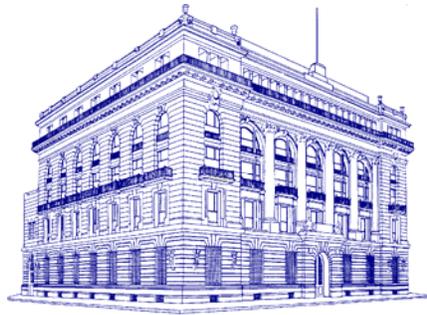


Inflation Report

July – September 2010



BANCO DE MÉXICO

OCTOBER 2010

BOARD OF GOVERNORS

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INFLATION REPORT

This report analyzes the development of both inflation and the economy in Mexico, as well as different domestic economic indicators, in compliance with Article 51, last section, of Banco de México's Law.

FOREWARNING

This text is provided for the reader's convenience only. Discrepancies may eventually arise from the translation of the original document into English. The original and unabridged Inflation Report in Spanish is the only official document.

Unless otherwise stated, this document has been prepared using data available as of October 26, 2010. Figures are preliminary and subject to changes.

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1. Introduction

The world economy slowed down during the third quarter of 2010. This partly reflects the persistent weakness of domestic demand in major advanced economies, which continued being curbed by households' efforts to deleverage and adjust their spending to sustainable levels, as well as the fragile situation of the financial system. In turn, emerging economies continued growing at a faster pace than advanced ones, driven by both their domestic demand and exports, although in some cases there appeared signs of deceleration. In this context, the global economic recovery is expected to moderate its pace in the next quarters.

World inflation remained at low levels throughout the third quarter of the year. The major advanced economies registered low levels of consumer inflation and in some cases the concern over deflation risk became even more pronounced. In this context and with the expectation of lower growth, the central banks of the major economies reasserted their decision to maintain their policy rates at low levels and expressed their disposition to take additional measures for monetary easing. In contrast, some emerging economies, mainly from Latin America and Asia, registered higher inflation levels during this quarter of the year, in some cases as a consequence of demand pressures and in others due to the increase in international grain prices. In view of this, the central banks of some of these economies responded by partially withdrawing the monetary stimulus.

The monetary policy implemented in advanced economies has generated an environment of abundant global liquidity, which has led to a search for higher yields. This search has contributed to substantial capital inflows to emerging economies, appreciation of their currency, as well as upward pressures on the asset prices of those economies that could even lead to bubbles. All of this has complicated monetary policy in these economies. There is also fear of a sudden reversal in capital flows, which has been one of the reasons that have encouraged the economies receiving capital to increase their international reserves accumulation.

Currency appreciation can affect export competitiveness of emerging countries in the international markets. For this reason, and out of concern about the possible weakening of the global economy, some of these economies have taken certain steps to try to contain this appreciation, among them international reserves accumulation. Nevertheless, at least two considerations are worth mentioning. First, in some cases, currency appreciation reflects at least partially more fundamental factors, such as the improvement in the terms of trade that has benefited some commodity exporting countries. Therefore, the appreciation does not necessarily decrease competitiveness of all exports. Second, the widespread policy of sustained economic recovery of external demand by means of depreciated real exchange rates is not a viable solution for the global economy. This brings out the need of greater coordination among countries that allows maximizing the growth of the global economy.

International financial market volatility decreased during the third quarter of the current year, and so far in the fourth quarter, due to diminishing perceptions that the sovereign crisis in Europe could have significant systemic implications, although this risk remains a source of uncertainty. In particular, despite the fact that several European countries implemented fiscal adjustment measures, their

capacity to diminish sovereign risk considerably is still doubtful. This factor could affect the growth prospects both for the European region and the global economy. In addition, financial institutions of various advanced countries are still dependent on capital and liquidity support from both their governments and central banks. Since private banks have to refinance high debt maturities, they remain highly sensitive to economic activity deterioration and confidence shocks. In this context, the recent announcement of the Basel Committee on the new global capital and liquidity standards represents a significant milestone in the future strengthening of the international financial system.

In Mexico, available timely indicators suggest that the expansion rate of the economy observed a slight moderation during the third quarter of the year. This is a result from both a lower growth rate in the external demand and the lack of consolidation in the domestic demand recovery. Thus, it is estimated that throughout the reported period there has been an absence of demand-related pressure on the utilization of main inputs and, as a result, on their prices and the country's external accounts.

The annual headline inflation was 3.67 percent during the reference period, which compares favorably to both the figure of the second quarter of the current year that was 3.96 percent and the lower limit of the forecast interval Banco de México published in the previous Inflation Report, which was 4.75 percent. This performance, with the merchandise core inflation behavior standing out, mainly reflects the national currency appreciation, the low world inflation, the negative output gap, as well as other seasonal and juncture factors, especially the intensified competition among some retail chains. All of these appear in the context of a prudent monetary policy aimed at achieving the inflation target.

In this context, Banco de México decided to revise the inflation forecast intervals downwards for the next two quarters: 0.50 percentage points for the fourth quarter of 2010 and 0.75 percentage points for the first quarter of 2011. Thus, the corresponding intervals are: 4.25 percent to 4.75 percent for the fourth quarter of 2010 and 3.75 percent to 4.25 percent for the first quarter of 2011. For the second quarter of 2011, annual headline inflation is expected to lie between 3 and 4 percent, and from the third quarter of 2011 onwards it is expected to converge towards the medium-term target of 3 percent, bearing in mind the variability interval of +/-1 percent. It is also noteworthy that a change in the manner of presenting the major macroeconomic variables, in particular inflation, is announced in this Inflation Report. The forecast intervals of a half-percentage point that have been used before were highly useful for anchoring inflation expectations considering the supply shocks that affected the price formation process during the last three years. Particularly, by the end of 2009 when a significant inflation rebound was expected for the beginning of 2010 due to both diverse fiscal adjustments and increases in public sector's administered prices and fares for goods and services, the forecast interval clearly signaled a temporary character of this inflation rebound and that it would gradually converge towards its target afterwards. As this convergence is expected to be achieved by the middle of the next year, Banco de México's forecasts, both of inflation and economic activity, will be presented by means of Fan Charts from the second quarter onwards, as detailed in the body of this report.

Considering the aforementioned, Banco de México's Board of Governors decided to maintain the overnight interbank interest rate target



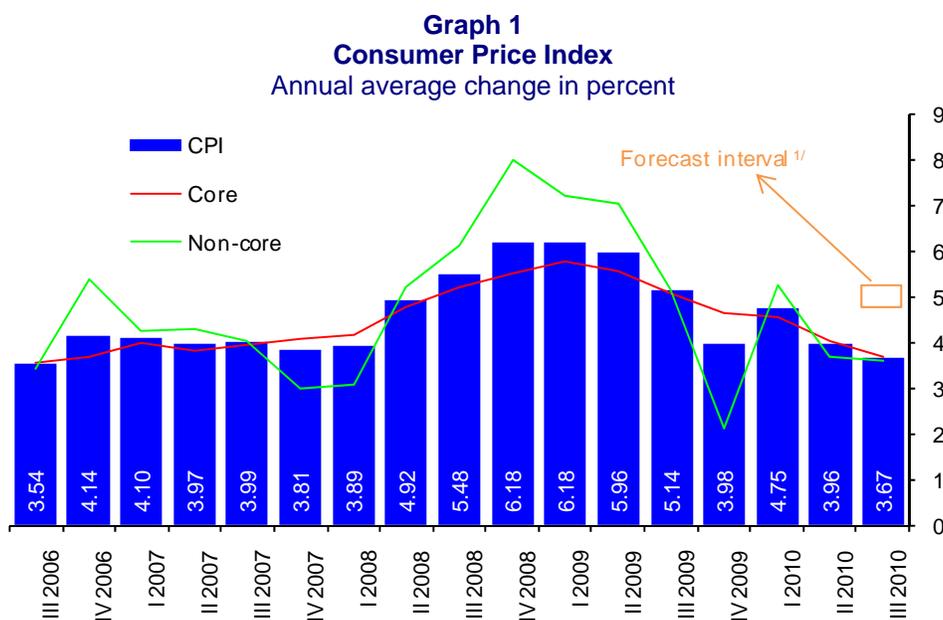
unchanged during the months of July, August, September and October of the current year. It will continue to monitor inflation expectations, output gap, public prices, grain prices, as well as other inflation determinants that might signal unexpected and widespread pressures on prices. All of this so that, in such eventuality, the central bank could adjust its monetary policy stance in order to reach the 3 percent target by the end of 2011.

2. Recent Developments in Inflation

2.1. Inflation

During the third quarter of 2010, average annual headline inflation was 3.67 percent, 0.29 percentage points lower as compared to the second quarter (Graph 1). This decrease was mainly caused by a smaller contribution of the CPI's core component. In fact, 0.25 points of this reduction are attributable to this element (Table 1).

During the analyzed period, annual headline inflation was 1.08 percentage points below the lower limit of the interval forecasted by Banco de México (4.75 percent, Graph 1).



Source: Banco de México.

1/ This forecast, which was originally published in the Addendum to the Inflation Report of July-September 2009, remains unchanged.

The average annual core inflation was 3.70 percent during the third quarter of 2010 (in the second quarter it was 4.05 percent, Table 1). This indicator decreased as a result of the lower inflation of the merchandise price subindex, whose average dropped from 4.34 percent during the second quarter to 3.57 percent during the third quarter (Graph 2). This subindex was mainly affected by three factors: i) appreciation of the national currency partly as a result of the abundant global liquidity (Graph 3a); ii) low inflation level in advanced economies (Mexico's main trading partner, U.S., among them, Graph 3b); and iii) increased competition among some retail chains leading to a considerable increase in price markdowns (Graph 4). Besides, the negative output gap has also contributed to the reduction in the upward pressures on the general price formation process.



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

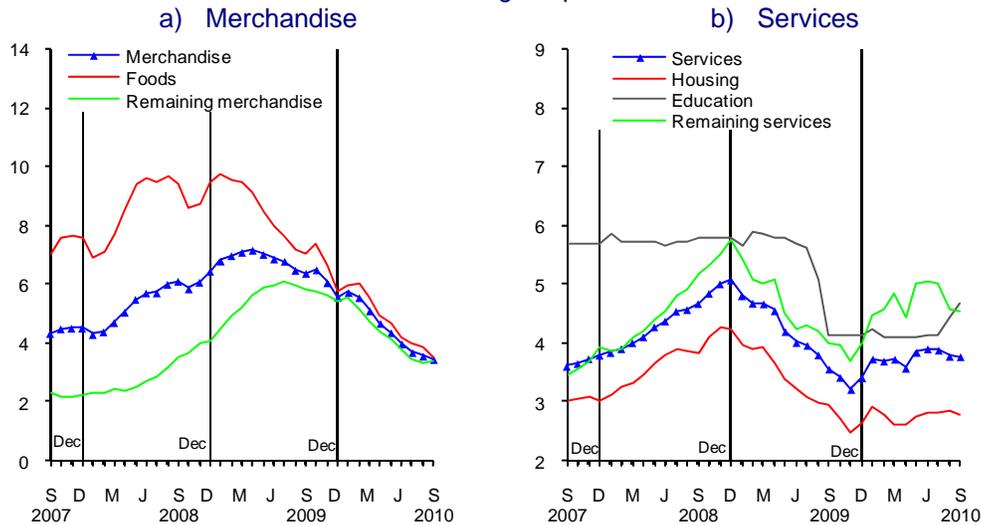
	Average Annual Change Percent		Average Incidence ^{1/}		Difference
	II-Q	III-Q	II-Q	III-Q	
	2010	2010	2010	2010	(b-a)
CPI	3.96	3.67	3.96	3.67	-0.29
Core	4.05	3.70	2.98	2.72	-0.25
Merchandise	4.34	3.57	1.56	1.29	-0.27
Foods	4.58	3.77	0.75	0.62	-0.13
Remaining Merchandise	4.14	3.41	0.81	0.67	-0.14
Services	3.77	3.81	1.42	1.44	0.02
Housing	2.74	2.82	0.46	0.47	0.01
Education	4.11	4.41	0.25	0.28	0.02
Remaining services	4.83	4.70	0.70	0.69	-0.02
Medical services ^{2/}	4.32	4.75	0.11	0.12	0.01
Non-core	3.71	3.60	0.98	0.95	-0.04
Agricultural	0.70	-1.27	0.07	-0.12	-0.19
Fruit and vegetables	2.99	-3.81	0.11	-0.14	-0.25
Tomato	-14.84	-30.30	-0.08	-0.18	-0.11
Onion	125.87	23.21	0.13	0.03	-0.10
Potato	-0.44	-16.81	0.00	-0.05	-0.05
Livestock products	-0.74	0.44	-0.04	0.02	0.07
Chicken pieces	-0.92	2.03	-0.01	0.02	0.04
Administered and regulated	5.35	6.32	0.92	1.07	0.15
Administered	4.76	5.79	0.41	0.49	0.08
Electricity	8.24	8.94	0.20	0.20	0.00
Gas for residential use	-0.55	-0.96	-0.01	-0.02	-0.01
Low -octane gasoline	6.37	8.96	0.20	0.29	0.08
High-octane gasoline	3.59	3.70	0.02	0.02	0.00
Regulated	5.95	6.84	0.51	0.58	0.07
Local phone service	0.80	5.68	0.01	0.07	0.06

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, as well as 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/ Medical consultation, general hospitalization, surgery, dental care, laboratory analysis, birth hospitalization, clinical analysis, pregnancy consultation, medical care during childbirth, clinical analysis during pregnancy.

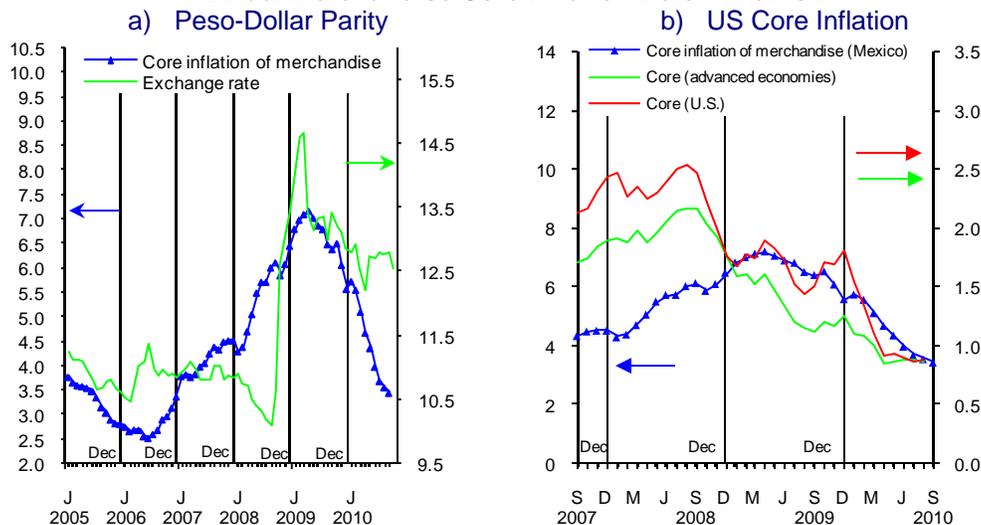
Intensified competition in the national commercial sector is estimated to have contributed to the reduction of headline inflation during the third quarter of 2010 by 12 basis points, as well as of core inflation and non-core inflation by 13 and by 8 basis points, respectively (Graph 4). The methodology used to calculate the referred contributions to the inflation change is presented in the Inflation Report, April-June 2010.

Graph 2
Core Merchandise and Core Services Subindices
 Annual change in percent



Source: Banco de México.

Graph 3
Annual Merchandise Core Inflation Determinants



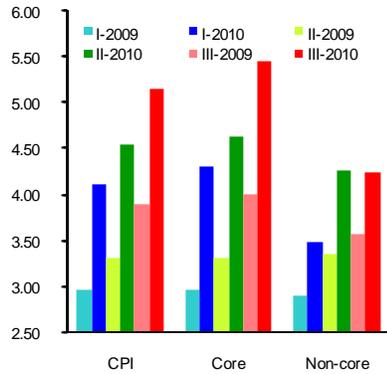
Source: Banco de México.

The reduction in annual core inflation during the third quarter was also reflected in its trimmed mean indicator,¹ which was on average 3.64 percent, while in the previous quarter it registered 3.80 percent (Graph 5). Thus, the lower core inflation was not only due to extreme price variations in some goods, but also due to a more widespread favorable behavior of goods and services prices of the whole core CPI basket.

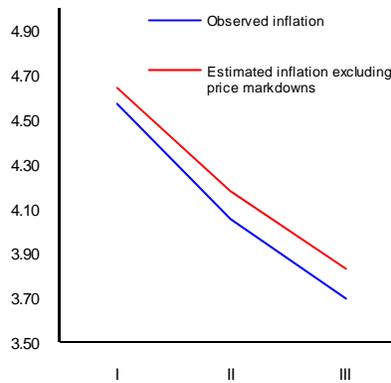
¹ The trimmed mean is an indicator that eliminates the contribution of extreme variations in some goods and services prices from headline inflation. To strip these variations, the following calculations are done: i) the monthly seasonally adjusted variations of CPI goods and services' prices are arranged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

Graph 4
Impact of Competition on Annual Inflation

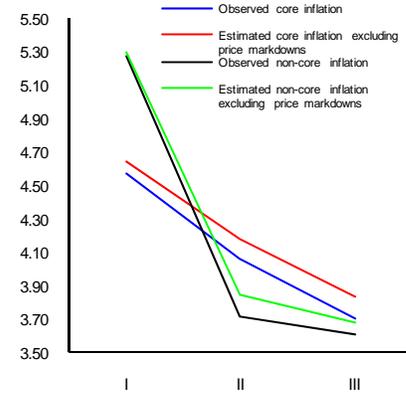
a) Frequency of Price Markdowns in the CPI Sample



b) Observed and Estimated Inflation, Excluding Price Markdowns

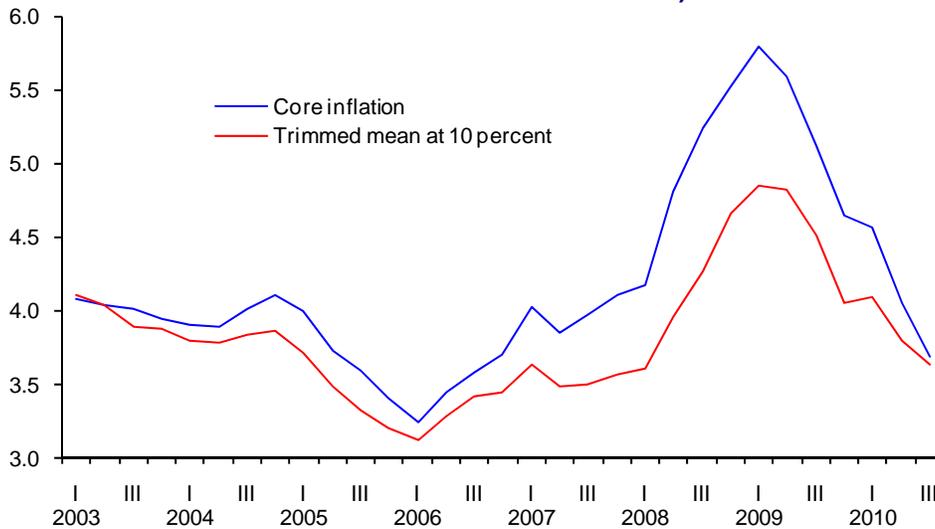


c) Core and Non-core Observed and Estimated Excluding Price Markdowns



Source: Banco de México.

Graph 5
Annual Core Inflation and Trimmed Mean (Excluding the Contribution of Extreme Upper and Lower Price Variations Trimmed at 10 Percent)



Source: Estimates by Banco de México based on CPI data.

The descending trajectory of core inflation during 2010 has been limited by certain downward inflexibility in the growth rate of the services price subindex (Graph 2b).² The prices of these subindex components have exhibited heterogeneous behavior. On the one hand, the average annual inflation of the housing price subindex in the third quarter of 2010 was 2.82 percent (Graph 2b).

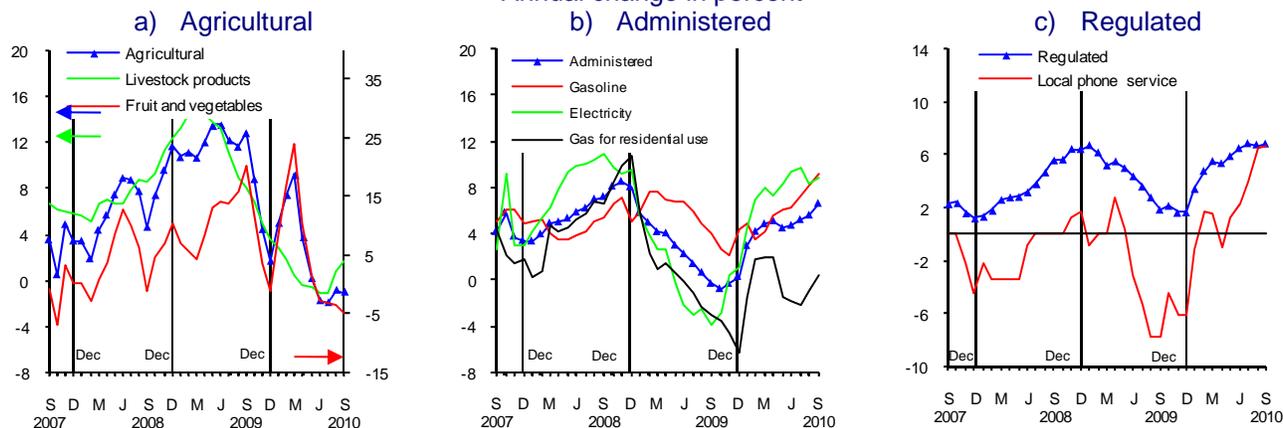
² In the Inflation Reports of the fourth quarter of 2008 and the third quarter 2009 Banco de México presented various considerations as to the possible rigidities of inflation. In the first case, the manner in which a lack of market competition, as well as other possible rigidities and distortions can temporarily affect observed inflation levels, as well as the response of consumer prices to the diverse demand or cost shocks are discussed (Box “Market Structure and Other Rigidities and Distortions: Effects on Observed Inflation”, pp. 9-10). In the second case, the origins and the possible types of rigidities that can be observed in the price formation process are presented, special attention paid to the case of services (Box “Price Setting under the Current Economic Environment”, pp. 7-11).

On the other hand, the annual inflation rates of the price subindices of education and remaining services reached 4.41 percent and 4.70 percent, respectively, in this period (Table 1).

The average annual non-core inflation was 3.60 percent during this quarter (in the second quarter it was 3.71 percent). This reduction was the consequence of the performance of fruit and vegetables prices, whose annual change rate declined from 2.99 percent to -3.81 percent between the second and third quarter of 2010 (Graph 6a). Nevertheless, this trajectory was partially counteracted by a higher contribution of administered and regulated goods and services prices subindex whose inflation rate has increased from 5.35 percent to 6.32 percent in the abovementioned quarters (Table 1 and Graph 6b).

The higher growth rate of administered goods and services prices was caused by the resumption of government's programmed increments in energy prices at the beginning of 2010 (Graph 6b). As mentioned in the Inflation Report, January-March 2010, the intention to align domestic energy prices with their international references has been pertinent in view of two considerations: first, to encourage sound public finances, and second, to achieve a more efficient resources allocation.

Graph 6
Non-core price subindex
 Annual change in percent



Source: Banco de México.

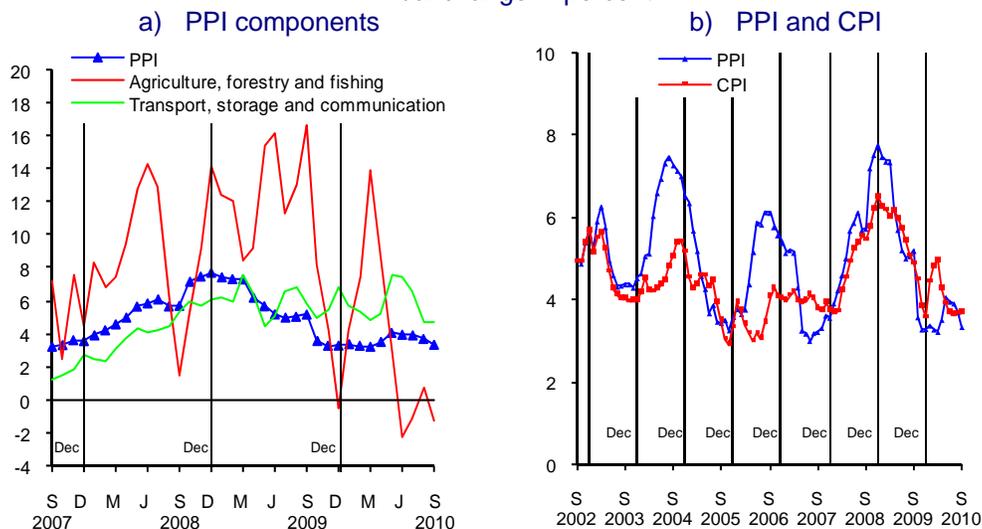
The annual growth rate of the regulated goods and services group was largely affected by phone services, an item that presented a low base of comparison since the substantial price markdowns for cellphone services fees, registered during the last year, have not been repeated in 2010. Thus, the annual inflation of the mentioned item increased from 0.80 percent in the second quarter to 5.68 percent in the third quarter (Graph 6c).

2.2. Producer Price Index

The Producer Price Index (PPI) of finished goods and services, excluding crude oil, recorded an annual average variation of 3.65 percent, as compared to 3.85 percent in the previous quarter, which is largely the result of a lower growth rate of some agricultural product prices (tomato, lemon, fresh chili-

peppers, potato and onion), as well as transport, storage and communication sector (Graph 7a).

Graph 7
National Consumer and Producer Price Indices
 Annual change in percent



Source: Banco de México.

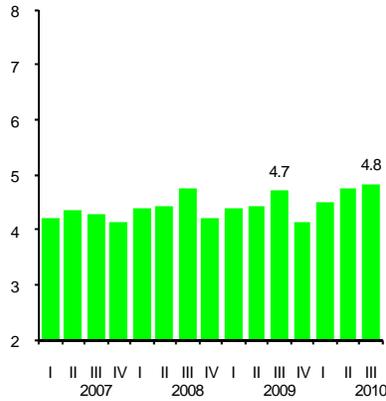
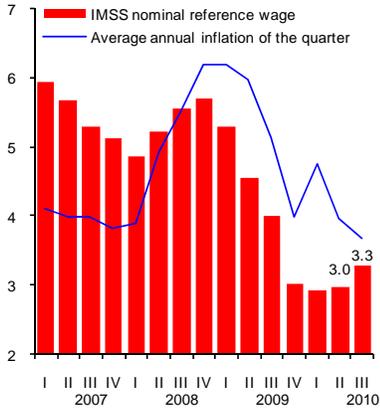
2.3. Wages

The recent performance of the wage indicators suggests that the labor cost dynamics have not generated inflationary pressures. In particular, during the third quarter of 2010 the IMSS reference wage (*Salario Base de Cotización, SBC*) exhibited an annual variation of 3.3 percent, which is lower than the annual headline inflation figure of the referred period (Graph 8a). In turn, the increase in the contractual wage, valid for a 1-year period, negotiated by firms under federal jurisdiction was 4.8 percent during the period July-September 2010 (in the third quarter of 2009 it registered 4.7 percent, Graph 8b).³ Finally, the average nominal income of total economy's workers exhibited an annual change rate of -0.3 percent during the second quarter of 2010 (Graph 8c).

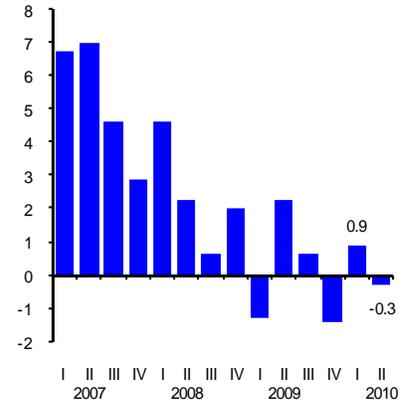
³ Contractual wages include only the direct increase in reference wage rate negotiated by the workers of the firms under federal jurisdiction and have a validity for the following twelve months. It is noteworthy that the monthly composition of this indicator is combined by the information of the firms' wage revision usually conducted in the same period of the year, thus giving them a seasonal pattern. Taking the abovementioned into account, the relevant comparison of this indicator is interannual.

Graph 8
Wage Indicators
 Annual change (percent)
 b) Contractual Wage^{2/}

a) IMSS Nominal Reference Wage^{1/}



c) Average Nominal Income for Total Economy^{3/}



Source: Calculated by Banco de México with data from IMSS, STPS and INEGI.

1/ During the third quarter of 2010 an average of 14.5 million of contributors were registered in the abovementioned institute.

2/ The number of workers in firms under federal jurisdiction that annually register their wage increase in the Secretary of Labor and Social Welfare (*Secretaría del Trabajo y Previsión Social (STPS)*) equals to approximately 1.8 million.

3/ The average monthly income is calculated based on the hourly wage and the number of hours worked in the given period.

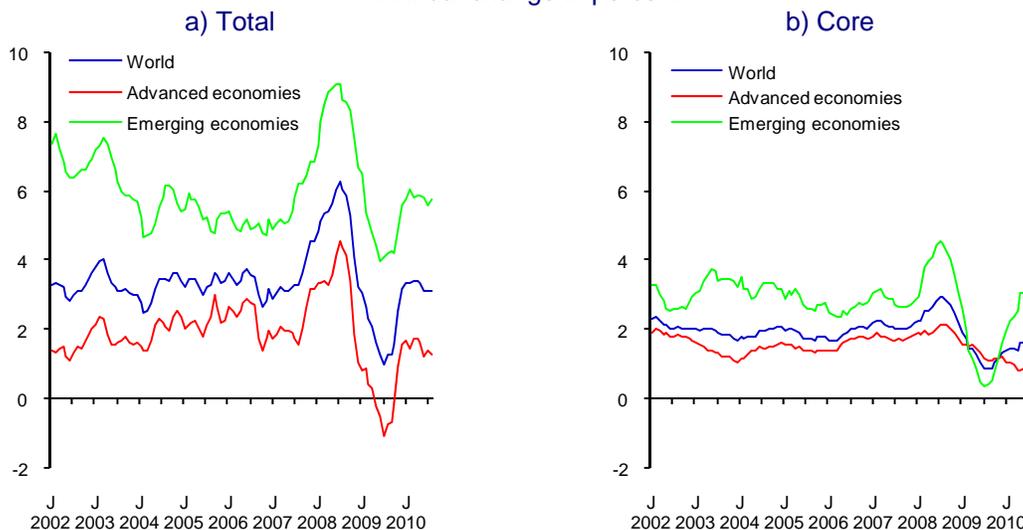
3. Economic and Financial Environment

3.1. External Environment

3.1.1. World Economic Activity

The world economy slowed down during the third quarter of 2010. The advanced economies continued recovering at a moderate pace and the unemployment level remained high, while the domestic demand remained subdued because of both households' efforts to improve their balances and the housing market weakness, which led to reductions in the levels of wealth. Besides, the international financial system remained fragile. In contrast, emerging economies in general maintained a more dynamic economic activity, although in some cases appeared signs of deceleration. World inflation remains at moderate levels (Graph 9a) and there are even concerns about deflation risks in some major advanced economies. In turn, some emerging economies endured inflationary pressures, mainly reflected by the development of core inflation (Graph 9b).

Graph 9
Consumer Price Inflation
 Annual change in percent



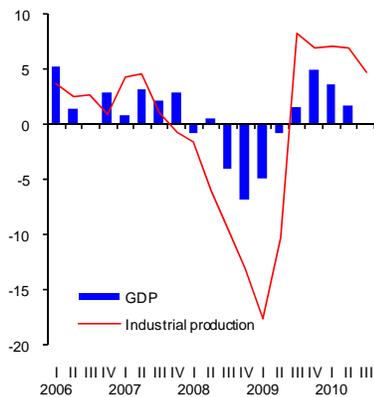
Source: IMF, WEO October 2010.

US GDP grew 1.7 percent in annualized quarterly terms during the second quarter of 2010 (Graph 10a), presenting a considerable reduction as compared to the growth rate of the previous two quarters (5.0 percent and 3.7 percent). This was influenced by the external sector's performance, whose contribution turned even more negative with respect to the previous quarter – reducing the growth rate by 3.5 percentage points– due to a strong increase in imports. In turn, consumption contributed 1.5 percentage points to the growth rate, slightly above the previous quarter's figure, while inventories' contribution declined to 0.8 percentage points.

US industrial production also registered a reduction of its growth rate during the third quarter, due to slower inventory replenishment, reflecting firms' concerns about weak consumer spending. Thus, after having grown 7.1 percent and 7.0 percent at an annualized quarterly rate during the first and second quarter, industrial production grew at a more moderate rate of 4.8 percent during the third quarter of 2010 (Graph 10a), and even registered a decline in monthly terms during September (-0.2 percent). Leading indicators point out to further moderation of industrial production growth during the fourth quarter. The utilization of productive factors is still low; in particular, the unemployment rate remains at a high level and the index of installed capacity utilization shows a slow recovery (Graph 10c).

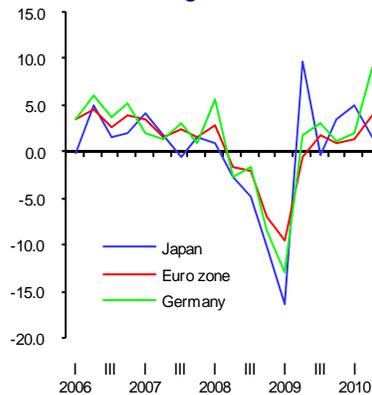
Graph 10
Economic Activity in Major Advanced Economies

a) U.S.: Growth of GDP and Industrial Production
Annualized quarterly percentage change, s.a.



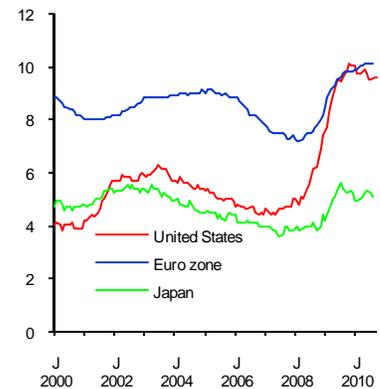
s.a. / Seasonally adjusted figures.
Source: BEA and Federal Reserve.

b) GDP growth in Japan, Euro Zone and Germany
Annualized quarterly percentage change, s.a.



s.a. / Seasonally adjusted figures.
Source: Cabinet Office and Eurostat.

c) Unemployment Rate in percent, s.a.



s.a. / Seasonally adjusted figures.
Source: BLS, Eurostat and Statistics Bureau.

From 1992 to 2007, US private consumption experienced its most prolonged growth period on records. This was mainly the result of exceptional conditions that prevailed during this period, including the almost uninterrupted increase in net household wealth until the second quarter of 2007 and the large, and ultimately unsustainable, expansion of credit to households.⁴ After decreasing considerably during 2008 and the first half of 2009, private consumption has recovered slowly. During the third quarter of 2010, available indicators show that private consumption expenditure continued increasing at a rate close to that of the second quarter of 2010 (2.2 percent in annualized quarterly terms), due to labor market weakness and households' need to increase savings and to deleverage (Box 1). These unfavorable conditions have been reflecting in consumers' confidence, which in October exhibited levels well below the pre-recession level. In turn, firm's expenditure in equipment and software remained at a higher level during the third quarter, although with certain signs of deceleration.

⁴ Households' net wealth decreased between the first quarter of 2000 and the third quarter of 2002 due to the decline in stock prices of information technology firms.

Box 1
Environment and Prospects of the Global Economy

The global economy is currently recovering from one of the most severe financial crises in history. The recovery has varied among countries and regions with the advanced countries facing moderate growth and some of the emerging countries growing at very high rates. This heterogeneity is related to the causes of the crisis, its evolution as well as the policies implemented to tackle it. This box presents a brief recount of the abovementioned factors and discusses the global economy prospects as well as the risks that it still faces.

1. Global Financial Crisis and Recession

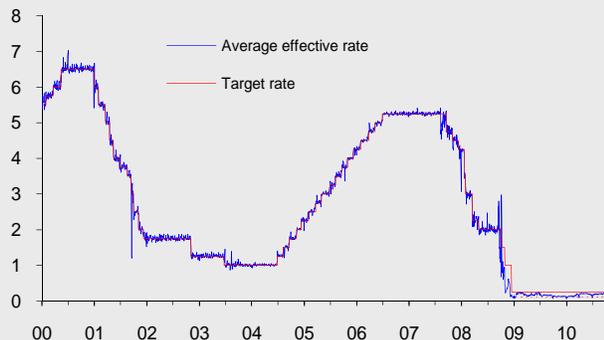
1.1 Financial Crisis Formation

The global financial crisis had its roots in various factors that fueled each other. Among these stand out the low interest rates prevailing in the major economies during the first half of the 2000s, the inefficient regulation and supervision of some countries' financial systems, as well as current account imbalances on a global level (see Inflation Report, October-December 2007, Box 1).

Interest rates remained low for a relatively prolonged period associated with a significant global excess liquidity. This became one of the most important causes of the housing price increase in some countries, mainly in the U.S. In turn, low interest rates resulted from a lax monetary policy in the major economies (Graph 1 for U.S. case), as well as capital flows from emerging economies with current account surplus, for example, China, other Asian countries and oil-producing countries, towards the countries with current account deficit, for instance U.S. (Graph 2).

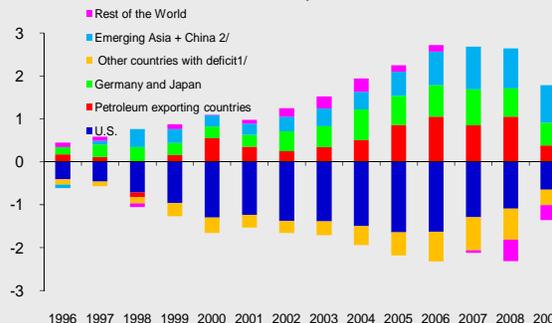
Low interest rates led to a search for yields, and, therefore, to increased risk-taking, especially by financial institutions. Thus, the abovementioned institutions became highly leveraged and held in their balance sheets assets riskier than expected, in particular, mortgage portfolios from the low rated credit sector. In turn, this process was favored by the financial system's inefficient regulation and supervision on a global level. Thus, the advanced countries' financial systems, mainly of the U.S., fueled the housing price increase and allowed private consumption to be located above the real spending capacity (see Inflation Report, October-December 2007, Box 1).

Graph 1
U.S.: Federal Fund Rates
Annual percent



Source: Bloomberg.

Graph 2
Global Imbalances
Annual percent



- 1/ Bulgaria, Croatia, the Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Turkey and the United Kingdom.
 - 2/ Emerging Asia: South Korea, Philippines, Hong Kong, Indonesia, Malaysia, Singapore, Taiwan and Thailand.
- Source: IMF, WEO, October 2010.

1.2 Outbreak of the Financial Crisis and Global Recession

In 2002, China joined the World Trade Organization, which, given its comparative advantages, caused a structural change leading to the relocation of various manufacturing processes to the Asian block. This, in turn, led to an increase in the commodity demand, raising its prices considerably (Graph 3). As a result of these inflationary pressures, various countries including U.S. responded by increasing their reference interest rates from mid-2004 onwards, which resulted in a cycle of monetary tightening that lasted various years (Graph 1).

Graph 3
Global Commodity Price Index
Index 2005=100



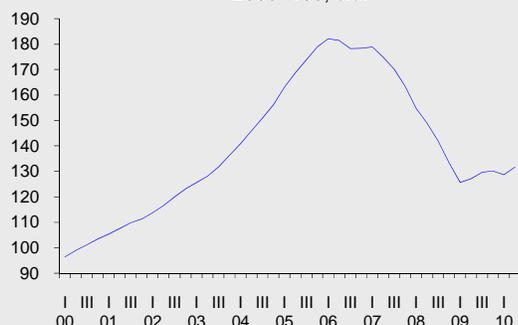
Source: IMF.

With increasing interest rates, the asset prices started to fall, among them, the housing prices, which changed their tendency in the U.S. in the first half of 2006 (Graph 4). In this environment, some mortgages, particularly from high risk sectors, started to default on their payments. This generated losses in financial institutions, which increased their financing costs (see Inflation Report, July - September 2008, Box 2).

Since this shock affected the whole financial system of advanced countries, there appeared certain doubts as to which degree each financial institution was exposed to *toxic* assets, which in turn generated a funding liquidity problem. To reduce the exposure to risk, the institutions started to sell their assets off, which caused a

liquidity problem in the market, as these *fire sales* led to a downward spiral in housing and other asset prices, increasing in this way the mortgage market defaults and aggravating the financial sector problems.

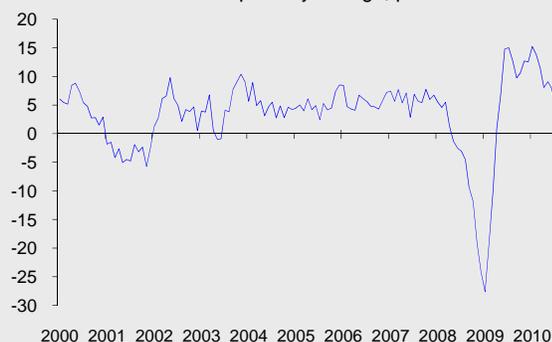
Graph 4
U.S.: Case-Shiller National Home Price Index of Single-Family Houses
 2000=100, s.a.



s.a. /seasonally adjusted figures.
 Source: Standard & Poor's.

Households' wealth decline caused by the asset price collapse, as well as the credit breakdown, resulting from the financial system problems of the U.S. and other advanced countries in the end strongly affected the real economy. In the U.S. the industrial activity collapsed and the unemployment reached levels unseen since the Great Depression. The world economic growth started to slow down since the middle of 2007, followed by a sharp fall and reaching its lowest level at the end of 2008 and the beginning of 2009 (Graph 5). World trade followed a pattern similar to that of economic activity (Graph 6).

Graph 5
World Industrial Production Index
 Annualized quarterly change, percent



Source: CPB Netherlands.

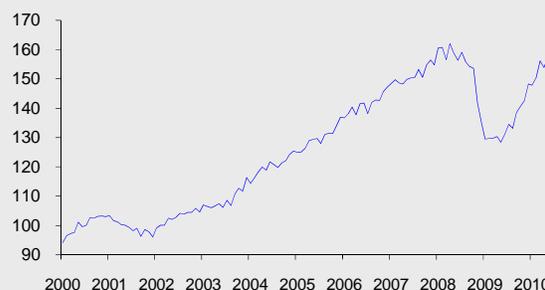
1. Economic Policy Response and Recovery Period

The global policy response had two objectives: first, to avoid the financial system collapse, as well as to restore the functioning of the markets, for instance, interbank market, which were not operating orderly; and second, to promote the economic activity recovery.

To reach the first objective, the Federal Reserve, the European Central Bank, as well as other central banks provided the financial system with considerable resources, which increased liquidity on the international level. This was achieved by decreasing interest rates to a historical minimum, which in many countries was even very close to the lower limit of zero from the end of 2008 onwards

(Graph 1, in U.S. case). Additionally, liquidity was directly injected to the institutions in need by means of various programs, in some cases supported by substantial fiscal resources (see Inflation Report, April – June 2008, Box 1 and Inflation Report, July – September 2008, Box 2).

Graph 6
World Trade Volume Index
 2000 = 100



Source: CPB Netherlands.

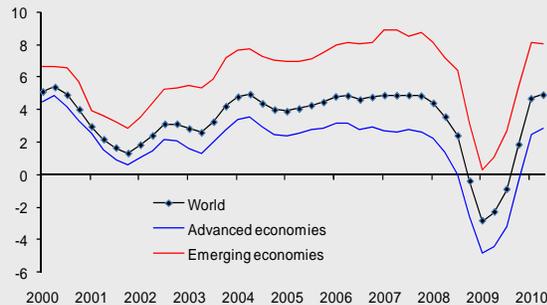
Various measures were taken to promote the economic activity recovery. As mentioned before, the monetary policy stance was relaxed, principally in advanced countries. This relaxation was not only achieved through interest rates' decrease, but also through the implementation of unconventional monetary policy measures, such as changes in composition and size of central banks' balance sheets, in order to continue with the monetary stimulus once the principal tool, which is the policy interest rate, has reached its lower limit (see Inflation Report, October – December 2008, Box 6). On the other hand, the fiscal stimulus conducted as part of the response to recession also reached its historic proportions. Taxes were reduced (in certain cases through temporary decreases in tax rates) and spending in various areas, both on federal and state level, increased (see Inflation Report, October – December 2008, Box 5).

From 2009 onwards the global economy began to recover, although slowly and with variations among regions and countries (Graph 7). In the advanced countries the recovery has been moderate with unemployment levels still being high. In emerging countries, in particular in the Asian countries, the recovery has been a lot faster, with growth rates reaching in certain cases the pre-recession levels.

In some of the advanced economies the potential output possibly decreased, caused, for instance, by an important adjustment in housing prices which is usually the main component of households' wealth, the adjustment in other asset prices, as well as the perception of lower wages in the future. To the extent to which the income change has been permanent, the consumption would also permanently decrease. This kind of drop cannot be stopped easily by tax and monetary policies, although it can be diminished temporarily.

Nevertheless, although the implementation of expansive fiscal policies or financial support has boosted the economic recovery, they have also contributed to the deterioration in these economies' fiscal position. In some southern European economies, the recovery has been slow, or even reversed, due to the international market doubts regarding the sustainability of their fiscal accounts and sovereign debt. These doubts increased at the beginning of the second quarter of 2010, spreading the fear of a new global financial crisis, which required new central banks' interventions, in particular the European Central Bank as well as other international organizations, such as the IMF. (See Inflation Report, April – June 2010, section 3.1.4.)

Graph 7
Real GDP Growth
 Annual change (percent)



Source: IMF, WEO October 2010.

In the rest of the advanced economies, although the development of their fiscal accounts and public debt did not cause concern similar to that observed in some of euro zone economies, expansive policies cannot be followed indefinitely. Eventually, these economies will have to consolidate their public finances in order to ensure the sustainability of their fiscal positions and debt levels. Nevertheless, the low inflation rates and the inflation expectations still anchored in these economies could allow the monetary stimulus to maintain for a longer period, accommodating the fiscal stimulus withdrawal.

In some emerging economies, for instance, China and some other Asian countries, the recovery has been based on the export-led growth policy. Implicit or explicit subsidies given to domestic firms to increase their competitiveness on the international level have been an important factor in this strategy. Maintaining the exchange rate depreciated and wages low and in general, limiting domestic consumption and encouraging savings have been among the measures taken to achieve that. The resulting current account surplus allowed accumulating international reserves at levels close to 50 percent of their GDP, for example, in China. In turn, the policy of sterilizing reserve accumulation also contributed to limit domestic consumption.

One of the consequences of the export-led growth strategy and the recovery of the countries following this strategy is the international commodity demand increase. In turn, this has benefited other export-driven emerging economies through the improvement in their terms of trade, which is reflected by their currency appreciation. For example, this is the case of Brazil and other Latin American countries that export inputs to China and foodstuffs to China and India.

Nonetheless, it is noteworthy that the necessity to adjust spending patterns in advanced economies, U.S. and some European countries among them, may lead to an export demand weakening in emerging economies. In this context, the competition for export markets among these economies could be intensified. In this case the widespread adoption of export promoting growth strategies can deteriorate the global economy recovery process even more.

3. Current Situations and Prospects

3.1 Current Environment

In advanced economies with current account deficit, the domestic expenditure component faces problems in becoming the driving force of the economic growth. Hence, these economies would have to grow through a stimulation of their exports. To diminish their current account deficit a change in relative prices is needed, in particular a depreciation of the real exchange rate, which can be achieved through a depreciation of the nominal exchange rate, decrease in domestic prices, particularly for the non-tradable goods and services, such as houses, or the combination of both.

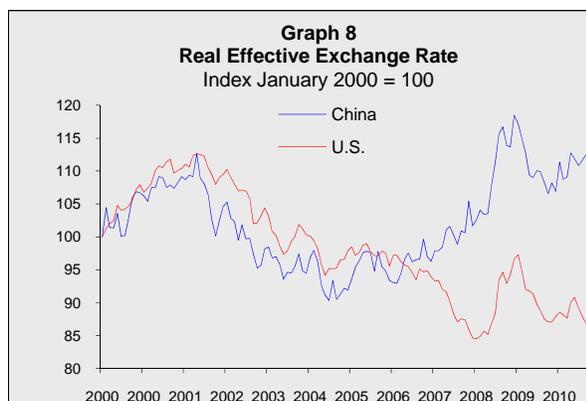
On the other hand, emerging economies with a current account surplus base their recovery on export-led growth. Nevertheless, given the problems in advanced countries, in particular the prospect of weak expenditure recovery in these countries, maintaining growth in emerging markets would require a greater development of their domestic markets. To decrease the current account surplus it is necessary to allow the appreciation of the real exchange rate, which in turn requires an appreciation of the nominal exchange rate, increase in the domestic prices, for example, in wages, or a combination of both. In the same way, it is necessary to take measures aimed at encouraging domestic consumption. Among those actions it is important to increase real wages in foreign currency, and to eliminate certain distortions that have led to the very high savings rate in these countries. In particular, it is essential to encourage the development of financial markets, as well as to strengthen social protection systems.

The real exchange rate has been adjusted in a slow manner (Graph 8). Global imbalances have decreased, although at least partially due to cyclical patterns, for instance, U.S. demand decline, and not due to more permanent changes (Graph 2). Nonetheless, at least part of it can be considered of a longer term, since the dollar has depreciated and U.S. households' savings rate has increased.

The adjustment of the global imbalances has been slow for various reasons. One of them is that a significant nominal depreciation of the dollar is difficult because it is detrimental to the countries with an export-led growth basis. In contrast, these countries seem to make significant efforts on the international level to avoid their currency appreciation.

Another reason is that a decline in domestic prices in the countries with a deficit requires a compression of domestic expenditure, which can be achieved through a decrease in household consumption, as well as through the fiscal stance consolidation. Nevertheless, this is not likely to be achieved soon, as the monetary and fiscal policy stance in advanced countries with a current account deficit remains lax in order to support the recovery of the short-term aggregate demand. In fact, in the context of low inflation, the objective of reactivating economic activity in advanced countries indicates that the monetary stance will remain lax for a considerable period. This has generated an excess liquidity in the global economy, just as in the period of the international financial crisis formation. Thus, the capital flows in search for higher yields are directed towards emerging economies that normally present a higher risk but at the same time offering higher yields. Nevertheless, these flows complicate the world growth, since they lead to an appreciation of the exchange rate and to upward pressures on asset prices in host economies.

For the economies basing their recovery on export-led growth, the received capital flows generate appreciation pressure on the exchange rate, which can affect the export competitiveness and can complicate the monetary management. As mentioned above, the appreciation appears as a result of both monetary factors, for instance, global excess liquidity, and fundamental factors, for example, increase in terms of trade. Nevertheless, it is the first type of factors that tends to affect export competitiveness. These economies have responded by taking measures to contain the aforementioned appreciation, such as taxing capital inflows and accumulating international reserves. Countries from Asia to Latin America have recently taken actions to moderate their currency gains against the dollar. At the same time, there is fear of a sudden reversal of these capital flows, which has been another reason that led these and some other host economies to increase their international reserves.



Note: Index increase implies an appreciation.
Source: BIS.

3.2 Prospects

Current world environment faces two important challenges. As mentioned above, advanced economies with large current account deficits and with unsustainable consumption expansions need to adjust their spending. This would imply a lower demand of these economies for the emerging economies exports. There is a risk that some economies will take steps aimed at retaining a bigger market share of a market, with the purpose of continuing growing through external sales. In particular, it is possible that in the context of the intensified competition among the export-oriented economies they could try to maintain their competitiveness by intervening in the exchange market, in order to depreciate their currency against the US dollar. The aforementioned in the context where, given the persisting global imbalances, this currency experiences depreciation pressures against the other currencies. Among other consequences this situation could lead to an environment of protectionism. A process of this kind could complicate the orderly adjustment of the global economy and cause a significant contraction of the world trade, jeopardizing the recovery process.

Thus, a generalized policy of sustaining economic recovery of the external demand through the depreciated real exchange rate is not a viable solution for the global economy as a whole. In particular, rebalancing the global demand patterns is necessary where, in the context of imminent weak expenditure in advanced economies, those economies with a large external surplus adopt measures to strengthen domestic markets to prevent the weakening of the global demand. Thus, a high degree of cooperation and coordination among various economies is required in order to reach agreements.

Precisely this kind of pressures on the world monetary system led to the signing of agreements and the creation of international financial institutions in the last century with the purpose of jointly resolving problems. One such example was the signing of the Bretton Woods agreement in 1944 by a number of nations. These agreements created an international monetary system in which the member countries committed themselves to maintain their foreign exchange rate fixed in terms of gold. The abovementioned agreements also established various institutions on an international level, for example, the International Monetary Fund (IMF). Another example is the agreement of Plaza in 1985, in which the G5 countries agreed on the currency appreciation for the countries with a surplus current account, such as Japan and Germany, as well as the fiscal contraction and currency depreciation in the countries with a deficit, such as the U.S. It is possible that in the future more international agreements of this kind will be required.

The second challenge is that the liquidity increase on a global level may generate a new asset price bubble, for example in the bond market or the housing market. Large capital inflows to emerging economies also generate concern as to what should be done when these capitals are withdrawn, given that this withdrawal can be abrupt, for example when eventually advanced economies start withdrawing the monetary stimulus or when some financial disturbance causes the capital to move to safer places.

The US labor market did not show a significant improvement during the third quarter and this caused concerns that its existing precarious situation, reflected in low employment growth, could also manifest as structural change and not only cyclical effects. After decreasing slightly during May and June, the unemployment rate increased marginally to 9.6 percent in August, which remained unchanged during September, although output continued growing and private sector's job vacancy rate increased.

The Euro zone registered a considerable increase in its GDP growth rate during the second quarter (3.9 percent in annualized quarterly terms, as compared to 1.4 percent during the previous quarter, Graph 10b). Nevertheless, the countries of the region recovered heterogeneously and faced obstacles, particularly in its periphery. The region's rebound in economic activity is mainly driven by the good performance of the German economy, still benefiting from the weak euro and strong international demand for capital goods, although its financial system could represent a risk of not achieving sustainable growth. For the third quarter, timely information points to a decrease in the growth rate of the area.

In turn, Japan's GDP grew by 1.5 percent in annualized quarterly terms during the second quarter, figure considerably lower than the one observed during the first quarter (5.0 percent). This was the result of the lower contribution of net

exports and private consumption expenditure, as well as a reduction in inventory accumulation.

Emerging economies' growth has been moderating, although it remained at higher levels than that of advanced economies. The relatively higher growth rate in Asian countries stands out, where the recovery was mainly driven by the private sector and no longer by the public sector. The annual growth rate of industrial production in China and India was lower during the third quarter, although it remained high. In Latin America, economic growth during the second quarter remained solid, mainly supported by dynamic domestic demand and increased exports. Timely indicators of economic activity in the third quarter point to lower growth in the region, due to a moderation of the inventory replenishment process and lower external demand.

3.1.2. Commodity Prices

International commodity prices behaved heterogeneously during the third and so far in the fourth quarter (Graph 11). Energy price quotes fluctuated around the first quarter's levels, as a result of a global production that was sufficient to satisfy demand growth and US inventories that remained higher than the average levels registered during the last four years.

International prices for metals exhibited an upward trend during the period, stimulated by higher demand for industrial metals by emerging Asian countries, as well as increased precious metals prices derived from higher demand by investors, who used them as an investment alternative given uncertain international financial markets and the world economic outlook.

The grain market also experienced a rebound, basically due to the increased international wheat price (caused by severe droughts and export restrictions in producer countries in the Black Sea region).

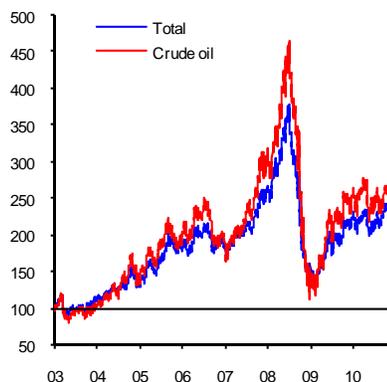
Finally, since commodity price quotes are usually denoted in USD, the depreciation of this currency also led to upward pressures on them (Box 1).

Nevertheless, commodity prices, excluding precious metals, are still below the levels observed during the first quarter of 2008. Until now, the behavior of commodity prices has not affected significantly world inflation, with some exceptions (e.g., Russia experienced inflationary pressures due to grain prices).

**Graph 11
Commodity Prices**

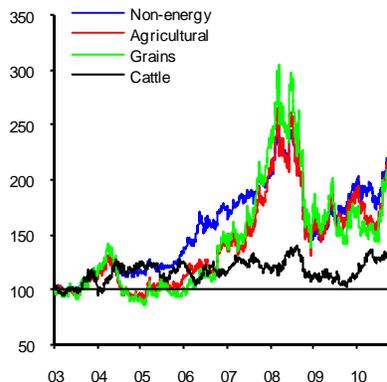
Index December 31, 2002=100

a) Total and Crude Oil



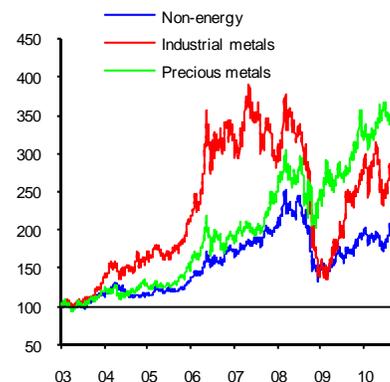
Source: S&P GSCI.

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 major advanced economies remained at low levels during the third quarter and there even seemed to be concerns about deflation risks. Inflation behavior was still dominated by the weakness of the economy that has generated lax conditions in the productive factors' markets.

In the context of historically low inflation and inflation expectations, and given widespread lower growth prospects in advanced economies during the last months, the major central banks reasserted their decision to maintain their extremely loose monetary stance for a longer period. In this environment, the Bank of Japan reduced its reference interest rate at the beginning of October from practically zero (to a range between 0 and 0.1 percent) and announced a new 5-billion-yen program for purchasing government notes, commercial paper, corporate bonds and stocks (investment funds and real estate investment trusts), among others. In turn, the Federal Reserve and the Bank of England signaled their disposition to adopt new measures of monetary easing.⁵ Given that the policy rate of most of the major central banks remains close to zero, a further accommodation would mainly include the so-called "quantitative measures" (Box 2). It is worth mentioning that the degree of global monetary easing, in particular in the major advanced economies, is unprecedented.

In the U.S., annual headline inflation was 1.1 percent during the third quarter (Graph 12a), despite an increase in the energy and foods components. In turn, annual core inflation was 0.8 percent in September (0.9 percent from April to August), representing its lowest level since the beginning of the seventies and it was much lower than its average since 1990, which was 2.6 percent. This can be explained mainly by the slack of productive capacity. In this context, the Federal Reserve Bank announced in September its decision to keep the federal funds rate unchanged in the interval of 0-0.25 percent. Further, it explained that the observed

⁵ On August 10, the Federal Open Market Committee (FOMC) announced its decision to keep the Federal Reserve's holdings of securities constant at their current level by reinvesting principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury securities. Additionally, the Committee mentioned that it will continue to renovate its Treasury bond holdings at maturity.

level of inflation rate is below those levels that would promote price stability and maximum employment in the long term.

Box 2 Unconventional Monetary Policy Measures

This box first describes conventional or traditional monetary policy, as well as circumstances under which it tends to lose effectiveness. Following, unconventional policy measures, as the ones recently implemented by some advanced economies' central banks, are analyzed. Finally, the risks of adopting some of these unconventional measures are discussed.

1. Conventional Monetary Policy

In most cases, to pursue their price stability objective, central banks use a short-term nominal interest rate as operational target of their monetary policy.

Particularly, a central bank affects the conditions under which the interbank market's liquidity needs are satisfied aiming at determining the short-term interest rate. In turn, medium- and long-term interest rates depend on the expectations about future short-term interest rates and the inflation expectations for different horizons, among other factors. Hence, central bank-induced changes in the short-term interest rates usually affect the longer-term interest rates.

The aforementioned changes in the nominal short-term interest rate also affect the economic activity and its prices through various channels. The Monetary Policy Program 2010 explains more detailed the different transmission channels of the monetary policy.

In particular, a positive demand shock that favors excess aggregate spending with respect to economy's potential income, leads to an increase in inflation, possibly exceeding the explicit or implicit central bank's target. In this scenario, the monetary authority can increase the short-term interest rate, aiming at moderating aggregate spending and thereby encouraging inflation tends to return to its target.

In the case of a negative demand shock (e.g. if private agents lose confidence in the economy and consume or invest less, the inflation may undershoot its target), the monetary authority can reduce the short-term interest rate, aiming at stimulating the aggregate spending and thereby encouraging inflation to return to its target and economic activity to recover. These strategies constitute the so-called traditional or conventional monetary policy measures.

2. Situations when Conventional Policy is not Effective

However, although in most situations the traditional monetary policy functions as described above, under certain circumstances it loses its effectiveness (Bini Smaghi, 2009), as demonstrated by the following examples:

2.1 Policy Rate close to Zero

First, if the policy or reference rate is zero or close to zero, the monetary authority cannot reduce it further and therefore cannot stimulate aggregate spending by the described mechanisms. This is explained by the fact that the nominal interest rates cannot be below zero, since no economic agent would be willing to grant credits or make deposits at a negative nominal interest rate. Therefore, the option of holding the resources in cash and gaining a zero nominal yield is preferable to a negative yield.

This situation is particularly problematic for the monetary authorities when inflation expectations are below the inflation target (Koenig and Dolmas, 2003). The consumption and investment decisions of households and firms depend on the ex-ante real interest rates, which correspond to the difference between the nominal interest rate and the expected inflation rate. So, even if the nominal interest rate does not increase and remains at a level close to zero, the ex-ante real interest rate still might increase if economic agents expect a lower or even negative inflation rate. The lower the expected inflation, the higher the ex-ante real interest rate, which would depress even more economy's spending.

If nominal interest rates approach zero, financial institutions tend to be indifferent between granting a credit and holding cash in their portfolios given that both options tend to generate similar yields. In this context, commercial banks have no incentive to grant credits, due to which the liquidity provided by the central bank would remain as reserves within their balance sheets. An economy under these conditions is said to be caught into a *liquidity trap*, where increasing liquidity to ease monetary conditions is not efficient to encourage economic activity.

2.2 Dysfunctions of Financial Market Operations

Second, even if the policy rate is not close to zero, the traditional monetary policy may lose effectiveness during episodes when the normal functioning of financial markets is interrupted (Bini Smaghi, 2009). For instance, in an environment of high uncertainty, loss of confidence, financial institutions' solvency problems and elevated counterparty risk, economic agents may opt out of financial markets. Under these conditions, the higher risk and liquidity premia for diverse financial instruments can lead to higher interest rates even if the central bank holds the short-term interest rate at low levels.

In an environment of increased uncertainty where economic agents decide to opt out of financial markets and financial institutions restrict their conditions for granting credits, households and firms may have less access to financing sources. Under these conditions, the medium- and long-term interest rates are no longer an important reference guiding private agents' consumption and investment decisions.

3. Unconventional Monetary Policy Measures

Even if the policy rate is close to zero and it is not possible to reduce it any further, central banks can resort to unconventional monetary policy measures to influence monetary conditions (Bernanke, 2009).

3.1 Commitment to Maintain a Low Policy Rate for a Prolonged Period

It is important to bear in mind that medium- and long-term interest rates largely depend on the current short-term interest rate and its expected future trajectory. Hence, the central bank can affect the interest rates at different horizons by influencing economic agents' expectations about future short-term interest rates.

Particularly, if inflation undershoots its target and the reference interest rate is close to zero, the monetary authority can additionally stimulate the aggregate demand and thereby encourage economic activity, by formally committing to sustain the policy rate at a reduced level until the inflation rate returns to its target. Depending on the extent of credibility of this commitment, the monetary authority can influence the longer-term interest rates and ultimately the private agents' spending (Bernanke, 2009, Bernanke y Reinhart, 2004).

3.2 Quantitative Easing Measures

Additional measures the central bank can use if the reference interest rate is close to zero are the so-called quantitative easing measures, which mainly refer to the purchase of financial assets by the central bank. Before explaining in detail these types of measures and the way central banks can use them to influence the asset prices and the financial conditions in general, it is worth mentioning that quantitative easing measures do not belong to the monetary authority's daily operations and that they only have been used by some advanced economies' central banks in extreme situations and always as a measure of last resort.

During the last two years, some financial market segments stopped operating adequately, as a result of higher uncertainty in these

markets driven by an increased counterparty risk among financial institutions. Therefore, diverse quantitative easing measures have been implemented by some advanced economies' central banks. Given the possible solvency problems faced by diverse financial institutions, various institutions sold some of their riskier assets in an attempt to improve their financial position. Nevertheless, to the extent to which these sales became more widespread among market participants, the related prices declined significantly. This, in turn, worsened the abovementioned insolvency problems. Thus, given a possible episode of systemic risk due to the existing interconnections among financial institutions and markets, some central banks opted for implementing financial asset purchase programs with the purpose of containing the strong decline in some financial asset prices and reestablishing the orderly functioning of financial markets. These measures also aimed at containing the financial market's problems, as far as possible, to prevent that its effect on the real sector of the economy might lead to a depression in the economic activity and to deflation, as well as reestablishing the conditions for the normal functioning of the monetary policy transmission mechanism.

Recently, although the conditions of advanced economies' financial markets have been normalizing, the possibility of a second round of financial asset purchases by some advanced economies' monetary authorities has been discussed in diverse fora (Bernanke, 2010a). This time, in an environment of a still not consolidated recovery of private spending in some advanced economies, the purpose of a second round of quantitative easing measures would be to further improve financial conditions. Thereby, the aggregate demand could be stimulated which would encourage economic activity recovery until inflation returns (from the low levels currently exhibited in these economies) to levels congruent with explicit or implicit long-term target. This also aims at reducing the deflation risk in these economies.

With respect to the effect of these measures on the economy, the following should be mentioned. In general, by purchasing financial assets, the central institute affects their demand and their price, i.e. tends to generate a price increase and, consequently, a reduction in the interest rate. By buying and holding certain types of assets in its balance sheet, the monetary authority reduces the relative supply of them available to private agents. Due to this relative increased shortage, the price of these assets remains at a lower level even when the central bank stops buying them (Bernanke, 2010a).

In order to describe how these monetary policy measures affect the economy, two dimensions will be analyzed in the following section:

- if the purchases of assets by the central bank are sterilized or not,
- if the central institute acquires assets issued by the government or by private institutions.

i) Sterilized and Non-sterilized Financial Asset Purchases

Regarding the sterilized purchases of assets, the central bank can alter the relative demand of financial assets by changing the composition of its balance sheet, which, in turn, may affect the relative prices of these assets and thereby the interest rates (Bernanke and Reinhart, 2004). For instance, the central bank can sell short-term public debt securities and buy long-term government bonds, thereby affecting the yield curve, in particular, favoring lower long-term interest rates. This mechanism works similarly if the central bank acquires private instruments.

The central bank can also realize non-sterilized purchases of financial assets, which are reflected by an increase in its balance sheet. By means of these purchases, the central institute can also influence the price of the acquired assets and therefore the corresponding interest rate.

Additionally, the monetary authority can affect the economy through a different channel. In particular, if the purchases of assets are not sterilized, the central bank can credit the accounts that the financial institutions, which sold these assets, keep in the central bank.

Nevertheless, the central bank does not realize transactions to offset the increased balance in commercial banks' accounts kept in the central bank. As result, a higher liquidity can be observed due to the increased reserves of the whole banking system. Under these conditions and with higher reserves available, the commercial banks could use them to grant higher credits to firms and/or households or to acquire other financial assets, affecting their prices (Bernanke and Reinhart, 2004; Murray, 2009). It should be highlighted that in an environment of uncertainty in financial markets, as observed during the recent crisis, this last channel could lose effectiveness to the extent to which banking institutions prefer to hold these deposited resources in the central bank, instead of granting credits or investing these resources in financial assets.

ii) Purchase of Assets issued by Government and Private Institutions

The purchases of government bonds by the central institute would tend to reduce the interest rates related to these instruments. In turn, the lower interest rates of government bonds are expected to induce economic agents to buy instruments issued by private institutions, reducing their respective interest rates as well, thereby improving financing conditions in the private sector (Klyuev et al. 2009).

It is worth mentioning that in an uncertain environment, the economic agents may not be willing to invest in risky assets and therefore, may abstain from acquiring these private instruments. Under these conditions, the central institute can decide to acquire instruments issued by private institutions, e.g. corporate bonds, asset-backed securities and commercial paper, among others. As shown by the recent crisis, this can be fundamentally important to reestablish the orderly functioning of these markets (Bernanke, 2009; King, 2009; Klyuev et al. 2009). In particular, given that the central bank buys these types of assets, it can contribute to improve confidence among financial market participants, favoring their disposition to invest in these assets.

Finally, it should be noted that the measures such as the central bank interventions in the exchange market have been classified as unconventional measures in some cases in the literature, e.g. the purchases of foreign currencies by the Swiss National Bank (Borio and Disyatat, 2009).

3.3 Risks Related to Quantitative Easing Policies

Although the quantitative monetary easing policies may allow central banks to reestablish the functioning of financial markets during episodes of systemic risk and/or to further stimulate the aggregate demand if the reference interest rate is close to zero and if there is a deflation risk, it is important to reassert that these measures should not be considered as instruments that a central bank uses under normal conditions.

As shown, the conditions faced by central banks that used these measures during the recent financial crisis have been exceptional. Generally, the experience in designing and implementing of these measures (Bernanke, 2010b), as well as the evidence that would allow to anticipate the possible short- and long-term consequences on the economy in general and on inflation in particular, is insufficient.

Regarding the risks associated with the use of these measures, it should be mentioned that the adoption of this type of measures can imply that the central bank does not only acquire government bonds but also other riskier financial assets, such as corporate bonds, asset-backed securities and commercial paper, among others. This would imply that the central institute bears a higher risk in its balance sheet. In certain scenarios, this could have adverse consequences on the central bank's balance sheet, e.g. the central bank could incur on losses related to holding these assets. In most cases, these losses end up absorbed by the treasury.

Another risk related to the use of these unconventional measures refers to the implications of the expansion in the central bank's balance sheet. As mentioned, non-sterilized purchases of assets by the central bank are usually financed by an increase in central bank's reserves. Considering that financial institutions can use these reserves to buy assets or grant credit, thereby increasing the amount of money in the economy, a credible exit strategy for the central bank is required, such that economic agents expect the removal of the monetary stimulus, once financial conditions normalize, the economic activity recovers and the inflation returns from low levels to levels congruent with the long-term target. Otherwise, the agents could expect the amount of money in the economy to be higher than the one congruent with an environment of price stability. Hence, long-term inflation expectations could increase, affecting the achievement of the prices stability target.

Therefore, for a central bank to be successfully using this type of measures, even under extreme conditions (situation of systemic risk in the financial system or the possibility of deflation), it is important for the central bank to have a record of price stability. The aforementioned requires a prolonged period of low and stable inflation, as well as sound public finances, which are necessary conditions to establish trust of the economic agents in the capacity and the commitment of the central institute to sustain price stability in the long term.

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In the Euro zone, the annual headline inflation increased slightly to 1.8 percent in September, after having declined to 1.6 percent in August, mainly due to increased energy prices. In turn, core inflation was, for the third consecutive month, 1.0 percent in September. The European Central Bank kept its policy rate unchanged at 1.0 percent during the third quarter. In Japan, the headline and core price indices exhibited an annual decline in August, for the 19th and 18th consecutive month, respectively.

Some emerging economies registered certain inflationary pressures during the third quarter of the year (Graph 12b). The annual consumer inflation in China was 3.6 percent in September, as compared to 2.9 percent at the end of the second quarter. India observed less pressure on food prices with respect to the second quarter; therefore the wholesale inflation was 8.6 percent during September, as compared to 10.3 percent in June. The annual consumer price inflation in Chile, Colombia and Peru was slightly higher in September than the one at the end of the second quarter, while inflation in Brazil and Mexico reduced, although in all cases inflation remained within its inflation target's variability interval. Given the signs of inflationary pressures, the monetary authorities of several emerging economies responded by taking various measures, such as: increasing reference interest rates (Brazil, Chile, China, Peru, Uruguay, India, Thailand and Pakistan), increasing the minimum reserve requirement (China, Indonesia, Turkey and Peru) and preserving direct limits of credit growth (China).

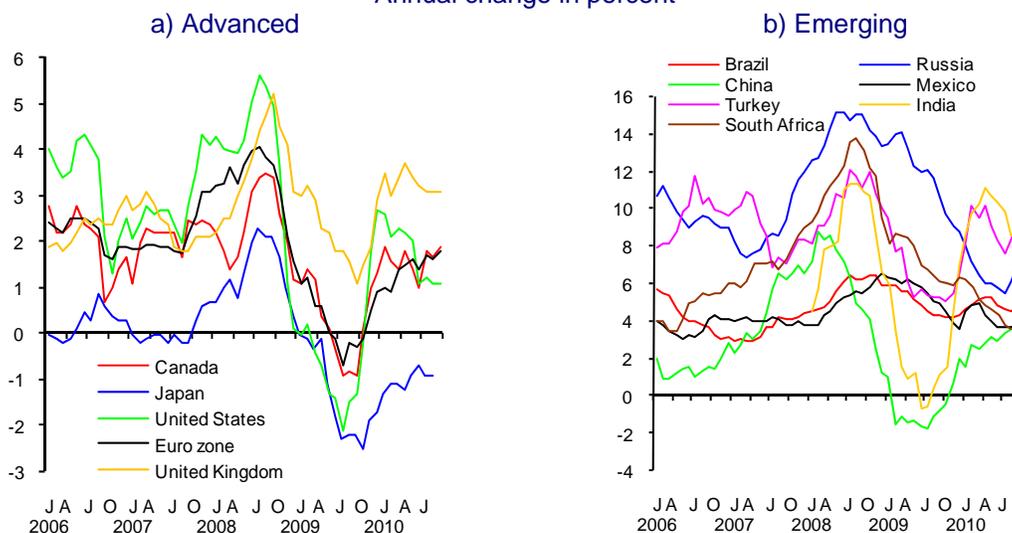
Although in the near future world inflation is expected to remain at low levels, its outlook within the next years could cause higher volatility. Two of the main factors that could lead to this development are:

- i. Inflation expectations vary substantially both among and within different economy groups. At one end, given the current phase of the economic cycle, some advanced countries are concerned about possible deflation

in the short term. At the other end, given the extremely accommodative policy stance maintained by various nations' central banks, there is the fear that this policy might lead to higher inflation in the future. Part of this monetary easing was aimed to stabilize the international banking system, as well as to stimulate aggregate demand in the main advanced economies. In this context, although not imminently, the risks related to the current situation are possibly badly understood, which leads to uncertainty about the world inflation prospects in the medium term. In particular, the high level of public debt in various economies contributes to higher inflation expectations, since these countries could be tempted to use this price increase for reducing (i.e. dilute) the real value of their debts.

- ii. An increase in the level and volatility of commodity prices has been observed, fundamentally due to two reasons: first, the rebound and fluctuations in some emerging countries' commodity demand (e.g., China and India) and second, the apparently more erratic world weather conditions, leading to higher volatility of international commodity prices, mainly of agricultural products.

Graph 12
Inflation in Selected Advanced and Emerging Economies
 Annual change in percent



Source: Country's statistics bureaus.

3.1.4. World Financial Markets

Financial market volatility decreased during the third quarter and so far in the fourth due to the attenuation of the concerns that the situation of some countries' banking sectors and public finances, particularly in the European periphery, could have systemic implications. The response to the sovereign risk problems in the Euro zone by the European authorities and the International Monetary Fund (IMF) represented an unprecedented effort for restoring the trust in financial markets. Due to the results of the stress tests, published in July, that has been applied to major European banks, the perception of the European banking system's vulnerability to macroeconomic and financial shocks lessened.

Nevertheless, between the beginning of August and the end of September, sovereign risk spreads increased in some countries, e.g., Greece, Ireland and Portugal, due to concerns about its fiscal situation and the costs associated to the bank support programs. The aforesaid developments, in contrast to those of May, did not lead to widespread contagion to other economies inside and outside the region. The announcement at the end of September of the new fiscal measures by Portuguese authorities, as well as the bank capitalization plans by the Irish authorities, have led to a certain decline in the sovereign risk spreads of these countries during October.

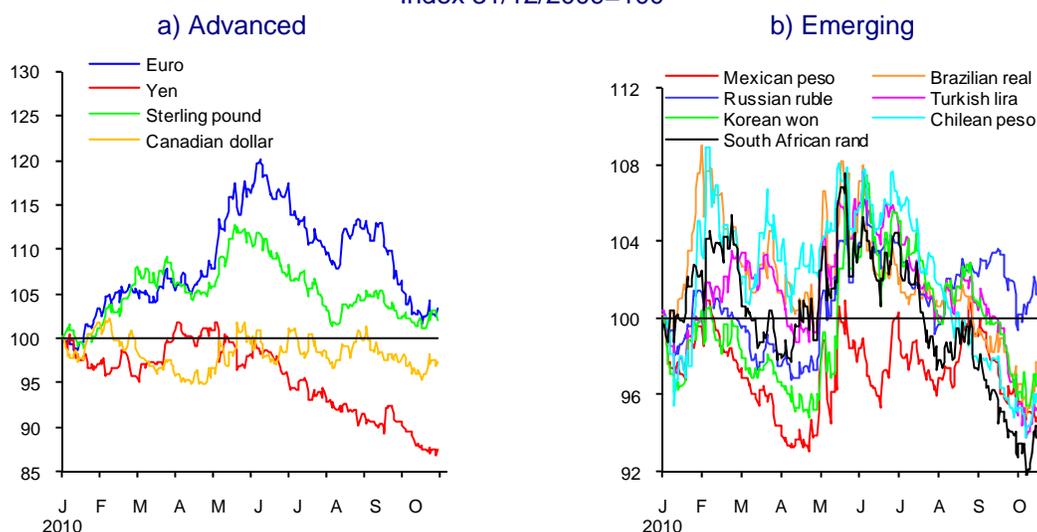
Financial institutions in many advanced economies are still highly dependent on capital and liquidity support from both the government and central banks. Commercial banks face the challenge of refinancing their high short-term debt maturities and improving their capitalization levels. Therefore, they remain exposed to confidence shocks. In general, banks' credit remained weak, reflecting the precarious position of intermediaries and the low demand of the private sector. In this context, the uncertainty originated by the European sovereign debt crisis is a risk factor that affects the growth prospects of this region, as well as those of the global economy.

On the other hand, the interest rates for major advanced economies' long-term bonds showed a downward tendency during the third quarter and the first days of October, given evidence that the economic recovery was weaker than formerly expected. Additionally, the perspective of new interventions by some central banks to affect some assets' yield rates accentuated this trend. In turn, the activity in the corporate and the sovereign debt markets increased due to low interest rates. In particular, corporate issuances reached their maximum levels of the year at the end of the third quarter. The securities markets in these economies regained an upward trend and reached considerable gains during the third quarter (with temporary declines in August) and so far in the fourth quarter, despite less optimistic global economy prospects. The main part of the gains, in general, was registered since September, when more favorable indicators of economic were released.

Advanced economies' exchange rates (euro, Sterling pound, Canadian dollar), after depreciating against the US dollar during the second quarter, recovered in the third quarter and the first days of October (Graph 13a). In particular, the euro recovered its losses registered since April, although remained below its level of the beginning of the year. The yen remained strongly demanded due to its role as an investment alternative and the liquidation carry trade positions. Among the main currencies, the yen was the one that registered the highest appreciation against the dollar since the beginning of the year.⁶ In general, the US dollar showed a depreciation tendency against practically all other currencies.

⁶ On September 15, Japanese financial authorities realized for the first time since March 2004 a direct intervention in the exchange market.

Graph 13
Advanced and Emerging Economies' Exchange Rates against the Dollar^{1/}
 Index 31/12/2009=100



^{1/} An increasing index equals a depreciation against the dollar.
 Source: Bloomberg.

As described in Box 1, the extreme laxity of major advanced economies' monetary policy and the expectation that this situation will remain for a prolonged period led to very low interest rates. This and other factors, such as the difference in growth rates among countries, has provoked the search for yields by investors, thereby generating considerable capital flows towards emerging economies, which in turn caused local currencies to appreciate (Graph 13b and Graph 14a). A decision by the Federal Reserve which would provide an additional monetary stimulus could accentuate this trend. In this context, several emerging economies try to prevent so-called excessive appreciations of their exchange rate by using different intervention mechanisms.⁷ This resulted in general in a significant increase of international reserves, by means of considerably increasing holdings of advanced economies' sovereign bonds, mainly from the U.S. This significant acquisition has contributed to maintaining low interest rates in these countries, which indeed closes a pernicious cycle that might have serious consequences on the world growth outlook. The policies of exchange market intervention (usually costly for the country conducting it) could eventually lead to increased protectionist policies. This would inevitably create a scenario of increasing weakness of global demand.

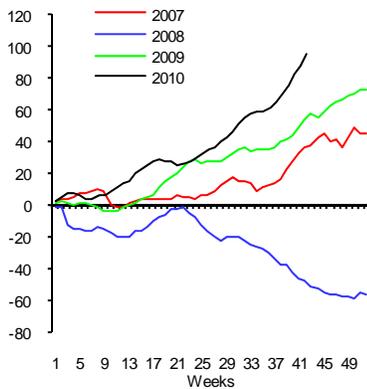
The increased demand for assets in emerging economies during the third quarter and so far in the fourth quarter generated high returns in some stock markets (Graph 14b). In turn, sovereign risk indicators have tended to decline (Graph 14c). The higher demand for financial and real assets in these economies, in case it continues or intensifies, could lead to the development of bubbles in these asset prices, which would be unsubstantiated by their

⁷ It is worth mentioning, that most of the emerging countries interventions in their exchange markets are sterilized. Nevertheless, these interventions do not always prevent the appreciation of their currencies, and can be expensive. Among the different mechanisms that have been implemented stand out: direct exchange market interventions through foreign currency acquisition; establishment or increase of taxes on foreign investors' financial activities; increases of minimum deposit requirements by non-resident financial institutions; and increasing limits for residents' investment abroad.

fundamentals. Indeed, as mentioned, this is one of the reasons why central banks of diverse capital-receiving economies have increased its reserve accumulation rates, besides trying to attenuate the strong appreciations of their currencies.

Graph 14
Financial Indicators of Emerging Economies

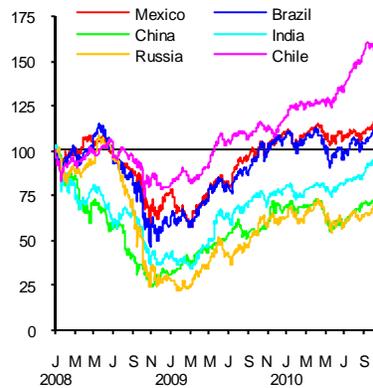
a) Accumulated Flows to Emerging Countries (Equity and Bonds)^{1/}
Billion USD



Source: Emerging Portfolio Fund Research.

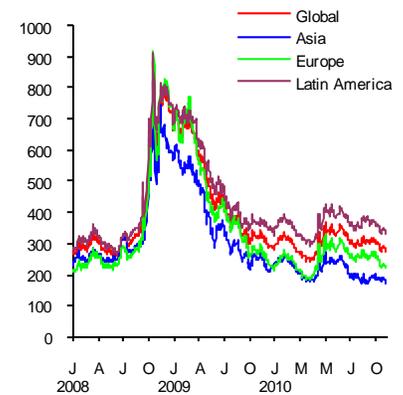
1/ The sample covers funds used for the purchase-sale of equity and bonds of emerging economies, registered in advanced economies' markets. Flows exclude portfolio results and exchange rate fluctuations.

b) Stock Markets of Selected Emerging Countries
Index 01/01/2008=100



Source: Bloomberg.

c) Sovereign Risk Spreads (EMBI) Basis Points



Source: Bloomberg.

An event that contributed to improving international financial conditions was the announcement of the Basel Committee on September 12, constituting an important agreement for strengthening the regulation of the international financial system, in particular with respect to new global capitalization standards. The objective is to increase banks' capacity for absorbing losses, promoting a more robust and resilient funding structure with respect to markets' volatility. The Basel Committee announcement was well accepted by the markets, anticipating the foreseeable impact of strengthening the national financial systems and thereby preventing a recurrence of a crisis, like the present one. It is worth mentioning that the agreed measures will be implemented gradually in line with the established calendar. In this way, the banking sector will be able to cover the main capital requirements through retaining of earnings and higher placement of capital. This will simultaneously contribute to strengthening the financial system and consolidating the global economy's recovery.⁸

In sum, despite the improved financial conditions in the third quarter and so far in the fourth quarter, in relation to the high volatility of the second quarter, the risk of a slowdown of the global economic recovery continued being an important source of uncertainty for the financial markets. Furthermore, although fiscal adjustment measures have been implemented in various European countries, concerns remain on whether these measures are sufficient for reverting the large fiscal deficits and, consequently, for reaching a significant reduction in sovereign debt risk.

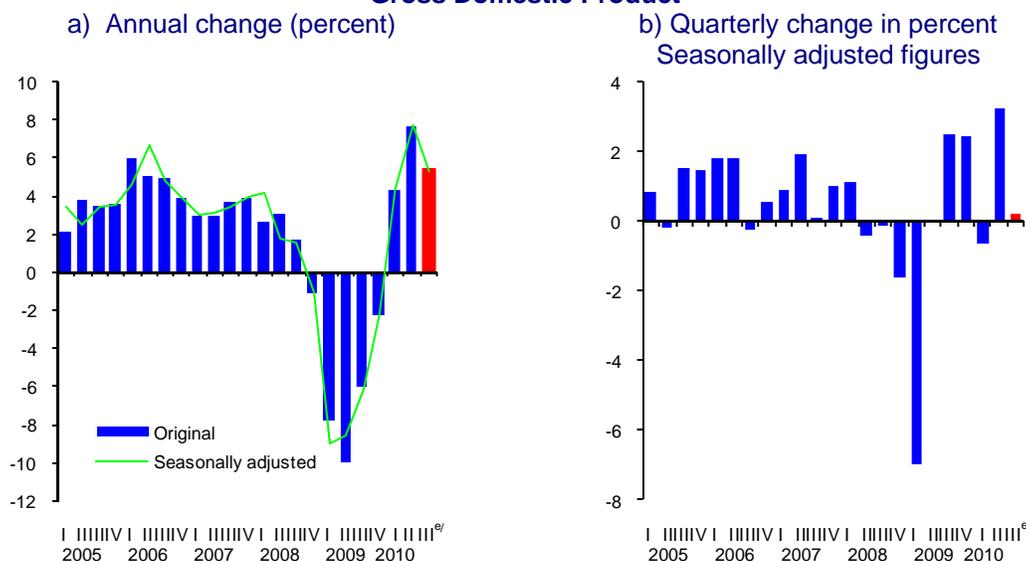
⁸ See press release of CNBV and Banco de México from September 12, 2010.

3.2. Developments in the Mexican Economy

3.2.1. Economic Activity

The recent indicators suggest that the Mexican economy experienced a slight moderation in its growth rate during the third quarter: the GDP is estimated to register an annual change of more than 5 percent, as compared to an annual growth of 7.6 percent in the previous quarter (Graph 15).

Graph 15
Gross Domestic Product



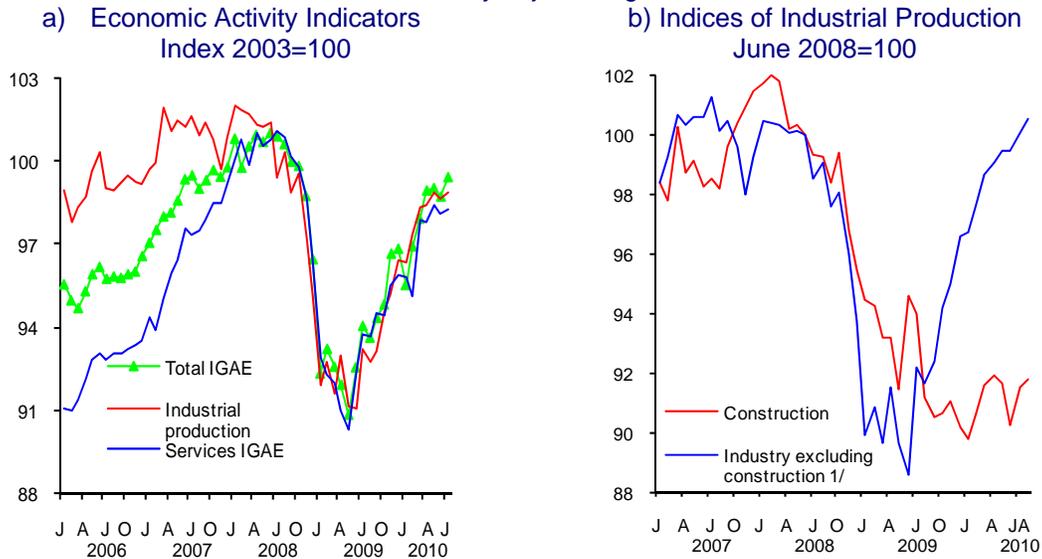
Source: Mexico's National Accounts System. INEGI. Seasonal adjustments for the third quarter of 2010 by Banco de México.
e/ Estimated.

In particular, the performance of the industrial and services sector in the recent months suggests that these sectors continued showing a positive trend, although their annual growth rates were slightly lower than the ones registered during the second quarter of the year (Graph 16a). Indeed, the industrial production in the months July – August 2010 was 6.7 percent higher than the one registered in the same period of 2009, and compared to an annual change of 7.8 percent in the second quarter. In turn, services exhibited an annual increase of 4.2 percent in July, after having grown by 7.6 percent in the period April – June 2010. These results reflect the combination of a lower growth rate of the external demand and the absence of a consolidation of domestic spending, which has hindered a favorable change in the trend of some sectors, e.g. construction (Graph 16b).

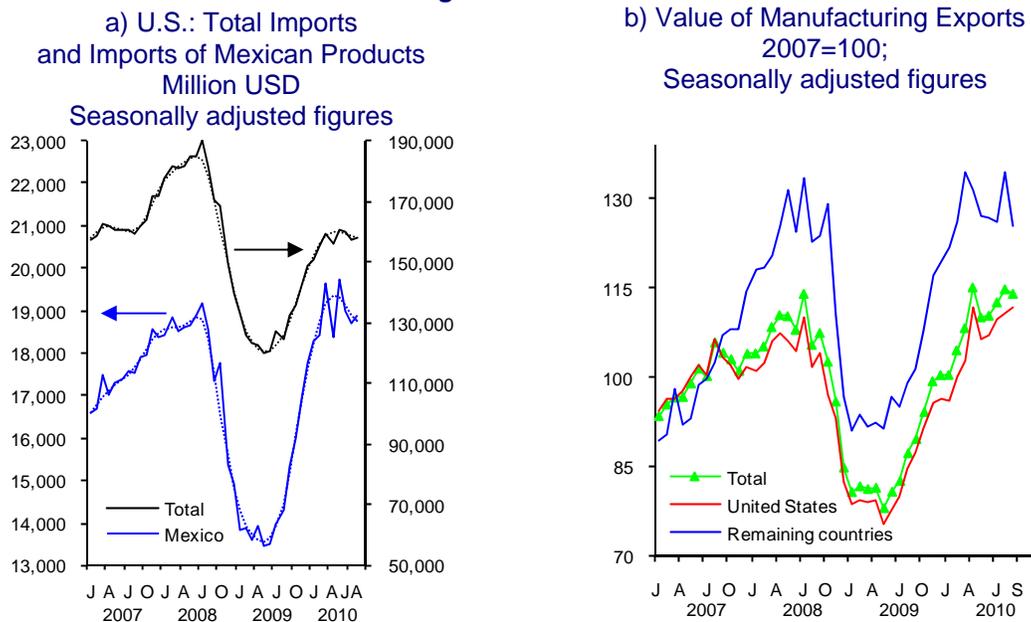
Regarding the external demand, in recent months the US merchandise imports seemed less dynamic. This is reflected in the US total purchases, as well as the purchases of Mexican products (Graph 17a). This behavior is in line with the weak aggregate spending and the slowdown of industrial activity, factors currently characterizing the US economy (see Box 1). It is worth mentioning, nevertheless, that the US imports of Mexican products during the last two years has tended to present a relatively more favorable evolution than the one of total US foreign purchases, partially reflecting the real depreciation of the peso against the USD that has been observed since September 2008. Therefore, the share of

Mexican products in the total US imports changed from 10.2 percent in the period of January-August 2008 to 12.0 percent during the same period of 2010.

Graph 16
Economic Activity Indicators
Seasonally adjusted figures



Graph 17
Foreign Trade Indicators

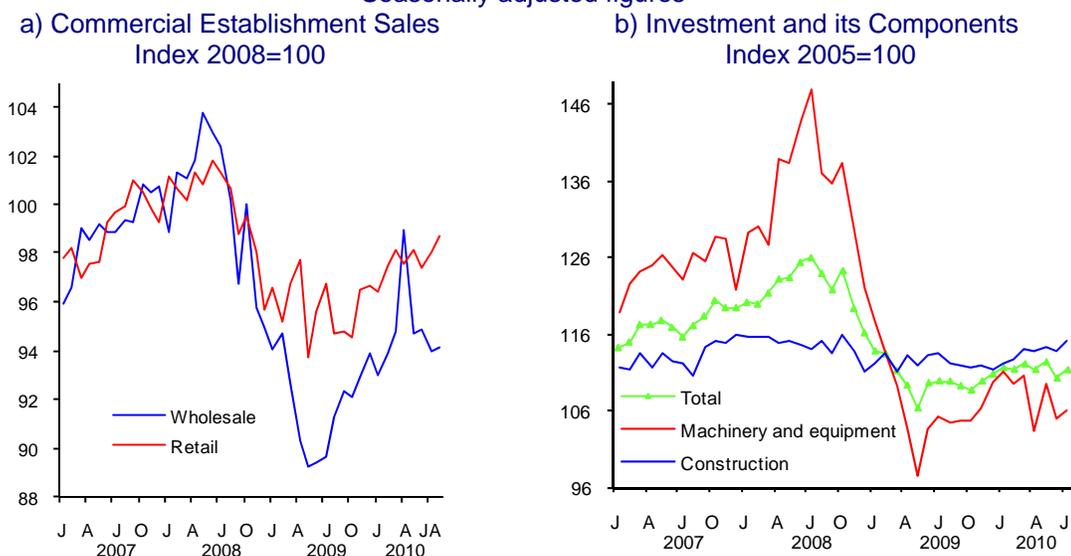


Reflecting the recent evolution of the external demand, the Mexican manufacturing exports showed a slight decrease in its growth rate, although it remained at a quite high level. Indeed, the manufacturing exports exhibited an annual growth rate of 30.9 percent during the third quarter of 2010, as compared to an annual change of 39.5 during the previous quarter (Graph 17b).

In turn, during the third quarter of 2010, the domestic demand exhibited an incipient increase:

1. Private consumption indicators suggest that this aggregate remains below pre-crisis levels (Graph 18a).
2. With respect to investment, although the seasonally adjusted figures showed a monthly growth of 0.98 percent in July, during the previous months its behavior was characterized by a high volatility (monthly changes of -0.65 percent, 0.90 percent and -1.89 percent in April, May and June, respectively). Therefore, recent information shows that this aggregate remained at lower levels and has not consolidated a recovery process (Graph 18b).

Graph 18
Domestic Demand Indicators
Seasonally adjusted figures



Source: Prepared by Banco de México with data from Mexico's National Accounts System, INEGI.

The recent development of domestic spending reflects the recent performance of several of its determinants, which in general remain at relatively reduced levels, as well as the relatively low levels of economic agents' confidence. In particular:

- I. The total wage bill of the economy remains at low levels, as compared to pre-crisis levels.
- II. Although workers' remittances exhibited a positive trend since the end of the previous year, during the recent months its growth rate has diminished. Thus, in September the remittances were 22.9 percent

below the peak registered in August 2007, in seasonally adjusted terms (Graph 19a).⁹

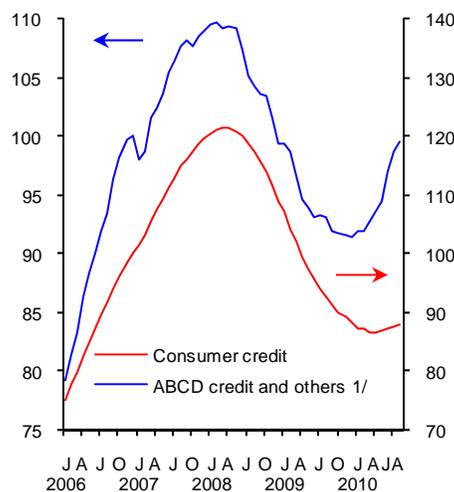
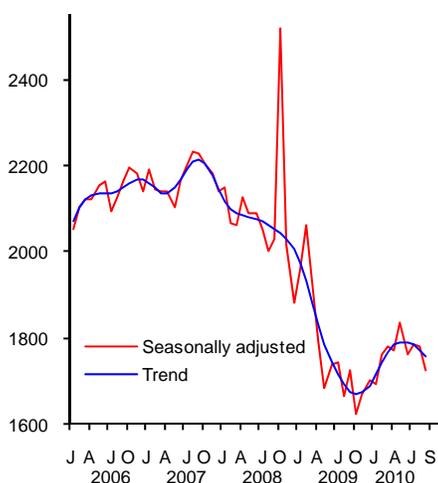
- III. Banks' financing for consumption continued an incipient recovery, although it was below pre-crisis levels (Graph 19b).
- IV. Finally, although producers' and consumers' confidence indicators began to improve when the economy started to recover, in general these indicators remain at low levels (Graph 20).

Graph 19

Workers' Remittances and Commercial Banks' Performing Credit

a) Workers' Remittances
Million USD

b) Commercial Banks' Performing Credit for
Consumption and Purchase of Durable Goods
(ABCD) and Others
Index December 2006=100



Source: Banco de México.

1/ Include automobile credits, credits for property acquisition, credits on capital leases, personal credits etc.

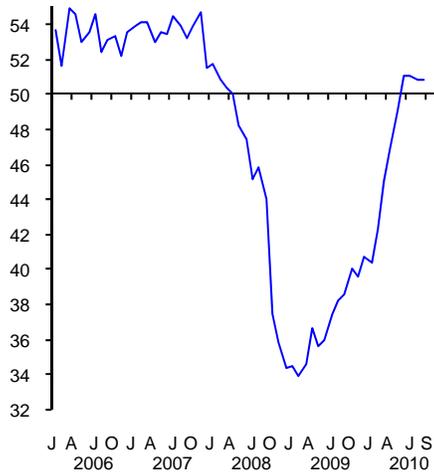
Source: Banco de México.

In turn, various leading indicators would seem to suggest a slowdown in the growth rate of the economic activity in the next months, as compared to the last quarters. In particular, the latest performance of the Manufacturing Orders Indicator (*Indicador de Pedidos Manufactureros (IPM)*) and the development of the orders received by manufacturing firms indicate that this sector's activity seems to be slightly less dynamic (Graph 21a and b). The possible moderation of the productive activity's growth rate in the next months is also reflected by the recent development of leading indicators of the Mexican economy (Graph 21c).

⁹ Revenues from worker's remittances amounted to USD 1,715 million in September 2010, representing an annual decline of 1.6 percent, after having grown at an annual rate of 1.8 percent and 9.3 percent in July and August, respectively. Considering these results, during the third quarter of 2010 remittances totaled USD 5,529 million, representing a 3.2 percent increase as compared to the same quarter in 2009.

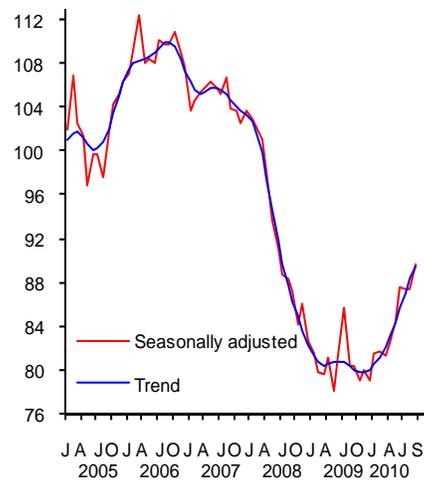
Graph 20
Confidence Indicators

a) Producer Confidence Index
50 point reference, original series



Source: Monthly Survey of Business Opinion (*Encuesta Mensual de Opinión Empresarial*), INEGI.

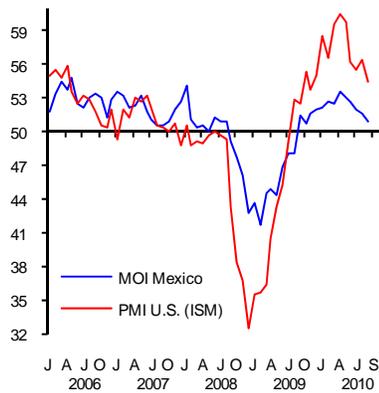
b) Consumer Confidence Index
January 2003=100



Source: National Survey on Consumer Confidence (*Encuesta Nacional sobre la Confianza del Consumidor*), INEGI and Banco de México.

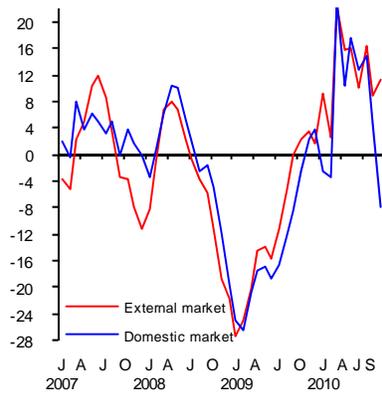
Graph 21
Indicators of Business Opinion and Prospects for Mexico and United States

a) Manufacturing Orders Indicator of Mexico and United States
50 point reference; seasonally adjusted figures



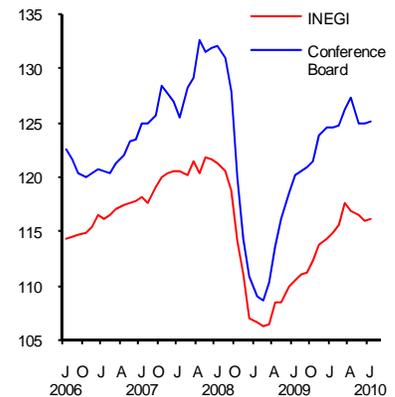
Source: Monthly Survey of Business Opinion (*Encuesta Mensual de Opinión Empresarial*), INEGI and Institute for Supply Management.

b) Orders of Manufacturing Firms
Balance of responses



Source: Monthly Manufacturing Tendency Business Survey (*Encuesta Mensual de Coyuntura*), Banco de México.

c) Mexico's Leading Indicators Index 2003=100; Seasonally adjusted figures



Source: INEGI and the Conference Board.

3.2.2. Financial Saving and Financing in Mexico

During 2010, the economy's annual flow of financial resources maintained an upward trend since the last three months of 2009 (Table 2). Indeed, this improvement continued during the third quarter. The higher growth of total financial savings, defined as the monetary aggregate M4 less the stock of banknotes and coins held by the public, was the result of considerable foreign

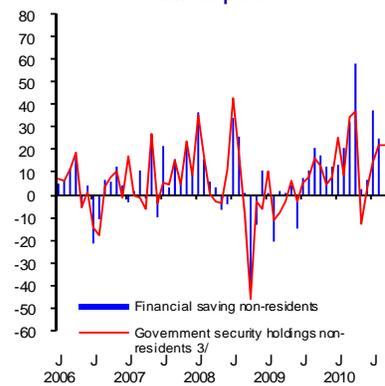
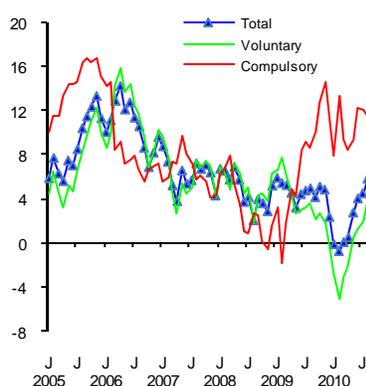
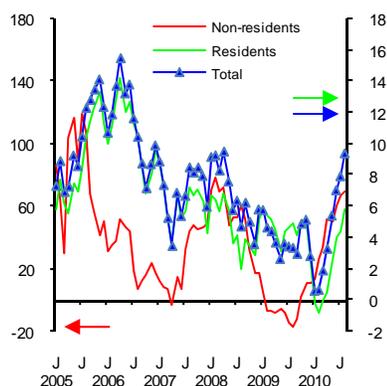
resource inflows, as well as the favorable development of residents' financial savings (Graph 22a and c). In this respect, the increased sources of foreign capital due to both the non-residents' financial savings and the foreign financing of non-financial public and private sectors has been favored by the sound Mexican macroeconomic framework, as well as an environment characterized by a high degree of liquidity in the global economy (see Box 1, Section 3.1). In turn, the growth of residents' financial savings, both compulsory and voluntary, reflects the higher levels of economic activity and employment during the last months, as compared to the previous year (Graph 22b). An additional factor that favored the growth of financial savings was the reduction of medium- and long-term interest rates, which increased the value of assets (valuation effect).

**Graph 22
Financial Saving**

a) Total Financial Saving^{1/2/}
Real annual change

b) Residents Financial Saving^{2/}
Real annual change

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



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 up to September 30, 2010.

In terms of its uses, in the second quarter of 2010 the financial resources were still mainly channeled to the public sector and to international reserves accumulation. At the margin, the resources have mainly been used for this accumulation and for the financing to the non-financial private sector, particularly targeted at firms (Table 2).

The domestic financing to the non-financial private sector continues to recover gradually during the third quarter.¹⁰ This improvement was mainly registered in the financing of firms through bank credits (Graph 23a). In turn, financing through debt issuance in the domestic market reduced its real annual growth rate, especially due to the lower use of financing through short-term debt issuance. Between June and December 2009, higher amounts of medium-term private debt placements have been registered, which have moderated in the course of this year.¹¹ With respect to foreign financing, Mexican firms continued

¹⁰ Given that the foreign direct financing statistics are obtained with some delay, some aspects will be mentioned with respect to domestic financing exclusively, as well as the external financing by means of securities issuance.

¹¹ In the period June-December 2009, the overall medium-term private debt placement was 58.3 thousand million pesos, while from January to September of this year it was 38.5 billion pesos.

facing favorable access conditions during the third quarter, maintaining debt issuance in international markets, although at a slower pace than the one registered in the previous quarter. The fact that this recovery is not taking place more vigorously seems to reflect a less dynamic credit demand, as well as the still not fully recovered confidence levels of several economic agents.

Table 2
Total Funding for the Mexican Economy (Sources and Uses)
Percentage of GDP

	Annual Flows						Stock 2010 II	
	2009 I	2009 II	2009 III	2009 IV	2010 I	2010 II	% GDP	Est. %
Total Sources	5.1	4.2	3.8	4.1	5.6	7.9	77.1	100.0
Domestic sources ^{1/}	5.5	5.2	4.7	3.4	3.1	4.1	55.6	72.1
Foreign sources ^{2/}	-0.4	-1.0	-0.9	0.7	2.6	3.8	21.5	27.9
Total Uses	5.1	4.2	3.8	4.1	5.6	7.9	77.1	100.0
Public Sector	2.8	3.2	3.8	3.5	3.1	3.5	38.5	49.9
Public Sector (PSBR) ^{3/}	2.7	2.9	3.3	2.7	2.2	2.6	36.1	46.8
States and Municipalities	0.2	0.3	0.5	0.8	0.9	0.9	2.4	3.1
International reserves ^{4/}	-0.6	-1.3	-0.9	0.5	1.8	2.8	10.5	13.6
Private sector	1.3	0.6	-0.4	0.1	0.8	1.5	31.7	41.1
Households	0.5	0.2	0.1	0.0	0.1	0.3	13.8	17.8
Consumption	-0.3	-0.6	-0.6	-0.5	-0.3	-0.1	3.8	4.9
Housing ^{5/}	0.8	0.8	0.7	0.5	0.4	0.4	9.9	12.9
Firms	0.8	0.4	-0.5	0.0	0.6	1.2	17.9	23.3
Domestic ^{6/}	1.1	0.7	0.3	0.5	0.5	0.6	10.4	13.5
Foreign	-0.3	-0.3	-0.8	-0.4	0.2	0.6	7.5	9.7
Commercial banks' foreign assets ^{7/}	0.0	0.2	0.1	-0.5	-0.3	-0.4	1.7	2.2
Other ^{8/}	1.5	1.5	1.2	0.6	0.3	0.4	-5.3	-6.8

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 (PIDIREGAS), 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/ Includes assets from abroad and foreign financing.

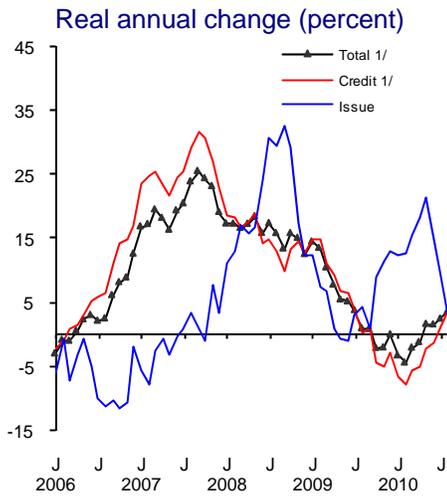
8/ Includes capital accounts and results and other assets and liabilities of commercial and development banks, Banco de México, non-bank financial, intermediaries, and INFONAVIT, as well as non-monetary liabilities from IPAB, among others.

The financing of households maintained a gradual upward trend and in August 2010 registered a positive real annual change, for the first time since November 2008. Commercial banks' credit for consumption, which was the most affected credit portfolio during the lower phase of the cycle, presented a sustainable, although moderate, recovery during the last months (Graph 23b). On the one hand, this reflects the restructuring process of the consumption credit portfolio, leading this portfolio's delinquency rate to levels where banks resumed the expansion of their credit supply, though under stricter selection criteria (Graph 24a). In turn, commercial banks' credit for housing acquisition continued growing in real terms, following the patterns observed throughout the year (Graph 23b), reflecting the adequate quality of this credit portfolio (Graph 24b).

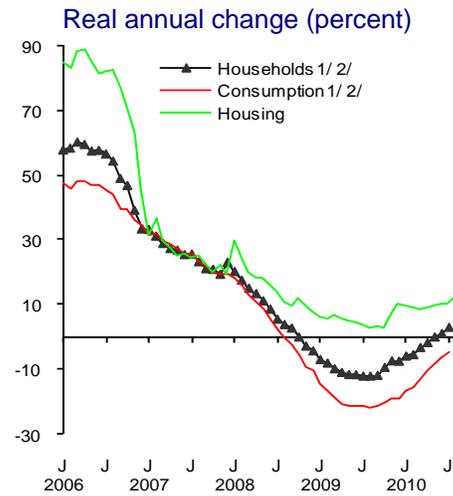
Graph 23

Domestic Financing for Non-financial Private Sector

a) Domestic Financing for Non-financial Private Firms



b) Commercial Banks' Performing Credits to Households



Source: Banco de México.

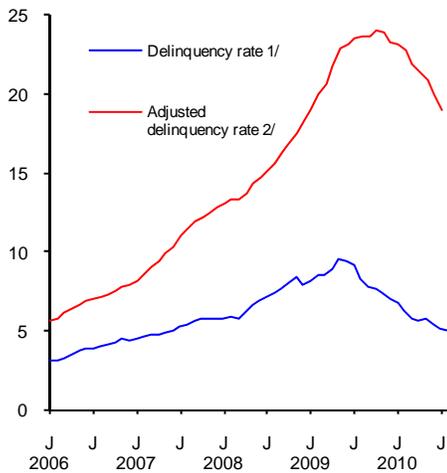
1/ From February 2009 onwards, figures are affected by the reclassifying of credit granted to small- and medium-size firms (PyMES, for its acronym in Spanish) from consumer credit to credit granted to non-financial firms.

2/ Figures as of March 2008 include total consumer credit portfolio of commercial banks' subsidiaries Sofom E.R.

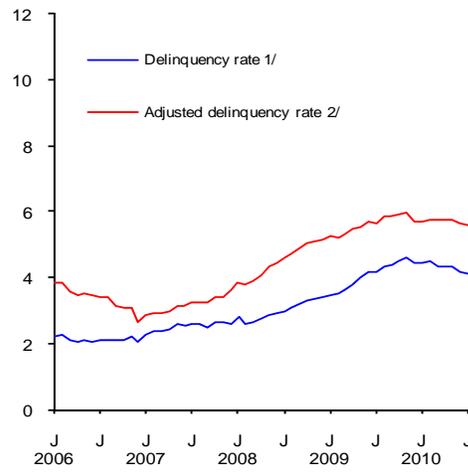
Graph 24

Delinquency Rates of Commercial Banks' Credit to Households

a) Delinquency Rates and Adjusted Delinquency Rates of Consumer Credit



b) Delinquency Rates and Adjusted Delinquency Rates of Housing Credit



Source: Banco de México and CNBV.

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

2/ The adjusted delinquency rate is defined as the sum of nonperforming 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.

As mentioned before, the Basel Committee established new regulation standards, which require higher capitalization levels by banking institutions at a global level. Nevertheless, for the Mexican case, the banks will not have to make strong efforts to meet the new regulatory parameters in time and according to the established calendars. The aforementioned due to the establishment, after Mexico's financial crisis in 1994-1995, of a strict regulatory framework on

capitalization standards that include criteria on the amount and quality of required capital.¹² Additionally, it is worth mentioning that the Financial Stability Board (FSB), an international body hosted by the Bank for International Settlement, published an evaluation of the Mexican financial system's regulation and supervision framework. In this publication, the FSB states that in recent years Mexico has achieved considerable progress in the improvement of their financial regulation and supervision framework in order to align with the standards and best international practices, which, coupled with its financial system's strength, permitted to overcome relatively well the current global financial crisis.¹³

¹² See CNBV and Banco de México press release from September 12, 2010.

¹³ See Financial Ministry (*Secretaría de Hacienda y Crédito Público*) and Banco de México press release from September 27, 2010.

4. Inflation Determinants

During the third quarter of 2010 inflation remained above the Central Bank's target. Besides fiscal adjustments and increases in public prices and fares applied during this year, this also reflects two factors. On the one hand, the fact that no integral fiscal reform has been implemented, although it is well known that in the medium term the strengthening of Mexico's non-oil revenues will be important. In this context, the policy of prices and fares had to be resorted to in order to complement public revenues. This is a factor that adds a considerable degree of inertia to the inflation process. Additionally, it is noteworthy that the inflation of the services price subindex presented some downward rigidity, possibly related to the market structure of some Mexican service-producing sectors (see Inflation Report, October-December 2008, Box 1 and Inflation Report, July-September 2009, Box 1).

Despite the fact that inflation remains above 3 percent, during this quarter it presented a downward trajectory. One of the determinants of this behavior is that, as mentioned before, the economic activity growth is estimated to exhibit a slowdown during the third quarter as compared to the second quarter of the year. This suggests that the output gap remained negative (Graph 25).¹⁴

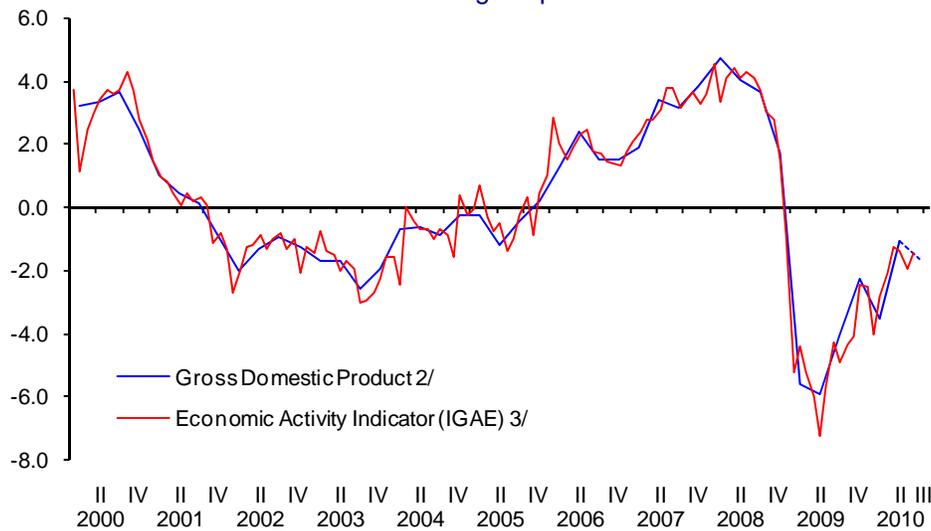
Thus, based on the available information, no demand-related pressures on the utilization of main inputs and therefore on its prices have been detected. Due to these factors short-term inflation expectations behaved properly and inflationary pressures kept under control. The performance of the main inflation determinants should be revised accurately in order to confirm the abovementioned:

- a) Formal employment, measured by the number of IMSS-insured workers, continued its upward trend. In fact, in September its seasonally adjusted level exceeded the peak observed in August 2008 (Graph 26a). Nevertheless, the total wage bill of the economy continues registering negative annual variations in real terms (Graph 26b).¹⁵ Likewise, the unemployment and the underemployment rates, as well as employment in the informal sector continued registering high levels (Graph 26c y d). These results have contributed to the moderation of wage increases and therefore, of inflationary pressures.

¹⁴ In the Inflation Report of April-June 2009 (p.69) Banco de México mentioned that the potential output of an economy can be defined as the maximum level of goods and services that a country can produce without generating inflation pressures, given its productive resources and available technology at each point of time. The difference between observed and potential output is generally known as the output gap that tends to be associated with aggregate demand shocks. These concepts cannot be directly observed, and therefore generally need to be estimated using observed data, e.g. observed GDP series. Consequently, the estimation of the potential GDP and the output gap are usually derived from certain statistical methods applied to the observed past information. For this reason, it is hard to expect the estimates of unobserved components to be highly accurate. Particularly, before concluding the output gap as positive or negative at a certain point in time, it is important to analyze if the results are statistically significant at an adequate confidence level. Additionally, given the degree of uncertainty usually associated with these indicators' estimates, the results should be considered carefully.

¹⁵ In the particular case of the formal sector, taking the number of IMSS-insured workers as a reference, the wage bill showed a real variation of 4.4 percent in the third quarter of 2010.

Graph 25
Output Gap^{1/}
 Annual change in percent



Source: Banco de México.

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

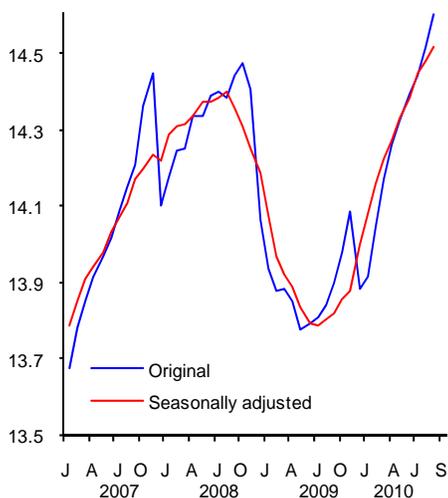
2/ GDP figures for the third quarter of 2010 estimated by Banco de México.

3/ Figures up to July 2010.

- b) Installed capacity utilization in the manufacturing industry seems to be converging towards a level lower than the one observed before the global crisis (Graph 27).
- c) The recovery observed in the banks' credit to the non-financial private sector has been moderate. Indeed, it has not constituted as a source of spending-related pressures.
- d) The international price quotes of wheat, corn and sugar exhibited significant increases during the analyzed period, mainly due to supply shocks. So far, the aforementioned increases have not affected the internal price formation process of the goods that use the referred commodities as inputs.

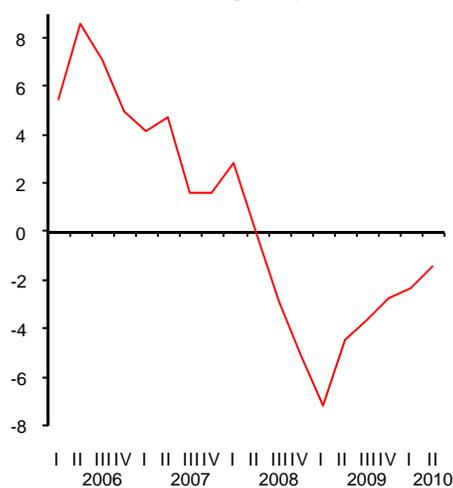
Graph 26
Labor Market Indicators

a) IMSS-insured Workers
Millions



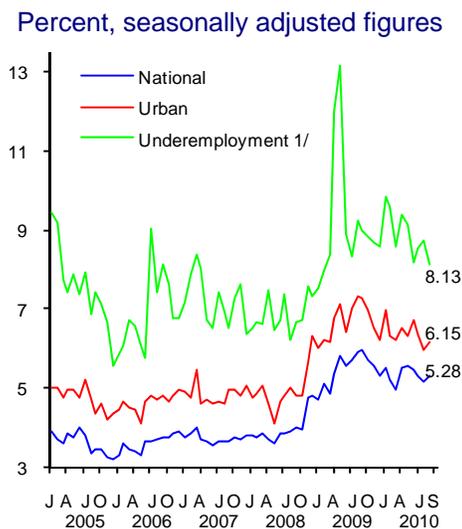
Source: Prepared by Banco de México with data from IMSS.

b) Total Economy's Real Wage Bill
Annual change in percent



Source: Prepared by Banco de México with data from the National Employment Survey (*Encuesta Nacional de Ocupación y Empleo*), INEGI

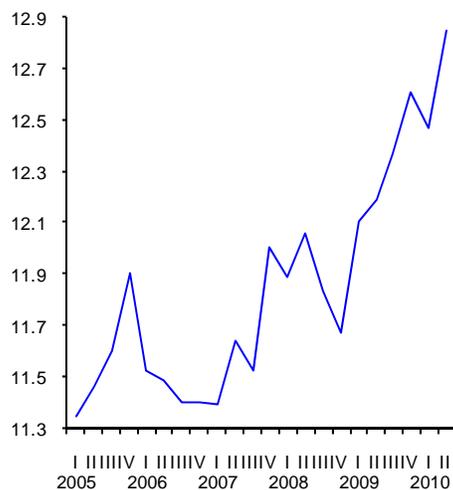
c) Unemployment and Underemployment Rates
Percent, seasonally adjusted figures



Source: National Employment Survey (*Encuesta Nacional de Ocupación y Empleo*), INEGI.

1/ Original series.

d) Informal Sector Employment
Millions of workers

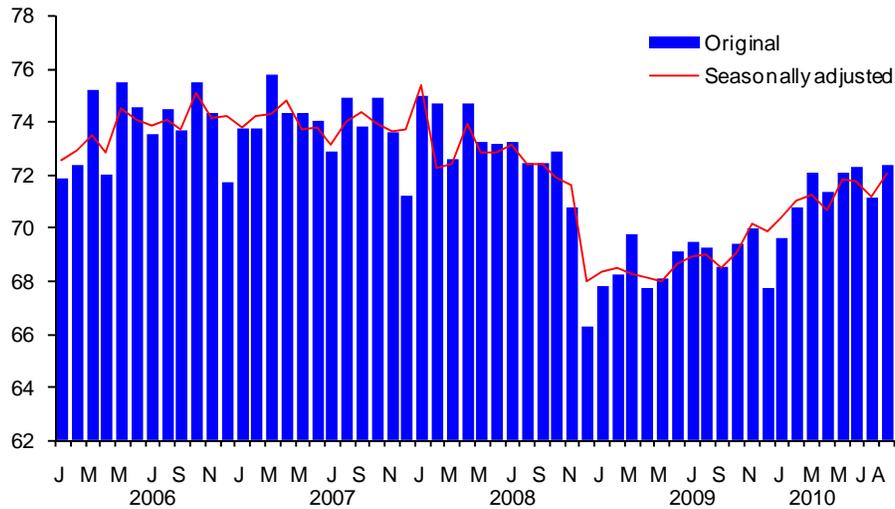


Source: National Employment Survey (*Encuesta Nacional de Ocupación y Empleo*), INEGI.

e) As in the previous quarter, the increase registered for merchandise imports is mainly associated with the increased imports of intermediate goods, which in turn reflects the higher merchandise export levels. In contrast, the imports destined for the domestic market have continued exhibiting a more moderate growth; especially the imports of capital goods have remained at lower levels (Graph 28a). Thus, based on the available information, the current account deficit is estimated to have

remained at moderate levels during the third quarter of 2010 (USD 2.1 billion, equivalent to 0.8 percent of GDP; Graph 28b). In turn, during the third quarter Mexico received a significant amount of foreign inflows, which allows full financing of the abovementioned deficit, and even contributed to the appreciation of the exchange rate. These resources stem from foreign investment (both direct and portfolio) and public and private sector's net foreign financing. Under this environment, the capital account (including errors and omissions) is estimated to register a surplus of around USD 9.0 billion during this quarter.

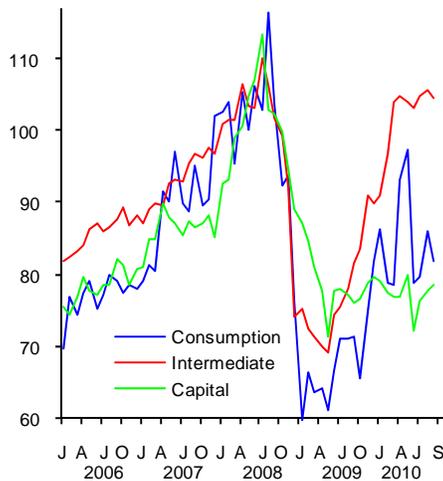
Graph 27
Installed Capacity Utilization: Manufacturing Sector
Percent



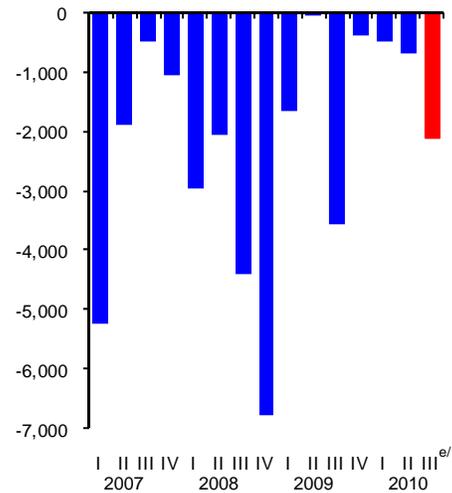
Source: Monthly Manufacturing Business Tendency Survey (*Encuesta Mensual de Coyuntura*). Banco de México.

Graph 28
Imports of Goods and Current Account

a) Imports of Consumer, Capital and Intermediate Goods
Seasonally adjusted figures;
Index 2008=100



a) Quarterly Current Account
Million USD

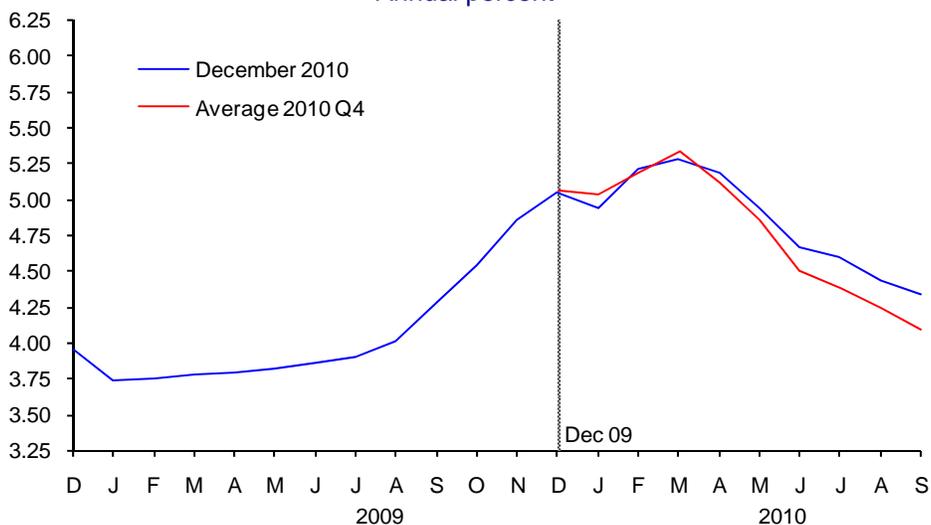


Source: Banco de México.
e/ Estimates.

f) In turn, despite the approaching end of the year, the inflation expectations for the fourth quarter average of 2010 continued decreasing during the last months, mainly due to the favorable development of inflation (Graph 29). In fact, the economic analysts' mean of inflation expectations for the fourth quarter average of 2010 (obtained from Banco de México's survey) decreased from 4.50 percent in the June survey to 4.13 percent in the September survey.¹⁶

Despite the aforementioned, the medium- and long-term inflation expectations remain above the inflation target. In particular, the economic analysts' mean of inflation expectations for December 2011 changed from 3.92 percent in the Banco de México survey from June to 3.84 percent in the September survey (Graph 30a).¹⁷ Additionally, the inflation expectations for longer horizons, i.e. for the next 4 years and the 5 to 8-year period average, remained close to 3.8 percent and 3.5 percent, respectively (Graph 30b). The compensation for inflation indicator (inflation expectations plus a risk premium) obtained from the difference between the nominal yield on 10-year bonds and the real yield of the same term indexed debt instruments (*Udibonos*), remains around 4.1 percent (Graph 30c).¹⁸

Graph 29
Annual Headline Inflation Expectations for 2010^{1/}
 Annual percent

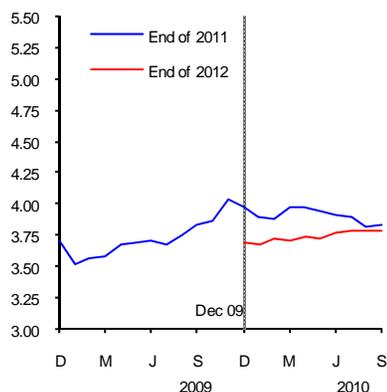


1/ Expectations for average inflation for the fourth quarter of 2010 are calculated based on monthly expectations for each one of the following twelve months.
 Source: Banco de México Survey.

¹⁶ In the Infosel survey of June 25, 2010, the expectation for the fourth quarter average of 2010 was 4.61 percent, while in the survey of October 22 it was 4.18 percent.
¹⁷ In the Infosel survey of October 22, the average of inflation expectations for the end of 2011 was 3.81 percent.
¹⁸ This indicator should be interpreted carefully due to the volatility typically observed in its performance.

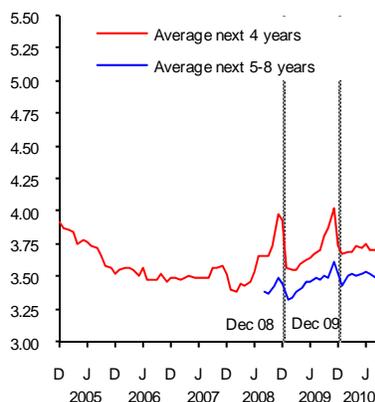
Graph 30
Annual Headline Inflation Expectations and Compensation for Inflation and Inflationary Risk on Long-term Bonds

a) Expectations for Annual Headline Inflation for 2011 and 2012



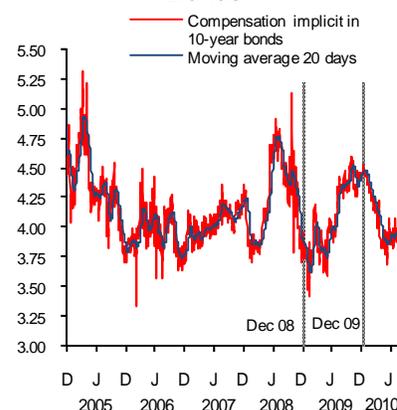
Source: Banco de México Survey.

b) Expectations for Annual Headline Inflation



Source: Banco de México Survey, monthly periodicity

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



^{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.
 Source: Banco de México estimates with data from Bloomberg.

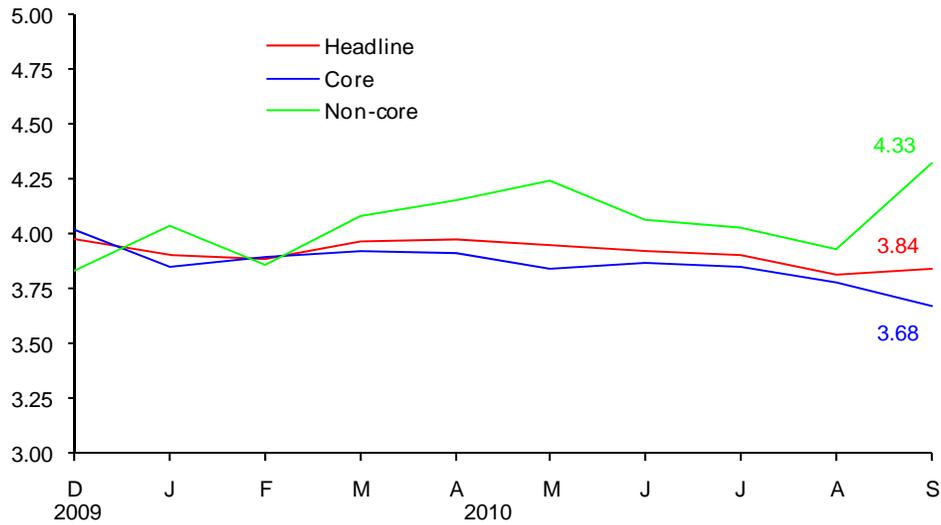
The fact that medium- and long-term inflation expectations remain above the inflation target may be explained by the uncertainty related to possible changes in public sector's price and fare policies. Indeed, the non-core inflation expectations for the end of 2011 increased from 3.93 percent in Banco de México's survey from August to 4.33 percent in the September survey (Graph 31), which might reflect the uncertainty perceived by economic analysts with respect to the possible changes in this policy.¹⁹ Given their supporting role for the public finances, public sector's prices, and fares influenced the inflation expectations behavior due to two principal factors: i) their widespread use as production inputs; and ii) their role as a reference for the general price formation process in the economy.

- g) Despite the abovementioned, the inflation expectations for longer horizons, as explained previously, remained unchanged, although they are still above Banco de México's inflation target of 3 percent.
- h) The expectations for core inflation for 2011 decreased from 3.78 percent to 3.68 percent in the same period.
- i) The recent development of the PPI, which as previously indicated by Banco de México contains useful information for predicting the CPI inflation, suggests the absence of upward pressures on this latter indicator.²⁰

¹⁹ As shown in Section 6 (Inflation Forecasts and Balance of Risks), the high volatility of fruits and vegetable price quotes is also a risk factor that could affect the inflation expectations for the end of 2011.

²⁰ See Inflation Report, January-March 2010, pp. 10-12

Graph 31
Inflation Expectations for the End of 2011
 Annual percent



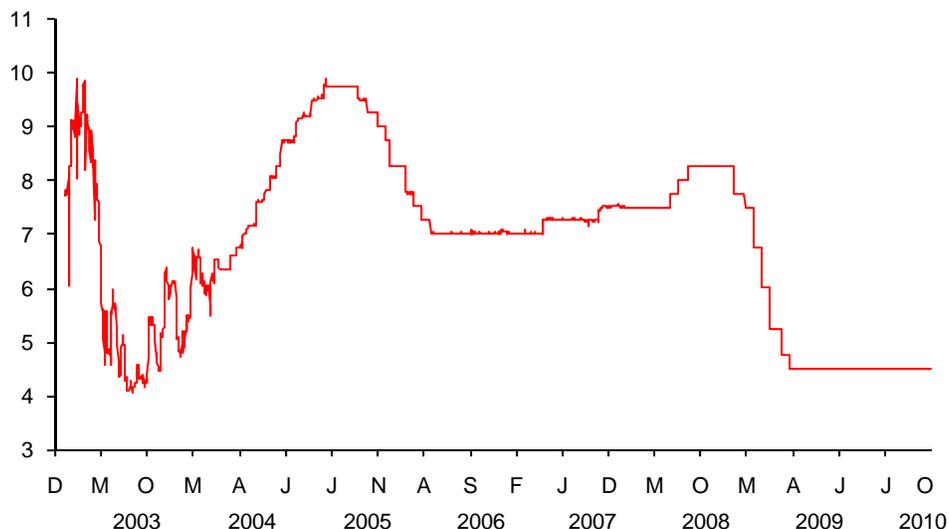
Source: Banco de México Survey.

Concluding this section, it is noteworthy that the conduction of the macroeconomic policy and, particularly, the coordination of the monetary policy stance and fiscal policy measures, is the fundamental inflation determinant. As will be shown in the next section, the current monetary policy has been in line with the decreasing inflation, which has even been lower than expected by the markets. In turn, due to the realized fiscal consolidation together with the present monetary stance, the Mexican economy-related risk perceptions have improved significantly. The resulting appreciation trend of the exchange rate has also favored the development of inflation.

5. Monetary Policy

During the months of July, August, September and October, Banco de México's Board of Governors maintained the overnight interbank interest rate unchanged at 4.5 percent since it was considered to be in line with achieving the inflation target in the established horizon (Graph 32).

Graph 32
Overnight Interbank Interest Rate^{1/}
 Annual percent



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

Among the main elements that have been considered in the monetary policy decisions, the following can be highlighted:

- i. Lax conditions prevailing in the economy that were analyzed in the previous sections of this Inflation Report. In particular, the output gap remained negative and worker's wages have continued registering moderate increase (Section 2.3).
- ii. Inflation expectations for the fourth quarter average of 2010 continued exhibiting a decline in the last months (Section 4).
- iii. Low inflation conditions prevail on a global level. Besides, as previously mentioned, there is certain deflation risk in some of the main advanced economies.

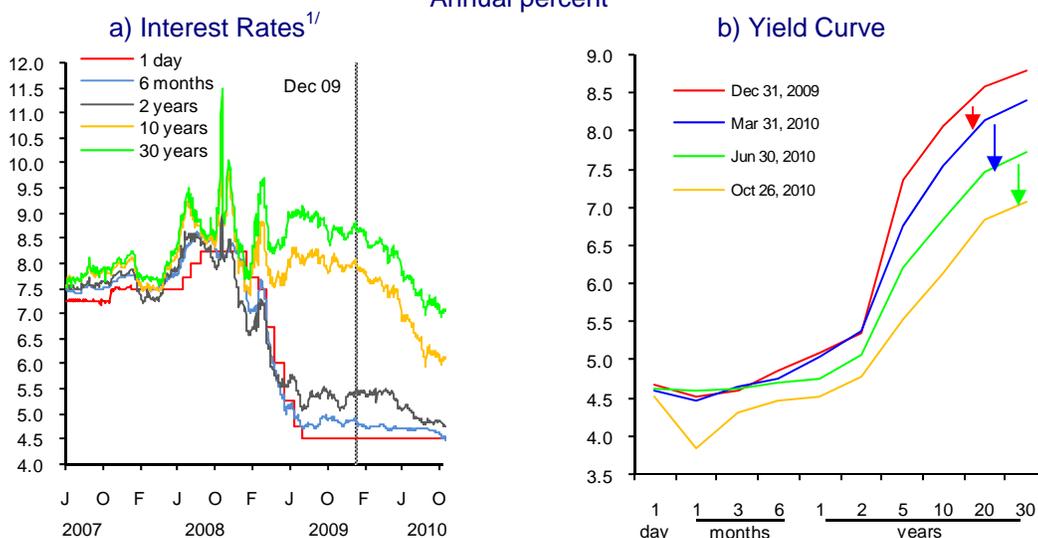
Nevertheless, it is worth pointing out that there are other factors that have hindered a further reduction in inflation.

- a. As mentioned repeatedly, core services inflation registers relatively high levels and, moreover, has shown inertia.

- b. Public price adjustment, although desirable from the fiscal and macroeconomic stability point of view in the medium term, affected non-core inflation.

Under these conditions, the yield curve continued flattening considerably. On the one hand, the short end of the curve has shown a slight decrease. From the end of July up to the present date, the 6-month interest rate declined from around 4.7 percent to about 4.5 percent. On the other hand, the decrease in the longer-term interest rates has been more pronounced and has taken them to historically low levels (Graph 33). In fact, the yield on 30-year government bonds declined from 7.7 percent at the end of June to 7.1 percent in the recent days. Therefore, the slope of the yield curve (defined as the differential between the yield on 30-year and 6-month bonds) decreased from approximately 300 basis points to 260 basis points in the referred period.

Graph 33
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 Interest Rate (Banco de México's operating target).

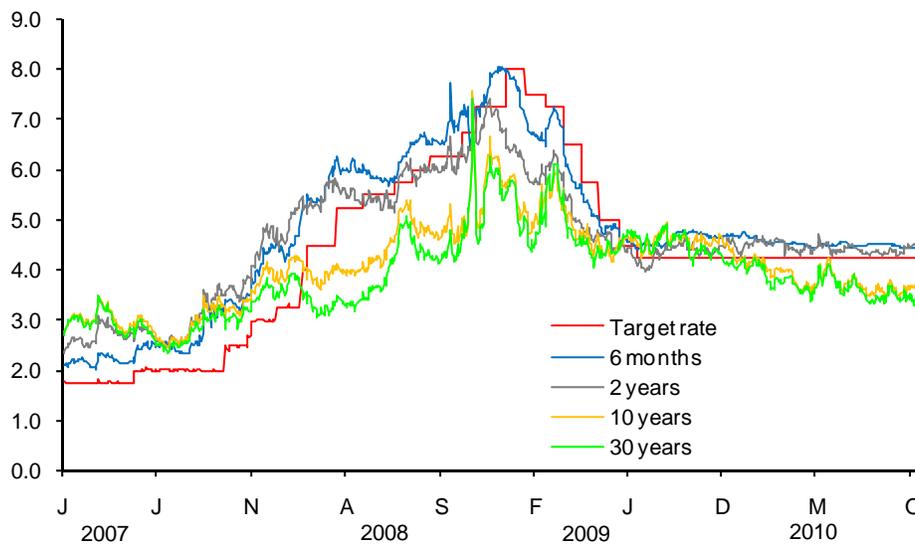
The decrease in the longer-term interest rates responds to various factors:

1. The improvement in the inflation outlook has generated a decrease in the inflation risk premium. As a result, economic analysts have kept postponing the date they estimate the Central Institute will start withdrawing the monetary stimulus.
2. The relative improvement of sovereign risk perception has led to an increase in the demand for Mexican government bonds as compared to the sovereign bonds of other emerging countries. As has been pointed out in the previous Inflation Report, this improvement allowed the inclusion of Mexican government bonds into the Citigroup's debt index (Citigroup World Government Bond Index (WGBI)).

3. International interest rates, in particular of U.S., have continued declining and are expected to remain at low levels for a prolonged period. In general, the degree of monetary accommodation in advanced economies, especially in U.S., is unprecedented. This has led to more astringent relative monetary conditions, mainly through exchange rate appreciation in various emerging economies, including Mexico.

The extraordinary degree of monetary accommodation in U.S. has favored the increase in capital flows towards countries with relatively solid economic foundations, such as Mexico. This has recently become more pronounced due to the expectation that liquidity in the US economy would expand even more through a new round of “quantitative” easing by the US monetary authorities. Capital inflows favor the exchange rate appreciation, the decrease in the long-term interest rates, and in general, the increase in the price of assets. Moreover, these movements fuel each other. Indeed, exchange rate appreciation contributes to lower inflation expectations, while lower inflation expectations lead to lower long-term interest rates.

Graph 34
Interest Rate Spreads between Mexico and the United States
 Percent



Source: Banco de México.

6. Inflation Forecasts and Balance of Risks

Before discussing the macroeconomic scenario forecasted by Banco de México for the remainder of 2010 and 2011, some reflections on the way the inflation forecast is presented this time, as well as on the forthcoming communication strategy will be made.

The present report announces the replacement of forecast intervals by a forecast referring to the inflation target from the second quarter of 2011 onwards. The intervals started to be published in the Inflation Report, July-September 2007, specifying that “Banco de México’s baseline forecast is presented in half-percentage point intervals for average quarterly inflation in annual terms for the next eight quarters.” (p. 42). These intervals have been particularly useful for the Central Institute’s communication strategy, especially considering the supply shocks that affected the price formation process during the last three years, period in which the intervals helped to anchor inflation expectations. In particular, by the end of 2009 inflation was expected to show a strong rebound at the beginning of 2010, once the tax changes were approved by the Congress. Among these changes was a VAT increase, as well as the increase in public sector’s administered prices and fares for goods and services. In this environment, the forecast interval acted as a fundamental communication element indicating the temporary character of inflation rebound and its future gradual convergence towards the target. In these cases, the inflation forecast interval not only guided the level of inflation expectations but also helped to reduce the dispersion among economic agents’ expectations. Given that inflation is expected to discontinue its temporary increase by the middle of 2011, forecast intervals will no longer be considered necessary from then on.

Besides, as well-known and as explained in previous reports, any forecast exercise is subject to a certain degree of uncertainty since it depends on the information available at the time of forecasting, among other factors. Therefore, forecasts should be interpreted in consideration of the related risks and any successful communication strategy should include measures aiming at quantifying this uncertainty. The fixed forecast intervals used so far do not adequately communicate this uncertainty for two reasons. First, because they are not specifying the degree of confidence with which the future inflation rate is expected to be within this interval. Second, because by maintaining a fixed-width interval for different forecast horizons, these forecasts do not reflect the increase in uncertainty that is common if horizons increase. Therefore, starting from the Inflation Report, October-December 2010 onwards, the forecasts for the major macroeconomic variables, in particular inflation, will be presented using Fan Charts (Box 3). It is worth mentioning that Fan Charts are used by numerous central banks for conveying their forecasts. Indeed, it is considered among the best practices in central banks that operate under inflation targeting. Moreover, in accordance with the aforementioned practices, Fan Charts will also be used to communicate Banco de México’s economic activity forecast.

These graphs present various advantages. For example, forecasts presented in Fan Charts fully describe the forecast-related uncertainty. This arises from the fact that various sources of uncertainty are taken into account during its construction, for example uncertainty due to the use of different forecasting

models, the estimation of each model's parameters, as well as data revision, among others. Furthermore, Fan Charts provide a more general description because they explicitly indicate the expected probability that the forecasted variable will be within certain intervals, i.e. they present an expected distribution of the possible future realizations of the variable. Thus, this kind of forecast covers both point and interval forecasts. Forecast presentation is clear because more probable trajectories are shown in darker shades, while less probable are presented in lighter tones. In this way, Fan Charts easily illustrate the uncertainty associated with the future dynamics of the forecasted variable, either inflation or economic activity. Box 3 explains in a detailed way Fan Charts construction and interpretation, using inflation as an example.

The macroeconomic scenario forecasted by Banco de México for the remainder of 2010 and for 2011 is based on the following assumptions about the external conditions:

- a) The US economy, particularly its industrial production, is expected to continue growing in the remainder of 2010, although at a slower rate than that during the first half of the year. In particular, analysts reach consensus on expecting a GDP growth rate of 1.9 percent and 2.3 percent in annualized terms during the third and fourth quarters of the year, respectively; as compared to 3.7 percent and 1.7 percent during the first two quarters. Similarly, industrial production is expected to increase to 3.1 percent in annualized terms during the last quarter of the year, after having grown 7.1 percent, 7.0 percent and 4.8 percent during the first three quarters.
- b) The US economy is expected to be less dynamic during 2011, as compared to 2010. In fact, during the last months the expectations about US GDP and industrial activity growth for 2011 have been revised downwards. In particular, between July and October of this year, economic analysts adjusted their GDP growth expectation from 3.0 percent to 2.5 percent and their industrial activity forecast from 4.7 percent to 3.9 percent.²¹

GDP Growth: In a context where domestic demand has not recovered solidly, the expected slowdown in the US industrial activity, as well as the fact that downside risks have tended to be more pronounced, suggest that the Mexican economy will face a less dynamic external demand during the next months and especially in 2011.

Thus, GDP in Mexico is estimated to grow around 5 percent in annual terms during 2010, which implies a moderation in its annual growth rate during the second half of the year (Graph 35). In 2011 the GDP is expected to increase between 3.2 percent and 4.2 percent, as in the Inflation Report, April-June 2010.

Although the output gap is expected to close gradually, the growth forecasts imply that it will remain negative during the remainder of 2010. I would

²¹ These figures are based on the average forecasts by economic analysts interviewed by Blue Chip in July and October of 2010. These two months are considered as reference months. In the Inflation Report, April-June 2010 the available expectations referred to July, while in this report the last available forecasts correspond to the October survey.

be until the second half of 2011 that, with a certain probability, the output gap could turn positive (Graph 36).²²

Employment: The number of IMSS-insured workers is expected to increase between 575 and 675 thousand by the end of 2010 and between 500 and 600 thousand in 2011, in line with the expected economic growth for this year.

Current Account: Although both exports and imports have recovered in comparison to 2009, the dynamism of exports leads to expectations of moderate deficits in the trade balance and the current account for 2010. Indeed, they are estimated to reach deficits of USD 5.1 and 6.5 billion in 2010 (0.5 percent and 0.6 percent of GDP), as compared to USD 4.6 and 5.7 billion (0.5 percent and 0.7 percent of GDP) in 2009, respectively.

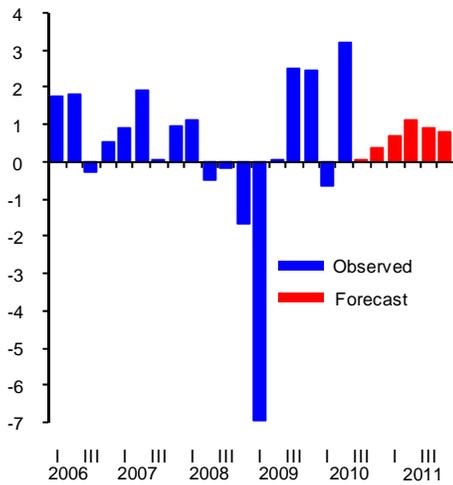
In turn, the possibly reducing growth rate of exports and the expected gradual increase of domestic demand in 2011 are expected to lead to a higher deficit in the trade balance, as well as in the current account with respect to the forecasts for 2010, although these deficits would remain at relatively low levels. In particular, the trade balance is expected to exhibit a deficit of USD 10.5 billion (0.9 percent of GDP) and the current account, of USD 12.7 billion (1.1 percent of GDP).

The large resource inflows to emerging economies, including Mexico, as well as the expected access conditions to international financial (see Box 1), suggest that the estimated moderate deficits in the current account will be fully financeable. Indeed, the federal government and the private sector have had access to the international markets under favorable conditions, regarding both term and costs. In particular, according to the Ministry of Finance (*Secretaría de Hacienda y Crédito Público*), the amounts obtained for the recent issuance of 100-year bonds and the ones obtained from the placement of Japanese yen-denominated bonds cover the programmed amortizations of the federal government's external debt until 2012. The available information on the expected trajectory of external debt maturities of the private sector indicates that no maturity-related pressures on the capital account will be observed in the remainder of 2010 and 2011. Finally, the economy is expected to receive significantly more foreign direct investments in 2010 and 2011, as compared to 2009.

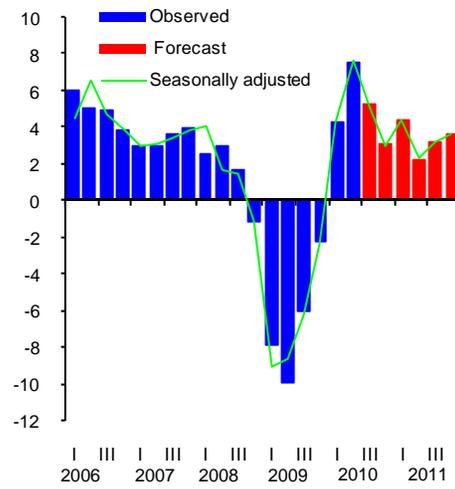
²² These estimates were calculated using the Hodrick-Prescott (HP) method with tail corrections and an unobserved components model. These methods are described in Banco de México (2009), "Inflation Report, April-June 2009", p.69.

Graph 35
Gross Domestic Product

a) Quarterly change in percent; seasonally adjusted figures



b) Annual change in percent



- ii. As described in Box 1 of this report, there is a risk that the global recovery process could be complicated if various countries intend to stimulate exports through “competitive depreciations”.
- iii. The need to consolidate the public finances of several countries that implemented countercyclical policies during the last recession, could lead to a less dynamic aggregate demand in the short term in these countries. Although it is evident that in the medium term fiscal consolidation is an indispensable condition to reach sustainable global growth.
- iv. A sudden reversal of capital flows, especially when monetary laxity starts being eliminated in advanced countries.

Inflation: The inflation risk balance improved during the third quarter. Therefore, the annual headline inflation forecast interval for the next two quarters was revised downwards: 0.50 percentage points for the fourth quarter of 2010 and 0.75 percentage points for the first quarter of 2011. Thus, the corresponding intervals are: 4.25 percent to 4.75 percent for the fourth quarter of 2010 and 3.75 percent to 4.25 percent for the first quarter of 2011. The annual headline inflation is expected to lie between 3 to 4 percent in the second quarter of 2011 and from the third quarter onwards it is expected to converge towards the target of 3 percent. It is noteworthy that the above mentioned target has a +/-1 percentage point variability interval, since, although the monetary policy is implemented in order to reach the established target, meeting the target is subject to a certain degree of uncertainty caused by multiple disturbances that affect the economy and the price formation process. The resulting changes in the relative prices lead to fluctuations in the inflation rate in a certain interval instead of remaining fixed at a point target.

With respect to the forecast presented in this report, the downward revision is basically due to three considerations: i) the favorable performance demonstrated by the growth rate of merchandise prices, driven by the appreciation of the exchange rate, as well as by the intensified competition in the commercial sector of the country; ii) the prospect that the output gap will remain negative for a prolonged period with a high probability; iii) the expectation that supply conditions for crops with a high CPI weight (e.g. tomatoes) will remain relatively normal in the next half year, despite the adverse weather conditions observed in different regions in the country and the inherent seasonality of these prices.

The inflation forecast presented in this report was influenced by the possible increase in the Excise Tax (*Impuesto Especial sobre Producción y Servicios*, IEPS) on tobacco. In particular, the Congress approved an additional increase in this tax burden of 5 pesos per packet of cigarettes. In 2009, an increase of 2 pesos per packet has been approved that would gradually come into force between 2010 and 2013 (the Congress advanced this increase by 2011). The direct impact on annual headline inflation in 2011, generated by the additional IEPS increase on tobacco, is 0.18 percentage points. While its impact on the annual headline inflation forecast for this year, related to the forecast by Banco de México regarding the increase of this tax burden, is 0.14 percentage points.

Among the major risks that the inflation forecast faces are:

1. The growth rate of administered and regulated prices for goods and services, especially in the context of the tight budget that the government is expected to face on various levels during 2011.
2. The possibility of competition intensification (or relaxation) among the retail chains that would decrease (or increase) inflation.
3. Abrupt changes in the exchange rate parity that could be caused by changes in the capital flow directions and that would affect the price formation process.
4. The volatility of the international grain prices that could affect domestic price quotes of foodstuffs used as inputs.
5. Higher downside risks of economic activity resulting from less favorable prospects for the global economy.
6. As usual, high degree of volatility of fruit and vegetable price quotes should be taken into account.

At the moment, the Mexican economy faces the challenge of generating growth rates that will lead to a greater level of development. This could present certain difficulties in the coming years given a less dynamic international environment, unless it is counterbalanced by a more dynamic domestic market driven by an increased investment and productivity stimulus.

Macroeconomic policy plays a fundamental role in achieving the abovementioned. The combination of sound public finances and a monetary policy aimed at reaching the inflation target, favors a macroeconomic environment characterized by stability and certainty, which is a necessary condition to encourage investment. Nevertheless, a sound implementation of macroeconomic policy needs to be complemented by an incentive structure that favors the productivity growth in the economy. Among the microeconomic policies that could favorably affect the incentive structure, the following measures stand out: increasing the competition in input and final goods markets and the flexibility in labor markets.

By allowing more participants in the market, stronger economic competition encourages the use of more productive technologies and more efficient work practices that directly affect productivity levels. In the same way, increased market competition can diminish the inflationary rigidity and reduce both input and final goods prices, favorably affecting input distribution and firms' competitiveness. In turn, labor market flexibility not only leads to higher economic productivity through more efficient labor resource allocation and increased investment in human capital and technology, but also favors a decrease in inflation by reducing firms' costs and in this way favoring the price decline in various domestically manufactured goods and services.

Box 3
Fan Charts for Illustrating the Probability of Economic Variable Forecasts Realization

Forecasts of macroeconomic variables are useful for conveying the monetary authority's economic outlook to the public, which constitutes a fundamental element for anchoring inflation expectations. Therefore, most central banks elaborate and publish forecasts of certain macroeconomic variables, mainly of inflation.

In various central banks' publications, the use of graphs known as Fan Charts is common for presenting forecasts of some macroeconomic variables.¹ These graphs are useful, among other reasons, since they permit illustrating the probability of realization of a macroeconomic variable forecast.

This box explains Fan Charts; in particular it presents some considerations with respect to their interpretation and construction method.

Uncertainty related to Economic Variable Forecasts

The forecasts of economic variables are subject to diverse sources of uncertainty, which should be considered when interpreting the information contained in the forecasts. Among these sources of uncertainty, there are:

- i) Model uncertainty. The forecast exercises are based on quantitative models in order to describe the behavior of the economy. Although the models vary in their degree of complexity, they are simplified representations of the economy and therefore, their results are subject to a certain degree of uncertainty.
- ii) Estimation uncertainty. The referred models are estimated using econometric methods. Thus, the estimation of each model's parameters is subject to a certain degree of uncertainty, also affecting the forecasts that are realized based on these models.
- iii) Data uncertainty. Mainly financial data and data on macroeconomic variables are used for the estimation of the mentioned models. This data are subject to measurement errors, adding uncertainty to the forecast models.

Considering the aforementioned, the challenge is using analytical tools that allow a systematic representation of the degree of uncertainty associated to the macroeconomic variable forecasts. In particular, Fan Charts are precisely a tool that allows illustrating this uncertainty.

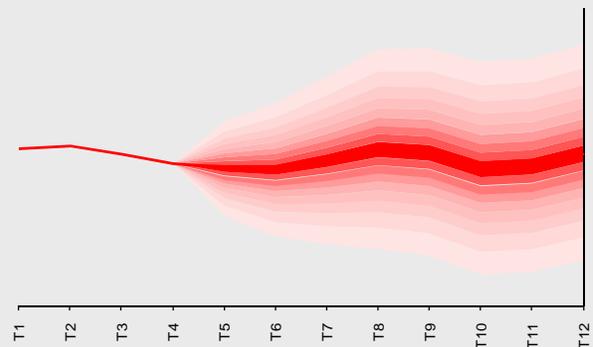
What is a Fan Chart?

As mentioned, a Fan Chart illustrates the probability of realization of a particular variable forecast. Specifically, it describes the possible values that the forecast can take in the future and the probability of their realization along the forecast horizon. In this respect, it is noteworthy that these probabilities depend on the information available at the time of forecasting.

Interpretation of a Fan Chart

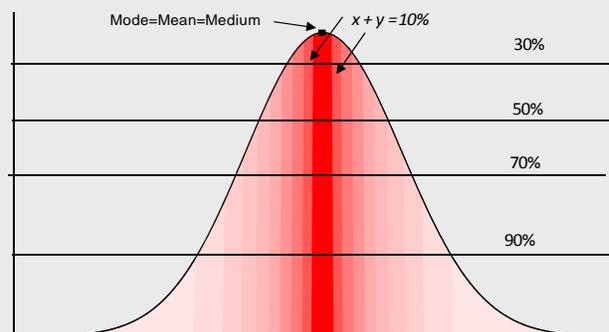
Graph 1 shows an example of a Fan Chart for a particular variable as commonly presented in the publications of diverse central banks. In this case, the solid line from T1 to T4 represents the observed level of the variable until the moment of forecast realization (period T4). Thus, the forecasts begin from the period T5 and cover an 8-period-horizon until the period T12. As mentioned, this type of forecasts depends on the information available in period T4.

Graph 1
Fan Chart Example for a Particular Variable



To explain in a more detailed way the meaning of the different tones along the forecast horizon in Graph 1, the (conditional) probability distribution of the forecasted variable for a particular point of the forecast horizon (period T9 in this example) is presented in Graph 2.² The arrow in Graph 3 indicates the point where the referred probability distribution within the forecast horizon reported in the Fan Chart is located. The different-colored bands and the intervals presented in Graph 2 correspond to the bands and intervals of the period T9 in Graph 3.

Graph 2
Example of the Probability Distribution for a Particular Variable Forecast^{1/}



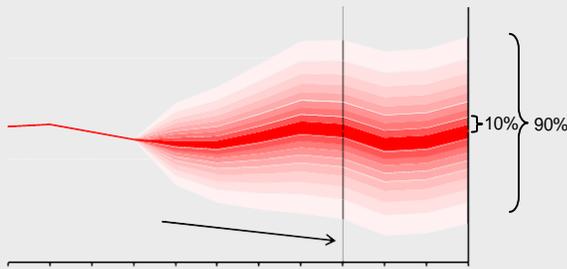
1/ The Probability Distribution corresponds to the period T9 in Graph 1 and 3.

Graph 2 shows that the highest point of the distribution is located in the band with the most intense color, containing 10 percent of realization probability. The central projection, which is equal to the mode of distribution, is located in this band, i.e. the forecast with the highest probability of occurring. On each side of the central band there are two bands added with the same color, but in lighter shades. These two additional bands accumulate another 10 percent of probability, therefore, together with the central band, they accumulate 20 percent of the realization probability. Thus, each pair of bands with increasingly lighter shades accumulates an additional 10 percent successively, until reaching 90 percent of probability.

¹ See, for example, Britton (1998), Blix and Sellin (1998), Vega (2004) and Julio (2006).

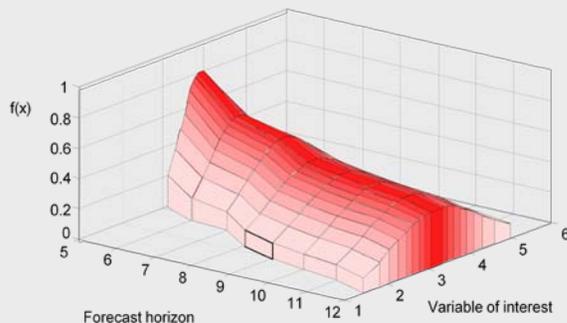
² A normal distribution function is used.

Graph 3
Fan Chart Example for a Particular Variable



To give a more detailed explanation of a Fan Chart interpretation, Graph 4 presents a three-dimensional Fan Chart of a variable under consideration. The vertical axis plots the conditional density function which allows inferring how likely it is that the variable under study could take certain values in the future, based on the available information at the moment of forecast. The forecast horizons are displayed in the lower left axis. The possible values that the variable under study can take along the forecast horizon are shown in the lower right axis. Thus, this graph clearly shows how the Fan Chart's amplitude increases when the forecast horizon expands. That means that the possible future range of values of the variable under study expands when the forecast horizon is more distant.

Graph 4
Three-dimensional Fan Chart Example for a Particular Variable



On the other hand, Graph 4 shows the probability distribution until accumulating 90 percent of possible cases. It is noteworthy that among the central banks that publish forecasts of macroeconomic variables using Fan Charts, it is common to report up to 90 percent of possible cases. This is done in order to concentrate the analysis and forecast discussion on the distribution center, i.e. the realizations with the highest occurrence probability, and not those that reflect unusual extreme events.

Fan Chart Construction

The general steps to elaborate a Fan Chart are described, taking inflation forecast as an example. Nevertheless, this procedure can also be used to generate Fan Charts of other macroeconomic variables.

In general terms, to construct a Fan Chart two items of information are needed:

³ Technically, this trajectory corresponds to the mode of the conditional probability distribution of the variable forecast.

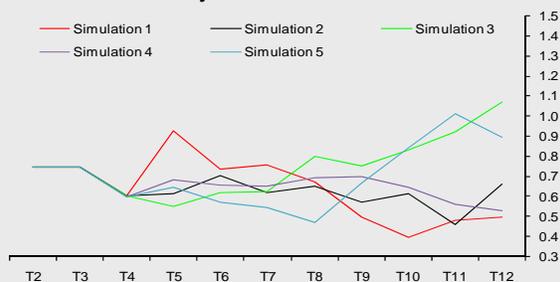
- a) The central projection of a variable under study that represents its trajectory with the highest realization probability, considering the information available at the time of forecasting.³ This trajectory is obtained from a set of quantitative models describing the behavior of several variables, relevant for the forecast of the variable under analysis.
- b) The amplitude of the confidence intervals around the central projection is obtained from the models' simulations used to elaborate the forecasts.⁴

These two elements are combined to estimate the different trajectories that the variable under analysis could take throughout the forecast horizon, and the probability associated with each of them (conditional probability distribution). In particular, once the central projection of the variable under analysis is estimated, the following steps are carried out to construct the Fan Chart:

- i) A set of "residual" variables is defined based on the estimates of the different quantitative models for the major macroeconomic variables. For each of the variables used in the elaboration of the forecast a residual variable is defined as the difference between the observed variable and its estimated value based on the model. In other words, this residual contains the information of the observed variables that cannot be explained by means of the used model. Thus, taking inflation as an example, its residual would be given by $\varepsilon_t = \pi_t - \pi_t^m$, where π_t is the inflation observed in period t and π_t^m is the inflation obtained by the model for the same period. In this way a set of residuals for the period t is constructed, one for each of the model's variables.
- ii) The procedure for obtaining the set of residuals for the period t, described in the previous step, is carried out for each period in the sample that was used to estimate the referred models. In this way, a time series for each variable's residuals is obtained throughout the sample.
- iii) The forecast horizon is defined. In the example of Graphs 1 to 4, the forecast horizon consists of 8 periods, from T5 to T12.
- iv) The following procedure is conducted to estimate a set of possible trajectories of the variable under analysis throughout the forecast analysis. Eight observations of the time series of the aforementioned residuals are randomly chosen (each one of these eight observations will be used for each one of the periods of the forecast horizon, in this case from T5 to T12). Next, the trajectory of the variable under study is estimated throughout the forecast horizon, based on: a) the aforementioned models; b) the present value (T4 period) of the variable under study and other variables taken into account; and c) the randomly selected residuals. In this example, the abovementioned trajectory is presented in Graph 5 as "Simulation 1." Subsequently, the present procedure is repeated several times, each time randomly choosing a new set of residuals. To the extent to which the chosen residuals are different in each simulation, the forecast trajectories for the variable under study are also different throughout the forecast horizon. Graph 5 presents four other forecast trajectories for the variable under study (simulations 2 to 5) and shows that there are differences among them.

⁴ The degree of uncertainty is directly related to the variance of the probability density function, which, obtained from the estimated model simulation, is consistent with the past statistical properties of the variable under study.

Graph 5
Simulated Trajectories of a Particular Variable



- i) The procedure is repeated until a set of trajectories for the variable under study is large enough, for example a thousand different trajectories. The number of simulations should be big enough to estimate the probability that the variable under study will be located within a determined range with some degree of certainty⁵.
- ii) Once the distribution of the variable under analysis for each period of the forecast horizon is determined, the values that accumulate 10 percent probability around the central projection

⁵ Realization probability of the different trajectories is estimated by adjusting a normal density function for each period of the forecast horizon (from T5 to T12).

are calculated. Subsequently, the corresponding values of 10 percent probability around the previous values are calculated. This procedure is repeated until 90 percent of the distribution is calculated.

- iii) Finally, a Fan Chart is constructed by linking the referred corresponding values throughout the forecast horizon.

Summing up, Fan Charts allow illustrating the realization probabilities of the macroeconomic variables' forecasts. Consequently, they are useful for communicating the monetary authorities' forecasts of different variables, including the illustrating of the confidence intervals. Nevertheless, it should be mentioned that forecast exercises, as the ones described above, depend on the information available at the moment of their execution. Thus, despite the fact that the macroeconomic variables' forecasts are presented by Fan Charts, they should not be interpreted as a monetary authorities' promise regarding the future evolution of these variables. As mentioned before, these are forecasts conditional on the available information.

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Annex Calendar of Monetary Policy Decision Announcements, Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions and Inflation Reports

Throughout the last years, an environment of macroeconomic stability has been establishing in Mexico, characterized by low and stable inflation. At the same time the monetary policy – including the Central Bank's communication strategy to the public – has been evolving. In this sense, starting with the Inflation Report, July-September 2002, the Board of Governors has published the calendar of monetary policy announcements for the next year within the corresponding third quarter report of each year. It is worth mentioning, that the publication dates of the quarterly inflation reports also have been included in this calendar.

The calendars that during this time have been published for the years 2003 to 2005 included 23 predetermined monetary policy announcement dates. Due to the decreased inflation and the higher stability of major macroeconomic variables in Mexico, the Board of Governors reduced the number of predetermined announcement dates: from 2005 to 2006 the number of dates reduced from 23 to 12 and from 2008 onwards, to 11.

Considering that inflation has converged to low and stable levels during the last years, the Board of Governors considers a further reduction of the number of predetermined monetary policy announcement dates as appropriate: the calendar presented below considers 8 dates for the referred announcements in 2011.²³ Nevertheless, as in previous years, the Board of Governors reserves the right to announce changes in the monetary policy stance at dates different to those previously scheduled, in the case of extraordinary events or situations requiring the Central Bank's intervention.

For the purpose of increasing even further Central Bank's transparency and being in line with the best practices in the matter, the Board of Governors has decided to increase the information released with respect to its meetings regarding the monetary policy decisions from 2011 onwards, i.e. by publishing the Minutes of each meeting. This document will allow the markets and the public in general to get to know the decision-making process, in particular the factors that mainly influenced the decisions of the Board of Governors' members. Therefore, although the number of monetary announcements during the year will be reduced, the amount of information released to the market will increase. The Central Institute also reasserts its commitment to increase the quality of the analysis provided.

Table 3 of this annex presents the calendar of monetary policy announcements, publication of the Minutes of the Board of Governors' meetings regarding the monetary policy decisions and the quarterly Inflation Reports for 2011. As can be seen, every month of the year, the Central Institute will provide information about the monetary policy performance to the public, either through

²³ From a sample of 25 countries, seven countries committed themselves to eight monetary policy announcements in 2010, representing the second most used frequency (12 was the most frequent number of announcements).



the monetary policy announcements, the Minutes or the quarterly Inflation Reports. This allows a more efficient use of Central Bank's communication instruments, since the predetermined dates are better distributed throughout the year.

Table 3
Calendar for 2011

Month	Announcement of the Monetary Policy Decision	Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions	Inflation Reports ^{1/}
January	21		
February		4	9
March	4	18	
April	15	29	
May	27		11
June		10	
July	8	22	
August	26		10
September		9	
October	14	28	
November			9
December	2	16	

^{1/} The Inflation Report that will be published on February 9, 2011 corresponds to fourth quarter of 2010, the one to be published on May 11 to the first quarter of 2011, the one to be published on August 10 to the second quarter of 2011, and the one to be published on November 9 to the third quarter of 2011.