BANCO DE MÉXICO

Inflation Report

July – September 2013

INFLATION REPORT

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

FOREWARNING

This text is provided for reader's convenience only. Discrepancies may possibly arise between the original document and its translation to 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 November 4, 2013. Figures are preliminary and subject to changes.

CONTENTS

BOXES

1.   Introduction

Strengthening of the monetary policy, stable inflation expectations and a sound functioning of the financial markets in Mexico contributed to an environment, in which the process of inflation convergence towards the 3 percent target has been consolidating. This provided Banco de México with more room for maneuver in the monetary policy conduction.

The above propitiated that, in light of the weakening of the economic activity and in an environment of low inflation, the Central Institute could implement downward adjustments of 25 basis points in the target for the reference rate in September and October, thus reducing the referred target from 4 to 3.50 percent, without compromising the process of inflation convergence towards the 3 percent target. It should be pointed out that this policy rate adjustment derived from both domestic and external factors, and was implemented despite the uncertainty prevailing in international financial markets.

Headline inflation continued to display the downside trend that it had started in April. This was consequent on the annual core inflation component remaining on average below 2.5 percent in the third quarter, close to its historical minimum levels. The performance of headline inflation was also accounted for by the fading of the effects of the shocks that affected the non-core inflation at the end of the first quarter of the year, which, as anticipated by Banco de México, turned out transitory and did not generate second round effects on the process of price determination in the economy. Hence, headline inflation lied within the interval of plus/minus one percentage point around the 3 percent target throughout the period analyzed by this Inflation Report.

The economic activity in Mexico weakened significantly over the first half of 2013. However, in the third quarter, some indicators suggest that it may have resumed a positive trajectory. The recent mixed performance of some indicators starts to reflect the fact that part of the impacts of the shocks that had adversely affected the economy in the previous quarters began to dissipate in the quarter under analysis.

This occurred in an environment of persisting weak growth of the world economy, as a result, on the one hand, of a mixed performance in advanced economies, which partly reflected divergences in their respective phase of the business cycle, and, on the other hand, as a result of lower than expected growth in main emerging economies.

At the beginning of the quarter, the U.S. economy expanded, which indicated that the Federal Reserve could begin reducing its asset purchases in September, which, in turn, contributed to the fact that the decompression process of some risk premia and the corresponding increase in long-term interest rates, which had begun in the previous quarter, continued. Nonetheless, the release of some economic figures in August and September pointed to a moderation in this recovery. Under these circumstances and given the uncertainty regarding the effects of the fiscal debate in the U.S., in September the Federal Reserve decided to maintain the pace of its asset purchases unchanged, thus giving rise to a temporary halt in the increase of risk premia, which had been observed in the previous months. In particular, a drop in long-term interest rates and a recovery in international financial markets were registered. Finally, in its October meeting, the

Federal Reserve ratified its decision to maintain unchanged the pace of asset purchases.

In a highly volatile global environment, the adjustments in Mexican financial markets took place in an orderly manner without affecting either inflation expectations, or the inflation risk premium. Thus, higher long-term interest rates in the period from May to August were consequent on external factors, in particular, on the above referred decompression process of some risk premia in the U.S. Still, in September, the downward adjustment in the reference interest rate in Mexico, combined with the interest rates' evolution in international financial markets, contributed to lower interest rates of all terms in Mexico. Moreover, the exchange rate adjustment in the period analyzed in this Inflation Report was orderly and congruent with the referred global environment.

Taking into account the above described, particularly, the weakening of the economy, headline inflation is anticipated to prevail around 3.5 percent in the remainder of 2013, and annual core inflation is expected to lie below 3 percent. Based on the available data, the possible impact of the fiscal changes on headline inflation for 2014 is estimated to be moderate and transitory, and is not anticipated to generate second round effects. Thus, the most probable path of annual headline inflation is expected to fluctuate around 3.5 percent throughout the following year. Even considering the fiscal changes, core inflation is anticipated to locate at levels under 3 percent in 2014. Additionally, headline inflation is estimated to register a downside trend in 2015 and to locate around the 3 percent target, and core inflation is expected to decrease slightly.

Considering the adverse results of the economic activity in the first half of 2013, which were more unfavorable than initially anticipated, a downside adjustment in the forecast of the Mexican economic growth in 2013 and 2014 should be made. In particular, the forecast interval for the GDP growth rate in Mexico in 2013 as a whole is revised down from 2.0 to 3.0 percent in the previous Inflation Report to 0.9 to 1.4 percent. For 2014, this forecast interval is modified down from 3.2 to 4.2 percent to 3.0 to 4.0 percent. These forecasts consider the impact on the economic activity generated by the expansionary fiscal policy implicit in the economic package approved for 2014, which will lead to an increment in the public sector borrowing requirements. For 2015, considering the possible gradual effect of structural reforms, the GDP growth rate is anticipated to lie within the interval of 3.2 to 4.2 percent.
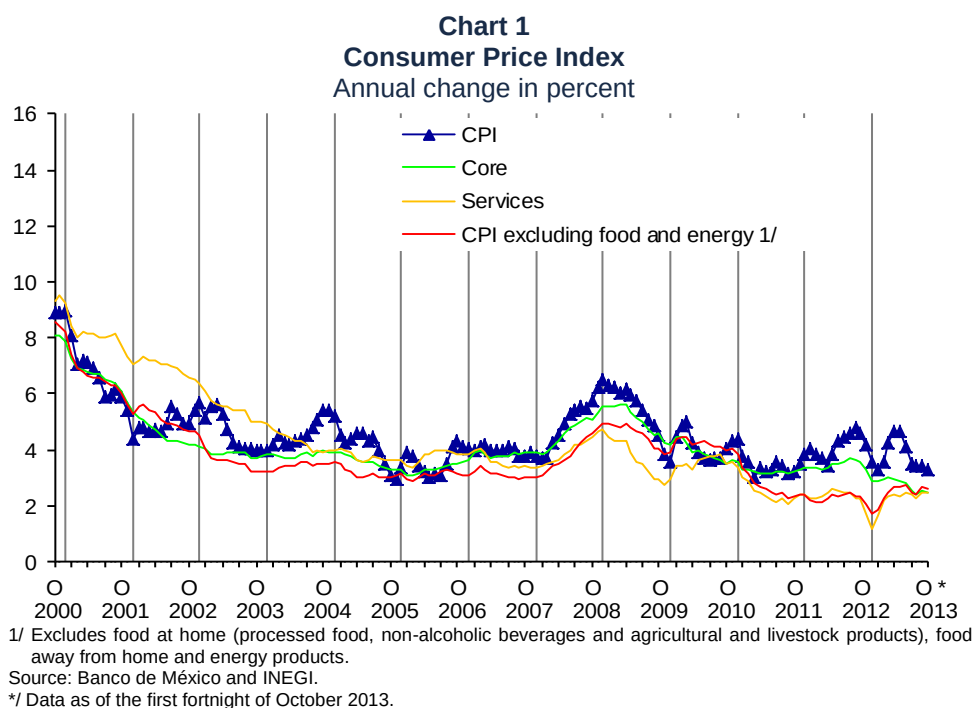
The Board of Governors estimates that, given the expected fiscal policy, the adjustments to the monetary policy in September and October are congruent with the efficient inflation convergence to the 3 percent target. Still, it considers that additional reductions to the reference interest rate target will not be advisable in the foreseeable future, taking into account that, on the one hand, even though the economy is characterized by a considerable degree of slack, it is anticipated to reduce in the horizon at which the monetary policy operates, and, on the other hand, that with the referred adjustments the ex-ante short-term real interest rate already lies at levels close to zero. Thus, given the current phase of the business cycle the economy is going through, the macroeconomic stance is estimated to be conducive to a gradual recovery of the economy without generating inflationary pressures. In any event, the Board of Governors will remain alert so that the relative price changes derived from the fiscal adjustments do not generate second round effects on inflation. Likewise, it will monitor the implications generated by

the evolution of the economic activity and the monetary stance of Mexico relative to the U.S., among other factors, onto the inflation outlook, so as to reach the abovesaid inflation target.

2.   Recent Developments of Inflation
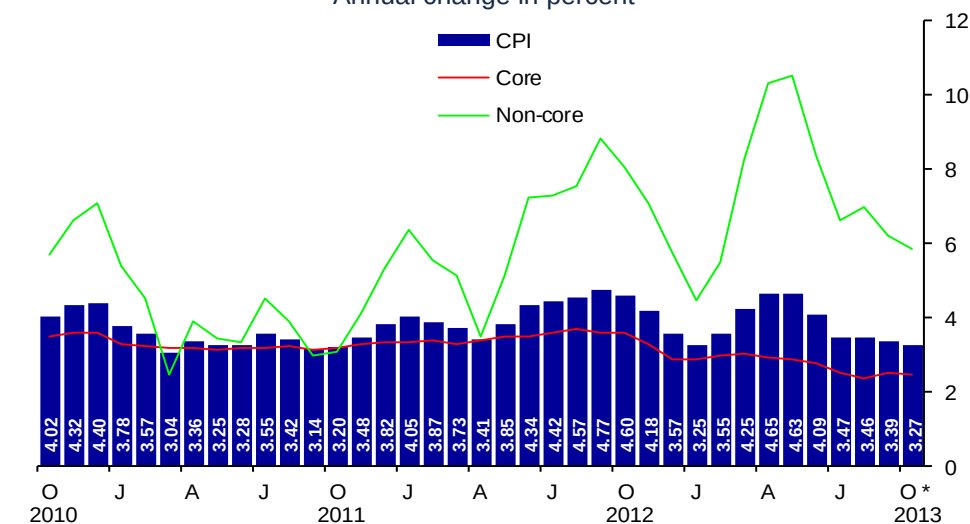
2.1.   Inflation

In the third quarter of 2013, annual headline inflation maintained the downward trajectory it had started in April, which was contributed to by a persisting downside trend of annual core inflation. Additionally, the fading of the effects of the shocks which affected the non-core inflation in March and April 2013 also supported the drop in headline inflation. The referred effects turned out to be transitory, as anticipated by Banco de México (Table 1 and Chart 1).

Chart 1
Consumer Price Index
Annual change in percent

1/ Excludes food at home (processed food, non-alcoholic beverages and agricultural and livestock products), food
   away from home and energy products.
Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

Thus, over the period analyzed in this Inflation Report, annual headline inflation again located within the variability interval of plus/minus one percentage point around the 3 percent target, after which its quarterly average registered 3.44 percent, while in the previous quarter the corresponding figure was 4.46 percent. It should be noted that the meteorological phenomena in the second fortnight of September 2013, which affected certain crops in different states of Mexico, particularly fruit and vegetables, did not produce a significant impact on the inflation evolution. Hence, in September 2013 annual headline inflation lied at 3.39 percent, while in the first fortnight of October it was 3.27 percent (Table 1 and Chart 2).
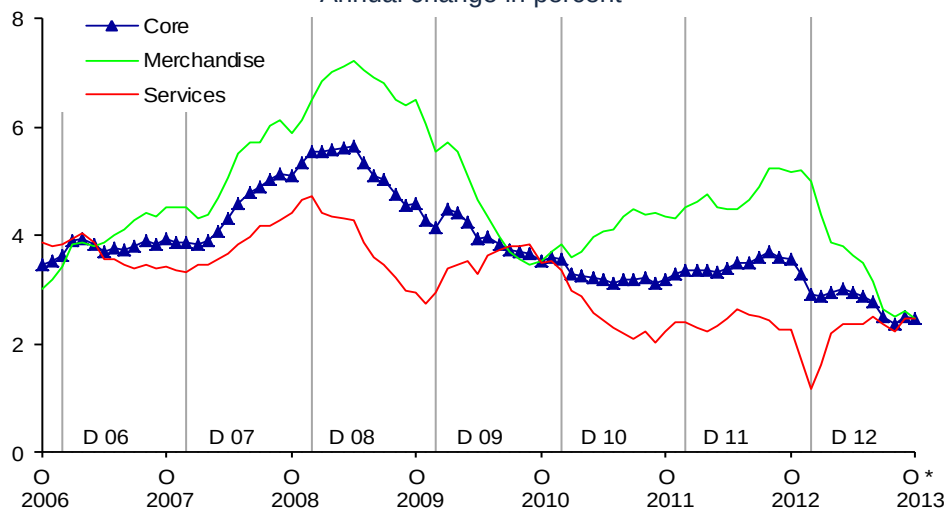
Chart 2
Consumer Price Index
Annual change in percent

CPI
Core
Non-core

Bar values: 4.02, 4.32, 4.40, 3.78, 3.57, 3.04, 3.36, 3.25, 3.28, 3.55, 3.42, 3.14, 3.20, 3.48, 3.82, 4.05, 3.87, 3.73, 3.41, 3.85, 4.34, 4.42, 4.57, 4.77, 4.60, 4.18, 3.57, 3.25, 3.55, 4.25, 4.65, 4.63, 4.09, 3.47, 3.46, 3.39, 3.27

O 2010   J   A   J   O 2011   J   A   J   O 2012   J   A   J   O* 2013

Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

Annual core inflation, used as a measure of the medium-term trend of headline inflation, reached minimum historical levels in the analyzed period, by registering 2.37 percent in August and an average of 2.46 percent in the third quarter of 2013 (2.87 percent in the second one). In the first fortnight of October 2013, the annual change of this indicator dropped to 2.46 percent from 2.52 percent in September (Table 1 and Chart 3).

Chart 3
Core Price Index
Annual change in percent

Core
Merchandise
Services

D 06   D 07   D 08   D 09   D 10   D 11   D 12

O 2006   O 2007   O 2008   O 2009   O 2010   O 2011   O 2012   O* 2013

Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

The merchandise core subindex decreased its average change from 3.42 to 2.58 percent between the second and the third quarters of 2013. The above is largely due to both the fading of the effects of international commodity price increases,

which brought about an upward change in this indicator in the third quarter of last year, and the weakening of aggregate demand (Table 1 and Chart 4a). It is noteworthy that within this item a greater share and duration of markdowns stood out in the analyzed period with respect to the same span in previous years. Thus, the average annual growth rates of both food and non-food merchandise plunged from 4.27 and 2.74 percent in the second quarter of 2013 to 3.44 and 1.90 percent in the third one. In the former group, a lower growth pace in the prices of corn-, wheat- and soy-derived goods was noteworthy, while the group of non-food merchandise presented lower price changes in goods such as motor vehicles and cleaning services and personal hygiene articles (Table 1).

The annual change rate of the services core subindex remained at levels significantly below 3 percent, registering in the third quarter an average change of 2.36 percent, as compared to 2.41 percent in the previous one. Considering that this is the indicator which better reflects the domestic conditions affecting inflation, it indicates the absence of demand-related inflationary pressures (Table 1 and Chart 4b). Within this subindex, the average annual change of the group of services excluding education and housing plunged from 2.08 percent in the second quarter to 1.87 percent in the third one, with the notable decrease in the cellular phone services and the air transport, as well as lower growth rates in some food services' prices and in tourism packages (Table 1).

Chart 4
Core Price Index: Merchandise and Services
Annual change in percent

a) Merchandise

b) Services

Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.
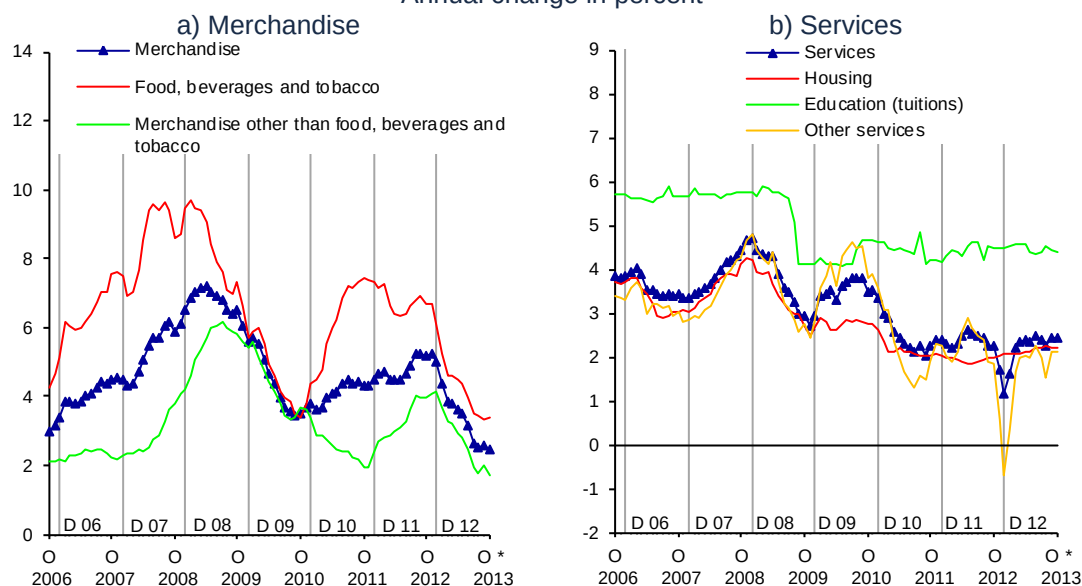
Table 1
Consumer Price Index and Components
Annual change in percent

	Annual change							Average percent	
	April 2013	May 2013	June 2013	July 2013	August 2013	September 2013	1f October * 2013	IIQ 2013	IIIQ 2013
CPI	**4.65**	**4.63**	**4.09**	**3.47**	**3.46**	**3.39**	**3.27**	**4.46**	**3.44**
Core	**2.95**	**2.88**	**2.79**	**2.50**	**2.37**	**2.52**	**2.46**	**2.87**	**2.46**
Merchandise	**3.63**	**3.49**	**3.14**	**2.64**	**2.51**	**2.59**	**2.47**	**3.42**	**2.58**
Food, beverages and tobacco	4.48	4.38	3.94	3.50	3.46	3.36	3.40	4.27	3.44
Corn-derived	3.40	2.89	1.50	1.45	1.12	0.89	1.13	2.59	1.15
Corn tortilla	3.11	2.50	0.97	1.01	0.71	0.57	0.70	2.19	0.76
Wheat-derived	6.44	6.63	6.52	5.71	4.73	3.19	3.33	6.53	4.53
White bread	9.76	9.60	9.09	8.82	5.40	1.77	1.13	9.48	5.24
Sweet bread	7.54	7.72	8.39	7.00	5.68	3.99	4.23	7.88	5.54
Soy-derived	4.16	3.14	2.15	1.01	1.20	0.89	0.61	3.15	1.03
Non-food merchandise	2.95	2.79	2.49	1.96	1.75	1.98	1.73	2.74	1.90
Motor vehicles	1.95	1.60	1.48	0.51	0.87	0.78	1.08	1.68	0.72
Cleaning services	4.12	4.01	3.83	2.06	1.83	2.05	1.89	3.99	1.98
Personal hygene articles	5.28	5.11	4.41	3.89	3.13	3.96	2.72	4.93	3.66
Services	**2.37**	**2.36**	**2.49**	**2.38**	**2.24**	**2.45**	**2.46**	**2.41**	**2.36**
Housing	2.10	2.14	2.21	2.21	2.26	2.21	2.20	2.15	2.23
Education (tuitions)	4.57	4.40	4.34	4.41	4.55	4.42	4.42	4.43	4.46
Other services	2.01	1.99	2.24	1.97	1.55	2.10	2.14	2.08	1.87
Food stands, refreshment stands, sandwich stalls and taco bars	5.11	5.03	4.76	4.72	4.18	3.87	3.77	4.97	4.26
Cellular phone services	-7.99	-9.12	-4.95	-7.35	-9.10	-7.33	-5.19	-7.39	-7.93
Air transport	-5.70	-8.03	-8.18	-11.66	-19.09	-16.37	-16.11	-7.32	-15.61
Tourism packages	2.72	3.15	3.93	1.80	2.42	0.88	2.15	3.26	1.71
Non-core	**10.32**	**10.56**	**8.39**	**6.60**	**7.01**	**6.20**	**5.85**	**9.75**	**6.60**
Agriculture	**17.25**	**15.30**	**8.99**	**4.22**	**5.19**	**2.33**	**0.71**	**13.80**	**3.90**
Fruit and vegetables	25.13	15.51	-1.22	-6.01	0.22	-0.63	-1.49	12.69	-2.14
Green tomato	227.28	102.81	-27.66	-40.48	-23.05	22.34	40.21	83.46	-16.73
Tomato	32.71	43.49	-5.82	-21.19	5.64	-1.57	-11.04	19.09	-6.10
Lemon	98.89	76.82	17.00	4.08	20.78	24.19	18.76	65.29	16.22
Livestock	12.66	15.08	15.38	10.60	8.15	4.04	1.94	14.37	7.53
Egg	39.59	50.52	48.20	22.05	11.58	-2.39	-5.61	46.01	9.44
Chicken	13.66	18.09	20.60	13.20	10.17	4.91	1.22	17.44	9.37
Beef	8.47	8.16	7.58	7.35	6.69	5.18	4.16	8.07	6.40
Energy and government approved fares	**6.47**	**7.75**	**8.06**	**8.12**	**8.16**	**8.66**	**9.15**	**7.42**	**8.32**
Energy	6.48	8.24	8.36	8.26	8.13	8.91	9.78	7.67	8.43
Gasoline	11.31	11.03	11.49	11.77	11.79	11.72	11.70	11.28	11.76
Electricity	-4.20	-4.29	-4.62	-5.43	-5.59	-3.53	3.45	-4.36	-4.86
Domestic gas	9.68	10.17	9.67	9.38	8.81	9.07	8.41	9.84	9.09
Government approved fares	6.26	6.51	7.15	7.50	7.87	7.87	7.78	6.64	7.75
Public transport fares	8.42	9.01	10.49	11.39	12.24	12.21	11.98	9.31	11.95
CPI excluding food (at home and away from home) and energy [1]	**2.68**	**2.64**	**2.72**	**2.49**	**2.41**	**2.68**	**2.63**	**2.68**	**2.53**
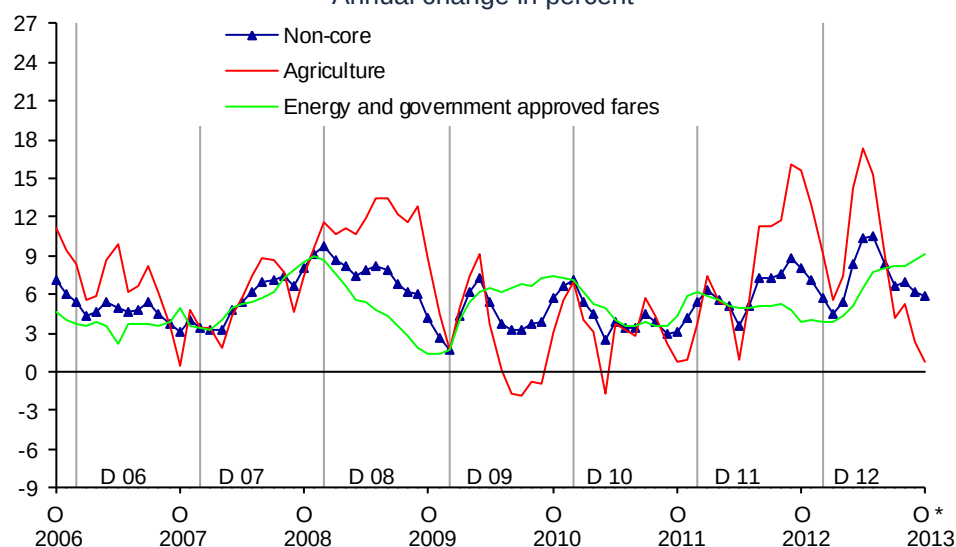
1/ Excludes food at home (processed food, non-alcoholic beverages and agricultural and livestock products), food away from home and energy products.
Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

The non-core price index dropped its average annual change rate from 9.75 percent in the second quarter to 6.60 percent in the third one, to subsequently decrease to 5.85 percent in the first fortnight of October (Table 1 and Chart 5). The above was mainly brought about by the fact that the effects of the weather and sanitary shocks, which negatively influenced the availability of some agricultural products at the end of the first quarter, continued dissipating in the third quarter of 2013.
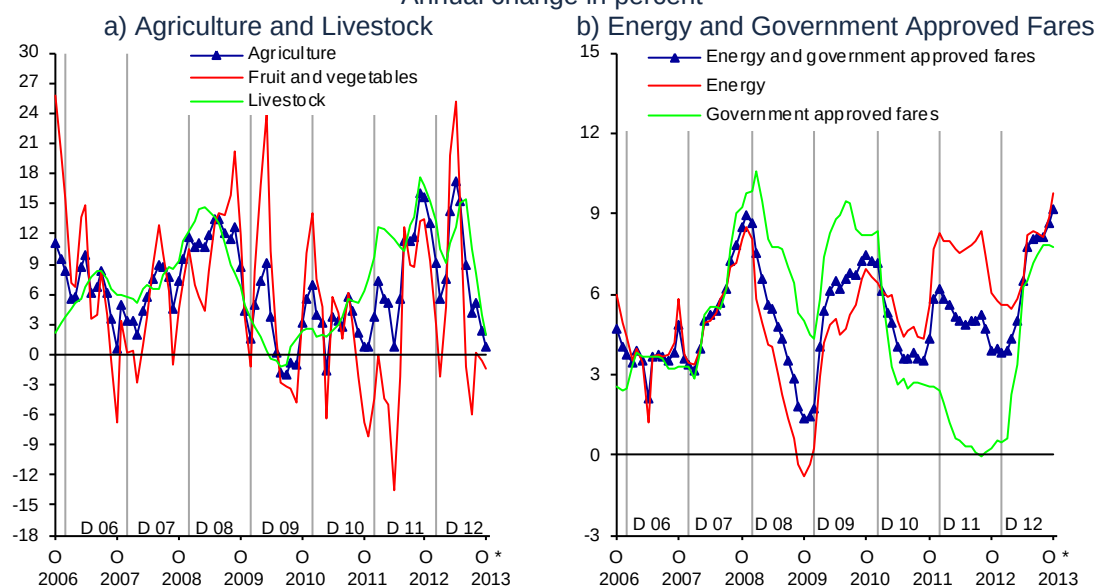
Chart 5
Non-core Price Index
Annual change in percent

Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

Therefore, the subindex of agricultural products' prices shifted from an annual growth rate of 17.25 percent in April to 2.33 percent in September. Thus, the average change of this indicator lied at 3.90 percent in the third quarter of 2013, while in the second one it was 13.80 percent. Various goods, whose prices in the previous quarters had been significantly affected by climate and sanitary shocks, green tomato, tomato, lemon, egg and chicken among them, reduced their prices and registered lower growth rates in the third quarter with respect to the second one. As a result, the average annual change of the fruit and vegetables prices shifted from 12.69 to -2.14 percent between the second and the third quarters, while that of the livestock products' prices slid from 14.37 to 7.53 percent over the same period (Table 1, Chart 6a and Chart 7). It should be noted that although the maximum historical precipitation levels on record were registered in September 2013, they did not significantly affect the Mexican agricultural production, and, therefore, did not considerably impact the CPI.

In the third quarter of 2013, the subindex of energy prices and government approved fares registered an average annual change of 8.32 percent, as compared to 7.42 percent in the previous quarter. This performance is mainly accounted for by three factors: i) a higher increment of gasoline prices with respect to 2012; ii) the fading of the effect generated by the elimination of the vehicle ownership tax fees in different states of Mexico in 2012; and iii) increments in public transport fares in some states of Mexico in the previous quarter. Thus, the first factor led to the increase in the average annual change of the energy item from 7.67 to 8.43 percent from the second to the third quarters, while the elimination of the vehicle ownership tax fee and higher public transport fares increased the average annual change of government approved fares from 6.64 to 7.75 percent over the same time span (Table 1, Chart 6b and Chart 8).
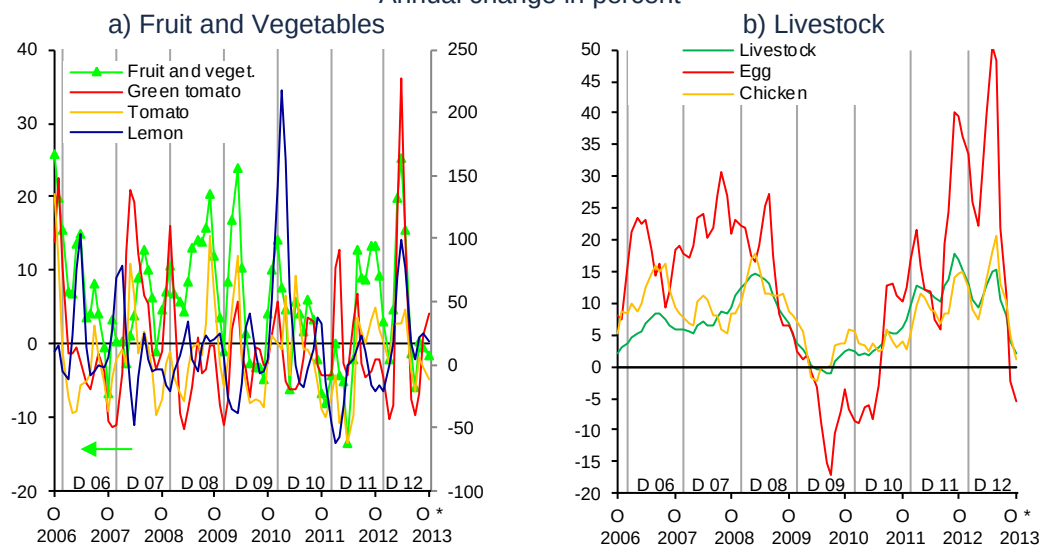
Chart 6
**Non-core Price Index**
Annual change in percent

a) Agriculture and Livestock

b) Energy and Government Approved Fares

Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.
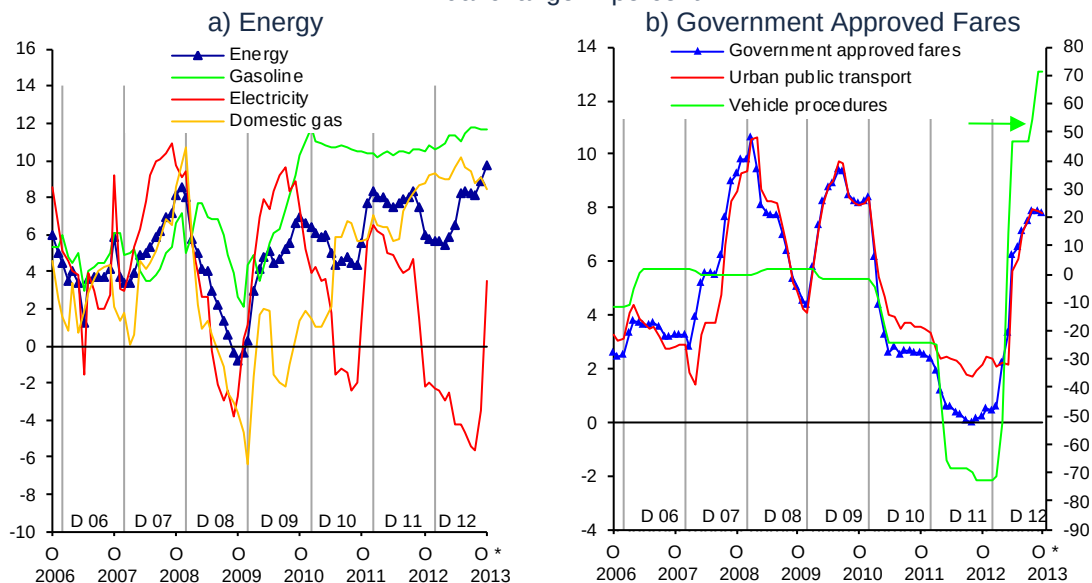
Chart 7
Agricultural Price Index
Annual change in percent

a) Fruit and Vegetables

b) Livestock
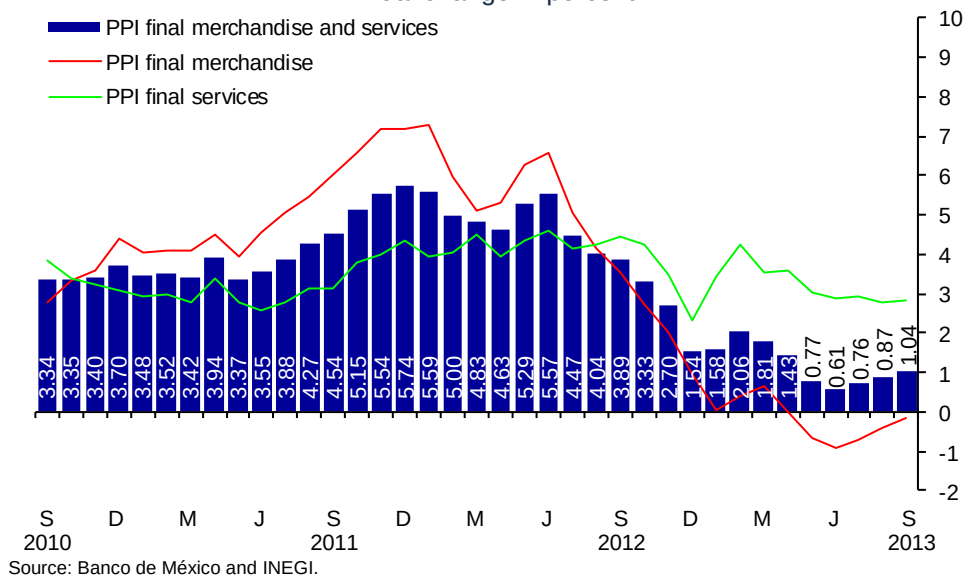
Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

Chart 8
Non-core Price Index
Annual change in percent

a) Energy

b) Government Approved Fares

Source: Banco de México and INEGI.
*/ Data as of the first fortnight of October 2013.

The Producer Price Index (PPI) of finished merchandise and services, excluding crude oil, lowered its average annual change for the fifth consecutive quarter, from 0.93 percent in the second quarter to 0.89 percent in the third one (Chart 9). This was due to the fact that the average annual change of merchandise prices remained negative, i.e. -0.43 percent in the third quarter of 2013 (-0.53 percent in the second). The services' prices decreased their annual growth rate, shifting from 3.15 percent in the second quarter of the year to 2.85 percent in the third one.

Chart 9
**Producer Price Index**
Annual change in percent
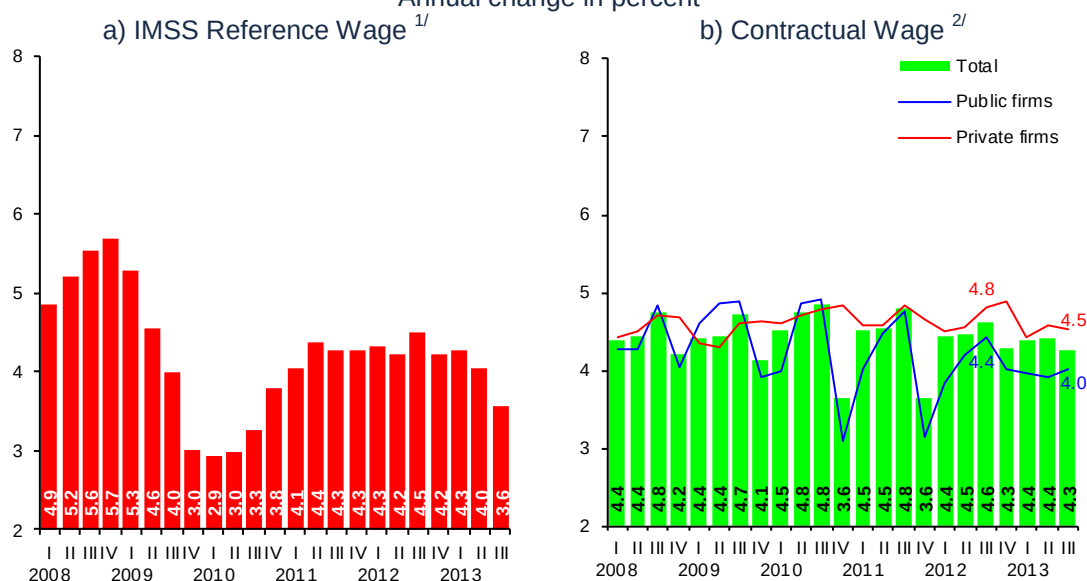
2.2. Wages

The recent evolution of the main wage indicators suggests that, in general, labor costs still do not represent an element generating inflationary pressures, given that they have been congruent with the current phase of the business cycle the economy is going through and have supported the inflation convergence towards its target. In the third quarter of 2013, the reference wage of IMSS-insured workers observed an annual change of 3.6 percent, below the 4.0 percent registered in the second quarter (Chart 10a).

The contractual wage negotiated by firms under federal jurisdiction presented an average annual increment of 4.3 percent from July to September 2013, a figure below that registered in the same quarter of last year (4.6 percent). This difference was due to both the change in the contractual wage in state-owned firms, which agreed on an average increment of 4.0 percent (4.4 percent in the same quarter of 2012), and the change in the contractual wage in private firms, which negotiated an average rise of 4.5 percent from July to September 2013 (4.8 percent in the third quarter of 2012, Chart 10b).

Chart 10
Wage Indicators
Annual change in percent

a) IMSS Reference Wage [1/]   b) Contractual Wage [2/]

Source: Calculated by Banco de México with data from IMSS and STPS.
1/ During the third quarter of 2013 an average of 16.4 million contributors were registered in IMSS.
2/ The contractual wage increase is an average weighted by the number of involved workers. The number of workers in firms under federal jurisdiction that annually report their wage increases to the Secretary of Labor and Social Welfare (*Secretaría del Trabajo y Previsión Social*, STPS) equals approximately 2 million.
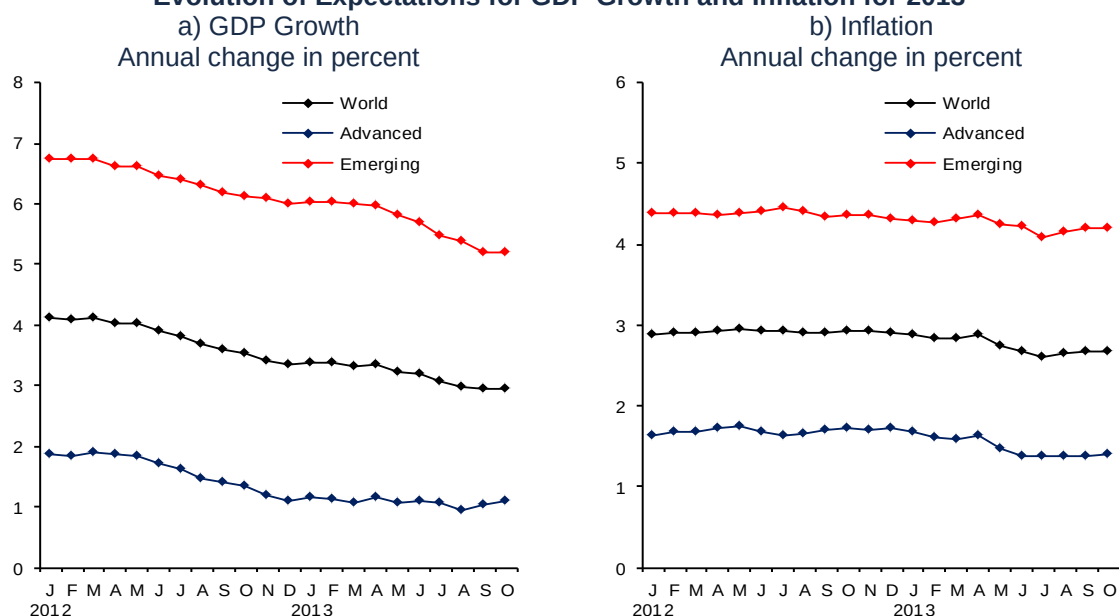
3. Economic and Financial Environment

3.1. International Environment

Over the third quarter of 2013, the recovery of world economy eased, as a result of a mixed performance in advanced economies and a lower than expected growth in the main emerging ones. In this context, downward revisions in emerging economies' growth forecasts for 2013 were observed (Chart 11a). Meanwhile, the inflation outlook generally remained stable in both groups of the countries (Chart 11b). International financial markets registered high volatility in the period covered by this Inflation Report, given the uncertainty with regard to the possible changes in the monetary and fiscal policies in the U.S. In light of the above, the global economic recovery is still subject to different risks.

Chart 11
Evolution of Expectations for GDP Growth and Inflation for 2013 [1]

a) GDP Growth
Annual change in percent

b) Inflation
Annual change in percent

1/ Weighted average by region, using as weight the share of each country's GDP, based on the purchasing power parity, in the world total GDP in the corresponding year.
Source: Prepared by Banco de México with data from the International Monetary Fund and from Consensus Forecasts.

3.1.1. World Economic Activity

The U.S. economic activity recovery seems to have moderated over the third quarter, given a reduced dynamism of domestic private demand.[1] The lower growth of private domestic expenditure was a result, among other factors, of the effects of tighter financial conditions derived from higher long-term interest rates and of the automatic government spending cuts. In particular, higher mortgage interest rates brought about a lower growth of residential investment, which had been strengthening over the previous quarters (Chart 12a). The expansion of

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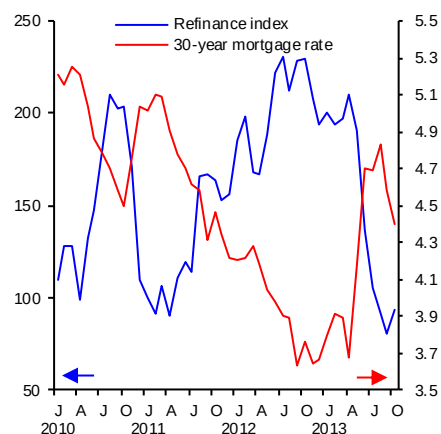
[1] In line with the Blue Chip forecast in October 2013, the GDP would have expanded at an annualized quarterly rate of 2.0 percent in the third quarter, a figure below the 2.5 percent registered in the previous quarter.

investment in equipment has slowed down, despite the ample availability of resources in non-financial private firms. This could reflect a certain degree of caution of firms as a response to the environment of slow economic expansion and uncertainty over the fiscal policy of the country. In turn, the growth of private consumption moderated in the referred period, given a lower increase in personal disposable income, which reflects the slow increment of wages and a decrease in consumer confidence (Chart 12b).
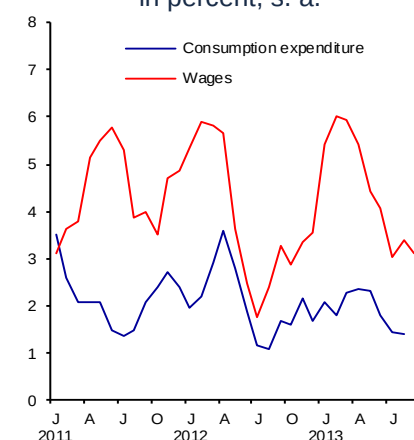
Chart 12
U.S. Economic Activity

| a) Housing Sector Indicators Index Jan 2011=100 and in percent	b) Real Personal Consumption Expenditure and Private Sector Employees' Compensation Annualized quarterly change of the 3-month moving average in percent, s. a.	c) Industrial and Manufacturing Production Index IV 2007=100, s. a.
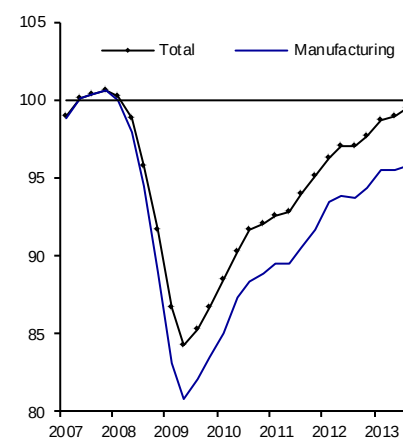
Source: MBA, Bloomberg.

s. a. / Seasonally adjusted figures.
Source: BEA and BLS.

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

The U.S. labor market kept a gradual recovery, even though at a rate lower than in two previous quarters. The average monthly expansion of the non-farm payroll was of 143 thousand jobs in the period from July to September, as compared to 182 thousand jobs over the period from April to June. The unemployment rate slid from 7.6 percent in June to 7.2 percent in September, thus maintaining its downside trend. However, to a large extent, this reflected the continuous fall in the labor participation rate.

Meanwhile, despite the significant fall in utilities, industrial production improved over the period covered by this Inflation Report, by shifting from a growth of 1.1 percent to that of 2.3 percent in annualized quarterly terms. This was due to the manufacturing activity recovery and a greater expansion of mining (Chart 12c).

The lack of agreement in the U.S. Congress to approve a new extension of the spending authority led to a partial shutdown of the U.S. Federal Government in the first half of October. Later, on October 16, 2013, the authorities approved the temporary legislation to maintain the current spending level through January 15, 2014, as well as the suspension of the Federal Government debt ceiling set at USD 16,699 billion till February 7, 2013. Even though a modest direct impact by this partial shutdown on the GDP is forecast in the fourth quarter, there is concern
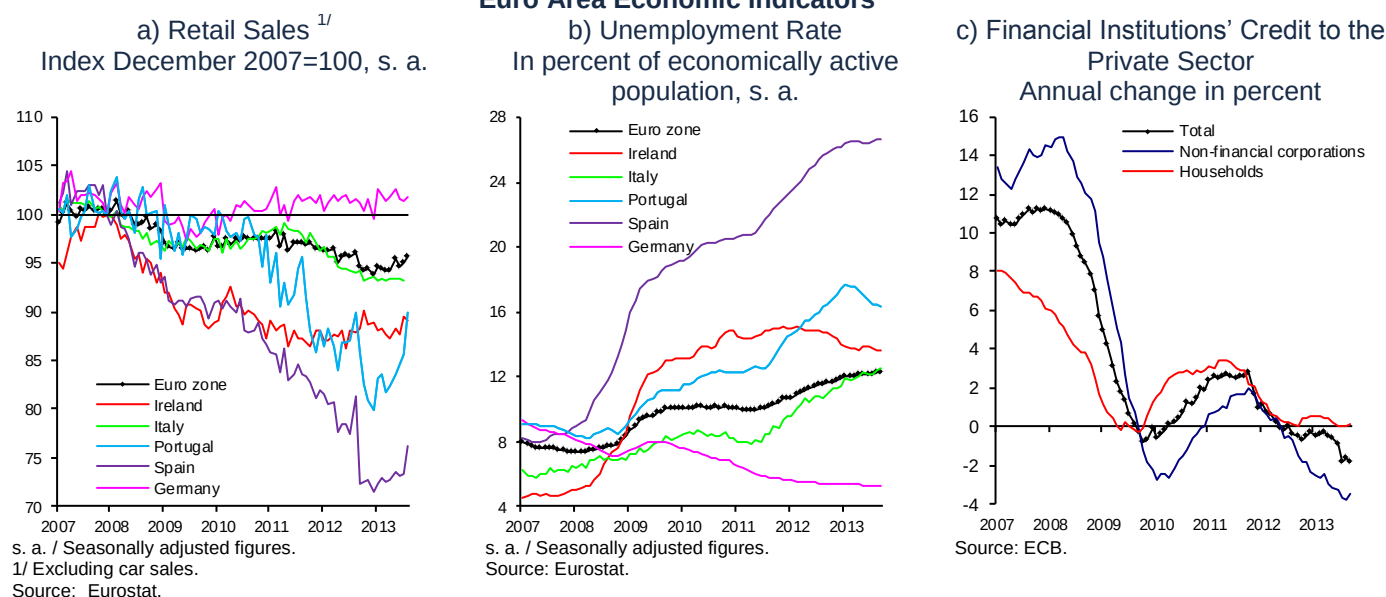
over the negative effects generated by the lack of lasting agreements in terms of the U.S. budget and debt on consumer and business confidence, investment plans, job creation in the private sector, and, therefore, on the economic recovery.

In late second quarter, the Federal Reserve pointed out that, if the economic recovery and improvement in the labor market continue, it could begin to reduce the pace of asset purchases in the second half of 2013. Given the evidence that emerged in early third quarter indicating that the economic activity recovery proceeded in line with the Federal Reserve expectation, the decompression process of some risk premia, as well as the corresponding increment in long-term interest rates, which had begun in the previous quarter, continued. This derived from the fact that in the markets it had already been anticipated that the Federal Reserve would gradually begin the adjustment in the pace of asset purchases in September. However, the publication of mixed economic figures in August and September suggested a moderation in the economic recovery, while some indicators of the labor market weakened.

Under these circumstances and given the concern over the negotiations of the budget and the debt ceiling of the Federal Government, on September 18, 2013 the Federal Reserve decided to maintain unchanged its pace of asset purchases, and indicated that it would postpone the adjustment of the monthly amount of these purchases till having more evidence of improvement in the economy. This decision resulted in a temporary suspension in the above referred decompression process of the risk premia, which gave rise to a slight decline in the U.S. long-term interest rates and a recovery in international financial markets. In this context, the Federal Reserve made a downward adjustment in growth expectations for 2013 and 2014, and stressed that, given that the risks to the economic recovery will only diminish gradually, the federal funds rate target anticipated to remain below its longer-run normal value for a considerable time. Finally, in its meeting of October 30, 2013, the Federal Reserve ratified its decision to maintain the pace of its asset purchases unchanged.

In the euro area, the business sentiment and the households' confidence index point to the persisting incipient economic recovery over the third quarter of the year. Even if the industrial production remained weak in the period from July to August, the available indicators of household consumption suggest an improvement in this period (Chart 13a). However, the recovery of private demand has been limited by high levels of indebtedness and unemployment, particularly in the economies of the periphery. The unemployment rate shifted from 12.1 percent in June to 12.2 percent in September (Chart 13b). Likewise, the continued fragmentation of financial markets and the fragile banks' balance sheets continue limiting the economic recovery. Thus, the financial institutions' funding to the private sector, particularly to non-financial corporations, still did not present any signs of recovery (Chart 13c).

Chart 13
Euro Area Economic Indicators

a) Retail Sales [1/]
Index December 2007=100, s. a.

b) Unemployment Rate
In percent of economically active
population, s. a.

c) Financial Institutions' Credit to the
Private Sector
Annual change in percent

s. a. / Seasonally adjusted figures.
1/ Excluding car sales.
Source: Eurostat.

s. a. / Seasonally adjusted figures.
Source: Eurostat.

Source: ECB.

So as to restore confidence in the European banking system and to firmly advance towards a banking union, which would contribute to the reduction in the credit markets' fragmentation and which would strengthen banks in the region, on September 12, 2013, the European Parliament passed legislation on the establishment of a banking union, by means of launching a Single Supervisory Mechanism (SSM).[2] This legislation grants the European Central Bank (ECB) the unique authority of prudential supervision of the main banks in the member countries, in force from November 2014 onwards. As part of the key activities in preparation to assume this authority, the ECB will carry out, together with the competent national authorities, a comprehensive evaluation of 130 banks from 18 countries in the region, which includes: i) an analysis of the levels of capital, liquidity and leverage; ii) a revision of the asset quality; and iii) a stress test.[3] The aim of the evaluation covering the period from November 2013 to October 2014 is to increase the strength of banks, to implement the required corrective actions and to generate confidence in the sector.

With respect to other necessary elements to progress in forming a banking union, an agreement over the pending proposals of restructuring and banking resolution, of creating a deposit insurance scheme, and over the proposal of a financial aid mechanism is expected, in case multiple banks with capital shortage emerge, as a result of the previous assessment procedures.

The U.K. economy maintained a solid recovery over the third quarter, sustained by a major vigor of domestic demand, particularly in the housing sector. Likewise, there is evidence of an incipient increase of exports, given a gradual recovery in the euro area. Although prospective indicators, such as households' and firms'

[2] On October 15, 2013, the European Council approved the creation of the SSM.
[3] The stress test will be carried out based on the reference value in the Tier 1 ordinary capital equivalent to 8 percent of the risk-weighted assets.
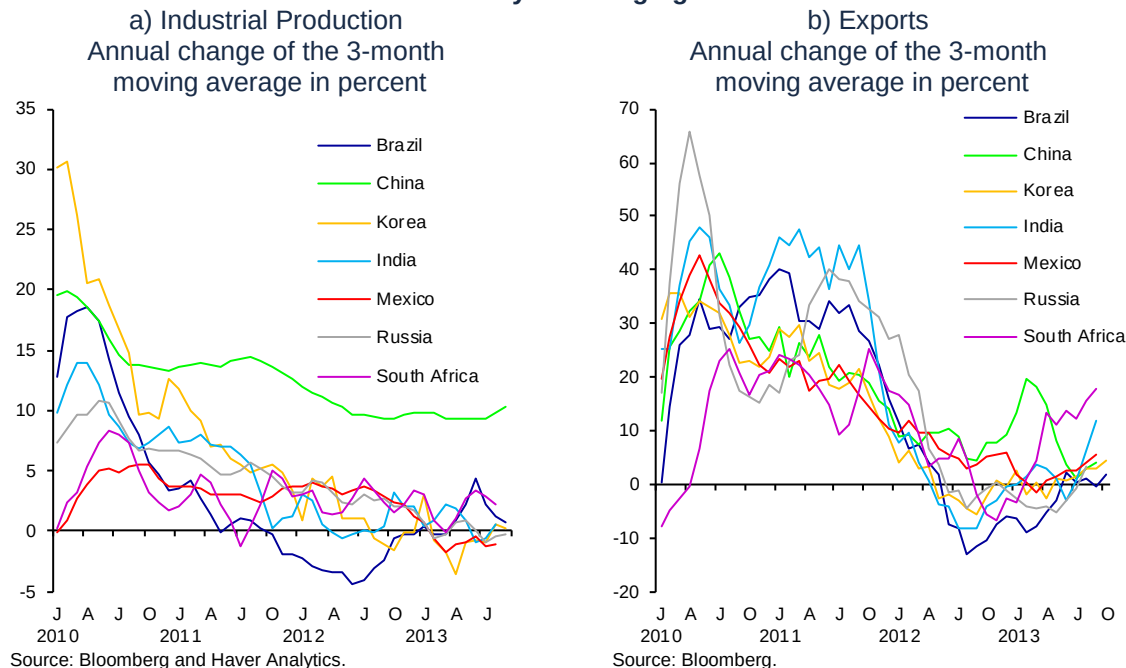
confidence, point to a continuous expansion of the economic activity in the short term, great uncertainty over the employment growth rate still prevails.

Japan's economy, sustained by an expansionary monetary and fiscal policy, continued the economic recovery in the third quarter, although at a lower rate with respect to the previous quarter. Private consumption decelerated in this period. Furthermore, exports dropped marginally, even though a moderate improvement is expected over the following months, supported by the world economic recovery and the yen depreciation. Meanwhile, both private and public investment continued expanding, the former one as a result of higher corporate profits. Nonetheless, there are still doubts regarding the growth of the Japanese economy in the medium term, as a reflection of uncertainty over the implementation of the pending structural reforms.

Growth in the main emerging economies generally turned out to be lower than anticipated in the third quarter, given a major weakness of domestic demand and tighter conditions in global financial markets. On the one hand, industrial production in these economies generally remains weak, even though exports seem to have stabilized given a gradual recovery in advanced economies (Chart 14). Nevertheless, concern prevails in some emerging economies with respect to the structural factors that may hold back the recovery and that reflect the infrastructure limitations, incentives that prevent greater investment and other restraints that could even have reduced its potential GDP.

Chart 14
Economic Activity in Emerging Economies

a) Industrial Production
Annual change of the 3-month
moving average in percent

b) Exports
Annual change of the 3-month
moving average in percent

Source: Bloomberg and Haver Analytics.

Source: Bloomberg.
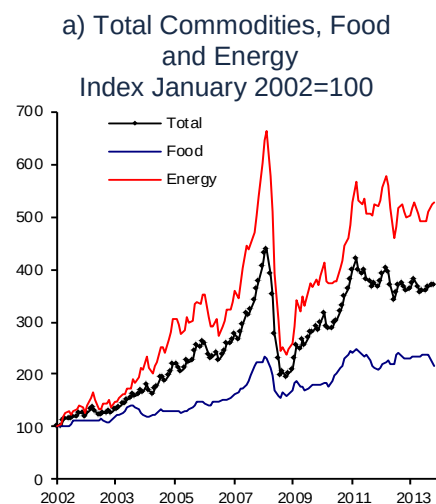
3.1.2.   Commodity Prices
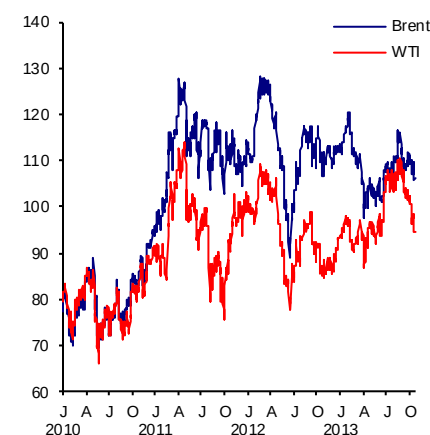
International commodity prices continued the downward trend, which had been observed in recent years, as a result of weak world economy. In the period

covered by this Inflation Report, the decline in some commodity prices was also affected by supply-related factors (Chart 15a). The lower crude oil price derived from fewer geopolitical risks in the Middle East, a recovery in the world production in different production regions and higher inventories (Chart 15b). In turn, the grain prices, particularly corn, stressed their downward trend, given a better outlook for production, derived from the favorable climate conditions in the U.S. (Chart 15c).
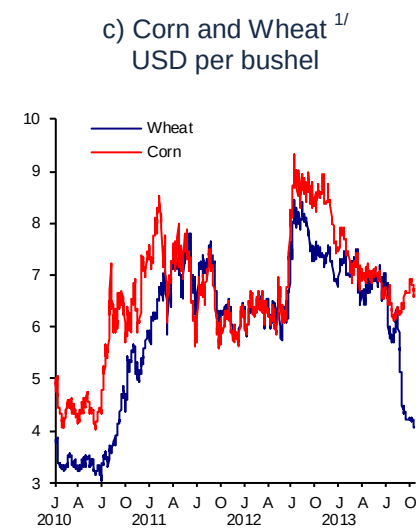
Chart 15
International Commodity Prices

a) Total Commodities, Food and Energy
Index January 2002=100

b) Crude Oil [1]
USD per barrel

c) Corn and Wheat [1]
USD per bushel

Note: Monthly figures as of September 2013.
Source: International Monetary Fund.

1/ Spot prices.
Source: Bloomberg.

1/ Spot prices.
Source: Bloomberg.

3.1.3. World Inflation Trends

Generally, inflation remained at low levels in most advanced and emerging economies in the third quarter and it is expected to remain at reduced levels over the next quarters. In advanced economies, the persistent slack contributed to low inflation levels, while in most emerging economies the downward inflation trend was, to a large extent, due to the lower growth rate and the decline in agricultural commodities' prices. Nonetheless, in some emerging economies with less solid macroeconomic fundamentals, the considerable depreciation of their currencies contributed to the emergence of inflationary pressures, given the expectation that the Federal Reserve would start to reduce the pace of its asset purchases in September and the persistence of domestic imbalances.

In the U.S., annual headline inflation slid from 1.8 percent in June to 1.2 percent in September, which was contributed to by a decline in energy prices (Chart 16a). Similarly, the annual change of the personal consumption expenditure deflator reduced from 1.3 to 1.2 percent over the period from June to August, persisting far below the Federal Reserve long-term target of 2 percent. In turn, core inflation increased slightly in the period, from 1.6 to 1.7 percent, which reflected higher housing rents and higher prices of health-related services.
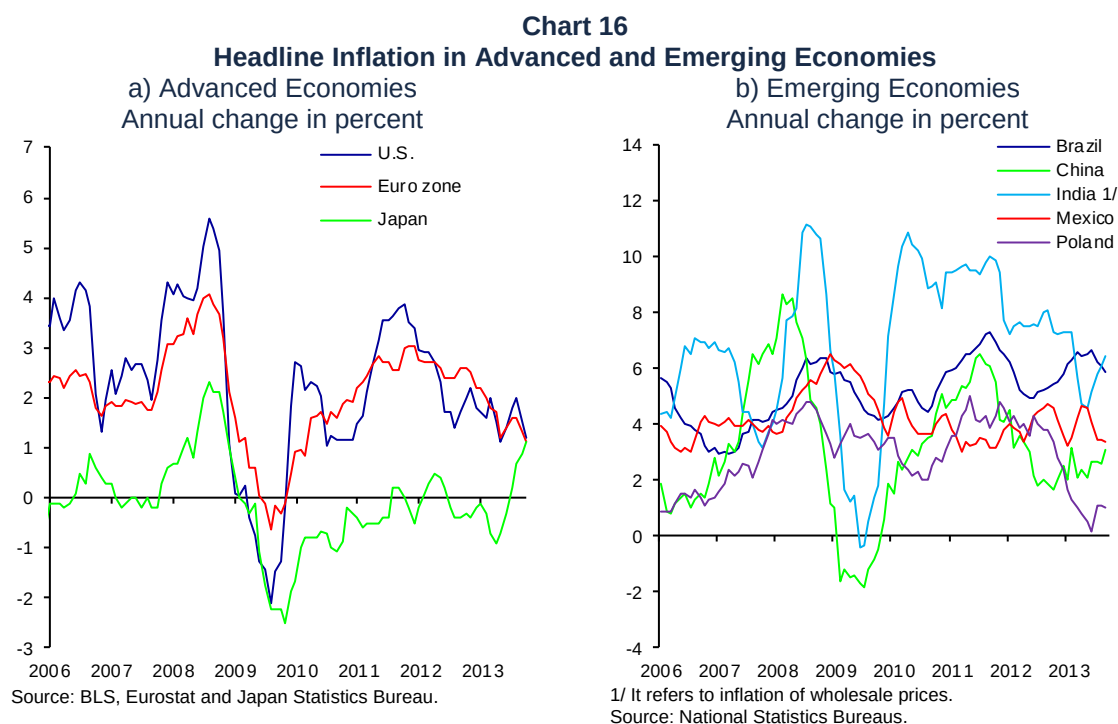
The downside trend of annual headline inflation persisted in the euro area in the third quarter, which shifted from 1.6 percent in June to 1.1 percent in September.

Thus, inflation remained below the ECB target, which is below but close to 2 percent in the medium term. Likewise, core inflation reduced from 1.2 to 1.0 percent in the same period. The ample slack in the economy, together with the strength of the euro contributed to the persistence of inflation at low levels.

In the U.K., annual headline inflation dropped from 2.9 percent in June to 2.7 percent in September, still above the Central Bank's target of 2 percent, but within the variability interval of plus/minus one percentage point around this target. Lower inflation partly reflected lower energy prices. Core inflation reduced from 2.3 to 2.2 percent over the reference period.

In Japan, annual inflation increased from 0.2 percent in June to 1.1 percent in September, after registering negative figures between June 2012 and May 2013. This was contributed to by the depreciation of the yen, as a result of the monetary easing measures of the Central Bank of Japan.

In emerging economies, inflation remained stable in most cases, due to lower dynamism of the economic activity and the fall in the international prices of agricultural products (Chart 16b). As mentioned above, the depreciation observed in some emerging economies' currencies and the presence of internal imbalances, such as an excessive credit growth, brought about greater inflationary pressures.

Chart 16
Headline Inflation in Advanced and Emerging Economies

a) Advanced Economies
Annual change in percent

b) Emerging Economies
Annual change in percent

Source: BLS, Eurostat and Japan Statistics Bureau.

1/ It refers to inflation of wholesale prices.
Source: National Statistics Bureaus.

3.1.4.   International Financial Markets

In an environment of an expected moderate recovery of the world economic activity and low inflation, the monetary policy stance is anticipated to remain accommodative in most advanced and emerging economies.

As mentioned above, in its monetary policy meeting of September, the Federal Reserve confirmed its decision to keep its monthly purchase of securities at USD 85 billion. Likewise, it ratified its expectation that the target range for the federal funds' rate between 0 and 0.25 percent will be appropriate as long as the unemployment rate remains above 6.5 percent, inflation between one and two years ahead is projected not to exceed 2.5 percent and long-term inflation expectations continue to be well anchored. In its press release it stated that even though risks to the economy and to labor markets have reduced since a year ago, a sustained tightening of financial conditions, such as the one observed in recent months, could affect the pace of the improvement in the economic activity and the labor market. Thus, the Federal Reserve indicated that it would begin to reduce the pace of its asset purchases once the information pointing to a continuous recovery of the labor market and to an inflation tending to its long-term target is available. In its October meeting, the Federal Reserve endorsed its decision to maintain unchanged both the pace of asset purchases and the target range for the federal funds' rate.

In its October monetary policy meeting, the ECB decided to leave unchanged its reference rates and considered that inflation expectations in the euro area would continue well anchored and in line with the ECB target, registering inflation below but close to 2 percent in the medium term. Similarly, the ECB ratified the forward guidance for its monetary policy, announced last July, which consists in maintaining its interest rates at their current levels or below them for a long time. Likewise, the President of the ECB noted that the Central Institute is prepared to use all available instruments, and even indicated that if necessary it could introduce again long-term refinancing operations for credit institutions, if uncertainty over its strength makes its financing difficult.

In its monetary policy meetings of July, August and September, the Bank of England (BOE) decided to maintain its reference rate at 0.5 percent and the amount of assets to be purchased at GBP 375 billion. Additionally, by introducing in August a forward guidance for the monetary policy, it specified that, at the very least, it would maintain its monetary policy highly accommodative until the degree of slack in the economy is substantially reduced, provided it does not imply risks to the evolution of inflation in the medium term, as well as risks to the financial system stability. In particular, it mentioned that it does not plan increasing the reference rate above its current level of 0.5 percent, at least until the unemployment rate has dropped below the 7 percent threshold. This, provided that three conditions are satisfied: 1) that the medium-term inflation outlook continues under 2.5 percent; 2) that inflation expectations remain well-anchored; and, 3) that the Financial Policy Committee considers that the monetary policy stance does not represent a considerable risk to financial stability.
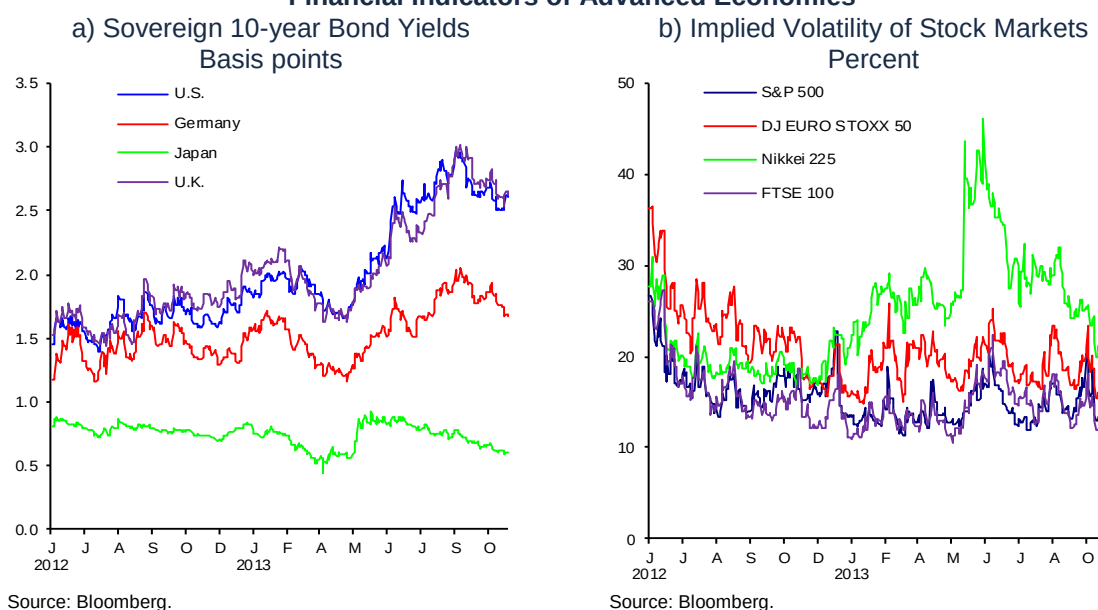
In its monetary policy meeting of October 31, 2013, the Bank of Japan maintained unchanged its policy rate, as well as the programmed level of asset purchases in order to reach the inflation target of 2 percent, which was announced last April, within approximately two years.

The monetary policy in emerging economies registered differentiated adjustments among countries, as a result of the decompression process of risk premia in international financial markets and of its vulnerabilities. In some of these economies, Mexico among them, the adjustment in their financial markets was moderate, while inflation and its expectations remained under control. As a result

of the above, the central banks maintained their policy interest rate unchanged and in some cases even lowered it. Other more vulnerable economies, with internal imbalances, such as the excessive credit expansion, high fiscal and current account deficits, and higher inflation levels, registered a considerable depreciation of their currencies, reason for which some central banks increased their reference interest rate.

Thus, high volatility was observed in international financial markets in the third quarter. The expectation of a change in the U.S. monetary policy generated an increment in long-term bond yields in this country, a tightening of financial conditions at the global level, and higher volatility in the stock markets (Chart 17). This derived from the fact that the market had considered that in September the Federal Reserve would reduce the pace of its asset purchases. Afterwards, as a result of the Federal Reserve September announcement, an improvement in international financial markets was observed. Despite the above, insofar as the economic recovery consolidates in this country, an upward trend in longer-term interest rates, and, in general, tighter conditions in international financial markets are expected at the global level.
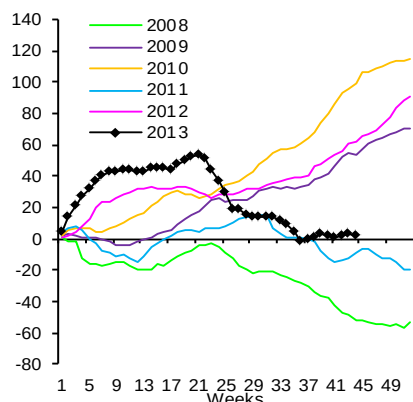
Chart 17
Financial Indicators of Advanced Economies

a) Sovereign 10-year Bond Yields
Basis points

b) Implied Volatility of Stock Markets
Percent

Source: Bloomberg.

Source: Bloomberg.

As a result, high volatility was observed in the financial markets of emerging economies in the quarter analyzed in this Inflation Report. Even though in this period capital outflows, falls in the stock markets, currencies' depreciation and higher risk premia of the sovereign credit were observed, the Federal Reserve decision to maintain unchanged its monetary policy gave rise to a recovery in the financial markets in late September (Chart 18).
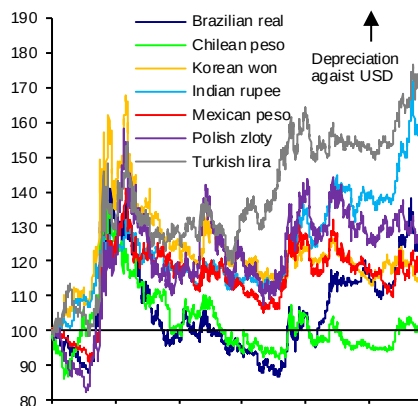
Chart 18
Financial Indicators of Emerging Economies

a) Accumulated Flow of Funds
(Equity and Debt)
USD billion

b) Exchange Rate
Index 01/01/2008=100

c) Sovereign Risk Spread (EMBI)
Basis points
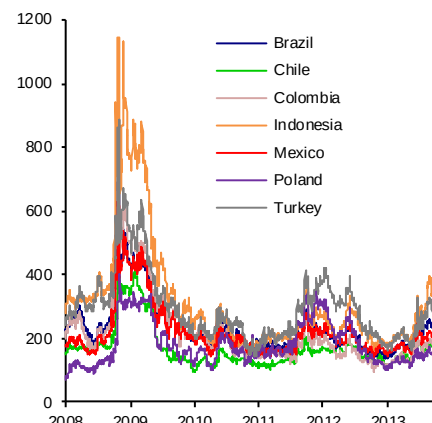
Source: Emerging Portfolio Fund Research.

Source: Bloomberg.

Source: Bloomberg.

3.2. Development of the Mexican Economy

3.2.1. Economic Activity

Following the slowdown of the Mexican economy that started in the second half of 2012, which manifested itself in a quarterly seasonally adjusted drop of the GDP in the second quarter of 2013, some indicators suggest that over the third quarter of 2013 the economy might have resumed a slightly favorable evolution. The incipient economic reactivation reflected the fact that some of the adverse shocks that affected the economy in the second half of 2012 and in the first half of 2013 apparently began dissipating.[4]
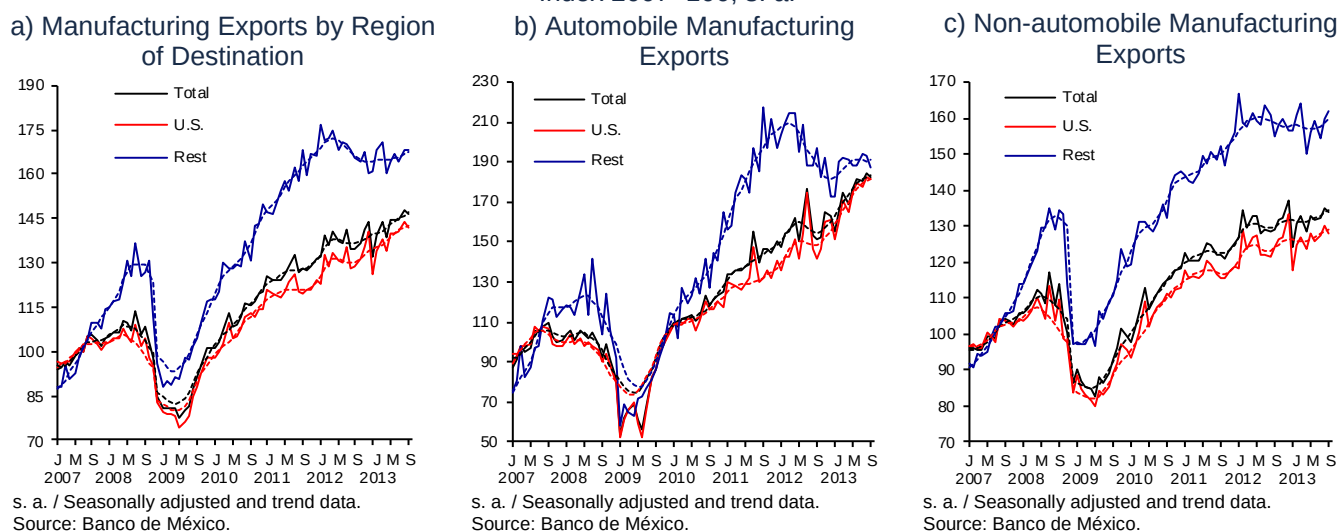
Indeed, as described in the previous Inflation Report, since the second half of 2012 the Mexican economy faced a series of adverse shocks, both external and domestic, which contributed to a pronounced slowdown registered in this period. In particular, the weak expansion rate of the world economy led to a decline in the dynamism of external demand. This lower external demand was exacerbated by the real exchange rate appreciation, which was observed until early in the second quarter of 2013. Likewise, lower dynamism of public expenditure and an unfavorable performance of the housing sector were registered. Furthermore, a shortage of natural gas occurred, which considerably affected production levels of the manufacturing industry, especially in the second quarter of 2013. The reversal of some of these shocks in the third quarter of 2013 was reflected by a relatively greater impulse of external demand, as well as an incipient improvement in the performance of domestic demand, even though some indicators of domestic expenditure still do not present clear signs of recovery.

In particular, in the third quarter of 2013 non-automobile manufacturing exports to the U.S. presented an upward trend, following stagnation in the previous months.

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[4] In the release of the GDP data of the second quarter of the year, INEGI changed the base year for the calculation of the Mexico's System of National Accounts (SCNM) from 2003 to 2008. See Box 1 for a detailed description of the change.

Likewise, in the reference period, automobile exports, both to the U.S. and the rest of the world, observed an upward trend (Chart 19).

Chart 19
Indicators of Manufacturing Exports
Index 2007=100, s. a.

a) Manufacturing Exports by Region of Destination	b) Automobile Manufacturing Exports	c) Non-automobile Manufacturing Exports

s. a. / Seasonally adjusted and trend data.
Source: Banco de México.

s. a. / Seasonally adjusted and trend data.
Source: Banco de México.

s. a. / Seasonally adjusted and trend data.
Source: Banco de México.

The available indicators of domestic spending evolution present mixed signals regarding its recovery rate. In particular, while the available information seems to suggest a relatively more favorable performance of private consumption as compared to the previous quarter, gross fixed investment maintained a downward trend. Particularly:

i.   In line with available data, private consumption seems to have improved in an incipient manner in the analyzed quarter, with respect to the fall in the second one. Specifically, ANTAD sales presented a positive change rate following the contractions in the previous quarter, even though they still show signs of weakness, while retail sales remain stagnated (Chart 20a and Chart 20b).

ii.   In this sense, even though some factors affecting the evolution of private consumption continued increasing or exhibited certain recovery as compared to its trajectory in the previous quarters, like in the case of consumption credit (see Section 3.2.2) and workers' remittances (Chart 21a), the consumer confidence index remains at low levels and has not improved in recent months (Chart 21b).

iii. The more timely data of the performance of gross fixed investment, such as capital goods imports and construction sector activity, suggest that this aggregate demand component generally continued registering a negative trend (Chart 22).

iv.   The measures announced by the Federal Government to reallocate and to accelerate the speed of public expenditure contributed to its reactivation in the third quarter of 2013. In particular, despite certain volatility, in the third quarter of 2013, public investment in construction rebounded, after exhibiting a considerable fall since the second half of 2012 (Chart 22c).

Box 1
The Change of the Base Year in the GDP Measurement
and the Perception of the Economic Activity Evolution

With the release in August 2013 of the data of the Gross Domestic Product (GDP) corresponding to the second quarter of 2013, the National Statistics Bureau (INEGI) began presenting the information relative to the Mexican System of National Accounts using the new base year 2008 for its calculation, rather than using calculations based on the previous base year 2003. The change of the base year in the GDP measurement led to an adjustment in the relative weights of each sector in the economy, resulting from the changes in the relative prices of each sector between the previous base year and the current one. Likewise, the publication of the base 2008 GDP also incorporated some methodological improvements mainly stemming from the implementations of international recommendations regarding the measurement of national GDP and its components.

As further detailed in this Box, the GDP data based on the new base year is generally more congruent with the recent environment that the Mexican economy has recently faced and with the way in which the shocks affecting it are transmitted to the domestic market, as compared to the data derived from the calculation of GDP using the previous base. In particular, the new series of total and sectoral GDP show a more pronounced and long-lasting slowdown of the economy and, particularly, in the industrial sector, than it was previously possible to perceive. Likewise, the new services sector figures indicate a gradual deceleration which is more evident relative to what could be observed with the data of the previous base year. This more accurate reading is obtained despite the fact that 2008 was an atypical year, and, therefore, the events of that year could have affected the new series of relative prices, with which the economic activities in the new GDP measurement are reweighted. Indeed, the global economic crisis started that year, leading to a considerable real depreciation of the national currency by mid-year and significant changes in the levels of production in different sectors of the economy. In particular, the real exchange rate depreciation temporarily affected the relative prices of different sectors of the economy. In this context, having used these prices for the new calculation of the GDP could have led to an increase in the weights of the sectors whose relative prices rose extraordinarily in the year, while the weight in the economy of the sectors, whose prices diminished in relative terms in 2008, could have decreased, as a consequence of the crisis and not due to a longer-term trend. However, as mentioned above, this does not seem to have considerably affected either the calculation or the interpretation of the results.

The main adjustments derived from the change in the base year in the GDP measurement and its implications for the sectoral composition are briefly described below.

Afterwards, a comparison between the recent performance of total and sectoral GDP series in 2003 and 2008 base years are presented, so as to illustrate how the interpretation of the economy using the new series seems to be more congruent than that based on the previous series.

1. Main Modifications Derived from the Change of the Base Year 2008

In general terms, with the change of the base year of the GDP calculation, the structure of the economy is modified in terms of the share in total GDP of different economic activities. In particular, the weight in the economy of the sectors, whose relative price in the new base year is greater than in the previous base year, increases, while the weight of the sectors, whose relative prices are lower in the new base year as compared to the previous one, declines. If the relative prices of the different sectors generally present a clear long-term trend and do not show abrupt and temporary changes, choosing a closer year to the present moment results in reweighting the sectors in such a way, that the change of the base year leads to a better representation of the weight of each sector within the total economic activity. However, choosing 2008 as a new base year presents a potential problem of having induced the use of new weights for different economic activities, based on prices that could have been significantly, although temporarily, affected by the impact of the global crisis, which broke out that year, on the real exchange rate. In principle, the latter could have led to the fact that the new weights of different economic activities do not necessarily reflect the relative weight in the economy from a longer-term perspective.

Despite the abovesaid, the availability of data determined that 2008 should be used as a base year for the new GDP calculation. Indeed, the most recent data INEGI had at its disposal to construct the new weights' base corresponded to the Economic Censuses 2009, which collected information regarding 2008. This is the reason for which 2008 was chosen as a new base year to update the productive structure of the country and calculate the new GDP series (see INEGI, 2013).

Prior to the analysis, however, it is relevant to mention that the change of the base year not only changed the weights of different sectors, but also introduced methodological improvements, among which the following stand out:

- The economic activities were classified based on the 2007 North American Industry Classification System (NAICS). Previously, the 2002 NAICS classification was used.

- The representativeness of quarterly GDP increased to 95.3% of annual GDP, with respect to 93.7% with the 2003 base.

- The measurement of the levels of activity in the construction sector was improved, by complementing the "*flow of goods method*" of building materials previously used with records of progress in public works and by the results of the surveys carried out among the firms in the sector.

- The change in inventories hereby published results from a direct measurement by means of surveys and does not correspond to a residual in the comparison between the GDP by sectors and by components of the aggregate demand. In this sense, the concept of *statistical discrepancy* was included, which is the one currently capturing the difference between the GDP measured with sectoral value added and with aggregate expenditure.

- A distribution of the Financial Intermediation Services Indirectly Measured (FISIM) among the sectors using them was carried out. Previously, this concept was reported as an independent item.

- The rights on hydrocarbon extraction, which used to be part of the taxes on production item, considered property income were reclassified to be reason for which it is now recorded in the mining industry item.

2. GDP Structure: 2003 Base and 2008 Base

In what follows, the structure of the economy observed in 2012 by sector of economic activity under the 2003 base is compared to the one corresponding to 2008. This analysis allows inferring which sectors tended to gain share and which activities lost weight in the new GDP measurement, with respect to the previous one. As can be seen in Table 1, in the calculation of GDP under the new 2008 base the primary and services' sectors have a smaller weight within total GDP, while that corresponding to the industrial sector increased, with respect to the calculation using the 2003 base. In turn, within the industrial sector, it is noteworthy that the sectors of construction, electricity, gas and water, and mining increased their share, while the relative weight of the manufacturing sector decreased.

These changes partly reflect the relative price adjustments in 2008 as compared to 2003, as well as the effects of some previously described methodological improvements, particularly in measuring the construction and mining sectors. It is noteworthy that, within the manufacturing sector, a significant decrease in the relative weight of the industry of transport equipment manufacturing was observed (Table 2). This in part reflects the effect of the relative price changes of the automobile industry in 2008, and largely accounts for the lower relative weight of the manufacturing sector as a whole in the economy.

With respect to services, the lower relative importance with the new base of the financial and insurance services; transportation, postal services and warehousing; professional, scientific and technical services; commerce; mass media information; health care and social assistance services; educational services; temporary accommodation services and food preparation, and other services should be mentioned. On the other hand, it is noteworthy that real estate, renting and business support services register a greater share. The changes in the relative weights of the tertiary activities, besides deriving from the changes in the relative prices of each activity, also reflected the methodological changes. For example, the update in the measurement of the marketing and distribution margins negatively affected the valuation of the sectors of commerce and of transportation, postal services and warehousing.

Table 1
Structure of the Gross Domestic Product in 2012

	2003 base	2008 base
TOTAL	**100.00**	**100.00**
Taxes on products, net	**5.2**	**2.6**
Gross Value Addes	**94.8**	**97.4**
Primary sector	**3.4**	**3.0**
Industrial sector	**29.9**	**34.2**
Mining	4.6	7.8
Electricity, gas and water	1.5	2.2
Construction	6.2	7.7
Manufacturing	17.6	16.5
Services sector	**65.2**	**60.2**
Commerce	15.9	15.1
Transportation, postal services and warehousing	7.0	5.8
Mass media information	4.0	3.3
Financial and insurance services	5.6	4.3
Real estate services and goods rental	10.3	12.0
Professional, scientific and technical services	3.2	2.2
Head offices	0.4	0.6
Business support services	2.5	3.1
Educational services	4.3	3.7
Health care and social assistance services	2.7	2.0
Cultural and sporting recreation services	0.4	0.5
Temporary accommod. services and food preparation	2.5	2.0
Other services	2.6	2.1
Governmental activities	3.6	3.6
FISIM	**-3.8**	**-**

Source: Prepared by Banco de México with data from INEGI.
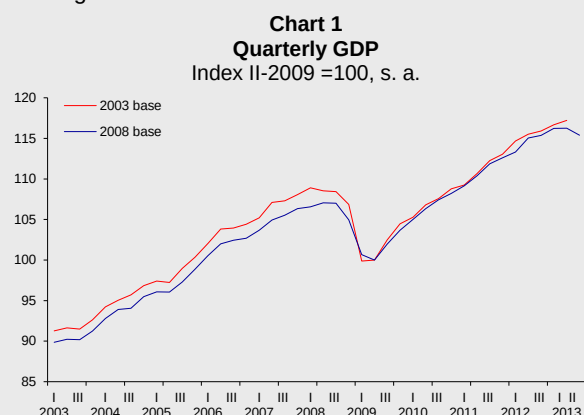
Table 2
Structure of the Manufacturing Value Added in 2012

	2003 base	2008 base
Manufacturing industry	**100.0**	**100.0**
Food industry	21.1	21.6
Beverage and tobacco industries	6.2	5.1
Textile inputs manufacturing	0.8	0.8
Textile products manufacturing	0.4	0.5
Apparel manufacturing	2.1	2.4
Manufacturing of leather and hide products	1.2	0.8
Wood industry	1.2	1.0
Paper industry	2.2	2.0
Printing and related industries	0.9	0.8
Petroleum and coal products manufacturing	2.5	3.6
Chemical industry	8.5	11.9
Plastic and rubber industry	2.8	3.0
Nonmetallic mineral products manufacturing	6.1	5.3
Basic metal industry	5.3	6.8
Metal products manufacturing	3.4	3.5
Machinery and equipment manufacturing	2.8	4.2
Communications, computer and other equip. manufacturing	4.3	3.9
Accesories and electric power generation equip. manufactur.	3.0	3.0
Transportation equipment manufacturing	21.6	16.4
Furniture, mattresses and blinds manufacturing	1.3	1.3
Other manufacturing industries	2.2	2.1

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

3. Perception of the Economic Activity

The data of total and sectoral GDP recently released, which were calculated with the new 2008 base, seem to report that the recent performance of the economy and of the different sectors composing it is more congruent with the expected response of the Mexican economy to the external and domestic shocks the country faced since the second half of 2012. Indeed, with the new data a more pronounced deceleration of the Mexican productive activity between the third quarter of 2012 and the second quarter of 2013 is observed as compared to that previously perceived, which was calculated using the 2003 base (Chart 1). In particular, the growth of the first quarter of 2013 was significantly revised downwards, while in the second quarter a contraction in seasonally adjusted terms was registered.
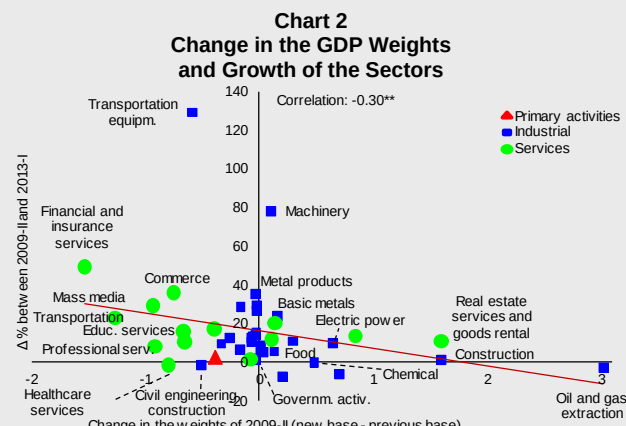
Chart 1
Quarterly GDP
Index II-2009 =100, s. a.

s. a. / Seasonally adjusted figures.
Source: Prepared by Banco de México with data from Mexico's System of National Accounts, INEGI.

This adjustment largely reflects the fact that the sectors that gained weight in GDP tended to be activities that had presented a weaker growth than the sectors whose weight was reduced. This can be appreciated in Chart 2, in which the relation between the accumulated growth between the second quarter of 2009 and the first of 2013 and the change in the weights in the 2008 base with respect to the 2003 base are presented. In general, it can be observed that those sectors that gained weight in the generation of value added are also the ones that exhibited lower dynamism in recent years.

In turn, GDP data with the new 2008 base also seems to present a more congruent outlook in relation to the recent performance of the industrial sector and of the services sector, given the economic situation since the second half of 2012. As to the industrial sector, the new data more clearly present the effect on the activities constituting this sector by the fact that the Mexican economy was affected by a weak external demand, which impacted the manufacturing sector, and by a less dynamic public expenditure, which influenced the performance of the construction industry. In particular, according to the 2008 base GDP data, a more pronounced and prolonged drop of the industrial sector than it was previously possible to

distinguish was registered. Indeed, according to the new data, this sector started to decline since the third quarter of 2012, and has registered four consecutive quarters of zero or negative growth, in seasonally adjusted terms (Chart 3). In contrast, the previous information suggested that this sector had only decreased in the fourth quarter of 2012, to later present an incipient recovery in the first quarter of 2013.

Chart 2
**Change in the GDP Weights and Growth of the Sectors**
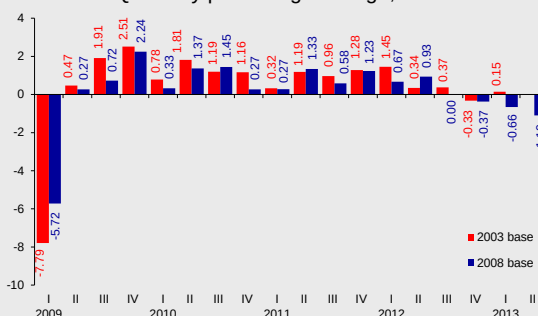
Source: Prepared by Banco de México with data from INEGI.
Significance level: *** 1%, ** 5%, * 10%.
To calculate the changes in the sectors, seasonally adjusted 2008 base series were used.

Finally, it also stands out that with the new data it is possible to more clearly appreciate the transmission of shocks on the industrial activity towards the services sector, which is generally observed with a certain lag.

Indeed, with the 2003 base data, not only was it not possible to appreciate a deceleration of the services sector, but also the data seemed to suggest that it was accelerating between the third quarter of 2012 and the first of 2013, which does not seem congruent with the expected effect produced by the contraction in the industrial sector. In contrast, with the 2008 base GDP data, a clear loss of dynamism in the tertiary sector in 2013, and, in fact, a fall in the second quarter of this year can be observed, with seasonally adjusted data (Chart 4).

Chart 3
GDP of the Industrial Sector
Quarterly percentage change, s. a.
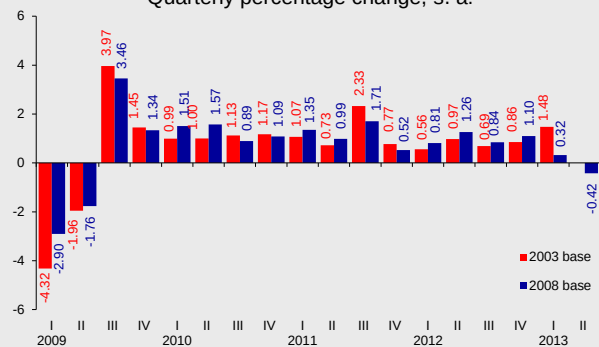
s. a. / Seasonally adjusted data.
Source: Mexico's System of National Accounts, INEGI.

Banco de México

In conclusion, the reading of the economy under the new 2008 base is more congruent with the external and domestic environment prevailing in recent quarters and with the expected transmission of external shocks to the domestic demand. In this context, the adjustment in the weights used to calculate the GDP of Mexico, despite being based on the prices observed in an atypical year, seems to have resulted in a better measurement of the recent behavior of the Mexican economy.

References

[1]. INEGI (2013) "Producto Interno Bruto en México durante el segundo trimestre de 2013". Nota técnica II: Modernización de las Cuentas Nacionales. Cambio de año base de 2003 a 2008. Press release no. 348/13, August 20, 2013.

Chart 4
GDP of the Services Sector
Quarterly percentage change, s. a.

s. a. / Seasonally adjusted data.
Source: Mexico's System of National Accounts, INEGI.

Chart 20
Consumption Indicators
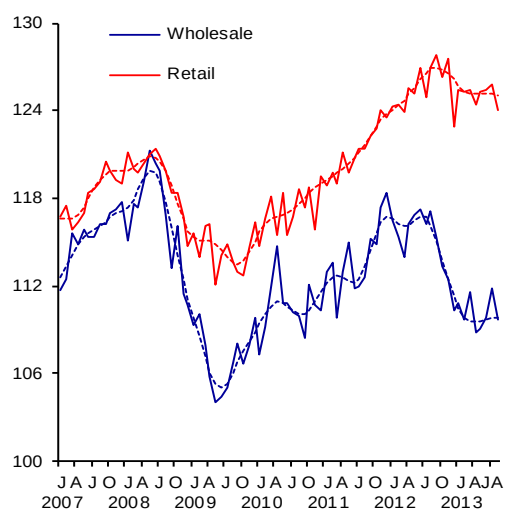
a) Total ANTAD Sales
Index 2003=100, s. a.

s. a. / Seasonally adjusted and trend data.
Source: Prepared by Banco de México with ANTAD data.

b) Commercial Establishments' Sales
Index 2003=100, s. a.
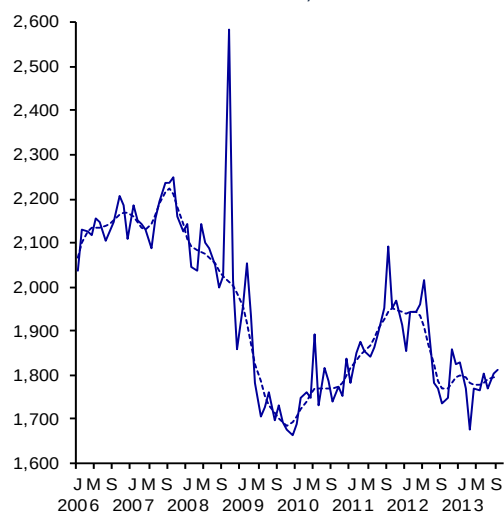
s. a. / Seasonally adjusted and trend data.
Source: Monthly Survey of Commercial Establishments, INEGI.
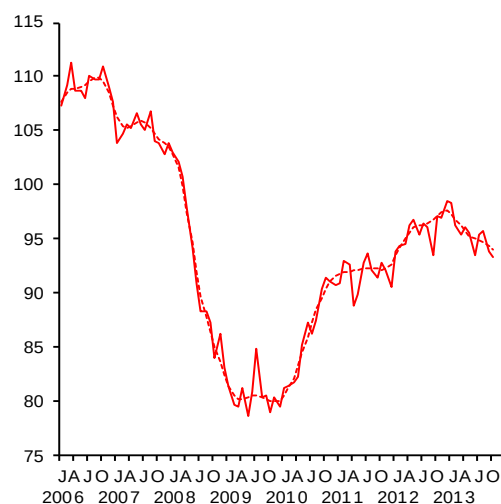
Chart 21
Consumption Determinants

a) Workers' Remittances
USD million, s. a.
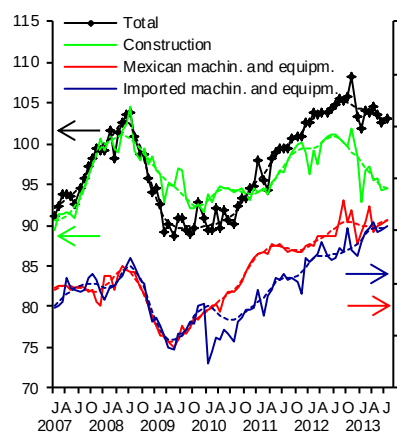
b) Consumer Confidence Index
Index Jan 2003=100, s. a.

s. a. / Seasonally adjusted and trend data.
Source: Banco de México.

s. a. / Seasonally adjusted and trend data.
Source: National Consumer Confidence Survey, INEGI and Banco de México.
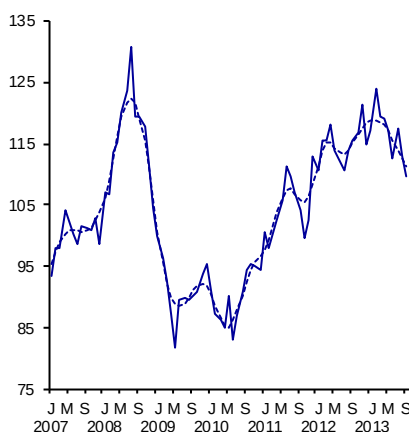
Chart 22
Indicators of Investment

a) Investment and its Components
Index 2008=100, s. a.
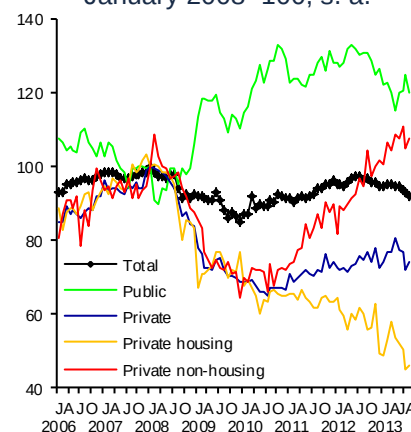
b) Imports of Capital Goods
Index 2007=100, s. a.

c) Real Value of Production in the Construction Sector by Contracting Institutional Sector
January 2008=100, s. a.

s. a. / Seasonally adjusted and trend data.
Source: Mexico's System of National Accounts, INEGI.

s. a. / Seasonally adjusted and trend data.
Source: Banco de México.

s. a. / Seasonally adjusted figures. For public and private (housing and non-housing) construction, the seasonal adjustment was prepared by Banco de México with data from INEGI.
Source: INEGI.

The faster growth rate of both external and domestic demand resulted in a new positive change of economic activity in the third quarter of 2013, after a contraction observed from April to June in quarterly seasonally adjusted terms (Chart 23a). Particularly, after four consecutive quarters of reductions, industrial production increased in quarterly seasonally adjusted terms in the reported period.

This fundamentally reflects the major expansion rate of the manufacturing industry, as compared to the previous quarters, given that the construction sector continued registering a negative trend in the reference quarter, particularly in housing (Chart 23b). It is noteworthy that the measures to address the natural gas shortage taken by the Federal Government mitigated the effects of this problem on the manufacturing activity in the third quarter, after having considerably affected it in the previous one (see Box 2).

Box 2
# Impact of the Natural Gas Shortage on the Economic Activity
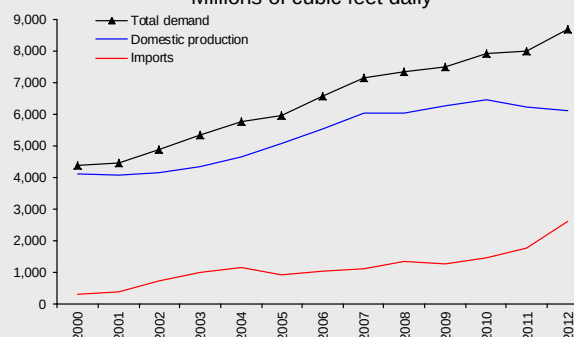
1. Introduction

Since early 2012, a shortage in the natural gas supply has been observed in Mexico, which affected the manufacturing sector activity in certain regions of the country. This shortage seems to have derived from a combination of a growing demand for natural gas, a decline in domestic production and the fact that the infrastructure to distribute both the gas domestically produced and imported reached a saturation point. Indeed, on the one hand, in recent years a greater demand for natural gas has been observed, which seems to be related to a reduction in the price of gas produced in the U.S., which in turn could be associated to a greater production of shale gas in that country. On the other hand, insufficient investment in the infrastructure of the pipeline network in Mexico has been observed, as a result of which the maximum distribution capacity of the current network has been reached recently. In this sense, there is a problem of "bottlenecks", which generated a shortage in the Midwest region of the country between the first quarter of 2012 and the second quarter of 2013. This problem was exacerbated by a lower Mexican production of natural gas by Pemex, which could not be totally compensated by greater imports from the U.S., precisely due to the lack of infrastructure to distribute it (Chart 1).

In this context, when the shortage problem arose, Pemex administered it by means of a system of "critical alerts", which consisted in indicating firms to limit their natural gas consumption for the period of the alert duration. The resulting reduced availability of natural gas affected the productive capacity of the manufacturing industry, and, therefore, the level of the economic activity as a whole, above all in the period from April to June 2013.

This box presents the estimation of the possible impact the shortage of natural gas could have had on economic activity in Mexico. With this purpose, an econometric model of the performance of manufacturing production is estimated, which includes a measure of the shortage as an independent variable, as well as other determinants of this production. Based on the obtained results, the impact on the Mexican economy is calculated. As will be explained, the estimates suggest that if no natural gas shortage had been registered, the quarterly seasonally adjusted growth rate of the GDP in the second quarter of 2013 could have been -0.4 percent, rather than the observed -0.7 percent. Thus, the shortage problem is estimated to have been an important determinant in the GDP decline during this quarter. Having said that, as will be seen below, the shortage problem was temporarily corrected via the liquefied natural gas imports by sea. Therefore, this problem is not expected to have had a significant impact on GDP in the third quarter.

Chart 1
Natural Gas Demand, Production and Imports
Millions of cubic feet daily

Source: Energy Information System, Mexican Petroleum Institute, National Balance of Natural Gas, National Energy Strategy scenario 2026.

2. Natural Gas Shortage and Critical Alerts

As mentioned above, the infrastructure of the National Pipeline System for the natural gas distribution has not been sufficient to meet the growing domestic demand, generating the need to ration its consumption. Thus, critical alerts have been issued since March 2012, by means of which Pemex informed the firms that they should reduce its consumption (see Pemex 2013). To estimate the impact of the natural gas shortage, in the first place an indicator of the degree of shortage by state was constructed, for each month from January 2012 up to now. This indicator was elaborated with data from Pemex and the Concamin's Energy Commission. Specifically, a variable to approximate the percentage of the natural gas consumption that the firms were requested to reduce with respect to the historical consumption was constructed for each month in each state of Mexico. Thus, in a month without rationing, the indicator takes value zero. If natural gas was rationed in 10 percent of the historical consumption over 5 days in a month of 30 days, the indicator takes the value of 0.016 (10 percent multiplied by 5 days divided by 30 days in a month).

Based on the available data it stands out that the Midwest region was the most critically affected by the natural gas shortage (Map 1). Likewise, in line with the average among states of the described shortage indicator, it is noteworthy that the greatest rationing was registered precisely in the second quarter of 2013, while over the third quarter of the year no new critical alerts were issued (Chart 2). Hence, the greatest impact on economic activity occurred over the period from April to June 2013, while the manufacturing sector is expected to have recovered in the period from July to September, as a result of the measures taken to tackle this problem.
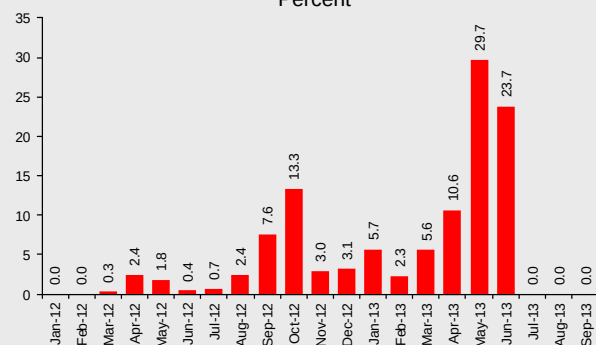
Map 1
Scheme of the National Pipeline System

Area of highest shortage

Source: Presidencia de la República, 2011.
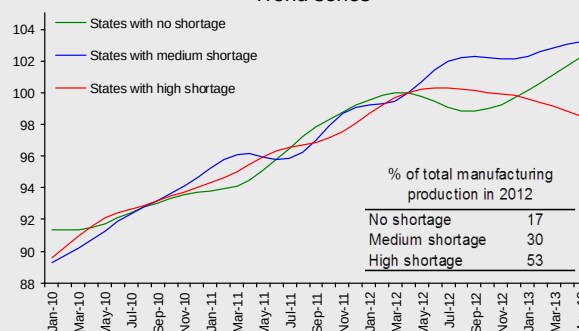
To present descriptive evidence on the fact that the natural gas shortage seems to have affected the manufacturing production, Chart 3 contains the production index in this sector for three groups of states: states with high shortage, states with medium shortage and with no shortage. As can be observed, the group of the states with high shortage registered the most pronounced slowdown from the second half of 2012 onwards and has not recovered in 2013 so far. This contrasts with the other two groups, which have already presented a positive trend this year. Additionally, it should be pointed out that the group of high shortage has the highest share in total manufacturing production, reason for which the impact it experienced is estimated to have reflected more clearly in total economic activity.

Chart 2
Average of the Shortage Indicator among States
Percent

Source: Estimates of Banco de México based on data from Pemex, with respect to critical alerts and Concamin.

Chart 3
Manufacturing Production
Index Apr-2012 = 100
Trend series

Source: Banco de México with data from INEGI.
Note: To calculate the manufacturing production by state, the state manufacturing GDP of 2011 was used and afterwards the monthly change obtained from the manufacturing production indices by state published by the INEGI was applied. The sum of production across all states in each group is reported.

3. Estimate of the Impact of the Natural Gas Shortage on Economic Activity

To evaluate the effect of the natural gas shortage on manufacturing production, an econometric analysis was performed with panel data by state by month from 2011. In particular, a regression was estimated, in which the logarithm of the monthly manufacturing production index by state depends on the shortage indicator described above, on state fixed effects and on quarter fixed effects, and on the interaction of the U.S. industrial production index with dummy variables of the states. The following equation describes the model used.

$$\ln(y_{it}) = \phi\, D_{it} + \beta \ln(ipius_t) \times \pi_i + \gamma \pi_i + \delta T_s + u_{it}$$

Where:

y is the manufacturing production index by state i for each month t.

D is the measure of the natural gas shortage.

$ipius$ is the index of the U.S. industrial production.

π_i are state fixed effects.

T_s are quarter fixed effects.

u_{it} is the error term.

The estimation using time and state fixed effects allows controlling for the effect of a series of factors that could affect the manufacturing production performance, and thus estimate precisely the impact of the shortage. In particular, the state fixed effects allow controlling for the particular state features (observable and unobservable), which do not change over time and which could affect the variables of interest. For example, the states characterized by bad infrastructure could generally be more prone to being affected by the shortage. The introduction of fixed effects allows separating the impact of the gas shortage from these structural factors of the state. On the other hand, time fixed effects allow

controlling for all the factors of the business cycle, which affect all states at a time. Quarter fixed effects were introduced, as this period of time is considered to better reflect the economic cycle as compared to the changes that could be observed in one month. Additionally, we control for U.S. industrial production, given the importance of this variable in determining the Mexican production. Moreover, it is taken into account that not all states in Mexico respond in the same way to fluctuations in the U.S. economic activity.[1]

Table 1 presents the results of the estimated regression. As can be observed, a negative and statistically significant effect of the natural gas shortage on the manufacturing production is obtained.

Table 1
Effect of the Natural Gas Shortage
on the Manufacturing Production

	ln (manufacturing production)
Shortage	-0.037*
	(-0.02)
$ln(ipius)$ x π_i	✔
State fixed effects	✔
Quarter fixed effects	✔
Number of observations	928
R-squared	0.942

Standard errors in parenthesis.
Significance level: *** 1%, ** 5%, * 10%.
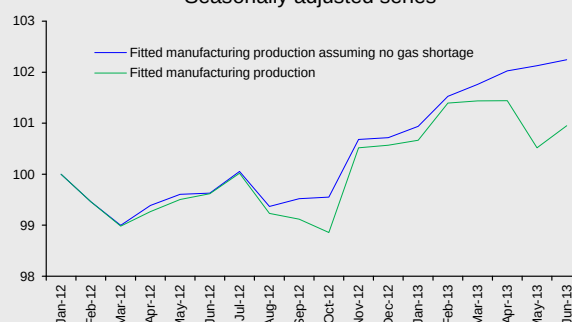
Once the econometric model has been estimated, it is necessary to make a series of calculations to derive the effect on the growth of the manufacturing GDP, and, consequently, on total GDP. First, for each state a series of forecast or "fitted" manufacturing production for the estimated model was obtained. Second, also for each state, the "fitted" manufacturing production was estimated by the model, under the assumption that there was no shortage; that is, supposing that the variable D_{it} takes value zero in all cases. Thus, the difference between both series can be attributed to the effect of the natural gas shortage.

Adding up the state level information, the estimation of the national manufacturing GDP trend, which would be observed if there was no shortage, was obtained, which can be compared to the trend forecast by the model, given the observed shortage level.[2] These trends are presented in Chart 4. The difference between the green

line (with the observed shortage) and the blue line (assuming there is no shortage) represents the loss of production as a consequence of the natural gas shortage. These results indicate that the greatest impact of the natural gas shortage took place in the second quarter of 2013.

Chart 4
Manufacturing Production
Index base: Jan-2012 = 100
Seasonally adjusted series

Source: Banco de México with data from INEGI.

Table 2 reports the annual seasonally adjusted percentage changes of the manufacturing GDP, estimated under the scenarios with and without shortage. As can be appreciated, the most important effect was registered in the second quarter of 2013. In particular, it is possible that as a result of the natural gas rationing, the manufacturing sector growth rate was two thirds of what it could have reached if there had been no natural gas shortage.

Table 2
Impact on the Manufacturing Production Annual Change

	2012-III	2012-IV	2013-I	2013-II	Average effect
Manufacturing sector					
Model with shortage (annual Δ%)	2.50	1.31	1.69	1.52	1.75
Model excluding shortage (annual Δ%)	2.70	1.65	1.93	2.60	2.22
Difference shortage impact (pp)	-0.20	-0.34	-0.24	-1.09	-0.47
Impact on GDP					
Total impact on GDP (pp on annual s.a. Δ%)[1/]	-0.07	-0.12	-0.09	-0.40	-0.17
Quarterly s.a. GDP growth rate (%)					
With shortage (observed)	0.27	0.74	0.03	-0.74	
Excluding shortage (counterfactual)	0.34	0.79	-0.01	-0.43	
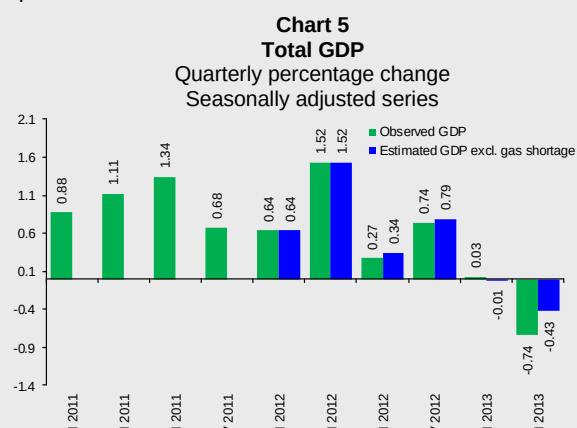
Source: Banco de México with data from INEGI.
1/ To calculate the effect of the shock on the manufacturing produced on the GDP growth a 0.37 elasticity was used, as estimated with the sectoral model of the economy, which includes indirect effects.

By virtue of the fact that the manufacturing production is linked to other productive sectors, e.g. commerce and transport, a negative shock on this sector indirectly affects the rest of the country's economic activity. Based on the models of the Mexican economy performance used in Banco de México, it is possible to quantify the interaction among the different sectors of the economy and to estimate the elasticity of total GDP given the changes in the manufacturing growth rate.

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[1] The information on the manufacturing production at the state level was obtained from INEGI, while that of the U.S. industrial production from the Federal Reserve. All series are seasonally adjusted.

[2] As for the case in Chart 3, the aggregation at the national level based on the monthly state series is not direct, given that the latter are only published in indices. To construct manufacturing GDP at the state level, the official one corresponding to 2011 was taken as a basis and the implicit increments in the monthly activity indices were used for each state to obtain an estimate of the monthly state manufacturing GDP. The trajectory of the national manufacturing GDP was calculated as the sum of those corresponding to the states.

Thus, a trajectory of the national GDP was constructed and its quarterly seasonally adjusted growth rates were calculated. Based on these, Table 2 and Chart 5 present the results of the estimate of the impact of the natural gas shortage on national economic activity. It is estimated that the GDP growth rate in quarterly seasonally adjusted terms would have been -0.4 percent, rather than the observed -0.7 percent in the second quarter of 2013.

Chart 5
Total GDP
Quarterly percentage change
Seasonally adjusted series

Source: Banco de México with data from INEGI.

4. Outlook

The presented estimate indicates that the natural gas shortage posed an important obstacle to growth in the second quarter of 2013. However, the Federal Government has taken measures to mitigate the problem, and so no more critical alerts were registered in the third quarter of this year. Hence, the manufacturing sector is anticipated to recover significantly in the period from July to September of 2013, which will be reflected in economic growth as a whole.

One of the main short-term measures to tackle the problem has been the import of liquefied natural gas by sea via Manzanillo. Nonetheless, its price is considerably higher, reason for which it could still impact production, even though the effect is not considered to be of the same magnitude as that associated with the shortage. On the other hand, the Federal Electricity Commission was also affected by the capacity restrictions in the pipeline infrastructure, which has raised the costs of electricity generation.

In the medium term, it is necessary to expand the infrastructure of the gas pipeline system, in order to import natural gas at competitive prices. The "Natural Gas Market Outlook" proposes steps in this direction, among which the project "Los Ramones" stands out as it will contribute to the natural gas provision to the Midwest region and to the resolution of the "bottle neck" problems.
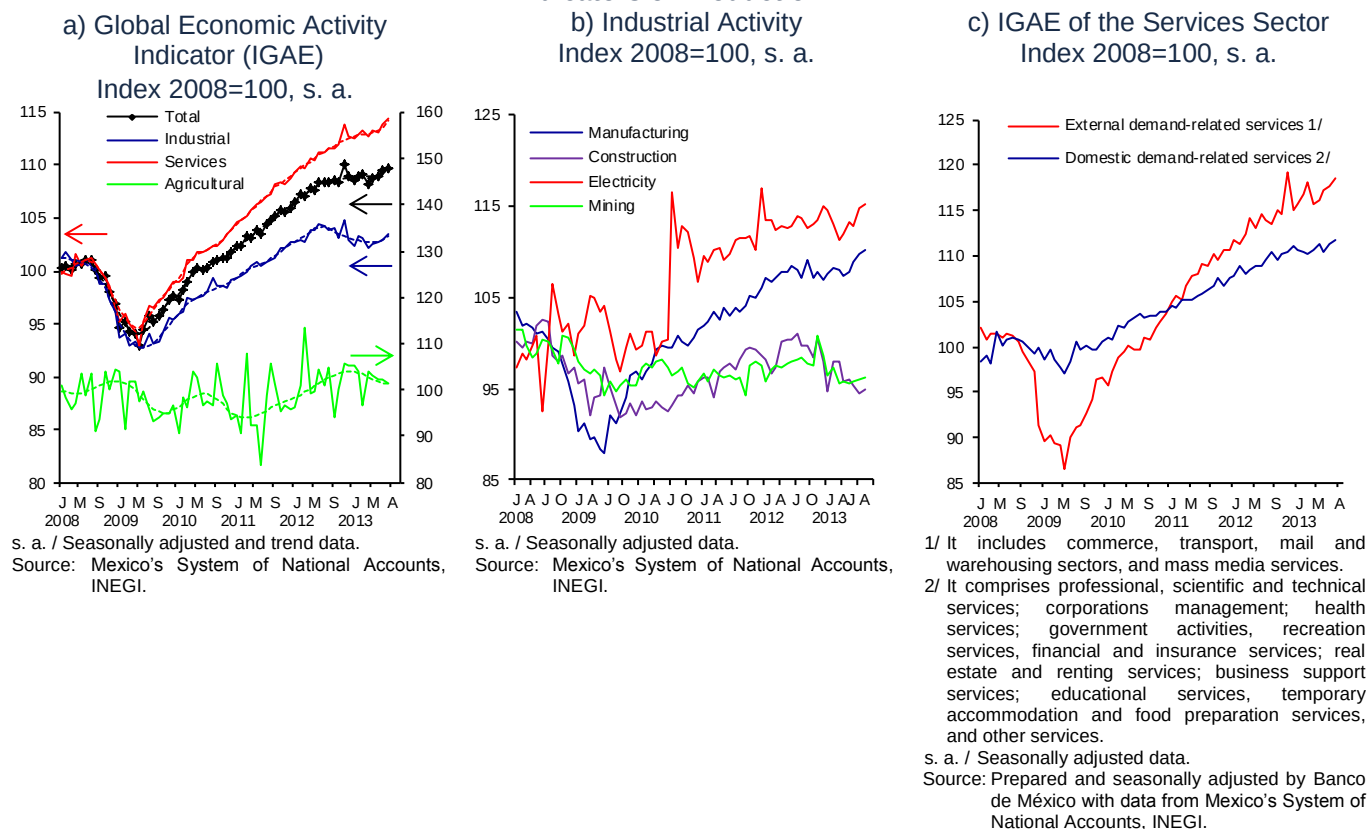
In this context, it is important to advance in the energy reforms, in order to reduce investors' uncertainty with respect to the fact that the expansion of the gas pipeline network will be carried out within appropriate time frames and that the natural gas supply will be guaranteed. Otherwise, investment in new productive projects could be discouraged.

References

[1]. Pemex (2013), Annual Report 2012.

[2]. Concamin (2013), Agreement among the manufacturers and the government to guarantee the natural gas supply, press release, 06-05-2013.

[3]. Secretaría de Energía (2012), Natural Gas Market Outlook 2012-2026.

[4]. Secretaría de Energía (2013a), National Energy Strategy 2013-2027.

[5]. Secretaría de Energía (2013b), Energy Reform.

Likewise, following the contraction in the period from April to June, the services sector registered a positive evolution, as a consequence of both the expansion of those services more related to external demand (commerce and transport, mail and warehousing), and the services more related to domestic demand, as is the case of professional, scientific and technical services, corporations and business management, business support services, educational services, social welfare services, recreation, cultural and sport services, and government activities (Chart 23c).
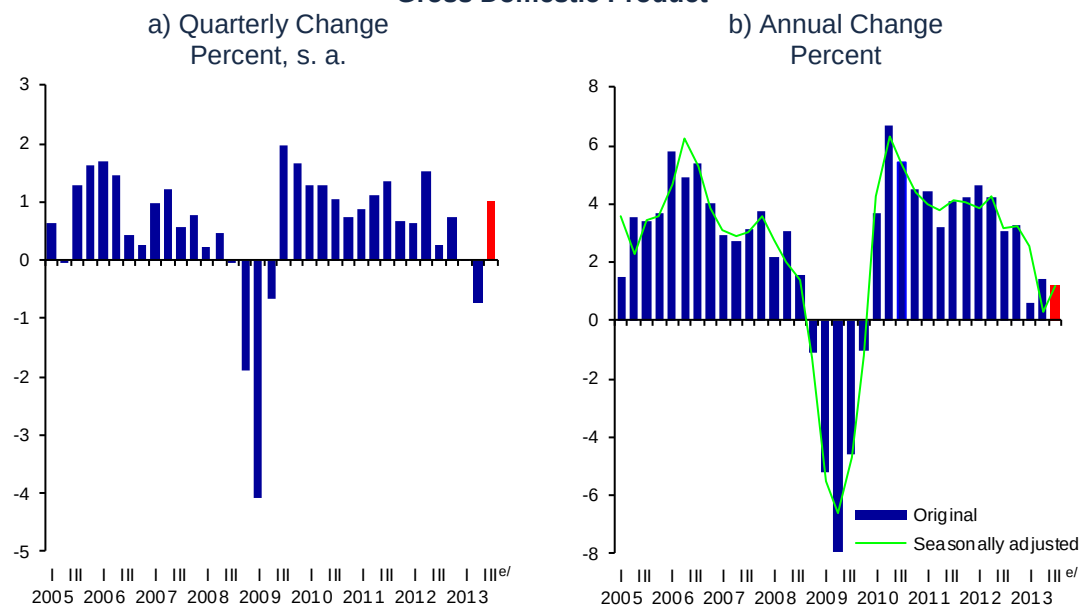
Chart 23
Indicators of Production

a) Global Economic Activity
Indicator (IGAE)
Index 2008=100, s. a.

s. a. / Seasonally adjusted and trend data.
Source: Mexico's System of National Accounts,
INEGI.

b) Industrial Activity
Index 2008=100, s. a.

s. a. / Seasonally adjusted data.
Source: Mexico's System of National Accounts,
INEGI.

c) IGAE of the Services Sector
Index 2008=100, s. a.

1/ It includes commerce, transport, mail and
warehousing sectors, and mass media services.
2/ It comprises professional, scientific and technical
services; corporations management; health
services; government activities, recreation
services, financial and insurance services; real
estate and renting services; business support
services; educational services, temporary
accommodation and food preparation services,
and other services.
s. a. / Seasonally adjusted data.
Source: Prepared and seasonally adjusted by Banco
de México with data from Mexico's System of
National Accounts, INEGI.

In the quarter analyzed herein, the agricultural sector was adversely influenced by the weather conditions in September, as a result of which the affected area of the spring-summer cycle crops and perennial crops expanded. To a large extent, derived from this, the primary sector contracted with respect to the previous quarter in seasonally adjusted terms. In this sense, falls in the production of barley, tobacco, copra, grapes, peach, oats, rice, lemon, sugarcane, guava and green alfalfa are noteworthy. On the other hand, lower production of fresh milk, beef and poultry was also registered. As already mentioned in Section 2.1, despite the above, generally the impact of these events on the price level has been very limited. Furthermore, the effect on the total economic activity is estimated to have also been relatively low.

Reflecting these results, for the third quarter of 2013, a quarterly seasonally adjusted GDP growth of approximately 1.0 percent is estimated (Chart 24a), as compared to the changes of 0.03 and -0.74 percent in the previous quarters. This would imply an annual seasonally adjusted GDP growth of 1.2 percent in the third quarter of 2013 (0.3 percent in the second quarter). Based on data without seasonal adjustment (Chart 24b), an annual GDP growth of 1.2 percent is anticipated in the reference quarter (1.5 percent in the previous quarter, a figure which is affected upwards by the fact that in 2013 the Easter Week was celebrated in March, while in 2012 it was in April).
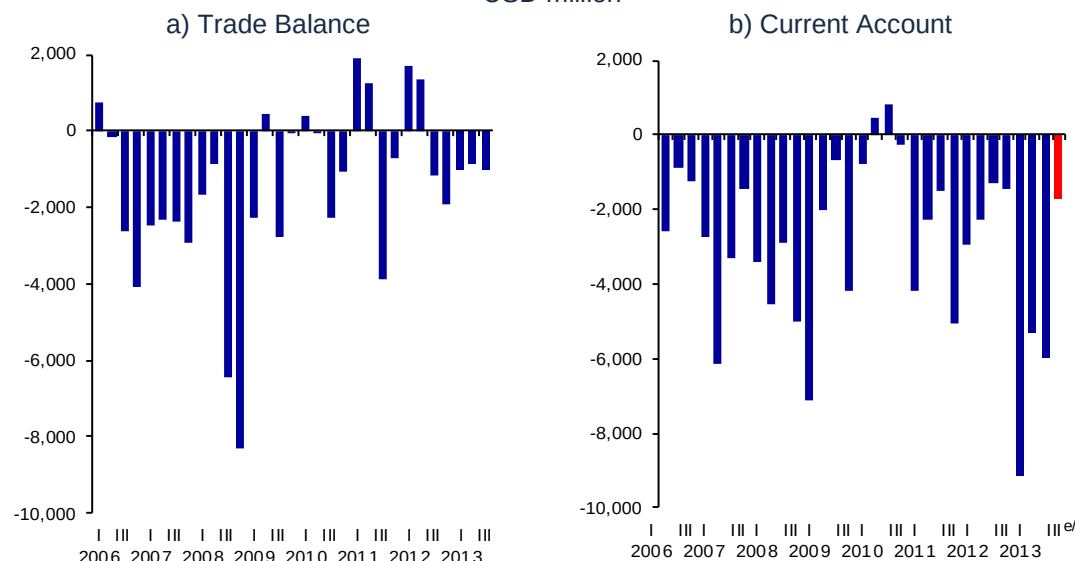
Chart 24
Gross Domestic Product

| a) Quarterly Change | b) Annual Change |
| Percent, s. a. | Percent |

s. a. / Seasonally adjusted data.
e/ Estimated by Banco de México.
Source: Mexico's System of National Accounts, INEGI. Seasonal adjustment up to the third quarter of 2013 by Banco de México.

As regards Mexico's external accounts, the most recent data indicate that in the period from July to September of 2013 the current account presented a moderate deficit and that the country continued receiving capital inflows via the financial account, sufficient to allow an easy financing of this deficit (Chart 25a and Chart 25b).

Chart 25
Trade Balance and Current Account
USD million

| a) Trade Balance | b) Current Account |

Source: Banco de México.

e/ Estimated by Banco de México.
Source: Banco de México.

3.2.2. Financial Saving and Financing in Mexico

In the third quarter of 2013, the sources of financial resources of the economy recovered, following a moderation in the previous quarter. This faster growth resulted mainly from an increase in the stock of domestic sources of funding, while the external sources observed a lower growth rate relative to the previous quarter. The availability of resources led to a further rise in the stock of financing to the non-financial private sector, reflected both in an expansion of the domestic credit portfolio and greater debt market activity.

With respect to the sources of financial resources of the economy, in the third quarter of 2013 the growth rate of the monetary base gradually recovered registering an average annual nominal rate of change of 5.2 percent, which was higher than the 3.6 percent average rate observed in June 2013.[5] This higher growth rate of the monetary base continued in October, when this aggregate observed an even higher average annual nominal change of 5.8 percent.[6] This growth derived from the gradual dissipation of a base effect associated with the considerable increase in the demand for banknotes and coins, which normally takes place in the period prior to the federal elections, just as observed in the second quarter of 2012. Moreover, the growth of the monetary base was also linked to the incipient improvement of economic activity.

Financial saving –defined as the monetary aggregate M4 minus the stock of banknotes and coins held by the public– registered an uptick in its growth rate (Chart 26a). Regarding its components, the stock of resident financial saving increased with respect to the previous quarter (Chart 26a and Chart 26c). This was accounted for by the expansion of the stock of voluntary financial saving, particularly by greater holdings of long-term instruments. Meanwhile, the stock of compulsory financial saving increased slightly. The stock of housing funds grew in the third quarter, while the stock of pension funds recovered in September, as a result of the greater valuation of its government debt securities portfolio, in light of the reduction of medium- and long-term interest rates that month. This stopped the downward trend presented by this aggregate since May 2013.
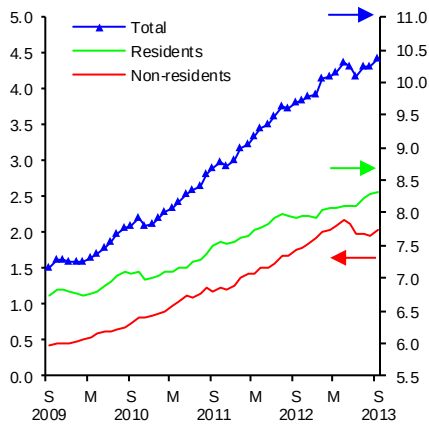
In contrast, the stock of non-resident financial saving has exhibited lower growth rates in recent months (Chart 26a and Chart 26b). This is mainly a result of two factors. First, following the maturity of fixed rate bonds on June 20, 2013, in July and August the reconstitution of non-resident holdings of these securities was slow as compared to similar episodes observed recently. Additionally, the increments in medium- and long-term interest rates led to a reduction in the valuation of non-resident securities of these terms. Both factors are related to the recent volatility of domestic interest rates. Despite the lower dynamism in this market segment, the stock of non-resident holdings of government debt securities was higher by the end of September in comparison with April, prior to the period of volatility in the financial markets. The above denotes the confidence of institutional investors in the Mexican economy and of the local longer-term debt profile.

[5] The monetary base is defined as the sum of currency in circulation plus bank deposits in Banco de México.
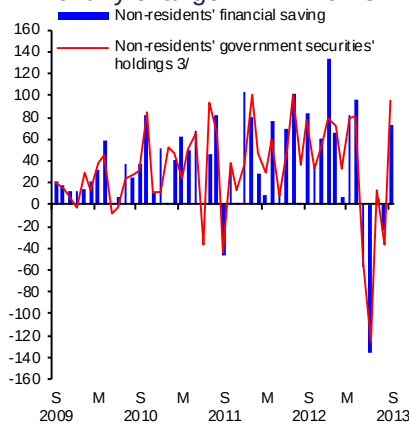
[6] The calculations are based on the monthly average of daily stocks.

Chart 26
Financial Saving Indicators
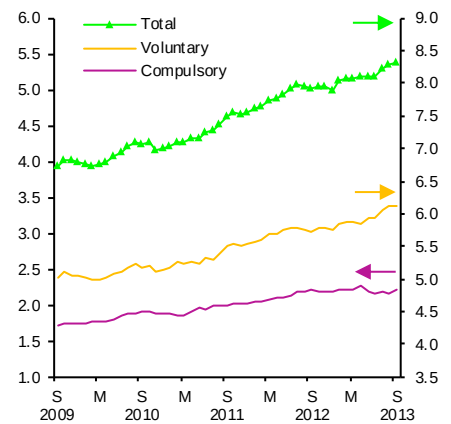
a) Total Financial Saving [1/ 2/]
MXN trillion as of
September 2013, s. a.

b) Financial Saving and Non-resident Government Securities Holdings
Monthly change in MXN billion

c) Residents' Financial Saving [1/ 2/]
MXN trillion as of
September 2013, s. a.

Source: Banco de México.
s. a. / Seasonally adjusted figures.
1/ Defined as the monetary aggregate M4 minus the stock of banknotes and coins held by the public.
2/ Figures are adjusted to exclude the impact of the reform to the ISSSTE Law.
3/ Holdings of government securities expressed in market value.
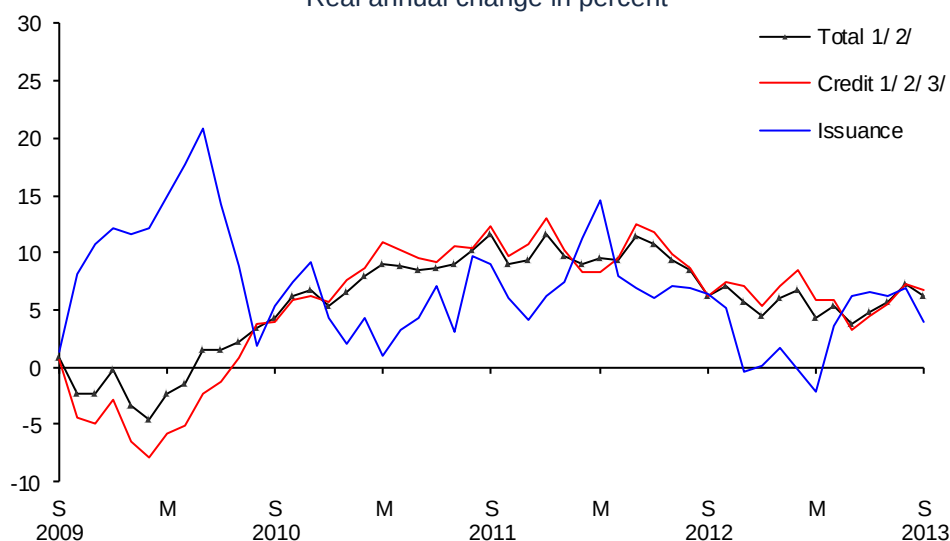
Regarding the use of financial resources in the economy, the stock of financing to the private sector grew at a similar rate to the one observed in the previous quarter. Financing to non-financial private firms kept expanding in the reference quarter, derived both from an increase in direct domestic credit and from higher debt issuance (Chart 27). With regard to credit markets, the resources granted by commercial banks increased with greater dynamism than in the second quarter of 2013 (Chart 28a). This portfolio's expansion has been reflected in greater resources channeled to small and medium enterprises as well as to large firms, even though the portfolio of the former has continued to grow at a greater pace. In this context, the interest rates of credits to firms remained stable (Chart 28b). The corresponding delinquency rates increased as a result of default by a reduced number of firms, mainly related to the housing construction sector, and not to a widespread deterioration of this portfolio (Chart 28c).

Development banks' credit to firms continued growing at relatively high rates during the third quarter of the year (Chart 28c). The expansion of this credit portfolio took place at higher interest rates, even though these average rates are somewhat volatile (Chart 28b). As was the case of the firm credit portfolio of commercial banks, the quality of the development banks' credit portfolio to firms deteriorated, due to the abovementioned problems faced by the same group of firms that did not settle their debts with commercial banks (Chart 28c).

Chart 27
Domestic Financing to Non-financial Private Firms
Real annual change in percent

Source: Banco de México.
1/ These figures are affected by the disappearance of some non-banking financial intermediaries and their conversion to non-regulated Sofom.
2/ From February 2009 onwards, figures are affected by the reclassification 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.
3/ It refers to the performing and non-performing portfolio, and includes credit from commercial and development banks, as well as nonbank financial intermediaries.
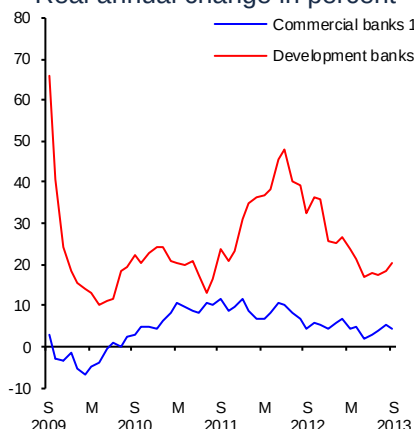
Chart 28
Bank Credit to Non-financial Private Firms
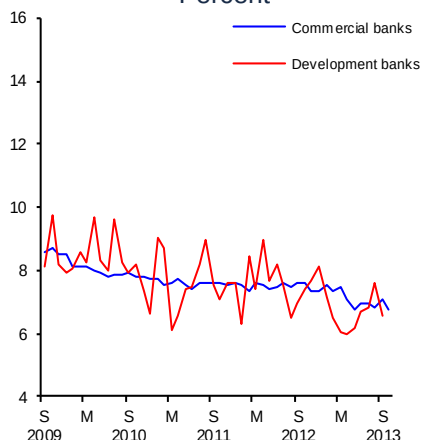
a) Performing Credit to Non-financial Private Firms
Real annual change in percent
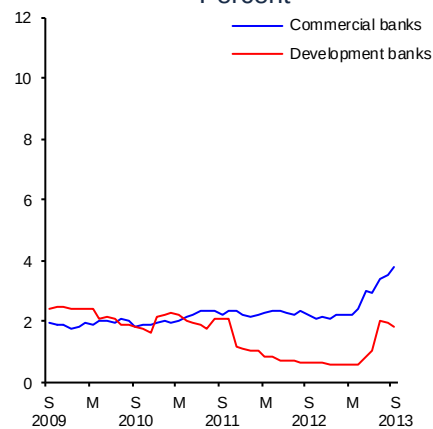
b) Interest Rates of New Credits to Non-financial Private Firms [2]
Percent

c) Delinquency Rates of Credit to Non-financial Private Firms [3]
Percent
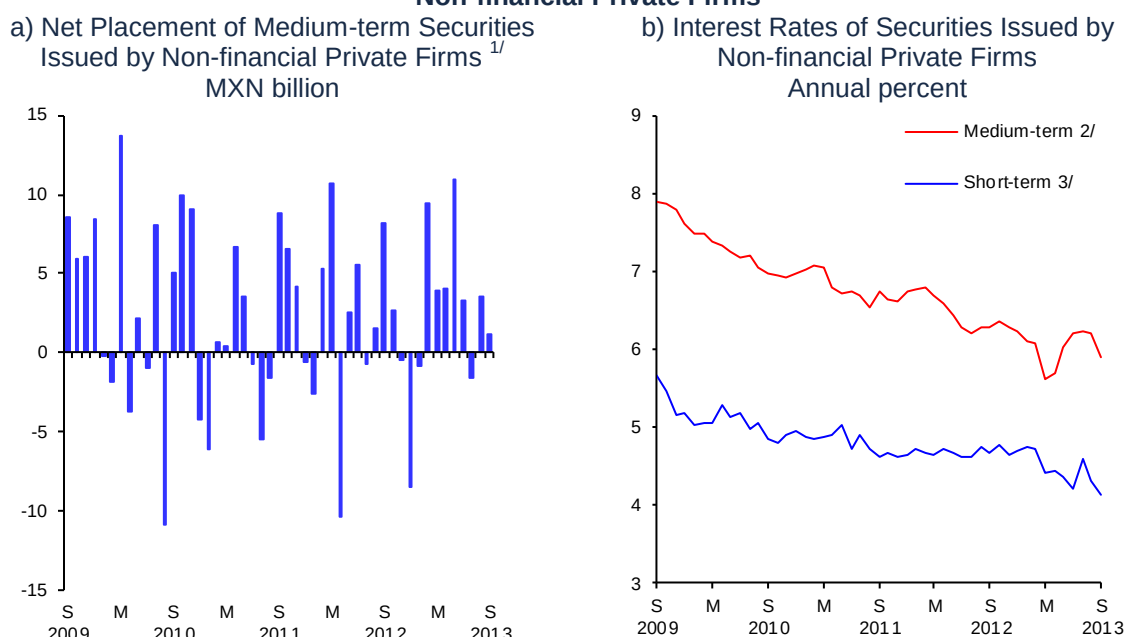
Source: Banco de México.
1/ From February 2009 onwards, figures are affected by the reclassification of credit granted to small- and medium-size firms (PyMES, for its acronym in Spanish) from consumer credit to credit granted to non-financial firms.
2/ It refers to the interest rates of new credits granted by banks to non-financial private firms, weighted by the associated stock of performing credit and for all credit terms requested.
3/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.

In debt markets, private firms continued increasing the issuance of securities in the third quarter of 2013, especially in international markets. The rise in external debt issuance largely derived from the fact that some firms substituted part of their

bank liabilities and domestic debt with external liabilities. Thus, the net issuance of medium-term domestic debt was lower than in the previous quarter (Chart 29a). In the period from July to September 2013, the net issuance of medium-term debt amounted to MXN 3.1 billion, as a result of gross placements of MXN 13.7 billion and amortizations for MXN 10.6 billion, out of which MXN 4.7 billion correspond to debt prepayments. These placements took place in a context of favorable conditions in relation to maturities and interest rates. The average maturity of medium-term securities issued by private firms was about six years, and their corresponding interest rates contracted in September in line with the reduction of interest rates of medium- and long-term government securities. Meanwhile, interest rates of private short-term security placements also decreased in September, in response to the 25-basis point reduction in the target for the Overnight Interbank Interest Rate by Banco de México (Chart 29b).

Chart 29
Non-financial Private Firms

a) Net Placement of Medium-term Securities Issued by Non-financial Private Firms [1]/
MXN billion

b) Interest Rates of Securities Issued by Non-financial Private Firms
Annual percent

Source: Banco de México, with data from Valmer and Indeval.
1/ Placements excluding amortizations in each month (securities and prepayments).
2/ Placements of more than one year.
3/ Placements of up to one year.
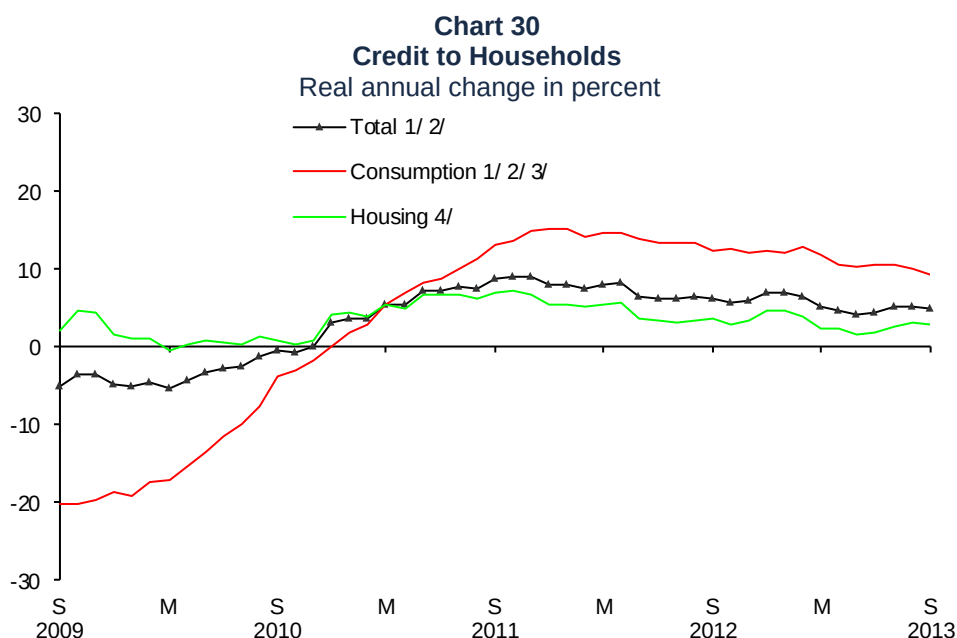
Credit to households continued to expand in the third quarter of 2013, with more vigor than in the previous one. This mainly resulted from the expansion of the mortgage loan portfolio, while consumer credit grew at a similar rate compared to the previous quarter (Chart 30). Thus, in the period of July-September, household credit recorded an average real annual growth rate of 5.1 percent, as compared to 4.5 percent in the second quarter of the year. Within this portfolio, the consumer and housing components registered real annual growth rates of 10.1 and 2.9

percent in the period comprised between July and September, as compared to 10.5 and 1.9 percent in the period of April-June, respectively. [7]

Chart 30
Credit to Households
Real annual change in percent

Source: Banco de México.
1/ From February 2009 onwards, figures are affected by the reclassification 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 from March 2008 onwards include the total consumer credit portfolio of commercial banks' subsidiaries Sofom E.R.
3/ It refers to the performing and non-performing portfolio, and includes credit from commercial and development banks, as well as non-bank financial intermediaries.
4/ It refers to the performing and non-performing portfolio, and includes credit from commercial and development banks, the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit), the ISSSTE Housing Fund (*Fondo de la Vivienda del ISSSTE*, Fovissste) and other non-bank financial intermediaries.
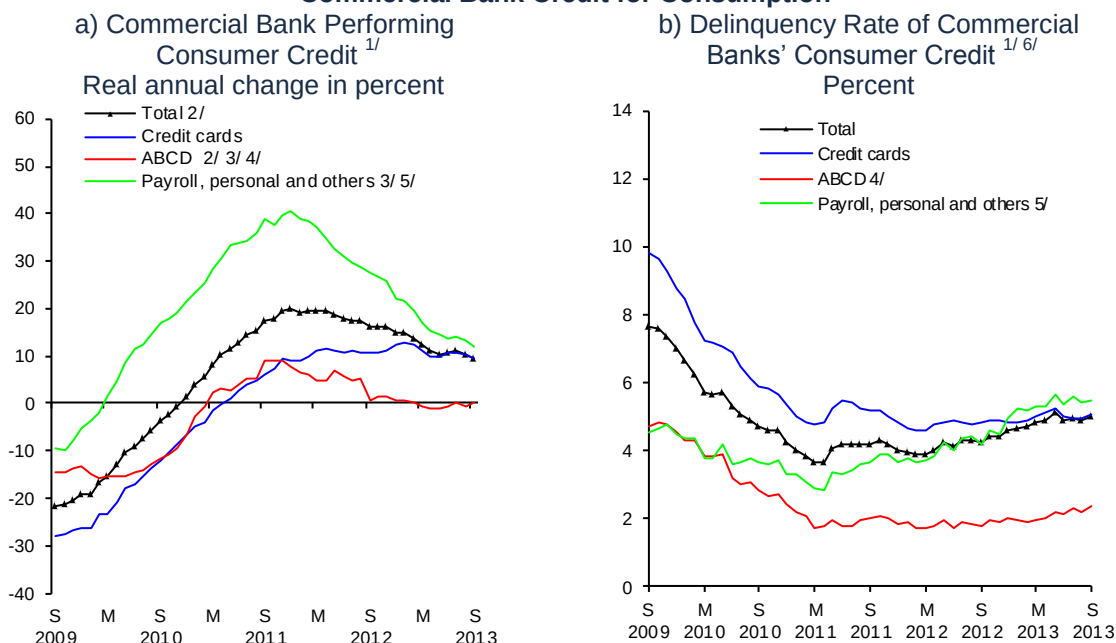
Commercial bank consumer credit maintained its growth rate in the third quarter of 2013. Stable consumer credit growth rates were widespread practically throughout all components (Chart 31a). It stands out that payroll loans, whose growth gradually decelerated since 2011, seem to have stabilized their rate of expansion in the third quarter of 2013. The credit card portfolio kept expanding in the third quarter with the same dynamism observed since 2012, while the ABCD portfolio remained practically unchanged. In this context, consumer loan interest and delinquency rates were stable, including the personal loan portfolio, which up to the second quarter of the year showed some deterioration in its delinquency rate (Chart 31b).

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[7] Housing credit statistics are affected by the conversion of sofoles to non-regulated sofomes, given that such conversion may hamper the collection of data regarding credit provided by these non-bank non-regulated entities. Taking this into account, the housing and consumer credit portfolios grew at real annual rates of 4.2 and 6.2 percent, respectively, in the third quarter of 2013.

Chart 31
Commercial Bank Credit for Consumption

a) Commercial Bank Performing
Consumer Credit [1/]
Real annual change in percent

b) Delinquency Rate of Commercial
Banks' Consumer Credit [1/ 6/]
Percent

Source: Banco de México.
1/ Includes loans by credit-card regulated sofomes: Tarjetas Banamex, Santander Consumo, Ixe Tarjetas and Sociedad Financiera Inbursa. From February 2009 onwards, figures are affected by the reclassification of credit granted to small- and medium-size firms (PyMES) from consumer credit to credit granted to non-financial firms.
2/ Between June 2010 and May 2011, figures are adjusted in order to avoid distortions due to the purchase of one banking institution's automobile loan portfolio.
3/ From July 2011 onwards, figures are adjusted in order to avoid distortions due to the reclassification from durable goods (ABCD) to other consumer credits by one banking institution.
4/ It includes credit for property acquisition and automobile credit.
5/ "Others" refers to credit for payable leasing operations and other consumer credits.
6/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
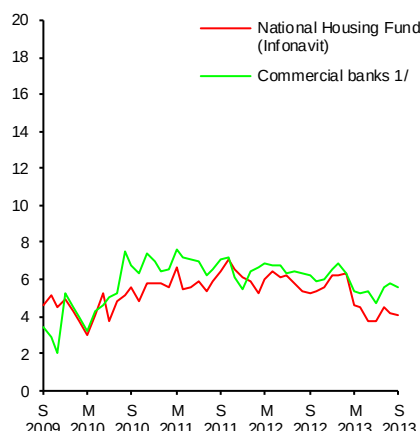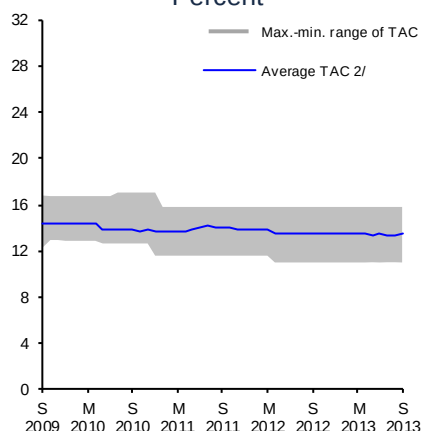
Mortgage loans expanded in the reference quarter at greater rates than observed in the previous one. This portfolio expansion derived from the increase of mortgage loans by the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit) and of commercial banks (Chart 32a). Particularly, the recent implementation of mortgage products with promotional rates offered by commercial banks seems to have had an upward impact on the placement of new credits in this segment. In this environment, interest rates for the total mortgage loan portfolio remain at low levels, and have even decreased slightly in recent months, while delinquency rates remain stable (Chart 32b and Chart 32c).

Chart 32
Housing Credit
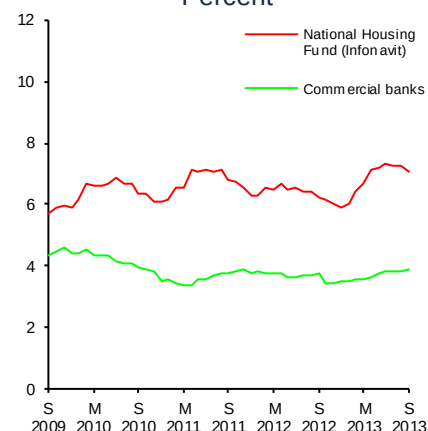
a) Performing Housing Credit
Real annual change in percent

b) Costs of Commercial Bank
Housing Credit
Percent

c) Delinquency Rates of
Housing Credit [3/]
Percent

Source: Banco de México.
1/ Figures are adjusted in order to avoid distortions by the pass-through effect of UDIS trust portfolio to the balance sheet of commercial banks and by the reclassification of credit in direct portfolio to ADES.
2/ Indicator's simple average resuming the total annual cost (TAC) for a standard mortgage product.
3/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.

In all, the analysis of the sources and uses of financial resources up to the third quarter of 2013 suggests a lower dynamism with respect to that observed in 2012. In particular, the lower expansion rate of the funding sources in 2013 so far has been reflected in a lower flow of funding to the non-financial private sector. Keeping this in mind, Box 2 presents an estimate of the evolution of the sources and uses of financial resources, based on the financial programming for 2013, 2014 and 2015, in order to analyze the possible funding pressures to the different sectors of the economy. This exercise takes into account the macroeconomic outlook and the forecast for the international environment presented in this Inflation Report.

Considering the observed evolution of financial resources up to the third quarter of 2013, by the end of 2013 these resources are expected to account for 7.1 percent of GDP (Table 2). This would represent a decline as compared to the last three years, when flows consistently reached levels equivalent to 9 and 10 percent of GDP. This anticipated fall in the sources of resources is mainly due to the evolution of foreign sources, which, even though kept flowing to Mexico, have observed a lower dynamism with respect to previous years, due to the uncertainty in international financial markets, which has led to lower capital flows to emerging economies in general.

With respect to the uses of financial resources, the flow of funding to the non-financial private sector is anticipated to lie at 2.7 percent of GDP in 2013, which represents a reduction as compared to the previous two years, when this flow was above 3 percent of GDP. This fall derives from the reduction in the sources mentioned above. However, this adjustment in the funding to the private sector is expected to be of lower magnitude than the reduction in available resources, given that for 2013 the resources to the public sector (Public Sector Borrowing Requirements, PSBR) are expected to be of a smaller quantity than those of the

previous year, due to the fiscal consolidation process proposed for this year and to a lower international reserves accumulation (Table 2).

For 2014, in line with the recent forecast of the possible evolution of the sources and uses of financial resources, an additional reduction from 2.7 to 2.3 percent of GDP in the flow of funding to the non-financial private sector is expected, despite the expected increment of 0.9 percent of GDP in the funding sources. Lower financial resources to the private sector mainly result from the anticipated increase in the financing to the public sector, in line with the economic package approved for 2014, from 3.2 to 4.4 percent of GDP.

For 2015, even though an outlook similar to that in 2014 is still estimated for the domestic sources of resources, there are risks that their external component could be lower as a result of the possible withdrawal of the monetary stimulus in main advanced economies. With respect to the use of financial funds, public sector borrowing requirements will remain high (3.9 percent of GDP), thus restricting the resources channeled to the private sector. This stresses the importance of reaching the trend of public deficits proposed by the Federal Government, which considers reductions from 2015 onwards until reaching a public deficit excluding Pemex investment equal to zero in 2017, given that, apart from guaranteeing the sustainability of the public debt, it would allow the channeling of greater resources to the private sector. In this regard, the strengthening of budget mechanisms and of the implementation of government expenditure, which derived from the recently approved adjustments to the Federal Law of Budget and Fiscal Responsibility, should be noted.

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

				Annual flows				
	2008	**2009**	**2010**	**2011**	**2012**	**2013** [e]	**2014** [e]	**2015** [e]
Total sources	**5.9**	**4.0**	**9.3**	**10.0**	**10.0**	**7.1**	**8.0**	**7.6**
Domestic sources	5.5	3.4	4.1	5.7	4.4	4.4	4.9	5.2
Voluntary M4	4.2	1.7	2.7	4.2	3.0	3.6	3.6	3.9
Compulsory M4 [1]	1.3	1.7	1.5	1.5	1.4	0.7	1.3	1.3
Foreign sources	0.5	0.6	5.2	4.3	5.6	2.7	3.1	2.4
Non-residents' M4	0.5	0.5	2.9	3.0	4.5	1.4	1.7	1.1
Securities and credit abroad [2]	0.0	0.2	2.3	1.3	1.1	1.4	1.5	1.3
Total uses	**5.9**	**4.0**	**9.3**	**10.0**	**10.0**	**7.1**	**8.0**	**7.6**
International reserves [3]	0.7	0.5	2.2	2.4	1.8	1.1	1.4	1.2
Public sector financing	1.8	3.4	3.8	3.0	3.7	3.2	4.4	3.9
Public Sector Borrowing Requirements (PSBR) [4]	1.6	2.6	3.4	2.7	3.2	2.9	4.1	3.6
States and municipalities	0.2	0.8	0.4	0.3	0.5	0.3	0.3	0.3
Financing to firms	2.0	0.0	2.5	3.5	3.2	2.7	2.3	2.6
Foreign	0.0	-0.4	0.5	0.7	0.8	0.8	0.7	0.7
Domestic [5]	2.0	0.4	2.0	2.8	2.4	1.9	1.6	1.9
Other [6]	1.4	0.2	0.8	1.1	1.4	0.1	-0.1	-0.1

Source: Banco de México.
Note: Figures may not add up due to rounding. Figures expressed in percent of nominal annual average GDP. The information on (revalued) flows is stripped from the effect of exchange rate fluctuations.
e/ Estimated data, expressed in percent of nominal annual average GDP, estimated by Banco de México.
1/ Annual revalued flows exclude the effect of the reform to the ISSSTE Law on the monetary aggregate M4.
2/ It includes 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/ As defined by Banco de México's Law.
4/ From 2008 to 2012, Public Sector Borrowing Requirements (*Requerimientos Financieros del Sector Público*, RFSP or PSBR, for its acronym in English) correspond to data reported by the Ministry of Finance (SHCP). From 2013 to 2015, the PSBR as a percentage of the GDP are obtained from the Economic Package 2014. Figures of revalued flows exclude the impact of the reform to the ISSSTE Law on PSBR.
5/ Total portfolio of financial intermediaries, of the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit), and of the ISSSTE Housing Fund (*Fondo de la Vivienda del ISSSTE*, Fovissste). It includes debt-restructuring programs.
6/ It 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.
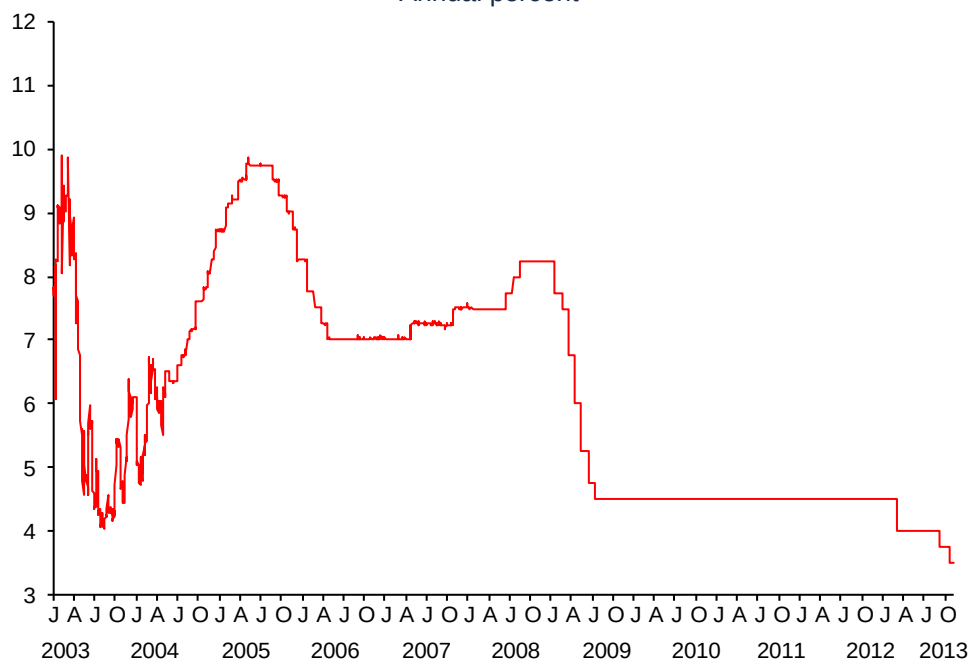
4.   Monetary Policy and Inflation Determinants

The evolution of inflation has been congruent with the convergence process towards the 3 percent target. In particular, while headline inflation has been decreasing in recent years, core inflation has dropped to historical minimum levels. The response of the Central Institute to different shocks affecting the Mexican economy has been crucial in order to achieve the abovesaid situation. In particular, Banco de México's actions have prevented second round effects in a context of relative price adjustments, which have affected inflation in recent years. As a result, inflation expectations remained anchored and are increasingly less influenced by supply shocks.

During the period analyzed in this Inflation Report, the monetary policy stance was congruent with the efficient convergence of inflation towards the 3 percent target, i.e., at the minimal cost to the society in terms of economic activity. Particularly, the Board of Governors decided in its July meeting to maintain the target for the Overnight Interbank Interest Rate at 4.0 percent and to reduce this target by 25 basis points in September and in October to locate it at 3.50 percent (Chart 33).

Chart 33
Overnight Interbank Interest Rate [1/]
Annual percent

1/ The target for the Overnight Interbank Interest Rate is shown since January 21, 2008.
Source: Banco de México.

Among the elements considered for the conduction of the monetary policy the following stand out:
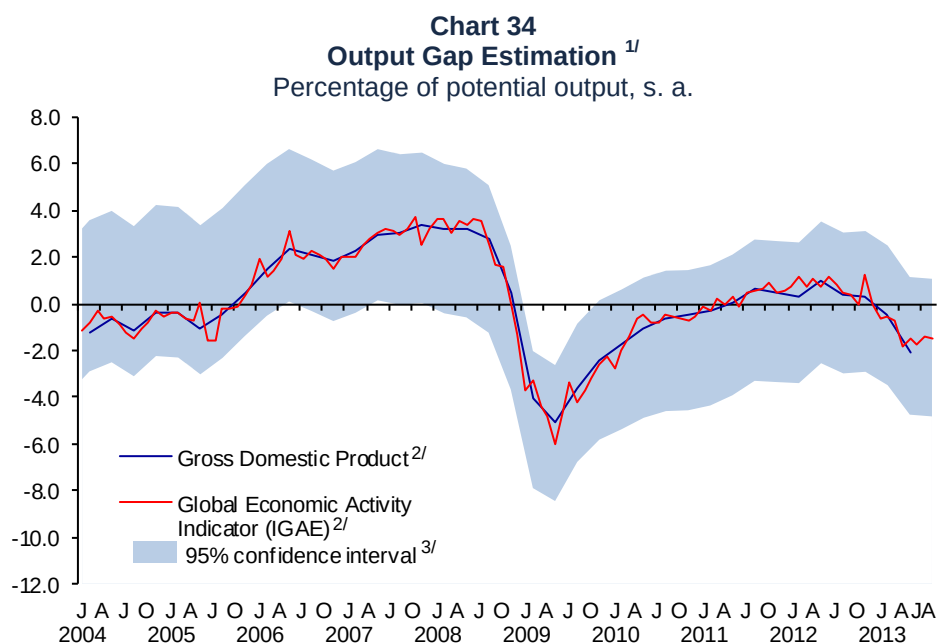
a)   That in the second quarter of 2013 the weakening of the economic activity was widespread and faster than anticipated, which generated a contraction in the GDP over the quarter and a considerable increase in the slack of the economy.

b)   That slack conditions are anticipated to prevail in the economy for an extended time period.

c)   That in recent months, inflation has reduced more than anticipated, partly associated to the major slack in the economy. The above was mainly reflected in the persistence of the core component close to its historical minimum levels.

d)   That the increment in the non-core inflation in early 2013 was indeed transitory, as it had been expected.

e)   That the fiscal package for 2014 is not anticipated to exert a significant impact on inflation, which, in any event, would be transitory.

f)   That inflation expectations have prevailed stable, despite a slight increase in those corresponding to 2014, related to the possible effects of fiscal adjustments, and that there is no evidence of second round effects on the price formation process in the economy, once the medium- and long-term ones have remained unchanged.

g)   That the adjustment in the Mexican financial markets, derived from the abovereferred uncertainty over the U.S. monetary policy has taken place in an orderly manner, as a result of the anchoring of inflation expectations.

Given the weakening of the economic activity and an environment of low inflation, the Central Institute implemented downward adjustments in the reference rate in September and October, without jeopardizing the process of inflation convergence to the 3 percent target. It should be noted that the referred adjustments in the reference rate resulted from both domestic and external factors, and were implemented despite the uncertainty in international financial markets. This demonstrates that the monetary policy in Mexico has been characterized by a high degree of freedom to carry out a countercyclical policy, without compromising the inflation control. This extra room for maneuver resulted from the implementation of the policies congruent with a stable macroeconomic environment and from the structural progress in curbing inflation over the last decade.

As a result of the recent evolution of the economy, and the slack persisting in the main input markets, no demand-related pressures on either the general price level, or the external accounts were registered. In particular:

a)   Given the major deceleration since the second half of 2012 and, particularly, in the second quarter of 2013, the output gap has become more negative (Chart 34). In this context, the referred gap remained

negative despite the incipient rebound in the economic activity levels in the third quarter.[8]

Chart 34
Output Gap Estimation [1/]
Percentage of potential output, s. a.

Gross Domestic Product [2/]
Global Economic Activity Indicator (IGAE) [2/]
95% confidence interval [3/]

1/ Estimated using the Hodrick-Prescott (HP) filter with tail corrections; see Banco de México (2009), "Inflation Report, April - June 2009", p.69.
2/ GDP figures up to the second quarter of 2013, IGAE figures up to August 2013.
3/ Confidence interval for the output gap calculated with an unobserved components' method.
s. a. / Prepared with seasonally adjusted figures.
Source: Prepared by Banco de México with data from INEGI.
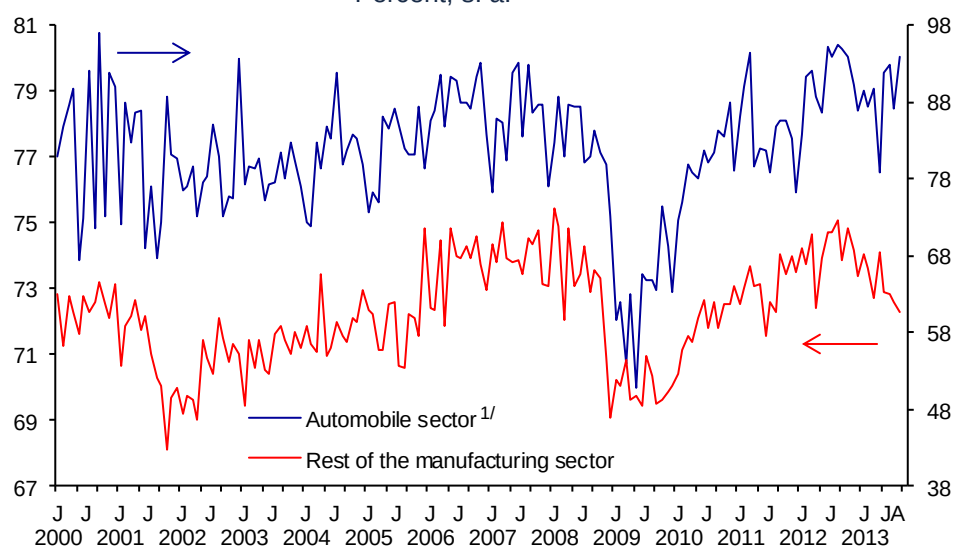
b) Likewise, the indicators of installed capacity utilization in the manufacturing sector suggest that, with the exception of the automobile sector, the rest of the manufacturing sector as a whole reduced gradually the use of its production plant since the second half of 2012 (Chart 35).

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[8] Considering that this indicator's estimation is subject to a certain degree of uncertainty, it should be carefully interpreted, given that, from a statistical point of view, it does not register levels significantly different from zero.

Chart 35
Use of Installed Capacity: Manufacturing
Percent, s. a.
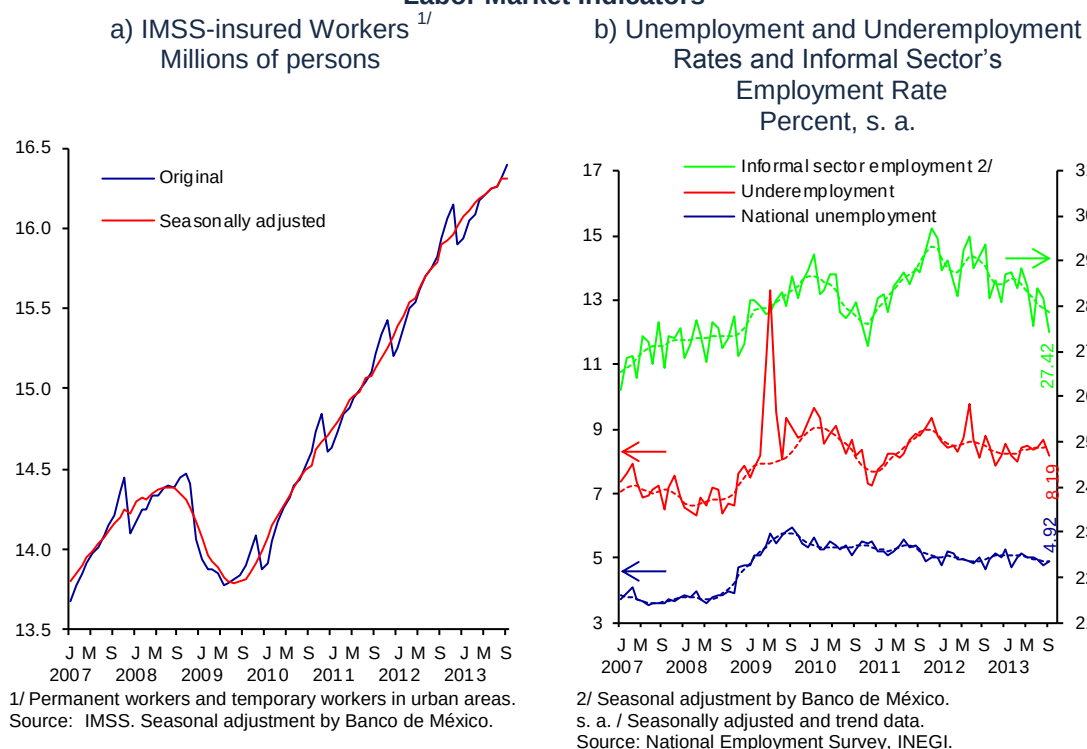
1/ This series is not characterized by a seasonal pattern.
s. a. / Seasonally adjusted figures.
Source: Monthly Survey of Manufacturing Business Environment, Banco de México.

c)   Despite the fact that the number of IMSS-insured workers kept presenting a positive trend in the third quarter of 2013 (Chart 36a), the labor market continues observing slack. Indeed, even though the Mexican and urban unemployment rates registered lower levels as compared to the first half of 2013, these rates, as well as those of underemployment, still lie above the levels prior to the 2008 crisis (Chart 36b).
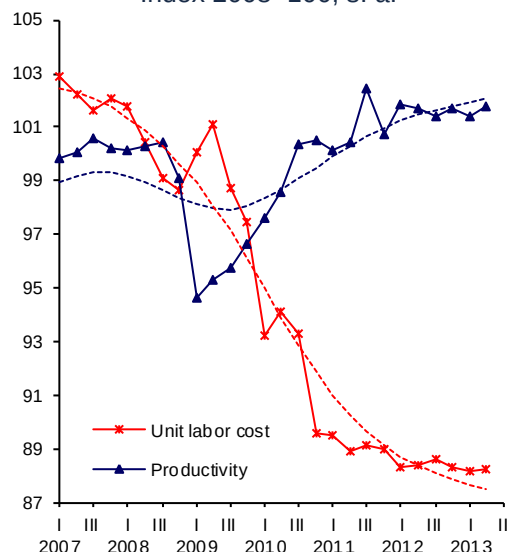
Chart 36
Labor Market Indicators

a) IMSS-insured Workers [1]
Millions of persons

b) Unemployment and Underemployment
Rates and Informal Sector's
Employment Rate
Percent, s. a.

1/ Permanent workers and temporary workers in urban areas.
Source: IMSS. Seasonal adjustment by Banco de México.

2/ Seasonal adjustment by Banco de México.
s. a. / Seasonally adjusted and trend data.
Source: National Employment Survey, INEGI.

d) The slack observed in the labor market has contributed to the moderation of the changes reported by the main wage indicators of the economy (see Section 2.2), which, together with the tendency of the average labor productivity, have retained the unit labor costs at low levels (Chart 37).

e) The recent evolution of different indicators in the debt market and the market of credit to the non-financial private sector point to the absence of signs of pressures in these markets.

f) As mentioned above, the deficit of the current account is estimated to have presented moderate levels in the third quarter of 2013 and the economy is considered to have received funding from abroad by an amount sufficient to easily finance it.

Chart 37
Productivity ^{1/} and Unit Labor Cost

a) In the Economy
Index 2008=100, s. a.

b) In the Manufacturing Sector
Index 2008=100, s. a.
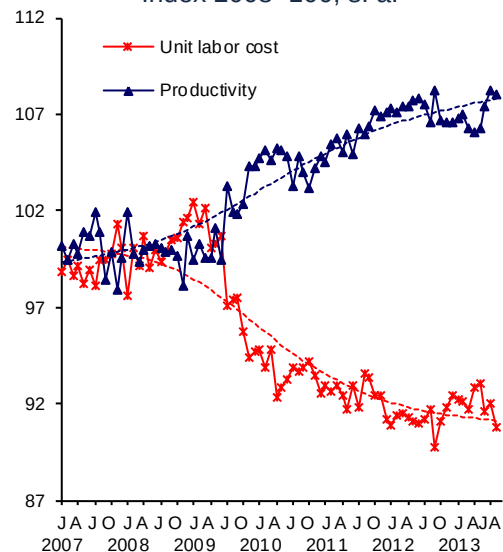
s. a. / Seasonally adjusted data. Trends estimated by Banco de
    México.
1/ Productivity based on the amount of hours worked.
Source: Unit cost prepared by Banco de México based on data
    from INEGI. The Global Index of Labor Productivity in
    the Economy (IGPLE), as released by INEGI.

s. a. / Seasonally adjusted and trend data.
1/ Productivity based on the amount of hours worked.
Source: Prepared by Banco de México with seasonally adjusted
    data from the Monthly Manufacturing Business Survey
    and the monthly indicator of the Mexico's System of
    National Accounts, INEGI.

The evolution of inflation expectations emphasizes the anchoring of the inflationary process in Mexico. In line with Banco de México's expectation survey among private sector analysts, over the period covered by this Inflation Report, the median of inflation expectations for the end of 2013 was revised downwards from 3.80 to 3.50 percent between the surveys of June and October. Hence, it dropped even below the levels observed prior to some transitory shocks, which affected the non-core inflation (Chart 38a). In this regard, it is noteworthy that the meteorological phenomena in different regions of Mexico in mid-September did not significantly affect inflation expectations either. In fact, between the surveys of September and October, the median of inflation expectations for the end of 2013 slid from 3.59 to 3.50.[9] Thus, between June and October, the median of core inflation expectations for the end of 2013 maintained its downward trend, by shifting from 3.10 to 2.82 percent over the reference period. In turn, non-core inflation expectations implicit in the referred medians decreased from 6.20 to 5.83 percent as well.[10]

[9] Even in the Banamex Survey of Financial Market Analysts' Expectations of October 22, 2013, a reduction in headline inflation expectations for the end of 2013 had already been observed, from 3.69 to 3.53 percent with respect to the survey of October 7, 2013.
[10] In line with the Banamex Survey, the median of headline inflation expectations for the end of 2013 dropped from 3.90 to 3.53 percent between the surveys of June 20, 2013 and October 22, 2013. This performance derived from a reduction in the medians of core inflation expectations for the same horizon from 3.20 to 2.87 percent, while the expectations of the non-core inflation implicit in the abovereferred medians declined from 6.30 to 5.79 percent.

The median of inflation expectations for the end of 2014 was revised upwards from 3.60 to 3.76 percent between June and October. This increase to a great extent derived from the possible effects generated by the fiscal adjustments for 2014 on inflation. Despite the abovesaid, these expectations, even considering the possible effect of the fiscal changes, remain clearly below 4 percent. In particular, over the reference period, the rise in headline inflation expectations resulted from the increment in the median of core inflation expectations from 3.20 to 3.28 percent, as well as from an increase in non-core inflation expectations implicit in these medians from 4.97 to 5.42 percent.[11]

In turn, inflation expectations for 2015 and in general for long-term horizons remained stable around 3.50 percent, which confirms the fact that the impact of the fiscal reform on inflation, foreseen by economic analysts, is transitory (Chart 38b). It should even be pointed out that, based on the recently approved economic package, from 2015 onwards gasoline prices are anticipated to adjust based on the expected inflation, reason for which the expectations for 2015 and the following years are forecast to adjust downwards (see Box 3).

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[11] According to the Banamex Survey, the median for headline inflation expectations for 2014 rose from 3.60 to 3.78 percent between the surveys of June 20, 2013 and October 22, 2013. This performance derived from the fact that the median of core inflation expectations for the end of 2014 remained at 3.36 percent, while non-core inflation expectations implicit in the referred medians grew from 4.42 to 5.22 percent.

Box 3
The Policy of Gasoline Price Adjustments and Inflation Expectations

1. Introduction

This Box presents the analysis of the possible implications for the expected inflation trajectory from 2015 onwards generated by the established in the Transitory Article Four of the Federal Revenue Law for the Fiscal Year 2014 approved by Congress. The referred article states that: "*From 2015 onwards, the public prices of Magna and Premium gasoline and of diesel, determined by the Ministry of Finance (SHCP), should be adjusted on a monthly basis in line with expected inflation of the economy. The price policy established in this Article will maintain provided the international prices remain stable or decline; otherwise, the Ministry of Finance will adjust the increments of public prices upwards, congruent with the fuel price growth in the international market*".
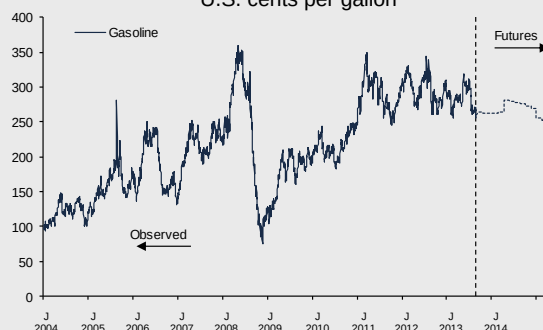
This new regulation turns out to be relevant, given that, as shown below, in recent years the annual change rates of gasoline prices have been high and have considerably affected the level of annual headline inflation. Thus, in light of the prospect of stable international fuel prices, given the weak environment of the global economy, a policy of adjustments of the domestic fuel prices to the public in line with the expected inflation will contribute to the convergence process of inflation to its 3 percent target.

The Box is organized in the following manner: Section 2 overviews the recent evolution of international fuel prices and their differentiated impact on fuel prices in different countries. Section 3 evaluates the impact of the gasoline price policy in Mexico on headline inflation. Section 4 analyzes the relation between the adjustments in the gasoline price policy and inflation expectation. And the last Section presents some final considerations.

2. Background

From 2004 onwards, the international crude oil price started to increase, mainly driven by a considerable increment in the global demand, generated by the expansion of some emerging economies, particularly India and China. In turn, the world production of this commodity observed low growth rates and was affected by the geopolitical conflicts in some relevant producing countries. As a consequence, the international gasoline price also grew significantly, which affected inflation at a global level, derived from the fact that this fuel is part of the CPI basket and an important input in the goods' production (Chart 1).
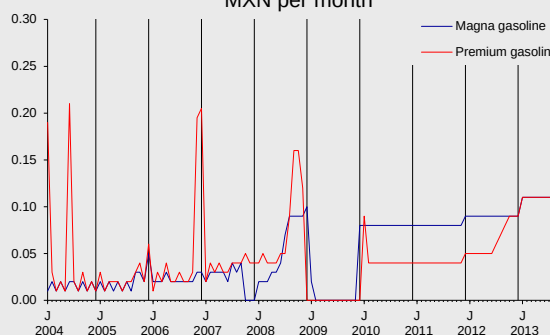
Chart 1
Spot Price of Regular Gasoline
U.S. cents per gallon

Source: 87 Octane gasoline New York Harbor, Bloomberg.

Unlike other countries, in which fuel prices are determined by free supply and demand, in Mexico, several years ago an adjustment policy of gasoline prices was implemented, determined by the Ministry of Finance, in order to protect the economy from short-term fluctuations in international prices of this fuel. Given the increment in the level and volatility of international reference prices of gasoline, the adjustments applied to the domestic price increases have varied throughout recent years (Chart 2). Thus, even when the referred adjustments increased domestic prices, this was gradual, as compared to the international counterparts, as a result of which a gap between them emerged. This gap has been gradually decreasing due to the adjustments, while international prices stabilized or decreased (Chart 3).

Chart 2
Gasoline Price Adjustments in Mexico
MXN per month
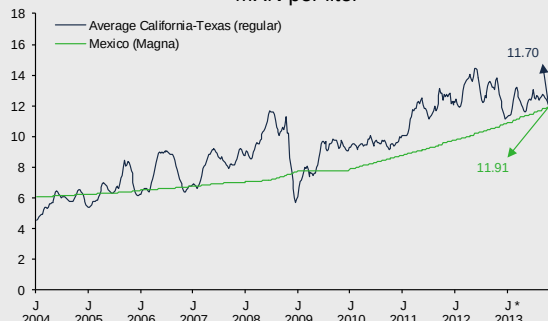
Source: Prepared by Banco de México with data from PEMEX.

The policy of gasoline price adjustments mitigated the effects on inflation in Mexico generated by strong increments in international crude oil prices and gasoline prices in 2007 and 2008, as compared to what occurred in other countries. In particular, stability of the annual change of the energy price index in

Mexico is evident, while other countries follow more closely the free price determination scheme in the energy sector (Chart 4).
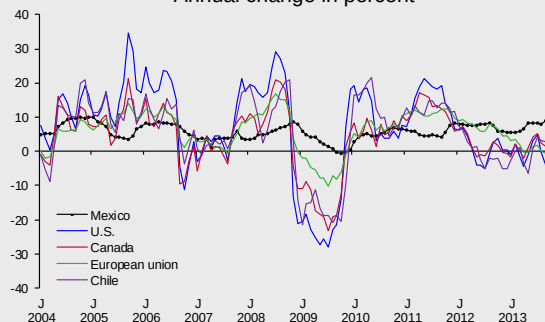
Chart 3
Gasoline Price Gaps
MXN per liter

Source: U.S. Energy Information Administration (EIA) and Banco de México.
*/ Data as of the third week of October 2013.

Chart 4
Energy Price Indices:
Selected Countries
Annual change in percent
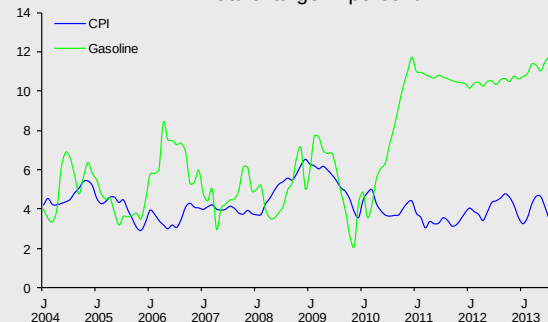
Source: Statistical agencies of different countries, INEGI and Banco de México.

3. Impact of Gasoline Price Adjustments on the Level and Persistence of Inflation in Mexico

Within the structure of the Consumer Price Index (CPI), gasoline (considering its high octane and low octane varieties) has a weight of 4.24 percent. Given this weight, the policy of gradual increments in domestic prices carried out in recent years to adjust them to their international counterparts has generated two effects on headline inflation. On the one hand, it managed to mitigate the impacts of the energy price fluctuations observed in other countries. On the other hand, it generated greater inertia in inflation. To illustrate this last point, Chart 5 presents the evolution of headline inflation and of the annual percentage change of the gasoline price index. As can be observed, the latter registered a greater increment than headline inflation from 2010 onwards. Chart 6 exhibits annual headline inflation and the share of it that can be explained by the increment in gasoline
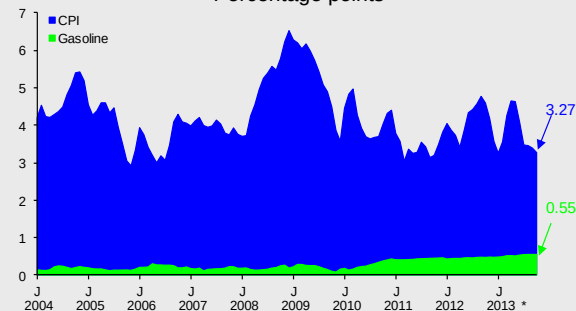
prices. Thus, it can be appreciated that the contribution of inflation of gasoline prices to headline inflation has been increasing in recent years.

Chart 5
**Consumer Price Indices for Mexico**
Annual change in percent

Source: INEGI and Banco de México.

Chart 6
Contributions to Annual Headline Inflation
Percentage points
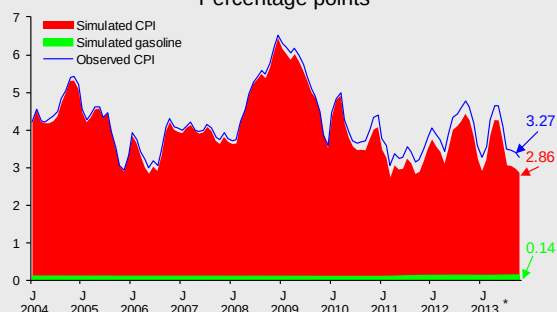
Source: INEGI and Banco de México.
*/ Data as of the first fortnight of October 2013.

Between 2004 and 2009, the increments in gasoline prices contributed with 19 basis points (bp) to annual headline inflation, while between 2010 and 2013 the average contribution was 41 bp. In the first fortnight of October 2013 their contribution amounted to 55 bp. To illustrate the impact on inflation that an adjustment in gasoline prices would have had in line with the 3 percent inflation, Chart 7 presents the trajectory that inflation would have registered if gasoline prices had increased at a rate congruent with the 3 percent target, with the remaining factors unchanged. As can be appreciated, the contribution of gasoline from 2004 to 2009 and from 2010 to 2013 would have been approximately 11 bp on average per year in both cases, and its impact on inflation in the first fortnight of October would have been 14 bp, as a result of which inflation would have turned out 41 bp lower than observed. In this way, if the international energy prices remain stable or decline, the price policy for 2015 is anticipated to contribute to the convergence process of inflation and its expectations to the inflation target.

Chart 7
Counterfactual Exercise
**Contributions to Annual Headline Inflation**
Percentage points
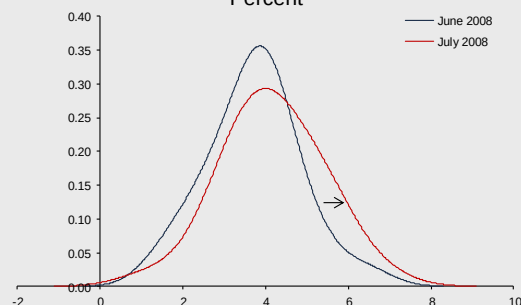
Source: INEGI and Banco de México.
*/ Data as of the first fortnight of October 2013.

4. Adjustments in Domestic Gasoline Prices and Inflation Expectations

Based on the expectations' survey conducted by Banco de México among private sector analysts, the relation between the two cases of the most significant adjustments in gasoline prices and the performance of inflation expectations for the next 12 months is analyzed. This is done to illustrate that gasoline prices are a factor affecting analysts' expectations. Based on each analyst's expectations of headline and core inflation, an implicit expectation of the non-core inflation can be calculated. This indicator turns out relevant, given that gasoline is a generic item of the non-core inflation. As can be observed in Chart 2, the price adjustment of the low octane gasoline increased from 4 to 7 cents per month between June and July 2008. In Chart 8 it can be observed that this was reflected in higher implicit expectations of the non-core inflation for the next 12 months.[1]

Chart 8
Distribution of Implicit Expectations
of the Non-core Inflation
Percent
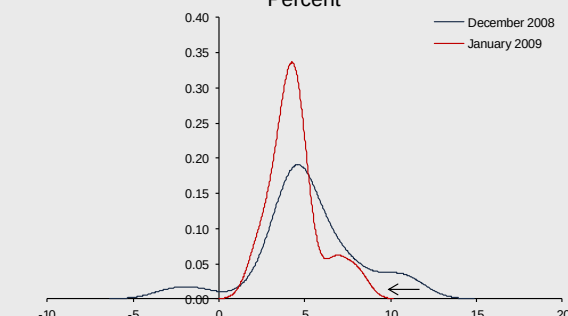
Source: Banco de México expectations survey.

On the contrary, the downward adjustment in Magna

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[1] It should be pointed out that over the same period other shocks could have taken place as well, which could have influenced inflation expectations.

gasoline from 10 to 2 cents between December 2008 and January 2009 also contributed to the decline in implicit expectations of the non-core inflation (Chart 9). Thus, when the gasoline price adjustment changed significantly, short-term inflation expectations also adjusted in the same direction.

Chart 9
Distribution of Implicit Expectations
of the Non-core Inflation
Percent
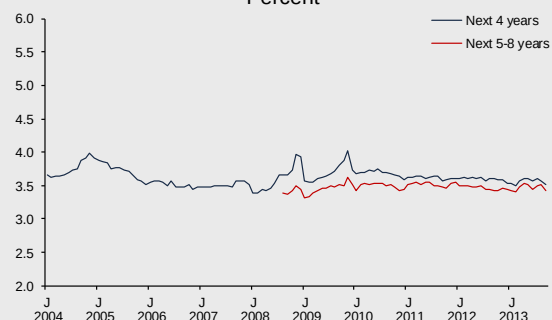
Source: Banco de México expectations survey.

Moreover, regardless of the marginal effects of the changes in gasoline adjustments on inflation expectations, they are possibly a factor affecting the level of longer-term inflation expectations (Chart 10). In particular, those corresponding to the next 4 and 5-8 years have persisted close to 3.5 percent in recent years. However, insofar as the increments in fuel prices are congruent with the anticipated inflation, the expectations for 2015 and hereinafter are estimated to reduce to locate at levels closer to the 3 percent inflation target.

This is due to the fact that the economic agents would incorporate this policy in their price determination, provided the perceived stability in the international prices of their counterparts, which allows following the described policy.

Chart 10
Longer-term Inflation Expectations
Percent

Source: Banco de México expectations survey.

5. Final Considerations
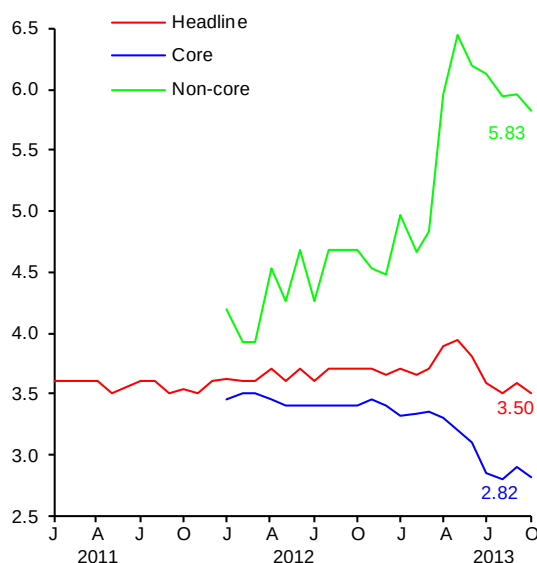
Between 2010 and 2013, the contribution of gasoline price adjustments to headline inflation was increasing, reaching 55 bp in the first fortnight of October 2013. By contrast, if gasoline prices in recent years had increased in line with the inflation target, the contribution to headline inflation would have been of only 14 bp. Therefore, headline inflation would have been 41 bp lower in the first fortnight of October.

In the current context, in which the gaps between the domestic and external prices have reduced and given the relative stability anticipated in international energy prices, the change in the policy of gasoline price determination from 2015 onwards is expected to contribute to the reduction in the economic agents' inflation expectations in Mexico, particularly in those corresponding to 2015 and subsequent years.

In addition to the information drawn from the surveys, inflation expectations obtained from the market-based instruments confirm that these remained stable despite high volatility in financial markets over the period analyzed in this Inflation Report. The indicator of break-even inflation and inflationary risk, which corresponds to the difference between the 10-year bond nominal yield and the real yield associated to inflation-indexed debt instruments of the same maturity, decreased and lies at levels close to 3.7 percent (Chart 39). Thus, given the estimated positive value of the inflationary risk premium, long-term inflation expectations implicit in these instruments are close to 3 percent.[12]
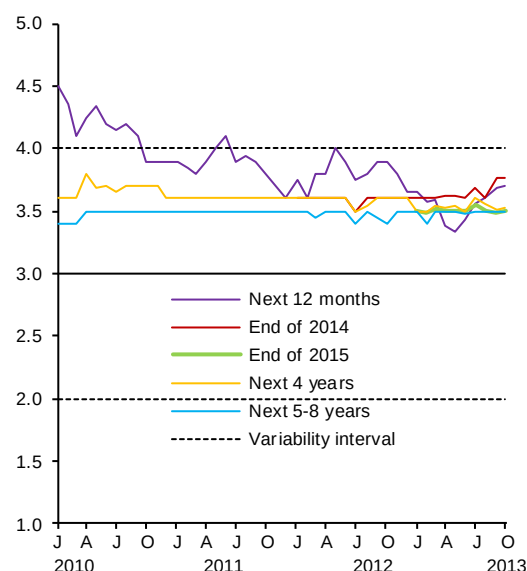
Chart 38
Inflation Expectations

a) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2013
Percent

b) Medians of Headline Inflation Expectations across Different Terms [1/]
Percent

Source: Banco de México's survey.
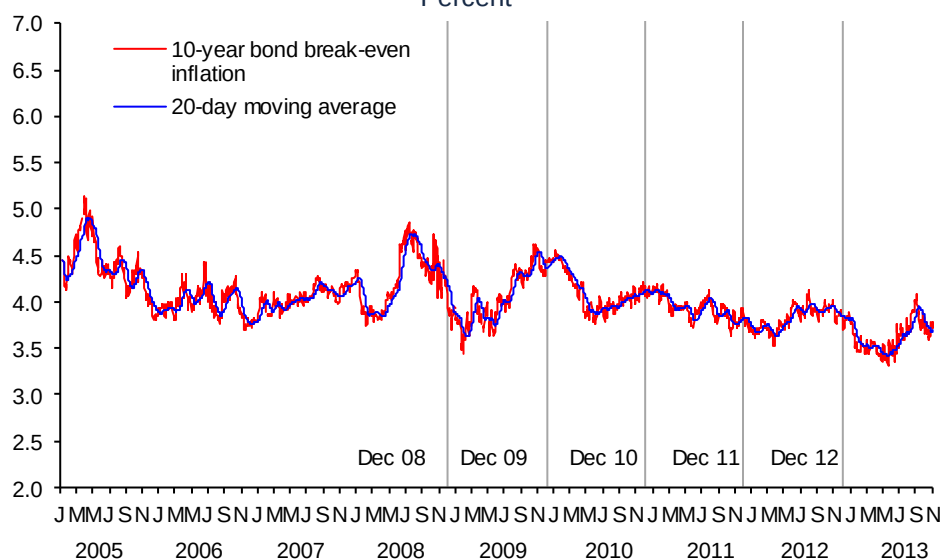
1/ Latest available data: October 2013.
Source: Banco de México's survey.

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[12] As mentioned in previous Inflation Reports, the estimates based on a model of the term structure of interest rates, which allows the risk premia to modify over time (Cortés and Ramos-Francia [2008], "A Macroeconomic Model of the Term Structure of Interest Rates in Mexico", Working paper 2008-10, Banco de México), suggest that for the period from 2001 to 2013 the average for the inflationary risk premium implicit in the 10-year nominal interest rate bonds is approximately 40 basis points.

Chart 39
Break-even Inflation and Inflation Risk [1]
Percent

1/ The break-even inflation and inflation risk implicit in 10-year bonds is calculated based on nominal and real interest
rates of the secondary market.
Source: Banco de México's estimate with data from Valmer.

As noted above, following both the Federal Reserve announcements and the better performance of the U.S. economy between May and August, it was anticipated that this central bank would begin reducing the pace of asset purchases in the second half of 2013. This triggered a decompression process of some risk premia in the U.S. economy, which resulted in higher longer-term interest rates in the U.S. and worldwide, as well as a higher volatility in international financial markets, particularly in emerging economies' exchange rate markets. Afterwards, given the recent moderation of the U.S. economic activity and the deferred reduction by the Federal Reserve in the pace of asset purchases, volatility in international financial markets diminished.

In this environment, the adjustments in the Mexican financial markets, both the exchange rate and the money markets, took place in an orderly manner without affecting either inflation expectations, or the inflationary risk premia. Medium- and long-term interest rates continued rising in July and till early September, in light of the referred decompression process of risk premia in the U.S. In particular, the interest rate of 10-year government bonds increased from average levels of around 5.50 percent in June to 6.50 percent in the first days of September. It should be noted that this increment did not derive from domestic factors, due to the fact that both the component of short-term interest rates implicit in the longer-term ones, and inflation expectations remained stable. In line with Banco de México's decision of the monetary policy of September 6, 2013, which reduced by 25 basis points the target for the Overnight Interbank Interest Rate to a level of 3.75 percent, longer-term interest rates even started to decrease. The fact that the U.S. interest rates have been declining since September, given the Federal Reserve decision to postpone the reduction of the pace of asset purchases, also contributed to this development. It should be noted that following the reduction of the target for the reference interest rate to 3.50 percent on October 25, 2013, the

interest rates of 10-year government bonds remained stable and recently located at levels close to 6.00 percent (Chart 40a).

In turn, in July and August, the 3-month interest rate of government securities persisted around 3.85 percent in line with the absence of changes in the reference rate over this period. Afterwards, as a consequence of the reductions in the reference interest rate, its evolution maintained a downside trend to locate close to 3.45 percent in early November. Thus, from late June to the first days of September, the slope of the yield curve (the difference between the 10-year and 3-month interest rate) changed from approximately 165 to 265 basis points by means of the decompression process of risk premia and the corresponding increase in long-term rates. However, in September, October and the first days of November, the slope of the curve dropped to 255 basis points, given that the reduction in longer-term interest rates was greater than that corresponding to the shorter-term ones. This dynamics of the yield curve reflects the deferred reduction in the U.S. pace of asset purchases, the anchoring of inflation expectations in Mexico and the progress in the convergence process of inflation towards the 3 percent target (Chart 40b).

In the period from May to August, in light of the volatility in international financial markets, which to a greater extent affected emerging economies, interest rates in Mexico grew more than in the U.S., reason for which long-term interest rate spreads between Mexico and the U.S. increased considerably, following the minimum levels reached in the first months of 2013. Thus, in the first days of September, the long-term interest rate spread, particularly in 10-year bonds, reached a level of 365 basis points. Nonetheless, given the evolution of interest rates in Mexico and the U.S. in September and October, these spreads plunged to levels of 340 basis points (Chart 41).

Chart 40
Interest Rates in Mexico

a) Government Securities
Interest Rates [1]
Percent

Dec 09 Dec 10 Dec 11 Dec 12

1 day
3 months
1 year
10 years
30 years

F MA N F MA N F MA N F MA N F MA N F MA N F MA N
2007   2008   2009   2010   2011   2012   2013

1/ Since January 21, 2008, the one-day (overnight) interest rate
corresponds to the target for the Overnight Interbank Interest
Rate.
Source: *Proveedor Integral de Precios* (PiP).

b) Yield Curve
Percent

Jun-30-13
Sep-05-13
Sep-09-13
Nov-04-13

1   1   3   6   1   2   5   10   20   30
day   months   years

Source: *Proveedor Integral de Precios* (PiP).

**Chart 41**
Interest Rate Spreads between Mexico and the U.S. [1]
Percentage points

Dec 09   Dec 10   Dec 11   Dec 12

1 day
3 months
1 year
10 years
30 years

J MM J S N J MM J S N J MM J S N J MM J S N J MM J S N J MM J S N J MM J S N J MM J S N
2006   2007   2008   2009   2010   2011   2012   2013

1/ For the U.S. target rate, the average of the interval considered by the U.S. Federal Reserve is considered.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

As mentioned in Section 3.2.2., non-resident financial saving moderated its growth in the third quarter as compared to the second one. Still, from July onwards, non-resident government securities holdings reverted the downward adjustment they

had presented in May and June, reaching in September a greater stock with respect to that of April, prior to the volatility period in financial markets. This recent recovery in the referred holdings indicates confidence of institutional investors regarding the profile of local longer-term debt, despite volatility in international financial markets (Chart 42).

Chart 42
Government Securities' Holdings by Foreign Investors
MXN billion


Source: Banco de México.
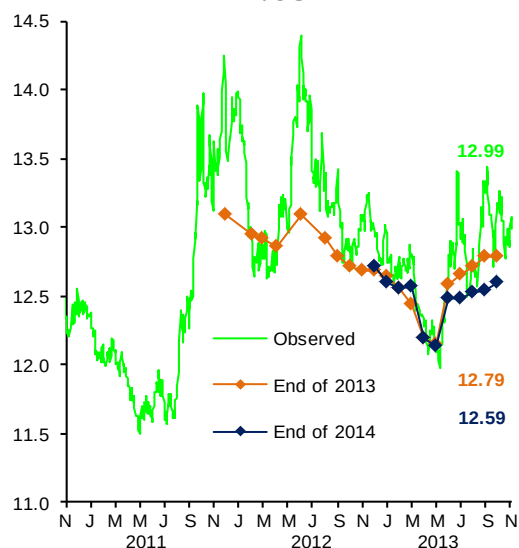
It is important to stress that a fundamental element in the framework for the conduction of macroeconomic policy in Mexico, which contributed to the considerable reduction of external vulnerability of its economy, is the flexible exchange rate regime. Indeed, this exchange rate arrangement has proved to be highly useful throughout the years, as it partly offset the effects of external shocks on the Mexican economy, thus becoming an element strengthening the macroeconomic framework of Mexico. Hence, the performance of the exchange rate over the period covered by this Inflation Report was in line with the global environment of volatility faced by the Mexican economy, which has facilitated its adjustment to the adverse international context (Chart 43).

In sum, unlike other emerging economies, in the case of Mexico, confidence in a stable macroeconomic environment has contributed to maintaining the sovereign risk premium stable, following the increase in the previous months, derived from the decompression process of risk premia in international financial markets.

Chart 43
Nominal Exchange Rate and Real Exchange Rate
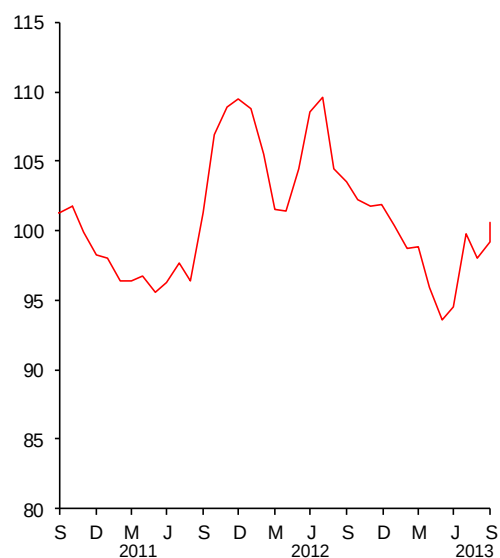
a) Nominal Exchange Rate and its
Expectations as of End
of 2013 and 2014 [1]
MXN/USD

b) Multilateral Real Exchange Rate [2]
Index 2010 = 100

1/ The observed exchange rate is the daily data of the FIX exchange rate. The latest datum of the observed exchange rate corresponds to November 4, 2013. For its expectations, the latest datum corresponds to the survey of October 2013.
Source: Banco de México and Banco de México's Survey.

2/ With respect to 51 countries. An increase in the index corresponds to a depreciation of the real exchange rate.
Source: Bank for International Settlements.

5.   Inflation Forecasts and Balance of Risks

As detailed in the previous sections, a series of adverse events, which had affected the economy since the second half of 2012, resulted in a more unfavorable than previously anticipated evolution of the economic activity. Furthermore, the revision of the economic activity figures derived from the change in the base for the GDP calculation indicates a more pronounced slowdown than it was possible to perceive based on the previous data. Thus, despite the expected economic activity recovery in Mexico in the second half of the year, as a result of a rebound in the U.S. growth, a greater dynamism of the public spending and a recovery of domestic demand, a significant downward revision of the growth forecast for 2013 as a whole is required, as a reflection of the unfavorable performance of GDP in the first half of the year.

For 2014, an uncertain international environment is anticipated, in which downward risks to growth have increased worldwide, while the expansion prospects for emerging economies have continued to register downside adjustments. The U.S. industrial sector remains fragile, therefore its growth outlook has been revised downwards. The above suggests that in 2014 Mexico's GDP could grow less than estimated in the last Inflation Report. Despite that, it should be noted that higher growth in 2014 as compared to 2013 is still anticipated, mainly due to the expectation that some of the elements that affected the economic growth this year will have dissipated by 2014. The possible positive effect, though moderate, of the countercyclical policy in the economic package on economic activity is considered in the forecasts, once the possible negative effects produced by higher taxes are excluded, even if they are moderate. Furthermore, in 2014 the beneficial effects of the structural reforms on potential growth of the Mexican economy could start to be perceived.

This more favorable trajectory for growth is anticipated to continue in 2015, driven by both external and domestic demand, as well as by the gradual positive impact of the structural reforms on potential GDP. This dynamism would take place in a context of consolidation of the world economic recovery, particularly of the U.S., even though there is still a risk of volatility episodes in the financial markets, derived from possible adjustments to the monetary policy in advanced countries.

The expectations regarding the U.S. economic activity, which represent the basis for Mexico's macroeconomic framework, are the following:[13]

a)   The anticipated U.S. GDP growth rate for 2013 is adjusted with respect to the previous Inflation Report from 1.8 to 1.6 percent, while for 2014 it is revised from 2.7 to 2.6 percent. For 2015, a 2.9 percent expansion is anticipated.

b)   As compared to the previous Inflation Report, the expected U.S. industrial production growth rate in 2013 is adjusted downwards from

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[13] Expectations for the U.S. economy are based on the consensus of analysts surveyed by Blue Chip in October 2013.
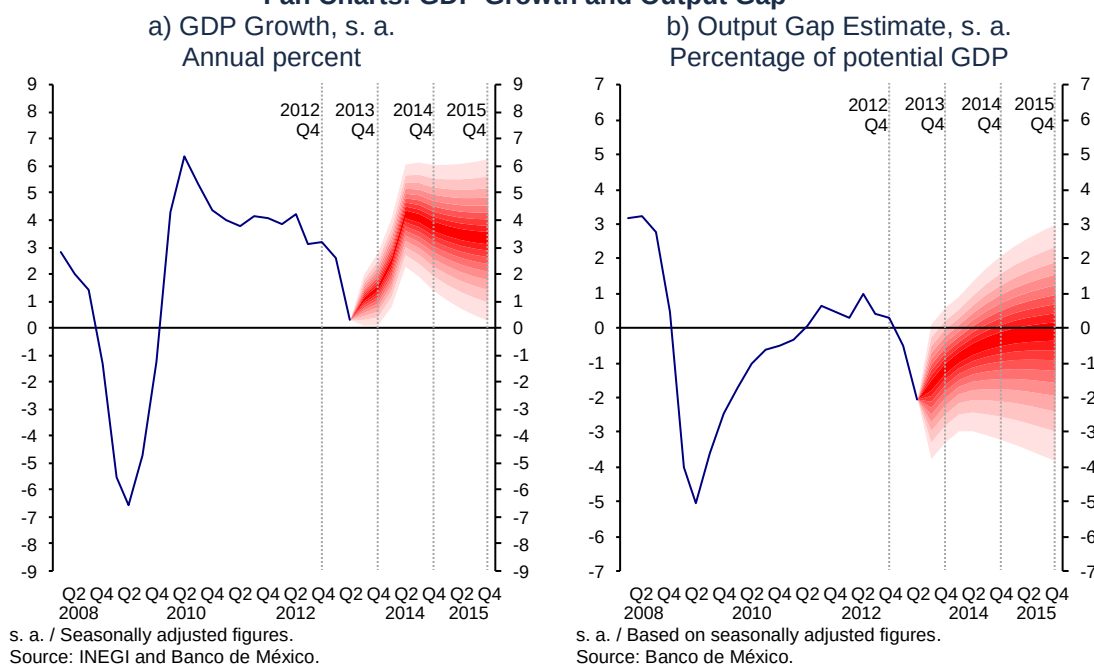
2.6 percent to 2.3 percent. For 2014, the growth outlook is revised from 3.2 to 2.9 percent, while for 2015 a change rate of 3.4 percent is forecast.

Growth of the Mexican Economy: Based on the above arguments and the change in the outlook for the U.S. economic growth, the forecast interval for the GDP growth rate in Mexico is revised down from 2.0 to 3.0 percent in the previous Inflation Report to 0.9 to 1.4 percent (Chart 44a). The forecast interval for the GDP growth in 2014 is modified down from 3.2 to 4.2 percent to 3.0 to 4.0 percent. For 2015, the GDP growth rate is anticipated to lie within the interval of 3.2 to 4.2 percent.

Employment: In line with the revision of the GDP growth forecasts, in this Inflation Report the expected increase in the number of IMSS-insured workers (permanent workers and temporary workers in urban areas) is adjusted downwards both for 2013 and 2014. In particular, for 2013 an increase of 400 to 500 thousand IMSS-insured workers (450 to 550 thousand in the last Inflation Report) is expected, while for 2014 additional 620 to 720 thousand IMSS-insured workers are estimated (700 to 800 thousand in the previous Inflation Report). For 2015, an increase similar to that of 2014 is anticipated.

Current Account: For 2013, the expected deficits in the trade balance and the current account amount to USD 4.2 and 18.8 billion, respectively (0.3 and 1.5 percent of GDP). For 2014, deficits in the trade balance and the current account of USD 5.2 and 22.2 billion are estimated, respectively (0.4 and 1.7 percent of GDP, in the same order). For 2015, deficits in the trade balance and the current account are expected to amount to USD 5.7 and 23.7 billion, respectively (0.4 and 1.7 percent of GDP, in the same order).

Chart 44
Fan Charts: GDP Growth and Output Gap
a) GDP Growth, s. a. Annual percent
b) Output Gap Estimate, s. a. Percentage of potential GDP

s. a. / Seasonally adjusted figures.
Source: INEGI and Banco de México.

s. a. / Based on seasonally adjusted figures.
Source: Banco de México.

In this environment of lower expected growth of the economic activity, an ample slack in the economy is anticipated to persist for an extended period, even though it is expected to decrease during the horizon at which the monetary policy operates. Thus, no aggregate demand-related pressures on inflation or the external accounts are anticipated. Indeed, derived from the major deceleration of the economy in the first semester of 2013, the output gap is currently negative. Likewise, given the growth prospects presented above, this indicator is expected to lie below zero in the forecast horizon (Chart 44b).
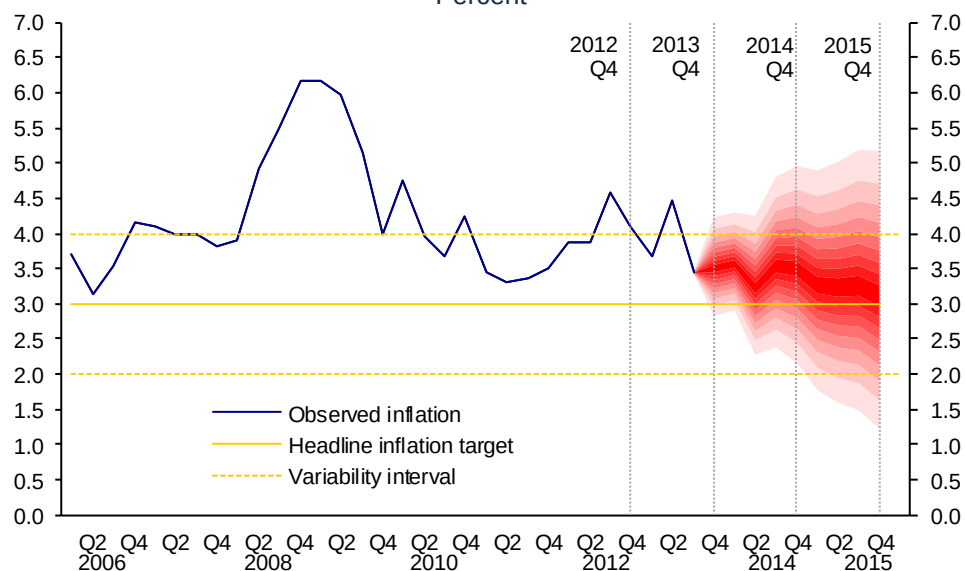
Downward risks to the growth of the Mexican economy, even though lower than in recent months, remain high. Among these, the following should be pointed out:

I.   A lower than expected U.S. economic expansion rate, which could be caused by the failure to solve its fiscal situation or by volatility in its financial markets. It could also derive from reduced external demand, as a consequence, for example, of the deferred implementation of structural reforms in Europe, necessary to guarantee its recovery, or from a major deceleration of emerging economies.

II.   Possible episodes of volatility in international financial markets, which could stem from uncertainty over the changes in the U.S. monetary policy or the instability in the Euro zone.

III.   A less dynamic than anticipated evolution of public expenditure in Mexico. Even though measures to increase the spending capacity seem to have been taken, a lower than expected growth of the economy could limit tax revenues, and, therefore, the potential for public expenditure.

IV.   The possibility that the housing sector could remain an obstacle for the recovery of the construction sector, and, therefore, for productive activity.

V.   Additionally, there is the risk that the reforms currently being discussed in Congress are be approved or that the version of the reform implemented is of a limited scope as compared to that anticipated by economic agents. It should be kept in mind that there already have been shortages in the energy sector.

Inflation: Given the lower expected economic growth mentioned above and the corresponding ample slack in the economy anticipated for an extended period, for the fourth quarter of 2013 annual headline inflation is expected to persist at levels close to 3.5 percent. For 2014, the forecast is slightly revised upwards, when the possible impact of the changes in taxes is considered, which, in turn, is estimated to be moderate and transitory, and is not anticipated to generate second round effects (see Box 4). Thus, the most probable trajectory of annual headline inflation is estimated to fluctuate around 3.5 percent throughout the next year. In turn, for 2015 it is foreseen to present a downside trend and to locate around the 3 percent target (Chart 45). This forecast takes into account the fading of the estimated effects of the fiscal changes on inflation in 2014, and a reduction in the fuel price adjustment, in line with the changes recently approved by the Congress to determine these prices from 2015 onwards.

Core inflation, which better reflects the inflation trend in the long run, is expected to remain at levels below 3 percent in 2013. For 2014, it is anticipated to persist below this level, even taking into account the effects caused by the fiscal changes. In 2015, core inflation is estimated to register slightly lower levels as compared to the previous year (Chart 46).

Chart 45
Fan Chart: Annual Headline Inflation [1]
Percent

1/ Quarterly average of annual headline inflation.
Source: INEGI and Banco de México.

Box 4
Estimate of the Fiscal Reform Impact on the CPI and the GDP

Last October, Congress approved modifications to different laws that constitute the Fiscal Reform. These changes, as further detailed, range from new tax burdens to the repeal of the Flat Rate Business Tax (IETU) and of the Cash Deposit Tax (IDE). Furthermore, the policy of fuel prices is modified from 2014 onwards, decreasing the monthly adjustment and introducing an environmental tax. Likewise, the economic package considers a public sector deficit of 0.4% of GDP in 2013 and of 1.5% of GDP in 2014, both of them excluding Pemex investment.

These measures could impact both inflation and the economic activity, as further analyzed in this box. With respect to the inflationary impact, in general, a tax can have two types of effect on the Consumer Price Index (CPI): i) a direct effect, when the good or service affected by the tax change is part of the CPI basket; and, ii) an indirect effect, when tax changes generate additional costs to firms, either by means of higher prices of inputs or an increment of their tax burden, and firms pass part of the costs increase through onto the final sales price.

As regards the effect on the economic activity, taxes affect the traded quantities of goods and services in two ways: i) reducing the traded quantity of the taxed good as a result of higher consumer prices and lower prices received by producers; and, ii) by lowering disposable income of the private sector, it adversely affects the aggregate demand. Despite the aboversaid, there could be a compensation effect of the greater tax burden, insofar as the resources recollected are used to fund higher governmental spending.

1. Approved Fiscal Adjustments

Among the approved fiscal adjustments, the following were identified as the ones that could have a transitory impact on inflation and the GDP (Table 1):

i) The Value Added Tax (VAT). For this tax: a) the general rate in the border region is adjusted from 11 to 16 percent; b) the exemption of the interstate land public passenger transport is eliminated, as a result of which this service is taxed with the general rate (16%); and c) chewing gum, pets and their processed food will pay the general rate; currently the zero rate applies to these items.

ii) The Special Tax on Production and Services (IEPS). The following tax rates are set: a) one peso per liter of flavored drinks; and, b) an 8% rate for high-calorie density food.

iii) The Income Tax (ISR), the Flat Rate Business Tax (IETU), the Cash Deposit Tax (IDE). In 2014: a) the IETU is eliminated; b) the IDE is eliminated; c) deductions and special regimes in the ISR for persons and corporations are eliminated or limited;

and, d) new marginal tax brackets are added to the individual ISR, with a new maximum of 35%.

iv) User fees. The modernization of its determination was approved from 2014 for: a) of water use and discharge; and, b) of mining.

v) Fuel price policy. The following will be applied: a) an ecological IEPS to gasoline and diesel of 10.38 and 12.59 cents per liter, respectively; and, b) a lower monthly adjustment, with respect to the one observed in 2013, of the low octane gasoline prices in 2014. From 2015 onwards, the retail prices should be adjusted on a monthly basis in line with the expected inflation, provided the international prices remain stable or decline; on the contrary, these increments will be revised upwards.

Table 1
Fiscal Adjustments for 2014

	Rates		CPI	Type of
	2013	2014	impact	impact
I. VAT				
Border region	11%	16%	√	Direct
Interstate land passenger transport	Exempt	16%	√	Direct
Chewing gum, pets and their processed food	0%	16%	√	Direct
II. Non-oil IEPS				
Tax on flavored drinks	-	1 $/lt	√	Direct
Tax on high-calorie food	-	8%	√	Direct
III. Income system				
IETU elimination			√	Indirect
IDE elimination			.	-
Simplified business ISR			√	Indirect
ISR measures of natural persons			.	-
IV. Fees				
Mining	-	7.5%		Indirect
Water use and discharge				Indirect
V. Policy of fuel prices			√	Direct and indirect

Source: the Draft Decree of the Federal Revenue Law for the Fiscal Year 2014, approved by the Chambers of Deputies and Senators on October 31, 2013; the Draft of the Income Tax Law and the Draft Decree by which different provisions of the VAT Law, the Law of the Special Tax on Production and Services, and the Federal Fees Law and the Fiscal Coordination Law are reformed, added and revoked; and the Law of the Flat Rate Business Tax and the Law of the Cash Deposit Tax are repealed; as approved by the Chamber of Senators in the session opened on October 29, 2013 and by the Chamber of Deputies in the session of October 31, 2013.

The above list is not exhaustive. Other measures were approved by Congress, whose expected impact on the CPI is not significant. The estimates do not consider the possible second round effects.
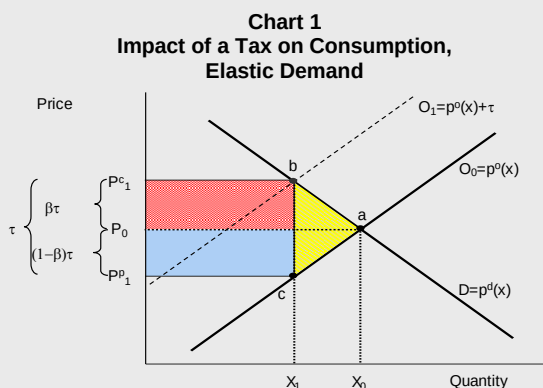
In sum, the approved Tax Reform comprises both broadening the tax base and higher rates of existing taxes. In this regard, the larger share of the increment in tax collection resulting from this Reform is expected to fall on those individuals who already contribute to the public expenditure funding, particularly via income taxes.

2. Estimate of the Impact on the CPI

2.1 Theoretical framework [1]
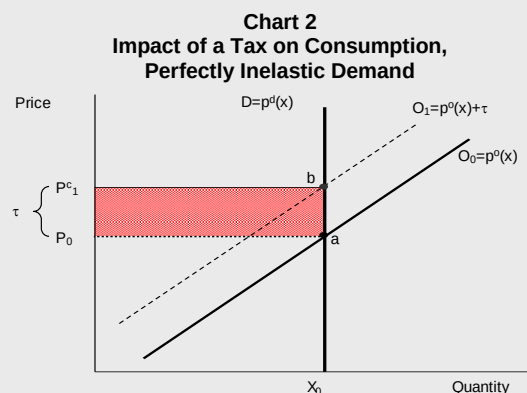
To estimate the Tax Reform impact on the CPI, first of all it should be considered that the burden of a tax is not necessarily assumed by the person bearing the statutory burden. Producers may be able to partially transfer the tax impact onto consumers, by means of modifying the final price (tax incidence on consumers). This depends on market conditions, specifically, on supply and demand elasticities.[2]

In particular, the effect of a tax on the good's price and the quantity produced can be illustrated with a supply and demand diagram (see Chart 1). Departing from market equilibrium (point a), applying a tax (τ) can be interpreted as a vertical shift of the supply curve by the amount of tax (from O_0 to O_1). This generates a gap between the price paid by the consumer (P_1^c) and the price received by the producer (P_1^p), which equals the tax magnitude (τ).[3] The lower price received by the producer results in a smaller quantity produced (from X_0 to X_1). As can be appreciated, the price increase, paid by the consumer ($P_1^c - P_o$) can possibly be a fraction β (incidence) of the tax (τ) and the producer can possibly assume a fraction $(1-\beta)$ of it.

Chart 1
**Impact of a Tax on Consumption,**
Elastic Demand
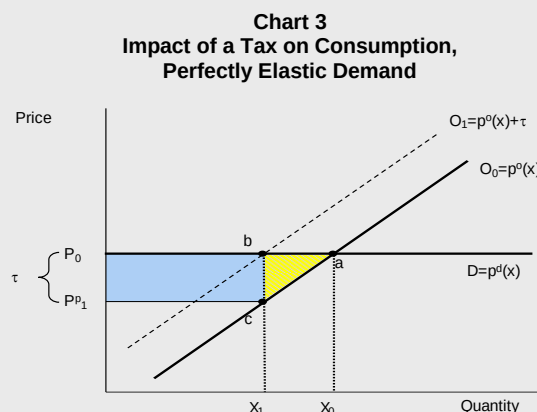
To illustrate the importance of the incidence of the tax distribution between the producer and the consumer, two extreme cases are illustrated below. The first case is when demand is completely insensitive to price (perfectly inelastic). In this case, the tax incidence on consumers is equal to one ($\beta=1$), since the same quantity of the good is always demanded, despite the price changes. Departing from market equilibrium

(point a in Chart 2), the equilibrium quantity does not change, while the price paid by the consumer will increase by the same amount of the tax increment (point b). Thus, the consumer is the one assuming the total tax burden. In contrast, in this extreme case the tax does not generate a drop in the quantity produced.

Chart 2
Impact of a Tax on Consumption,
Perfectly Inelastic Demand

In the second case, demand is extremely sensitive to price (perfectly elastic), hence, as a result of small changes in it, the good is no longer demanded. For this type of demand, the tax incidence on consumers equals zero ($\beta=0$). As shown in Chart 3, the quantity of the equilibrium declines from X_0 to X_1, while the price paid by the consumer is not affected. Nonetheless, the price received by the producer decreases by the same amount of the tax, therefore the producer is the one assuming the total tax burden. In this case, the tax significantly affects the produced quantity. Thus, the analysis presents implications for the calculation of the Tax Reform impact on both prices and the GDP, carried out below.

Chart 3
Impact of a Tax on Consumption,
Perfectly Elastic Demand

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[1] The analysis carried out in this section is based on the "Addendum to the Inflation Report, July-September 2009" of Banco de México.

[2] The presented analysis is of partial equilibrium, that is, it only considers the effect of the tax on the market of the analyzed product, without taking into account the possible effects on the markets of other goods and services and on the markets of factors of production.

[3] For ease of exposition, a per unit tax is illustrated. However, the analysis extends to an ad valorem tax.

2.2 Estimation methodology

The estimation of the fiscal changes' impact on prices, using the theoretical framework described above, requires knowing the fiscal incidence (β) and the increment in the tax burden (τ) on the goods and services affected by the reform.

The values used for tax incidence were those estimated in the analysis of the inflationary impact of the fiscal reform approved in 2009 and whose results were presented in the "Addendum to the Inflation Report, July-September 2009" of Banco de México. This analysis uses the methodology of Aportela and Werner (2002), work in which the differentiated increase of the general VAT rate in 1995 in the border region and the rest of the country is analyzed to estimate the fiscal incidences.[4] Given that, in 1995 the tax rate did not change in the border region, while in the rest of the country it did, this measure constitutes a "natural experiment" as referred in the economic literature.

On the other hand, the increase in tax burden (τ) is estimated for each tax depending on its base. If the base is the quantity sold or the transaction value, the increment in the fiscal burden is estimated as the change that would be observed in the price if it entirely reflected the tax change. As it is detailed below, for other taxes, first, the equivalent rate to an ad valorem tax is estimated, and with it, the increase in the fiscal burden is estimated as if it were a value tax.

Once the fiscal incidence and the tax rate for each good are determined, the percentage change in the consumer price can be estimated, which results from the tax increase for each CPI generic. The percentage change in the good's price is multiplied by its weight on the CPI, thus obtaining the inflationary impact associated to this good. The total impact is the sum of the impacts of each good.

2.3 Estimated inflationary impact

Applying the above described methodology, the possible increment in the annual CPI change in December 2014 was estimated, with respect to what would be observed without a Fiscal Reform.

VAT

There are three changes in the tax treatment:

i)   The increment in the general VAT rate in the border region from 11% to 16%. Applying the methodology presented in Section 2.2, the evaluation of the impact with the incidences for all taxed goods at a general rate and an increment in the fiscal burden of 5 percentage points for all of them was carried out. The result was adjusted given the weight of the border cities in the CPI.

ii) The elimination of the exemption for the interstate land passenger transport. Since there was no estimate of the fiscal incidence for this service, the available one for the group of the "Transport" item of the CPI was used. With regard to the increase in the tax burden, it should be recalled that inputs to produce an exempt good or a service are taxed, therefore the elimination of the exemption will only affect the value added in the last stage of the chain.

iii) Applying the general rate to chewing gum, pets and their processed food. Since goods taxed with 0% rate did not observe any modifications in the 1995 reform, an incidence similar to that of the category of food, beverages and tobacco was assumed.[5] Unlike the exempt goods, taxation in this case affects 100% of the value added in all the chain.[6]

Non-oil IEPS

To estimate the inflationary impact generated by taxing with the IEPS flavored drinks and high-calorie density food, an estimated incidence for these goods was used. In the case of flavored foods, the increment in the tax burden is the tax charge as percentage of its price. For high-calorie density food, the increase in fiscal burden used is the statutory rate of 8%.

ISR, IETU, IDE and fees

• In the case of the *ISR, IETU, IDE* and user fees, it should be taken into account that the tax base does not correspond to the quantity sold or to the transaction value, reason for which it is not possible to directly calculate the change in the price associated to the tax adjustment. However, the methodology described in Section 2.2 can be applied by calculating a rate equivalent to an ad valorem tax (τ^e), expressing an additional fiscal burden (ΔCF) as a share of total sales (Y).

$$\tau^e = \frac{\Delta CF}{Y}$$

• Thus, to estimate the effect of the modifications to the ISR, IETU, IDE applicable to corporations, an equivalent rate was calculated for each sector of the economic activity. The incidences used were the average of the items produced by each sector.

• The IETU elimination decreases the fiscal burden, compensating, at least partially, the increment associated to other measures of the same system. This mitigates the inflationary impact of the reform to this system.

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[4] Aportela and Werner (2002) "The reform to the value added tax in 1995: Inflationary impact, incidence and relative elasticities" published by Banco de México.

[5] This category refers to manufactured food, which, therefore, is subject to the general VAT regime.
[6] To calculate the inflation impact, the price increase was weighted by the incidence of each item and by their weight in the CPI. The latter are published by INEGI.

- For the IDE an inflationary impact is not estimated, given that it is credited against the ISR.

- With respect to the individual income tax, even though there will be an increment in the fiscal burden, the ability to transfer the tax to other agents is estimated to be non-significant. Still, higher tax burden could represent pressure in the future, of an uncertain magnitude, onto the wage negotiations.

Fuel price policy

The change in the fuel price policy could have two effects on inflation:

i) Direct. As these are the goods with administered prices, a unit incidence is used. The change in the fiscal burden will be determined by two factors: a) an ecological IEPS; and, b) a smaller change, with respect to that applied in 2013.

ii) Indirect. Given that the fuel is the input for production of goods and services, an increment in their prices will affect the firms' cost structure. This impact is estimated based on the input-output matrix, as a share of the direct effect.

Total impact

Considering the above elements, it is estimated that the total impact of the tax measures, user fees and the price policy of the public sector on the CPI change between December 2013 and December 2014 could be around 40 basis points. It should be stressed that this impact would be transitory, affecting the CPI performance only in 2014.

Finally, it should be kept in mind that all statistical estimation, like the one done herein, involves a degree of uncertainty. Moreover, the market structures prevailing in 1995, which are the basis for part of the estimations carried out for the analysis, could have modified since then.

3. Estimate of the Tax Reform Effect on the GDP

To estimate the impact of the Fiscal Reform on the GDP growth, three types of effects were considered: a) the effect on production derived from higher taxes that change the relative prices of certain goods, modifying demand for and production of these goods, just as described in the above theoretical framework; b) the impact on the disposable income of the private sector related to higher taxes; and, c) the effect on the aggregate demand generated by the increment in public expenditure.

The impact of the fiscal changes on production of each sector was estimated, just as implied in the described theoretical framework, by multiplying the change in the consumer price of each sector by the elasticity of the

demand estimated for this sector.[7]

Furthermore, the effect of the changes in the ISR, the IETU and the IDE on private consumption and, therefore, on aggregate demand was estimated. The impact corresponding to the change in the disposable income derived from: a) the elimination of the IETU and the IDE; and, b) a greater fiscal burden as a result of the measures in the ISR of individuals and corporations.[8]

Finally, it was also considered the favorable impact on the aggregate demand because of the increment in the public expenditure derived from both higher tax collection and from the higher deficit. Thus, the net estimated impact on the economic activity indicates that the described fiscal changes and the countercyclical policy could jointly lead to a GDP growth rate in 2014 greater than approximately 0.2 percentage points that would be otherwise observed if no such measures were in place.

4. Final Considerations
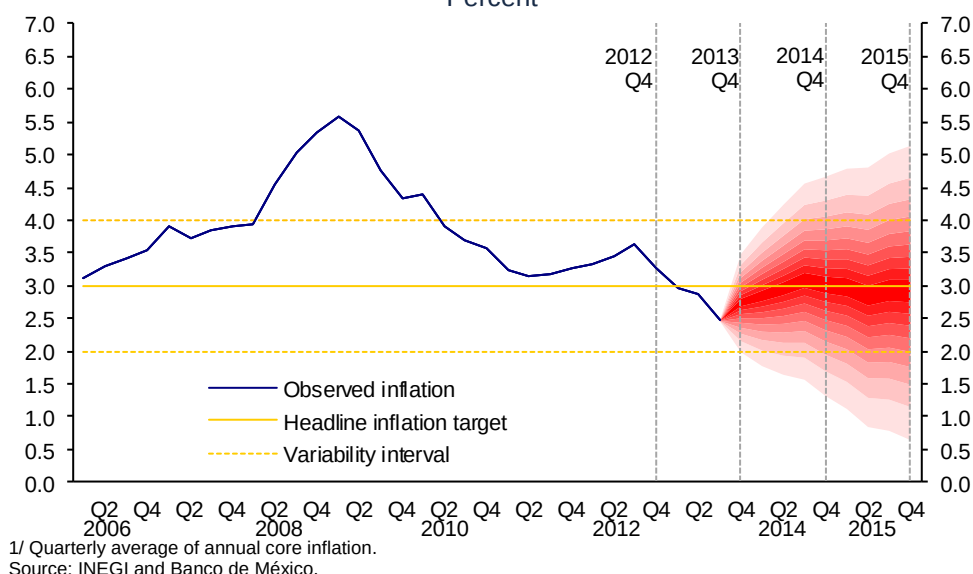
In sum, the Fiscal Reform is estimated to have an impact of 40 basis points on inflation, measured as the change of the CPI between December 2013 and December 2014. This impact would be transitory, with effect only in 2014. As regards the effect on the economic activity, the estimates point that the Fiscal Reform, including the fiscal countercyclical impulse, could lead to a GDP growth rate in 2014 around 0.2 percentage points greater. In both cases, these effects are with respect to a scenario excluding the referred measures.

It should be noted that the CPI estimates do not consider possible subsequent effects on prices, like the contamination of the price formation process in the economy, which could adjust inflation expectations. Although the estimated impact on the CPI is moderate and transitory, in a context in which slack conditions are estimated to prevail in the economy, the Board of Governors of the Central Institute will remain alert, so that other prices are not contaminated and so that inflation expectations remain well-anchored.

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[7] To approximate the long-term demand of each sector, the following explanatory variables are included in the econometric specification: the relative price of each sector, the aggregate demand from the private sector, the public spending and other factors causing demand to shift. The total impact results from the sum of these sectoral impacts.

[8] To evaluate the impact of these adjustments, a consumption function was econometrically estimated and subsequently used to calculate the impact of the tax increment on consumption. Likewise, the multiplier effect of the consumption reduction on the GDP was considered.

Chart 46
Fan Chart: Annual Core Inflation [1/]
Percent

1/ Quarterly average of annual core inflation.
Source: INEGI and Banco de México.

The expected inflation trajectory is not without risks and could be affected by different factors, among which the following can be found:

i.   In the short run, the possibility that the economic activity recovery in Mexico may turn out lower than anticipated could generate downward pressures.

ii.   Regarding upward risks, in light of major volatility in international financial markets, exchange rate adjustments cannot be ruled out, with their consequent effect on inflation. However, depending on their scope, a limited effect would be expected, derived from a low pass-through of exchange rate adjustments on inflation.

In short, the balance of risks for inflation in the horizon, in which the monetary policy operates, has improved. The above is reinforced by an expected downside trend in international commodity prices, as well as by the prospects of a good water supply in the next agricultural cycles, given a recently observed recovery in the level of dams at the national level.

Given the above considerations and Banco de México's expectation of the amplified slack in the economy prevailing for a prolonged period of time, although decreasing in the horizon in which the monetary policy operates, and taking into account the expected fiscal policy, the Board of Governors estimates that the monetary policy is congruent with the efficient convergence of inflation towards the 3 percent target. Still, it considers that additional reductions to the reference interest rate target will not be advisable in the foreseeable future, given that the ex-ante short-term real interest rate lies at levels close to zero. Thus, the current macroeconomic stance is conducive to a gradual recovery of the economy without generating inflationary pressures. In any event, the Board of Governors will remain alert so that the relative price changes derived from the fiscal adjustments do not generate second round effects on inflation. Likewise, it will monitor the implication of the evolution of the economic activity and the monetary stance of

Mexico relative to the U.S., among other factors, onto the inflation outlook, so as to reach the abovesaid inflation target.

It should be pointed out that the international environment characterized by high commodity prices, low interest rates and ample liquidity in international financial markets prevailing over the recent years started to revert. Therefore, in the following years emerging economies, Mexico among them, are likely to face a relatively more difficult external environment, particularly with respect to available sources of financing of the economic activity. In this context, the referred economies should adopt public policies and economic reforms aimed at fostering the domestic sources of growth and at encouraging and maintaining solid economic fundamentals. In this regard, two key elements in supporting the favorable evolution of the Mexican economy in the coming years should be noted. The first one refers to the recently implemented structural reforms in Mexico and those currently under discussion in Congress. Insofar as these reforms boost the economy's productivity and competitiveness, it will be possible to reach high and sustained growth rates without jeopardizing price stability. The second factor refers to the importance of strengthening the framework for the conduction of the macroeconomic policy, in particular public finances. It will be achieved insofar as the downward trend of public deficits will consolidate, tending towards equilibrium, which would guarantee the sustainability of public debt and would allow a greater inflow of resources to the private sector financing. In this respect, the commitment of the Mexican Government to bringing the fiscal deficit to zero in 2017 at the latest and the strengthening of the Federal Law of Budget and Fiscal Responsibility are fundamental.

Annex   **Calendar of Monetary Policy Decision Announcements, Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions and Inflation Reports in 2014**

Table 1 of this annex presents the calendar for the year 2014 of the monetary policy announcements, as well as the publication of the Minutes of the Board of Governors' meetings regarding the monetary policy decisions and the quarterly inflation reports.

Table 1
Calendar for 2014

Month	Announcements of Monetary Policy Decisions	Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions	Inflation Reports [1]
January	31		
February		14	12
March	21		
April	25	4	
May		9	14
June	6	20	
July	11	25	
August			13
September	5	19	
October	31		
November		14	12
December	5	19	

1/ The Inflation Report that will be published on February 12, 2014 corresponds to the fourth quarter of 2013, the one to be released on May 14, 2014, to the first quarter of 2014, the one of August 13, 2014, to the second quarter of 2014 and, finally, the one to be presented on November 12, 2014, to the third quarter of 2013.

The calendar considers 8 dates for the announcement of monetary policy decisions in 2014. Two weeks after each announcement the corresponding Minutes will be published. Nevertheless, as in previous years, Banco de México reserves the right to announce changes in the monetary policy stance at dates different from those previously scheduled, in the case of extraordinary events that may require the Central Bank's intervention.

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