production in the country has recovered.

3.2.2. Financial Saving and Financing

The reduction in the availability of financial resources observed during the first three quarters of 2009 ended in the fourth quarter of that year. This was due to a rebound in foreign financing equivalent to 0.7 percent of GDP. In contrast, domestic financing, although being positive, continued to decrease during this period in terms of GDP, reaching 3.3 percent (Table 3). The weakness of domestic financing sources and a greater dynamism of external financing sources have also been observed in the first two months of 2010 (Graph 18a). In this regard, the greater availability of foreign resources has taken place in an environment characterized by a world economic recovery and a clear improvement in the financial systems of the main advanced economies, as well as in exceptionally low interest rates in the latter economies. All of the aforementioned has encouraged the search for higher yields.

Table 3
Total Funding for the Mexican Economy (Sources and Uses)
Percentage of GDP

	Annual Flows						Stock 2009	
	2007 IV	2008 IV	2009 I	2009 II	2009 III	2009 IV	% GDP	Est.%
Total sources	4.6	6.2	5.2	4.3	3.9	4.0	78.3	100.0
Domestic sources ^{1/}	3.8	5.7	5.6	5.2	4.8	3.3	56.8	72.5
External sources ^{2/}	0.8	0.4	-0.4	-1.0	-0.9	0.7	21.6	27.5
Total uses	4.6	6.2	5.2	4.3	3.9	4.0	78.3	100.0
Public sector	1.2	2.3	3.3	3.7	4.3	4.0	41.3	52.8
Public sector (PSBR) ^{3/}	1.1	2.1	3.1	3.4	3.8	3.2	39.1	49.9
States and municipalities	0.1	0.2	0.2	0.3	0.5	0.8	2.3	2.9
International reserves ^{4/}	1.0	0.7	-0.6	-1.3	-0.9	0.5	10.0	12.8
Private sector	3.9	2.0	1.3	0.6	-0.4	0.0	32.1	41.0
Households	1.5	0.7	0.5	0.2	0.1	0.0	13.9	17.7
Consumption	0.9	0.0	-0.3	-0.6	-0.6	-0.5	4.0	5.1
Housing ^{5/}	0.7	0.7	0.8	0.8	0.7	0.5	9.9	12.6
Firms	2.3	1.3	0.8	0.4	-0.5	0.0	18.2	23.2
Domestic ^{6/}	1.7	1.3	1.1	0.7	0.3	0.4	10.8	13.8
External	0.6	0.0	-0.3	-0.3	-0.8	-0.4	7.4	9.4
Other items ^{7/}	-1.4	1.2	1.2	1.2	0.8	-0.5	-5.1	-6.6

Source: Banco de México.

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/ Includes monetary aggregate M4 held by residents. Annual revalued flows of Domestic sources exclude the effect of the reform to the ISSSTE Law on monetary aggregate M4. Information on the stock of Domestic sources includes the effect of this reform.

2/ Includes monetary aggregate M4 held by non-residents, foreign financing for the federal government, public institutions and entities, and foreign financed investment projects (PIDREGAS), commercial banks' foreign liabilities, and financing to the non-financial private sector.

3/ Public Sector Borrowing Requirements (*Requerimientos Financieros del Sector Público*, RFSP or PSBR, for its acronym in English) and Public Sector Borrowing Requirements' historical stock (SHPSBR or 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 RFSP. Information on SHRFSP does include the effect of this reform on the public debt.

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

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

6/ Total portfolio of financial intermediaries. Includes debt-restructuring programs.

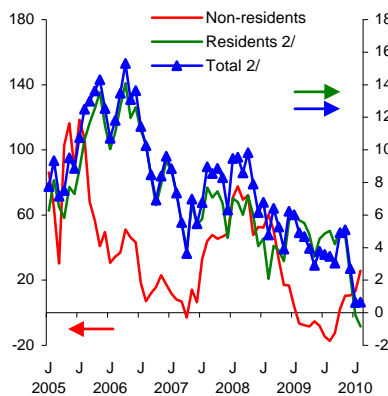
7/ A positive flow (negative) of this concept refers to a use (source) of financial funds.

In terms of its uses, in 2009, financial resources were characterized by a greater flow of financing to the public sector, states, and municipalities and by a

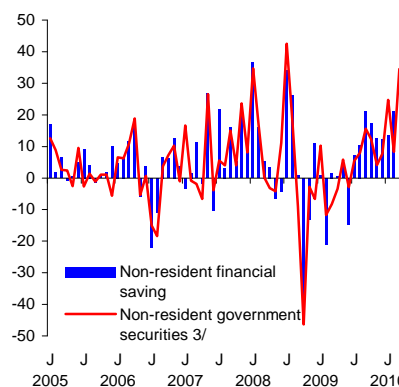
reduction in the availability of resources (both foreign and domestic) for the non-financial private sector (Table 3). In particular, the greater amount of foreign financing was mainly channeled to the public sector through international financial organizations and an increasing holding of government securities by non-residents (Graph 18b). The greater use of financial resources by the public sector measured through Public Sector Borrowing Requirements (PSBR) was due to the impact of the contraction of economic activity on budgetary revenues, and of the implementation of various stimulus programs for the economy in that year. As for financing to states and municipalities, it rose during the second half of 2009, which allowed to offset the reduction in revenue sharing. Thus, resources used in 2009 to cover public sector, states, and municipalities' borrowing needs as well as international reserve accumulation accounted for 4.5 percent of GDP and thus their share in the total financing balance in 2009 amounted to 65.6 percent. On the contrary, foreign financing to the private sector contracted during the entire 2009 (Table 3), despite the significant growth in bond issue in international markets by domestic firms since the last quarter of 2009 (Graph 18c).¹⁵

Graph 18
Financial Saving and Foreign Financing

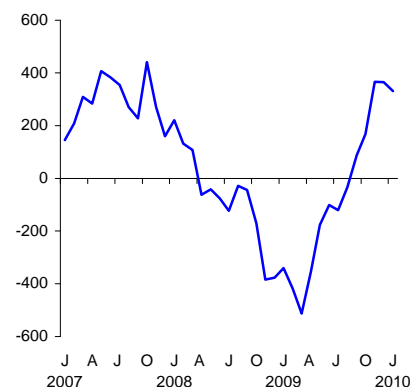
a) Total Financial Saving^{1/}
Real annual change (percent)



b) Non-residents Financial Saving
and Government Security
Holdings
Monthly change in thousand
million pesos



c) Non-financial Private Firm
Instruments issued Abroad
Monthly flows in
million US dollars^{4/}



Source: Banco de México.

1/ Defined as monetary aggregate M4 less the stock of banknotes and coins held by the public.

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

3/ Holdings of government securities in nominal value. Figures available to March 31, 2010.

4/ Three-month moving average of seasonally adjusted monthly flows.

During January and February of 2010, domestic financing to the non-financial private sector continued to contract but more markedly, mainly as a result of the weakness of bank lending to both households and firms. This weakness could be influenced by both supply and demand factors:

- a) As for financing to firms, demand factors that could be exerting an influence are, on the one hand, the prevailing weakness of private investment and, on the other, in the case of certain firms, bank lending has been substituted by a greater financing through debt issuance in

¹⁵ Both the number of issuing firms and the amounts invested have increased. While during the first quarter of 2009, two firms invested 215 million US dollars, preliminary figures up to the first quarter of this year reveal that 10 firms invested 7,028 million US dollars.

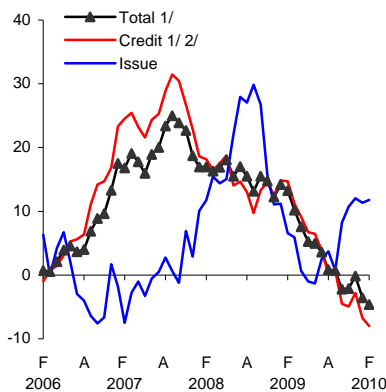
both external and domestic markets, as costs have decreased and the terms for this type of financing have extended. This has been possible due to the fact that financing conditions in both international and domestic markets have gradually gone back to normal (Graph 19).

- b) As for supply factors that could be limiting the growth of bank lending, commercial banks could be adopting a more conservative stance regarding credit granting, due to the uncertainty about the possible changes in world financial regulation that might take place in the future.

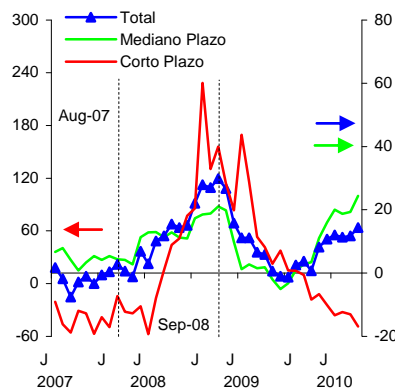
Graph 19

Domestic Financing for Non-financial Private Firms and Issuance of Domestic Debt

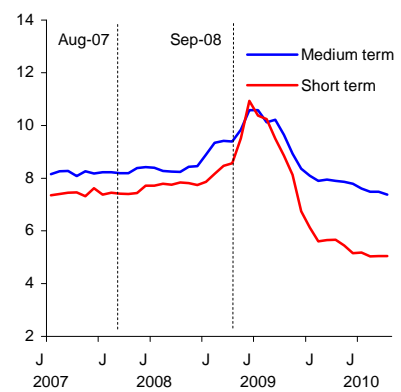
a) Domestic Financing for Non-financial Private Firms
Real annual change (percent)



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



c) Interest Rate of Non-financial Private Firms' Securities Issued in the Domestic Market
Percent



Source: Banco de México.

1/ From February 2009 onwards, 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/ Includes credit granted by commercial banks, development banks and other non-bank financial intermediaries.

- c) As for financing to households, commercial bank loans for consumption continue decreasing (Graph 20a). In this regard, commercial banks decided to reduce the supply of this type of credit, due to the high delinquency rates in this type of portfolio (Graph 20b), and the change in regulation regarding the provisions on overdue credit card balances, which went into effect in August 2009, and which has been reflected in greater costs to grant this type of credit. It is important to point out that banks have done considerable efforts to improve the quality of their credit portfolio. These efforts include eliminating the portfolio with low repayment likelihood, and restructuring other troubled loans, as well as being more cautious when granting new credits. In the short term, these efforts clearly have a negative effect on the stock of credit. As for bank lending for home acquisition, despite having markedly slowed down, it continues to exhibit real annual positive growth rates (Graph 20a). Commercial banks' decision to continue expanding this type of credit, even in the lowest part of the business cycle, could be due to, among

other factors, the relatively low delinquency rates in housing credit portfolio (Graph 20c).¹⁶

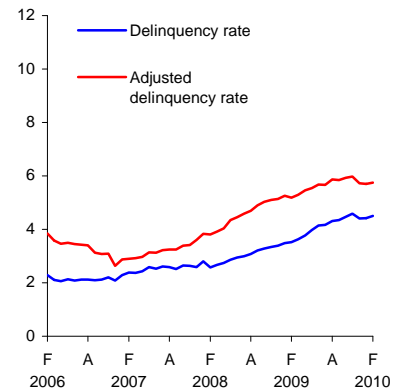
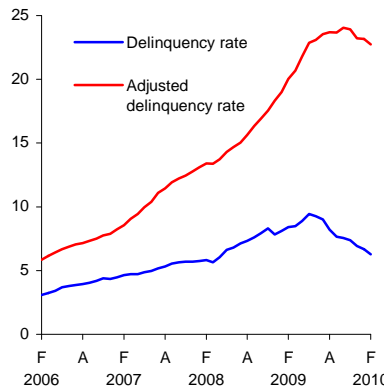
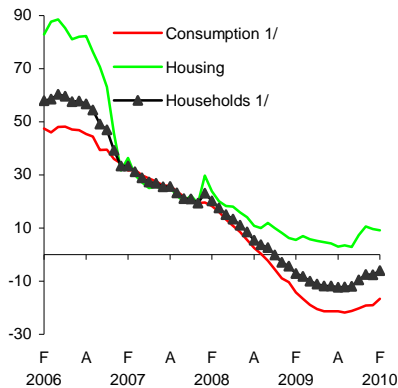
Graph 20

Commercial Banks' Performing Credit and Delinquency Rates of Commercial Banks' Credit to Households

a) Commercial Banks' Performing Loans to Households
Real annual change (percent)

b) Delinquency Rates and Adjusted Delinquency Rates of Consumer Credit^{1/ 2/}
Percent

c) Delinquency Rates and Adjusted Delinquency Rates of Housing Credit^{2/}
Percent



Source: Banco de México.

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

The following thought deserves to be pondered in view of the dynamics characterizing loanable fund markets in the last quarters. The greater financing to the public sector could have two effects: first, inasmuch as credit contraction is due to the lack of demand from the private sector, the public sector could be fostering the recovery of credit by complementing such a demand (i.e. a complementarity or "crowding in" effect); nevertheless, as domestic expenditure gradually recovers, the greater financing to the public sector could, at some point, limit the granting of credit to the private sector (i.e. an eventual shift or "crowding out" effect).

¹⁶ The delinquency rate (*Índice de Morosidad* or IMOR, for its acronym in Spanish) is the ratio of non-performing portfolio to total loan portfolio. However, since this indicator is affected by banks' decisions on loans write-offs, a more accurate indicator of debtors' delinquency is used: the adjusted delinquency rate (*Índice de Morosidad Ajustado* or IMORA, for its acronym in Spanish). 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 the total loans plus the aforementioned charges or losses aforementioned (see Financial System Report 2007, p.50, Box 21, and Inflation Report of July - September 2008).

4. Inflation Determinants

Annual headline inflation rose during the first quarter of 2010. As mentioned throughout this Report, this was due to supply shocks associated with four factors: i) the tax changes approved by Congress for 2010; ii) the resetting of the policy of fuel price adjustments; iii) the increase in prices and fees/fares determined by local governments –especially those in Mexico City for the subway and for water supply services; and, iv) an enormous volatility in fruit and vegetable prices due to adverse weather conditions. Nevertheless, this inflationary rebound is considered to be temporary and will revert when the mentioned shocks fade, in view that the higher levels of inflation have not generated second round effects on the price formation process, and have taken place in an environment where there are no demand-related pressures and the exchange rate parity has appreciated.

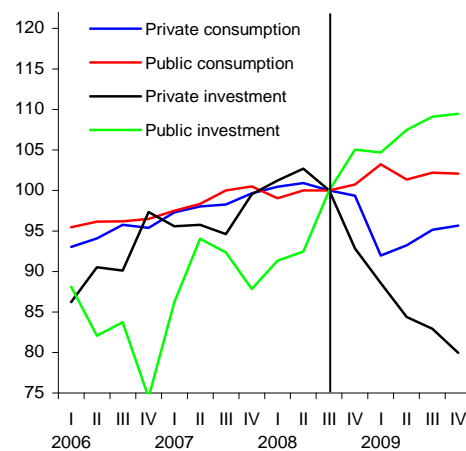
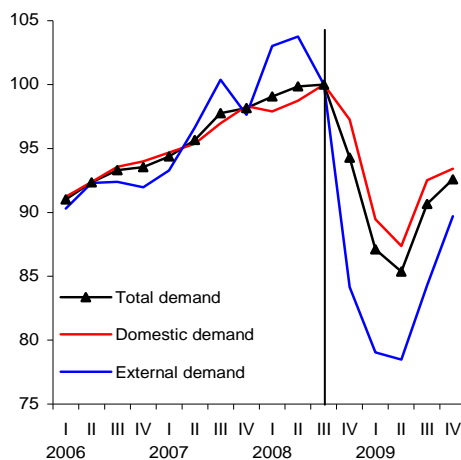
After considering the ideas exposed in the previous sections it can be said that although total aggregate demand in Mexico has continued to recover as compared with the low levels observed during the first half of 2009, the recovery has not been widespread (see Graph 21). First, despite having recovered, exports are still below the levels registered before the global economy entered into recession in 2008. Second, domestic demand has recovered weakly and still remains stagnated. This latter condition reflects the weak recovery of private consumption and the persistently negative trend of private investment, given that consumption and public sector investment have followed a positive trend during the current business cycle. Under these circumstances, total aggregate expenditure in the economy remains below the levels prior to the upburst of the global financial crisis.

Graph 21
Aggregate Demand

Indices Third Quarter of 2008=100; seasonally adjusted figures

a) Total, Domestic and External Demand

b) Domestic Demand Components

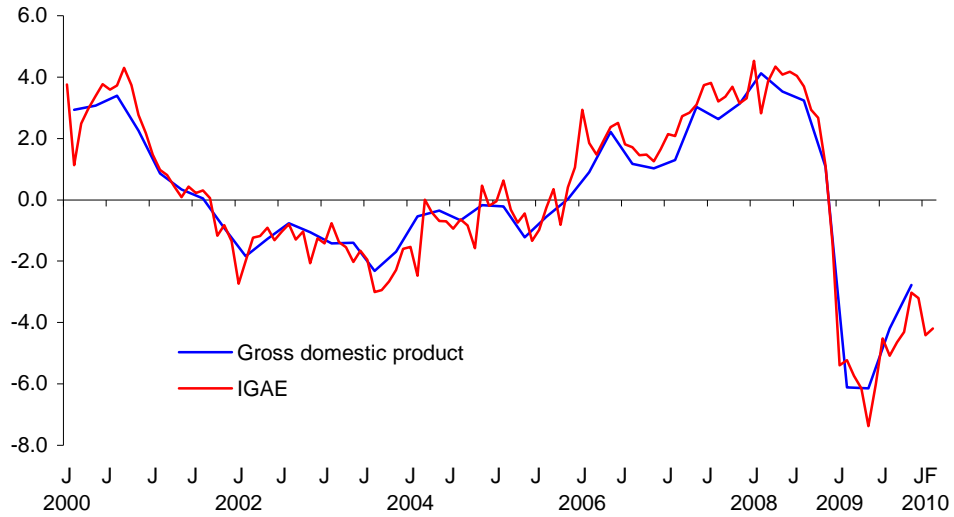


Source: INEGI.

In light of these conditions, the Mexican economy's productive activity is expected to have remained below its potential level during the first quarter of the year, and therefore the output gap is still in negative territory (Graph 22). As mentioned in the previous section, there are supply-related and demand-related factors that are influencing the negative trend followed by financing to the non-

financial private sector. The recent behavior of the monetary aggregates, in particular M4, shows that Mexico is far away from undergoing a credit expansion that would foster spending above the economy's absorption capacity (Graph 23).

Graph 22
Output Gap^{1/}
 Annual change (percent)

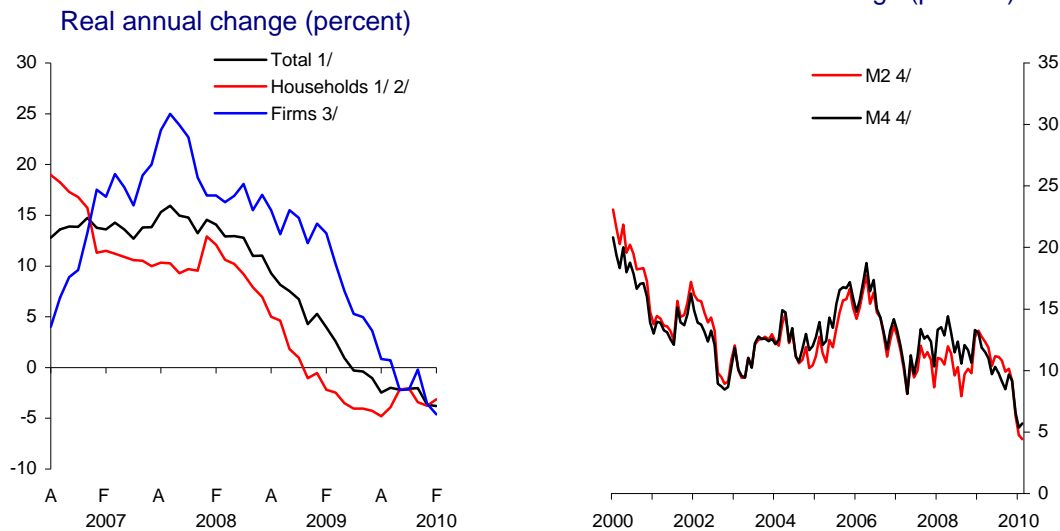


Source: Banco de México.

1/ Estimated using the Hodrick-Prescott (HP) with tail correction method; See Banco de México (2009), "Inflation Report April – June 2009", p.69.

Graph 23

Domestic Financing to the Non-financial Private Sector and Monetary Aggregates
 a) Domestic Financing to the Non-financial Private Sector
 b) Monetary Aggregates
 Real annual change (percent)



Source: Banco de México.

1/ Between December 2007 and November 2008 figures are adjusted to avoid distortions from the incorporation of Fovissste.

2/ Figures as of March 2008 include the portfolio of consumer credit of commercial banks' subsidiaries Sofom E.R. Since February 2009, figures are affected by the reclassification of credit to PyMES from consumer credit portfolio to credit to firms' portfolio.

3/ Since February 2009, figures are affected by the reclassification of credit to PyMES from consumer credit portfolio to credit to firms' portfolio.

4/ Excludes the effect of the implementation of the new ISSSTE law.

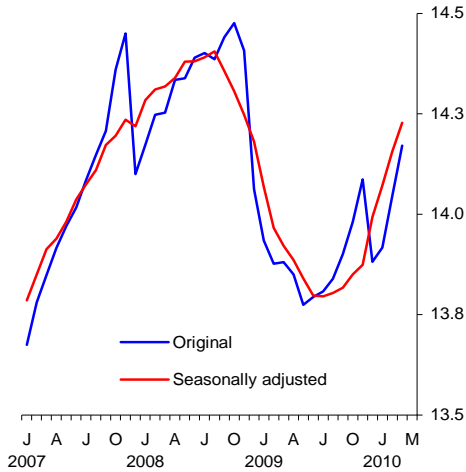
Various indicators suggest that these conditions have led to an absence of demand-related pressures on both productive factor utilization and Mexico's external accounts:

- a) Regarding the labor market, the number of IMSS-insured workers remains below that observed before the crisis (Graph 24a). Partly reflecting these results, the unemployment and underemployment rates are still high (Graph 24b). Following the same line, according to the results from the Monthly Survey on Manufacturing Conditions conducted by Banco de México, this industry continues not facing problems to hire skilled labor (Graph 24c). Finally, in terms of workers' level of income, the growth of employment observed in the last months has concentrated in less remunerated jobs that those lost as a result of the previous year's recession (Graph 24d). All indicators show that there is still slackness in the labor market, a factor that has contributed to moderate wage increases.
- b) As already discussed, production capacity in the manufacturing industry, which is one of the sectors that has exhibited greater dynamism, is still significantly below the levels observed prior to the financial crisis (Graph 25). This could also be contributing to the decreasing trend still followed by private investment.
- c) Finally, the current account deficit is expected to have remained at low levels during the first quarter of 2010 (1.0 billion US dollars, equivalent to 0.4 percent of GDP). This result, which takes place in a setting in

which the capital account registered a wide surplus, reveals that the external accounts have not been a source of pressure on tradable goods' prices via the real exchange rate.

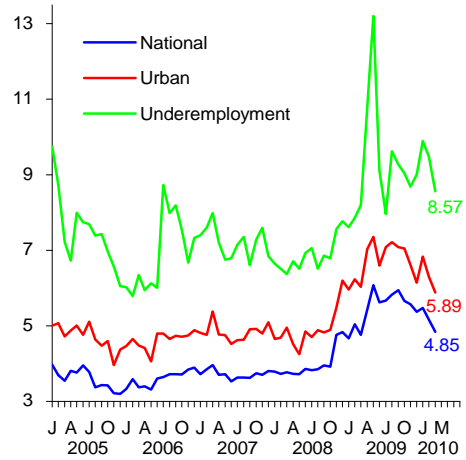
Graph 24
Labor Market Indicators

a) Workers insured by IMSS
Million individuals



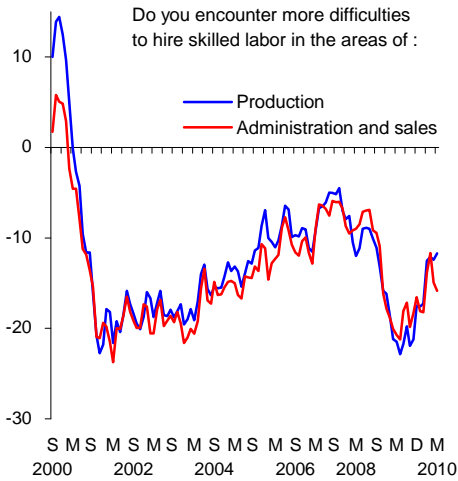
Source: Prepared by Banco de México with data from IMSS.

b) Unemployment and Underemployment Rates
Percent; seasonally adjusted figures



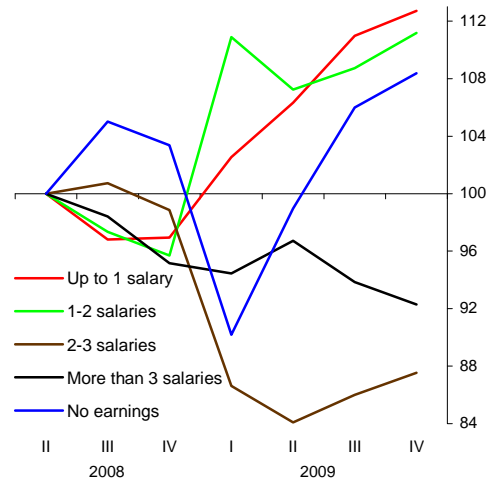
Source: INEGI.

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



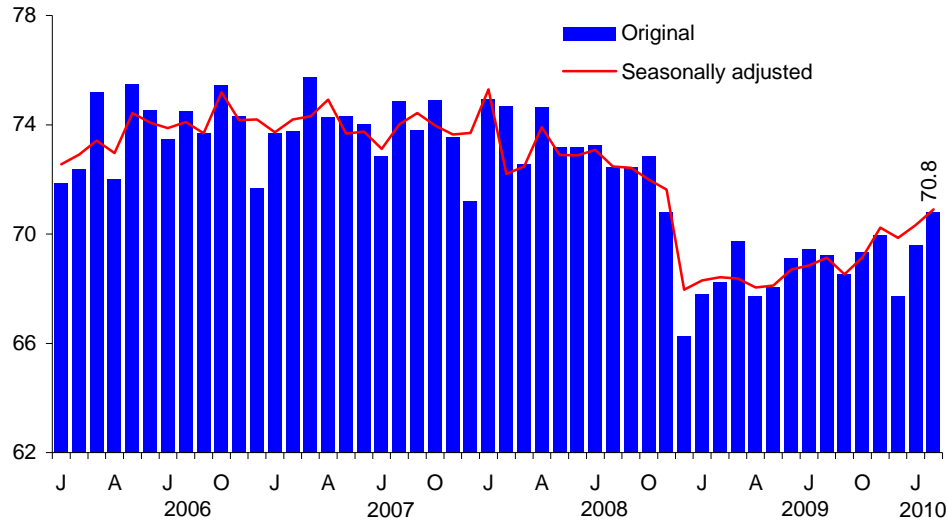
Source: Banco de México.

d) Employment by Minimum Wage Range
Second quarter of 2008=100



Source: INEGI.

Graph 25
Installed Capacity Utilization: Manufacturing Sector
 Percent



Source: Banco de México.

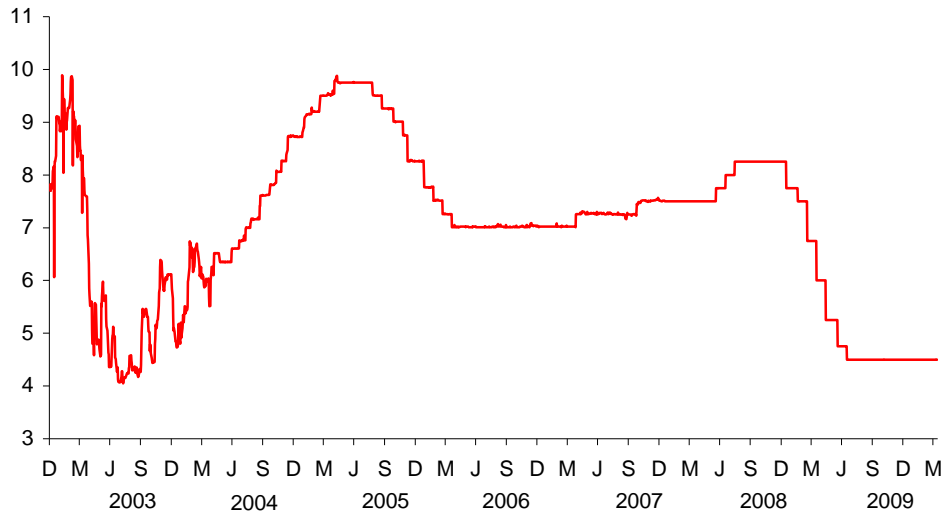
It is important to point out that, as previously mentioned, the nominal exchange rate has appreciated rapidly in the last months. This has partially offset the effect on inflation of other shocks that have affected its trajectory.

The absence of pressures in productive factor utilization and therefore on the prices of productive factors suggest that, under the current conditions, the economy is not facing demand-related pressures that could adversely affect inflation. The behavior of the exchange rate has also offset other inflationary pressures. Nevertheless, despite the abovementioned, the inertial behavior of inflation in Mexico, together with supply shocks stemming from the increase in taxes and public sector's prices and fares/fees, have raised it to levels above the 3 percent target and made difficult for it to decrease rapidly.

5. Monetary Policy

Banco de México's Board of Governors decided to keep the target for the Overnight Interbank Rate (operational target) at 4.5 percent in January, February, March, and April of this year. The target has remained at that level since July 17, 2009 (Graph 26).

Graph 26
Overnight Interbank Rate^{1/}
Annual percent



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

In the last months, the Board of Governors has based its monetary policy decisions on the following factors:

1. Despite the unexpected increase in certain vegetables' prices, the observed increase in annual headline inflation during the first quarter was in line with the central bank's forecast. This is partly due the fact that the price increases associated with the tax adjustments and with the policy of public sector's prices and fares/fees, have been consistent with Banco de México's forecasts and have also not contaminated the price formation process in the rest of the economy.
2. Despite the ongoing recovery of the Mexican economy, no demand-related pressures on prices have been detected.
3. Inflation expectations have remained relatively stable, although they continue to be above the 3 percent target. According to Banco de México's survey drawn in March of this year, inflation expectations for the fourth quarter of 2010 were 5.33 percent,¹⁷ slightly above the 4.75–5.25 percent interval foreseen by Banco de México for average inflation in the fourth quarter of 2010. As for expectations for average inflation for

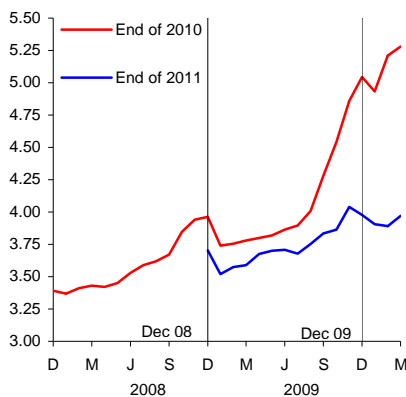
¹⁷ Annual inflation expectations for the average for the fourth quarter of 2010 are calculated according to monthly inflation expectations reported for each of the following twelve months. In the case of the Infosel's survey of April 23, the average for the fourth quarter of 2010 was 4.98 percent.

the end of 2011, they remained around 3.9 percent during the quarter (Graph 27a). This reflects that economic analysts expect inflation to resume a downward pattern next year, although these expectations remain above the central bank's forecasts for quarterly average inflation for the fourth quarter of 2011.¹⁸

As for inflation expectations for longer terms, the mean obtained from Banco de México's survey for the average for the next 4 years has remained around 3.7 percent in the last months, while that for the average for the following 5-8 years has remained close to 3.5 percent (Graph 27b).¹⁹

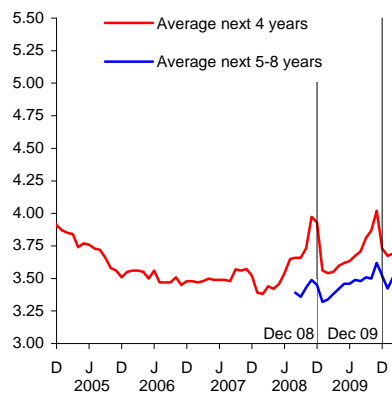
Graph 27
Expectations for Annual Headline Inflation, and Compensation for Inflation and Inflationary Risk on Long-term Bonds
 Annual percent

a) Expectations for Annual Headline Inflation



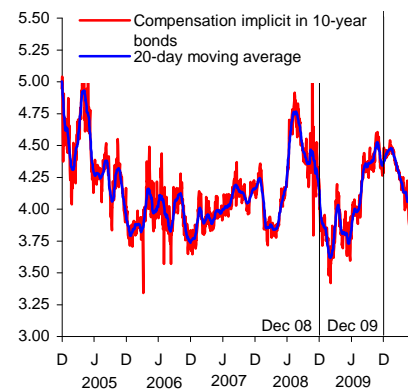
Source: Banco de México Survey.

b) Expectations for Annual Headline Inflation



Source: Banco de México Survey.

c) Compensation for Inflation and Inflationary Risk on Long-term Bonds^{1/}



Source: Banco de México estimates with data from Bloomberg.

^{1/} 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.

Complementing the information drawn from the surveys, the indicator of compensation for inflation (inflation expectations plus a risk premium), which is the difference between the nominal yield on a 10-year bond and the real yield associated with indexed debt instruments of the same term (*Udibonos*), shows that after having reached levels close to 4.5 percent by the end of 2009, during the last months it decreased to close to 4 percent in the last days (Graph 27c).²⁰

4. Workers' wages have continued to increase moderately during the last months. Consequently, firms' costs have not been affected significantly

¹⁸ The average for inflation expectations for the end of 2011 reported by the Infosel survey of April 23 was 3.91 percent.

¹⁹ The Infosel survey of April 23 reported a mean of 3.58 percent for average inflation expectations for the following 4 years and of 3.38 percent for the average for the next 5-8 years.

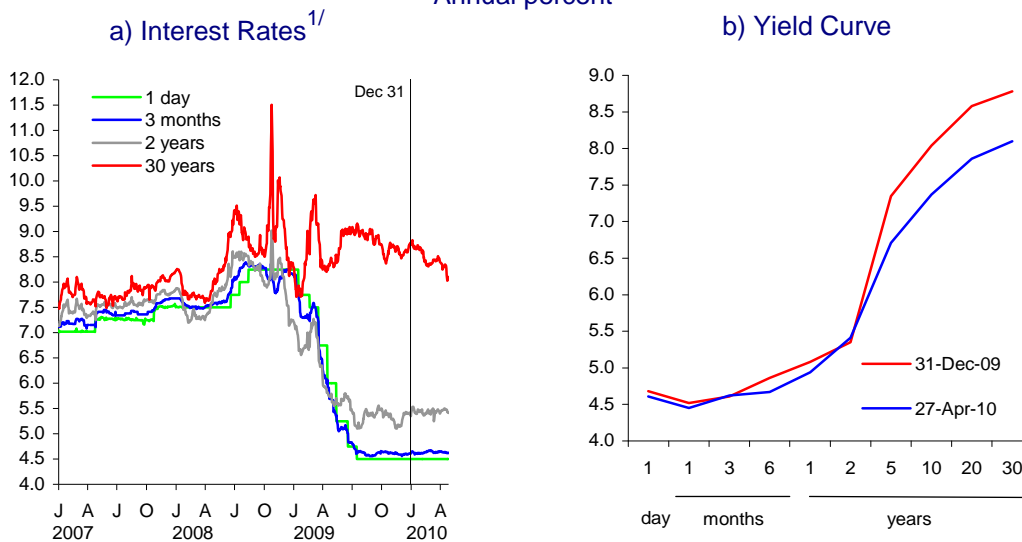
²⁰ As mentioned in previous Inflation Reports, this type of indicators must be interpreted with caution due to their volatility.

by this factor and therefore have not been a source of inflationary pressures.

5. The appreciation of the exchange rate has contributed to mitigate any possible pressures on tradable goods' prices and on the costs of those goods and services that use imported inputs.

These elements have been reflected in the pattern followed by the yield curve in the last months. On the one hand, in the absence of variations in the reference interest rate, the shorter part of the curve has not changed significantly. In particular, 3-month interest rates have remained around 4.60 percent. On the other, the longer part of the yield curve has decreased since the end of December 2009 to date. Thus, the yield on the 30-year government bond has decreased from levels close to 8.7 percent at the end of 2009, to around 8.10 percent in the last days, leading to a flattening yield curve (Graph 28).²¹

Graph 28
Interest Rates in Mexico
Annual percent



^{1/}Since January 21, 2008, the one-day (overnight) interest rate corresponds to the target for the Overnight Interbank Rate (Banco de México's operating target).

Summing up, a flattening yield curve reflects: i) long-term inflation expectations have remained anchored, in an environment of a strengthening of public finances; ii) capital inflows to domestic financial markets; and, iii) although economic activity remains below the levels prior to the crisis, the economy continues to recover, thus fostering a reduction in risk premia demanded by investors.

Under these conditions, the Board of Governors has pointed out that it will carefully monitor the trajectory of medium and long-term inflation expectations as well as other determinants of inflation that may signal unexpected and widespread pressures on prices. In particular, it will remain attentive of how fast the output gap closes.

²¹ The slope of the yield curve (defined as the spread between the 30 year bond and the 3-month bond) has decreased from around 410 basis points at the end of 2009 to 350 basis points in recent days.

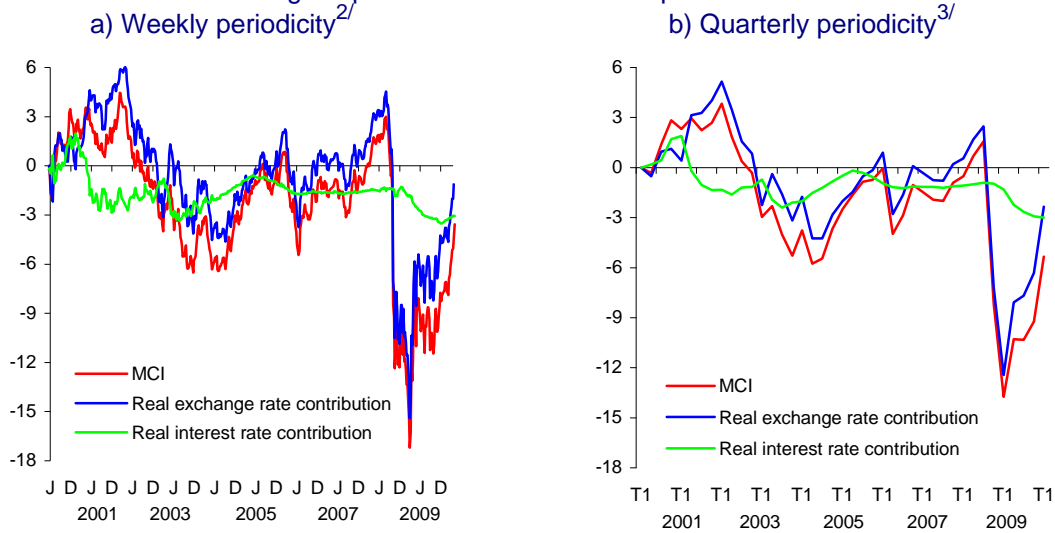
As pointed out in this Report, it is important to emphasize that in the last months, the Mexican peso has appreciated considerably. This appreciation has clearly contributed to partially offset any upward pressures on prices and to less relaxed monetary conditions (Graph 29). In this regard, although part of the growth in capital inflows is explained by an improvement in both the outlook and the fundamental conditions of the Mexican economy, another part is explained by the extraordinary accommodative monetary policy stance in the U.S., together with the outlook of a depreciation of the US dollar in the medium term, in an environment in which the U.S. is in a process of correcting its external accounts.²² In view of these considerations, Banco de México's Board of Governors will remain particularly attentive of the risks associated with any changes in external monetary conditions that could lead to a sharp and sudden reversal of capital inflows. In this regard, the Foreign Exchange Commission, made up of officials from the Ministry of Finance and Banco de México, decided to increase the rate of international reserve accumulation in order to improve Mexico's sovereign credit worthiness.²³

²² The US dollar has appreciated recently as a result of the fiscal situation in some European countries, which has led investors to search for lower-risk instruments.

²³ See Foreign Exchange Commission of February 22, 2010, which announces the monthly US dollar selling auction to Banco de México.

Graph 29 Monetary Conditions Index ^{1/}

Change in percent in relation to first quarter of 2000



1/ The Monetary Conditions Index (MCI) is calculated as the weighted average of the change in the real interest rate and the real exchange rate in relation to its average level during the first quarter of 2000. The weights of the contributions of both indicators to the MCI are defined in 0.5 and 0.5, respectively. Through various analytical tools these values are found to be a good approximation of the contribution of the real interest rate and the real exchange rate in monetary conditions faced by aggregate demand. An exchange rate appreciation and/or an increase in the real interest rate raise the level of the MCI. Therefore, an increase in the MCI suggests relatively more stringent monetary conditions.

2/ The weekly index of the bilateral real exchange rate in relation to the US dollar is calculated using the weekly average of the FIX exchange rate, the weekly average of a consumer price index in the U.S. with weekly periodicity (CPI linear interpolation) and the weekly average of a consumer price index in Mexico with daily periodicity (MexCPI linear interpolation). The real interest rate with weekly periodicity is defined on the basis of a weekly average of the 28-day CETES nominal interest rate and inflation expectations for the following 12 months from the Infosel weekly survey.

3/ The quarterly average of the bilateral real exchange index in relation to the US dollar. The real interest rate is defined using the quarterly average of the nominal interest rate on 28-day CETES and the quarterly average of inflation expectations for the following 12 months from the Infosel survey.

6. Inflation Forecasts and Balance of Risks

The macroeconomic scenario foreseen by Banco de México considers that the world economy will continue to expand, relying on the improvement in financial markets and the significant stimulus from countercyclical policies. In particular, the consensus among analysts is for the U.S. economy to grow 3.1 percent during both 2010 and 2011, and industrial production in that country to grow 4.9 and 4.5 percent in 2010 and 2011, respectively. Nevertheless, U.S. consumption and employment are expected to recover gradually, and the U.S. economy to continue growing below its potential during 2010 and next year.

As for the Mexican economy, the following base scenario is foreseen:

GDP Growth: the improvement in the outlook for industrial production growth in the U.S., together with the recent development of Mexican economic activity, suggests that GDP in Mexico will grow above previous quarters' forecasts. In particular, the Mexican economy is expected to grow between 4.0 and 5.0 percent during 2010. In 2011, GDP is expected to grow between 3.2 and 4.2 percent, just as forecasted in the Inflation Report of the previous quarter.

Considering that quarterly GDP growth in seasonally adjusted terms during the last two quarters of 2009 reflected not only a change in the cyclical phase of the economy, but the fading of some events that temporarily affected the levels of activity during the second quarter of that year, average quarterly GDP is expected to grow more moderately during 2010. Nevertheless, insofar as higher levels of domestic expenditure are attained, this aggregate will grow gradually during the rest of the year (Graph 30a).²⁴

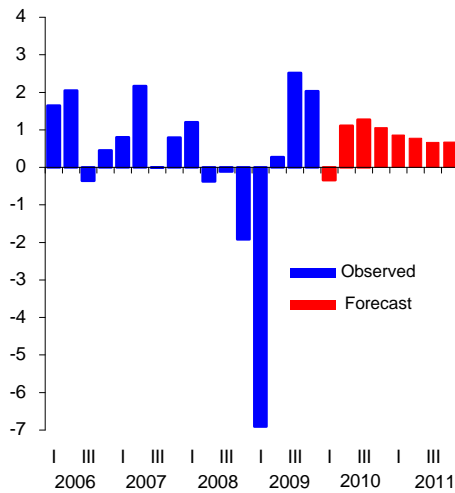
Despite the recovery of productive activity foreseen in this scenario, slackness is anticipated to prevail in the economy during 2010. Nevertheless, as a result of the upward revision in growth expectations for both Mexico and the U.S., these conditions are expected to fade more rapidly than expected. Indeed, it is likely that the output gap closes relatively faster than as forecasted in the previous Report, therefore increasing the probability of certain scenarios of output gap becoming positive during the first half of 2011 (Graph 31).²⁵

²⁴ In yearly terms, the change in GDP during the first quarters of 2010 would be influenced by the low levels of activity observed during the first half of 2009 and therefore is anticipated to be relatively higher than the annual change in GDP observed during the second half of the year (Graph 29b).

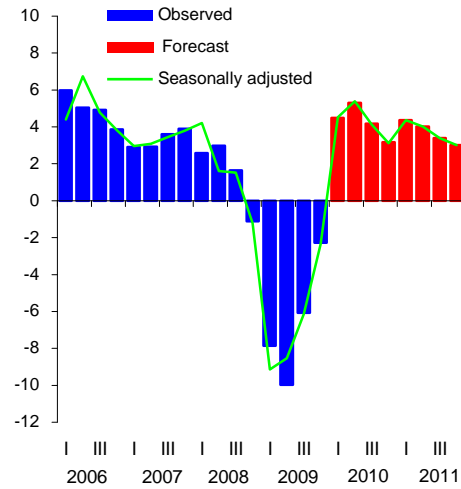
²⁵ These estimates were done using the Hodrick-Prescott (HP) tail correction method and a model of non-observed components. These methods are described in the Inflation Report of the Second Quarter of 2009. See Banco de México (2009), "Inflation Report April – June 2009", p.69.

Graph 30
Gross Domestic Product

a) Quarterly change (percent); seasonally adjusted figures



b) Annual change (percent)



approximately 48 billion US dollars was renewed, and the distribution in time of public and private sector's expected debt repayment, the economy is not expected to face foreign financing problems in 2010.

The foreseen scenario for economic growth in Mexico for the next two years is not risk-free. In this regard:

- a) Advanced economies will eventually start to withdraw the fiscal and monetary stimuli implemented to counter the crisis. This implies two different risks. On the one hand, the recovery of economic activity in advanced economies continues to depend excessively on these stimuli, and withdrawing them could jeopardize the recovery of the world economy. On the other hand, despite any fiscal consolidation efforts from advanced economies in the following years, the demand for financial resources from the governments of these economies will remain high. This, together with the foreseen withdrawal of the monetary stimulus in the U.S. eventually could make interest rates in international financial markets escalate and thus lead to tighter credit conditions for emerging economies.
- b) In the short run, there is the risk of a possible contagion in financial markets, particularly sovereign debt markets, if the fiscal situation in Greece or in other countries facing similar scenarios in Europe deteriorates. The latter could increase financial volatility worldwide and tighten the conditions for international financing.
- c) As already mentioned, if the appreciation of the exchange rate continues, export dynamics would be affected and therefore the capacity of the economy to recover. The latter, inasmuch as this appreciation does not reflect the progress in relative productivity of the sector of internationally-traded goods, which would lower production costs in this sector.

Inflation: The forecast for annual headline inflation for 2010 and 2011 remains unchanged as compared with that of the last two Inflation Reports (Table 4 and Graph 32). This is due to the following:

1. The effect on inflation of the tax increases has been as expected, and up to now no second-round price increases have been observed.
2. The impact on inflation of the resetting of the policy of monthly increases in fuel prices, as well as of price and fare increases of local governments, has been consistent with what was anticipated.
3. Wages are expected to continue adjusting moderately.
4. Medium and long-term inflation expectations remain relatively stable, although above the 3 percent target.
5. Given the volatility of vegetable prices, their impact on inflation is expected to be short-lived.

6. Productive activity is anticipated to remain below its potential level in the following quarters. As a result, no inflationary pressures from the aggregate demand side are expected.

It is important to point out that although the fiscal changes implemented entail costs regarding short-term inflation, they will also be beneficial for the good functioning of the economy. Mexico is a country with a huge need for public spending in both physical and human capital investment. Financing this type of spending through stable sources of income is crucial to maintain a macroeconomic environment characterized by low and stable inflation.

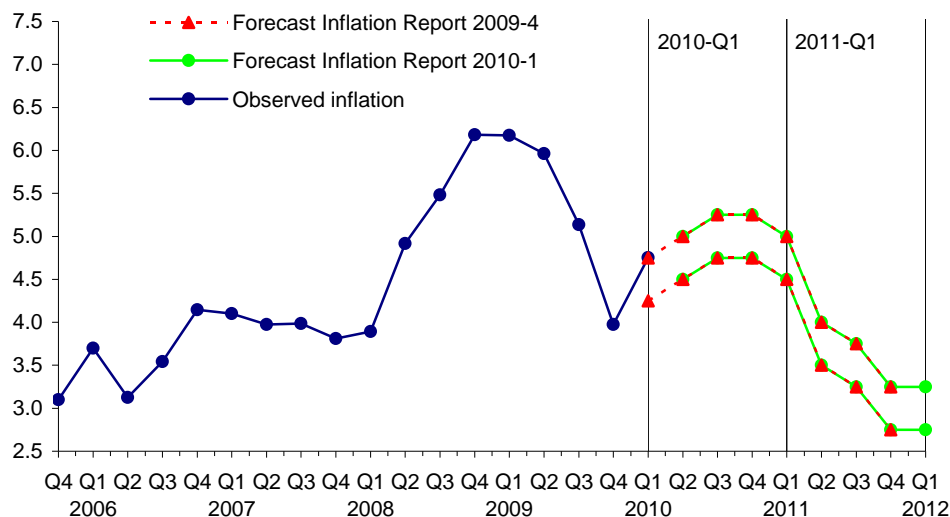
Table 4
Base Scenario Forecast for Annual Headline Inflation ^{1/}
 Quarterly average (percent)

Quarter	Forecast	
	Inflation Report I-Q 2010	
2010-I	4.75 ^{2/}	
2010-II	4.50	- 5.00
2010-III	4.75	- 5.25
2010-IV	4.75	- 5.25
2011-I	4.50	- 5.00
2011-II	3.50	- 4.00
2011-III	3.25	- 3.75
2011-IV	2.75	- 3.25
2012-I	2.75	- 3.25

^{1/} The forecast of this Report coincides with that of the previous one and also includes that for the first quarter of 2012. The Inflation Report's forecast up to the fourth quarter coincided with that of the Addendum to the Inflation Report of the third quarter. In each Inflation Report, the forecast horizon covers the following 8 quarters. For this reason, on each occasion, one quarter (the eighth) is added to the forecast, as compared with the first quarter of the previous Report, where it becomes an observed figure.

^{2/} Observed figure.

Graph 32
Forecasts for Annual Headline Inflation
 Quarterly average (percent)



The forecast for annual inflation is subject to various risks, among which the following stand out:

- i) A sudden reversal in capital flows could lead to an abrupt and rapid exchange rate adjustment.
- ii) The possibility that the economic recovery process is more (less) vigorous than previously anticipated could raise (reduce) inflationary pressures from the demand side.
- iii) As recently observed, the high volatility of fruits and vegetables prices.

Despite these risks, others have eased in the last months. In particular, the possibility that a greater pass-through to prices related to both fiscal changes and public price and fare increases has diminished, as well as that of a greater rate of adjustment in goods and services with administered and regulated prices.

After analyzing the development of inflation in Mexico over the last years, as well as its outlook for the following ones, the following thought arises. It is well known that inflation is a monetary phenomenon and therefore central banks are entailed to fight it. However, in the short term many other factors might affect inflation and make difficult the attainment of the inflation target set implicitly or explicitly by the central bank or by society itself. In this regard, it is clear that a key element to maintain low and stable inflation is sound public finances.

Nevertheless, various microeconomic policies can also affect inflation dynamics. Two particularly relevant issues in this regard are the degree of economic competition and the presence of labor market rigidities.

First, besides preventing resources from being allocated efficiently and modern technologies from being adopted more rapidly, thus hindering productivity and economic growth, the lack of competition leads to excessively high prices of inputs and finished goods, affecting the distribution of income and magnifying the rigidities in the inflationary process. This, in turn, can complicate even further the convergence of price growth to the central bank target.

Second, the lack of flexibility in the labor market not only complicates labor mobility towards its most productive uses, but also translates into higher labor costs, which also leads to higher prices of various goods and services produced in Mexico.

It is precisely this type of measures and not fluctuations in the nominal exchange rate which will ensure the Mexican economy remains competitive.

Under this setting, it is crucial to promote both market competition and flexibility in allocating labor. The approval of the draft proposal to reform the Law on Economic Competition and the Labor Law currently under discussion would be a significant step in this direction.

Finally, regarding monetary policy, Banco de México's Board of Governors will carefully monitor the trajectory of medium and long-term inflation expectations as well as other determinants of inflation that may signal unexpected and widespread pressures on prices. In particular, it will remain attentive of how



fast the output gap closes so that, if necessary, the central bank adjusts monetary policy in order to attain the 3 percent inflation target by the end of next year.