



Regional Economic Report  
October – December 2015



March 31, 2016

# Outline

- I. Regional Economic Report**
- II. Results October – December 2015**
  - A. Economic Activity**
  - B. Inflation**
  - C. Economic Outlook**
- III. Final Remarks**

# Regional Economic Report

- The Regional Economic Report is a quarterly publication on the recent trends in economic activity, inflation and business agents' expectations in the Mexican regions.<sup>1</sup>
- This information is taken into account by Banco de México's Board of Governors when evaluating the economic situation and the forecast for the Mexican economy.
- The economic performance of the regions in 4Q 2015 and the prospects for regional economic activity and inflation over the following 12 months are analyzed herein.

1/ For the purposes of this Report, the states of Mexico are grouped into the following regions: Northern: Baja California, Chihuahua, Coahuila, Nuevo León, Sonora and Tamaulipas. North-Central: Aguascalientes, Baja California Sur, Colima, Durango, Jalisco, Michoacán, Nayarit, San Luis Potosí, Sinaloa and Zacatecas. Central: Ciudad de México, Estado de México, Guanajuato, Hidalgo, Morelos, Puebla, Querétaro and Tlaxcala. Southern: Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco, Veracruz and Yucatán.

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# Economic Activity

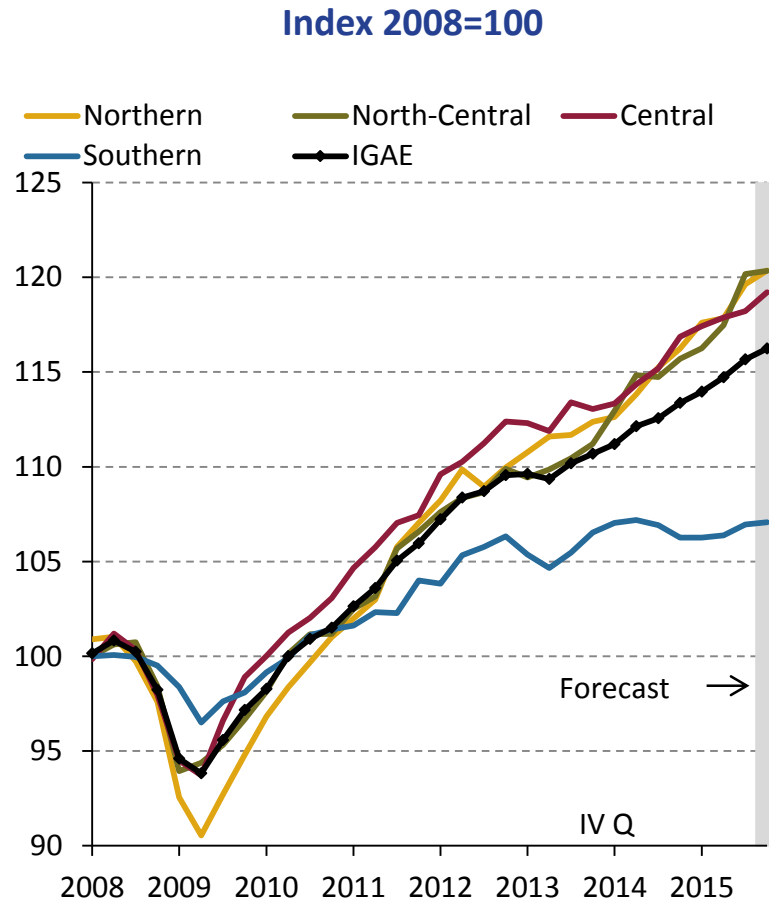
- In 4Q 2015, Mexican economic activity continued expanding, although, in general, at a slower pace than in 3Q 2015.
  - ✓ This is partly attributed to the deceleration of the manufacturing production, in light of weak external demand.
  - ✓ Likewise, the mining and construction sectors kept presenting a negative trajectory.
  - ✓ The agricultural sector registered a weaker performance, as compared to 3Q 2015.
  - ✓ In this context, the boost to productive activity essentially came from the relatively more favorable performance of commerce and the services sector.
- The evolution of economic activity was heterogeneous across the regions.
  - ✓ The slowdown in the expansion rate at the national level is attributed to the lower dynamism in the Northern and North-Central regions, as well as to the stagnation of the economic activity in the Southern region.
  - ✓ On the contrary, the growth rate in the Central region accelerated, as compared to 3Q 2015.

# Economic Activity

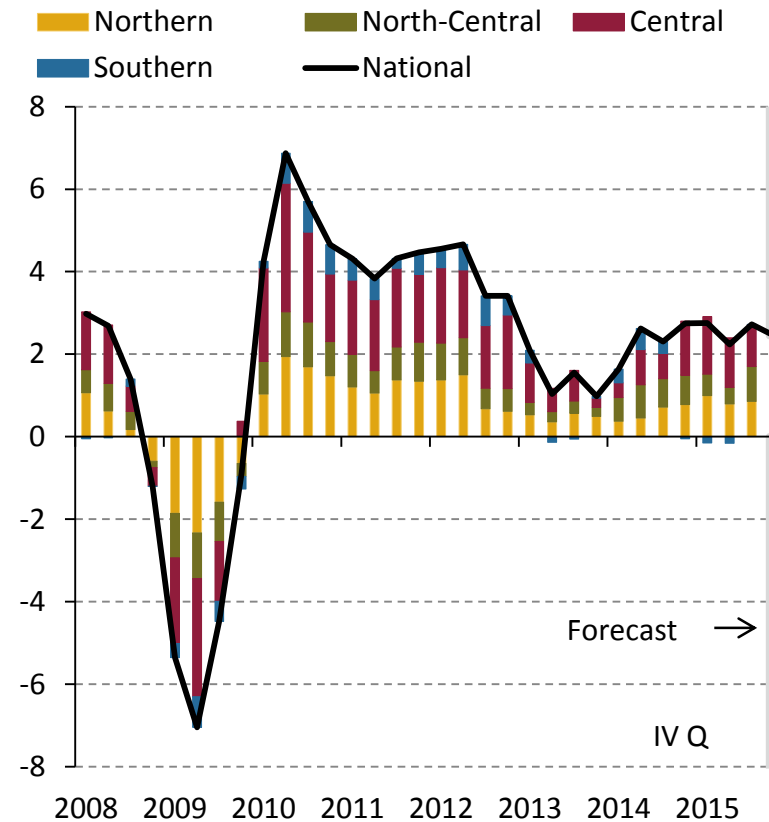
- The lower expansion rate in the Northern and the North-Central regions was related to a less favorable performance of manufacturing production, as well as of the construction and agricultural sectors.
- The stagnant economic activity in the south was mainly attributed to the persisting negative trend in the crude oil mining, which led to an unfavorable performance in some sectors, such as the manufacturing and construction sectors.
- In contrast, the Central region presented a greater dynamism, due to the higher growth rate of some activities related to domestic demand, in particular, commerce, some services and certain manufacturing activities to a higher degree oriented to the domestic market.

In 4Q 2015, the economic activity slowed down in the Northern and the North-Central regions, exhibited a greater dynamism in the Central region and remained stagnant in the Southern region, all of the above with respect to 3Q 2015.

## Quarterly Indicator of Regional Economic Activity <sup>1/</sup>



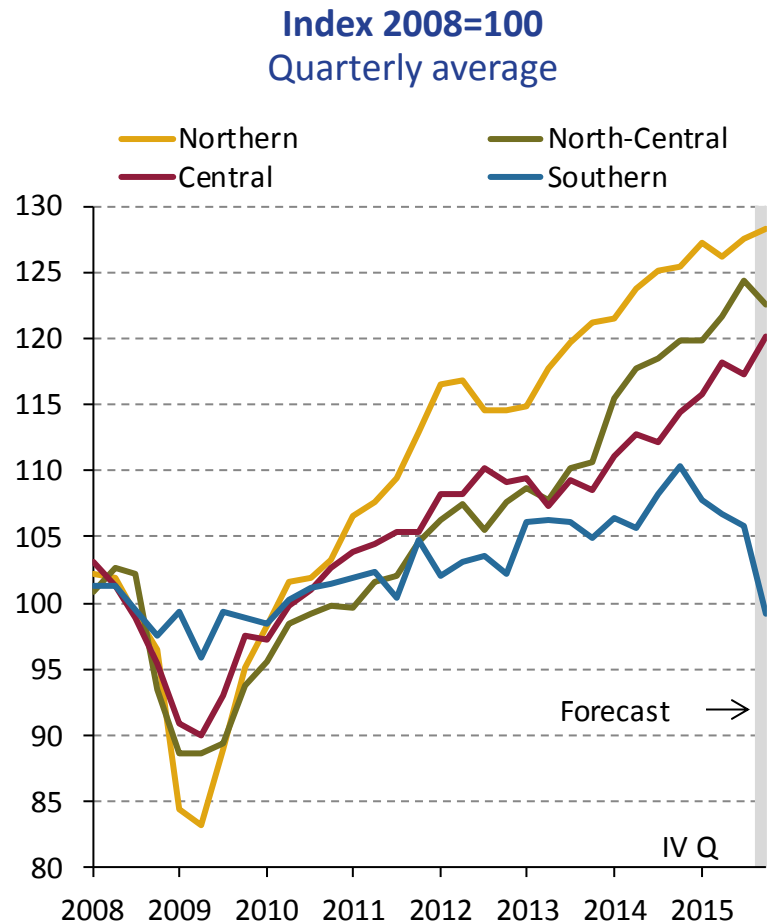
## Contribution by Region to the Annual Growth of Economic Activity Percentage points



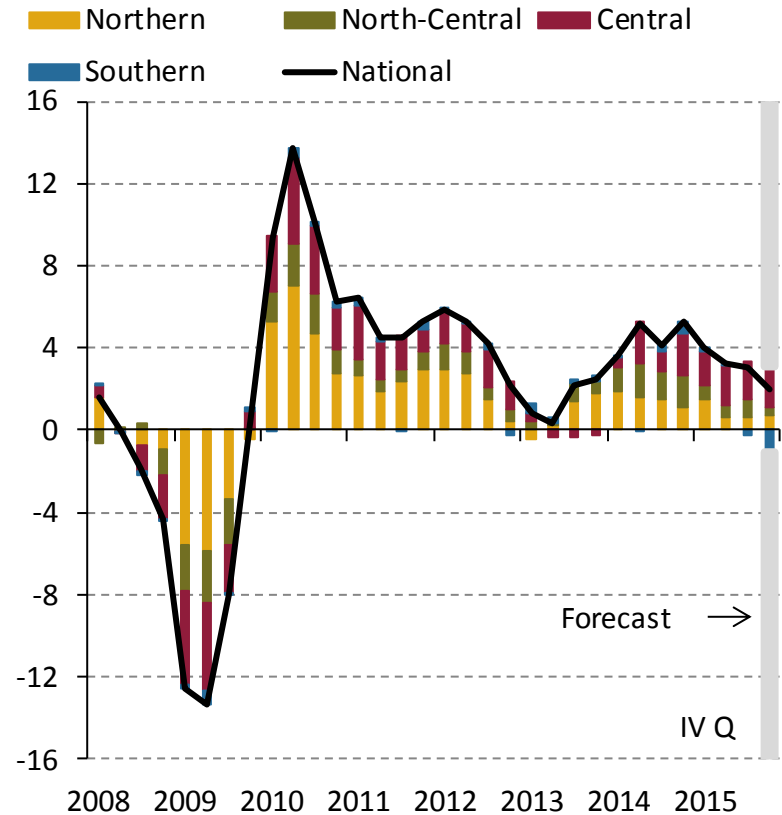
<sup>1/</sup> The value of the Global Economic Activity Indicator (IGAE) for 4Q 2015 corresponds to the observed data.  
Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

In 4Q 2015, the growth rate of the manufacturing production decelerated, as compared to 3Q 2015. In particular, this activity lost dynamism in the Northern region, and contracted in the North-Central one. On the other hand, the manufacturing production maintained a negative trajectory in the Southern region. In contrast, the level of activity of the manufacturing sector rebounded in the Central region.

### Regional Manufacturing Indicator



**Contribution by Region to the Annual Growth of the Manufacturing Activity**  
Percentage points

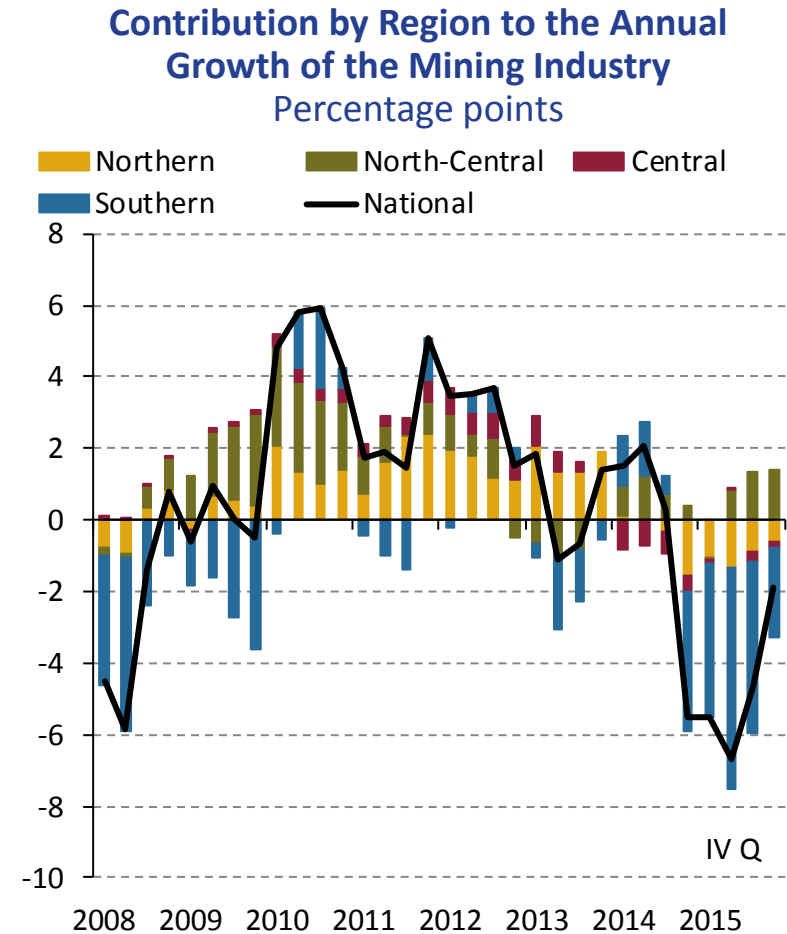
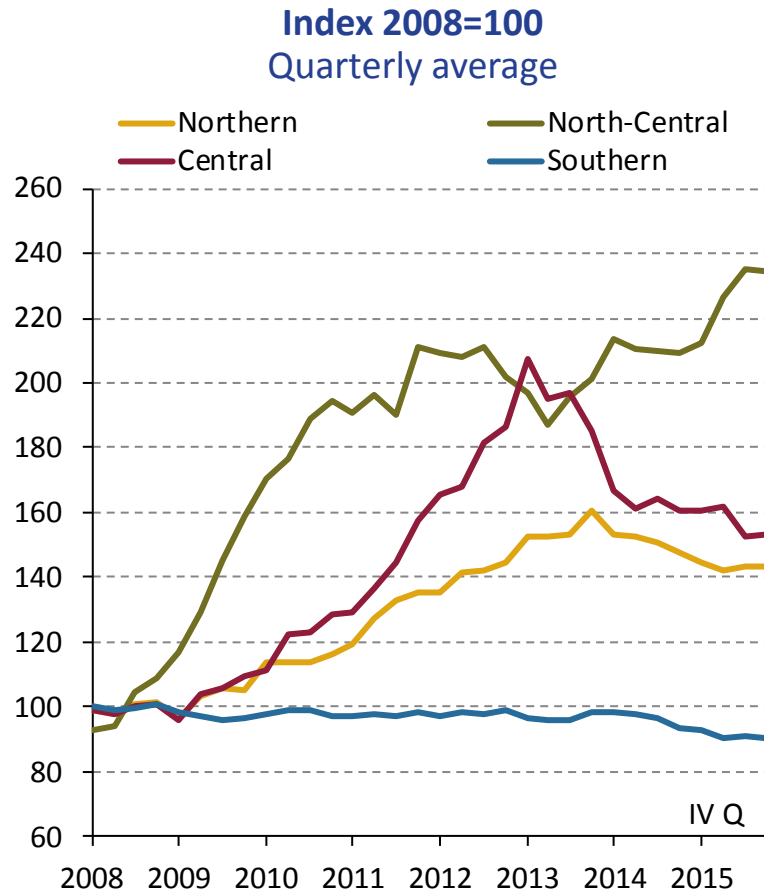


Source: Estimated by Banco de México with seasonally adjusted data from INEGI.



The negative trend persisted in the mining sector. This performance mainly derives from the unfavorable evolution of the subsector associated with the oil well exploration. In the central regions, activity in this sector stagnated with respect to the levels of 3Q 2015. In the North-Central region, the growing trend, that had been registered throughout 2015, slowed down. Finally, in the Northern and the Southern regions a decreasing trend persisted.

### Regional Indicator of the Mining Industry <sup>1/</sup>

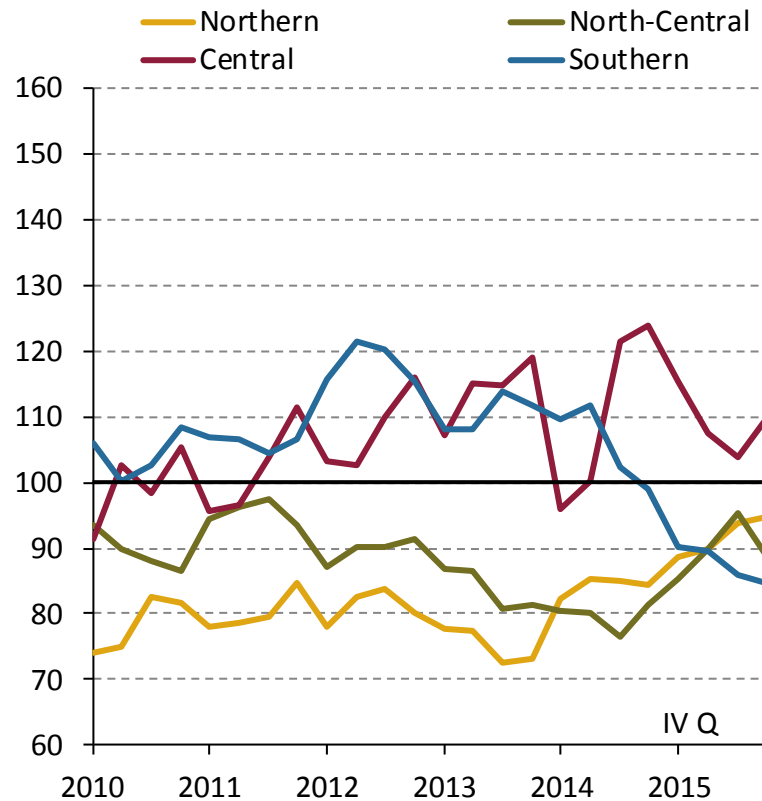


<sup>1/</sup> The indicator's values in 4Q 2015 are preliminary.  
Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

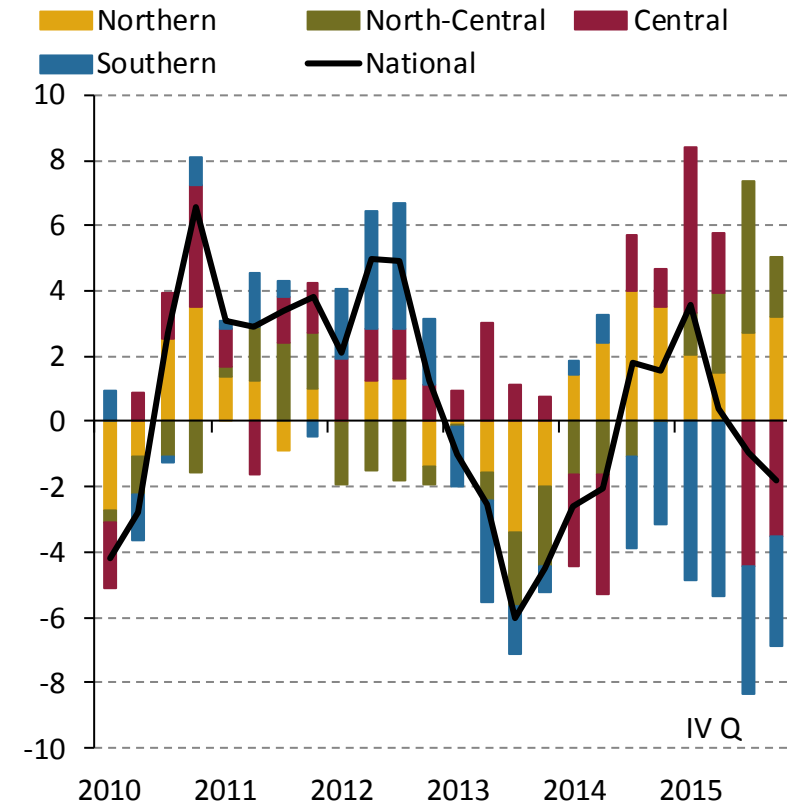
Activity in the construction sector maintained an unfavorable trajectory in 4Q 2015. In the Northern region, this activity kept observing a positive trend, while in the Central region it rebounded with respect to the level of 3Q 2015. In the North-Central region an important contraction was registered, following the expansion presented during the previous quarters. Finally, in the Southern region, the construction sector maintained a downward trend.

### Real Value of Production in the Construction Industry by Region

Index June 2008=100  
Quarterly average



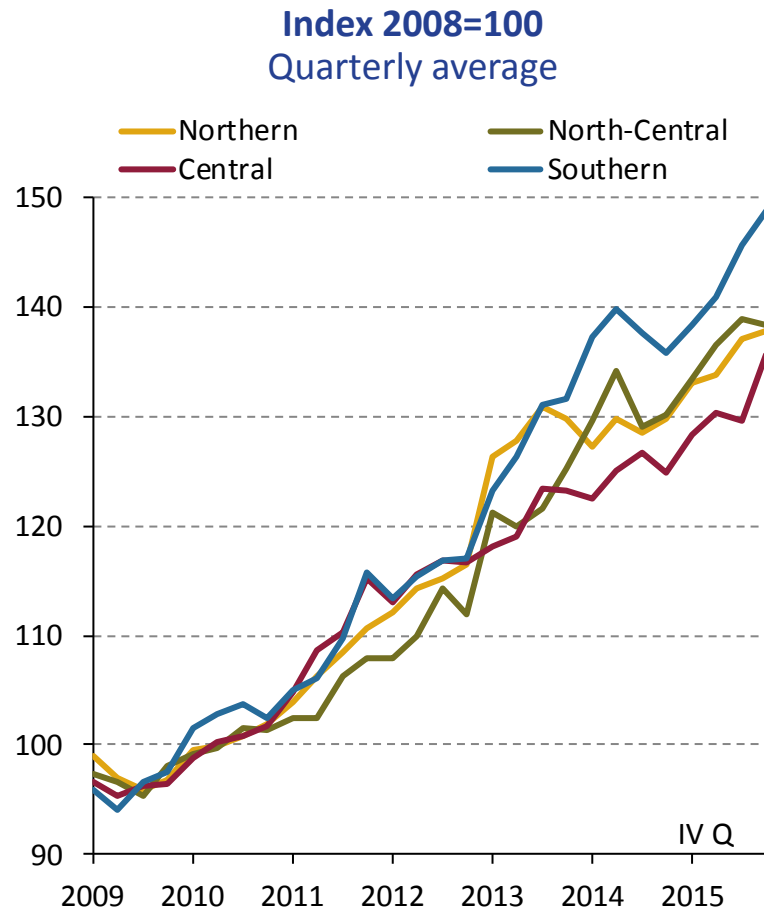
Contribution by Region to the Annual Growth of the Construction Industry  
Percentage points



Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

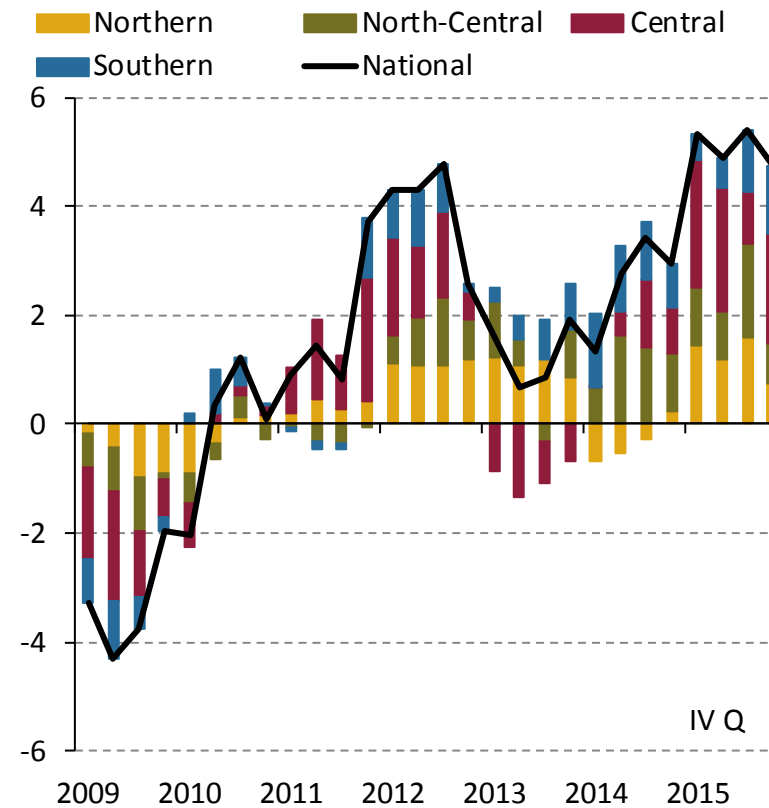
In contrast, in 4Q 2015, retail trade continued expanding in most regional economies of Mexico, with the exception of the North-Central region, where the economic activity contracted with respect to the level of 3Q 2015.

### Regional Indicator of Trade



### Contribution by Region to the Annual Growth of Trade

Percentage points

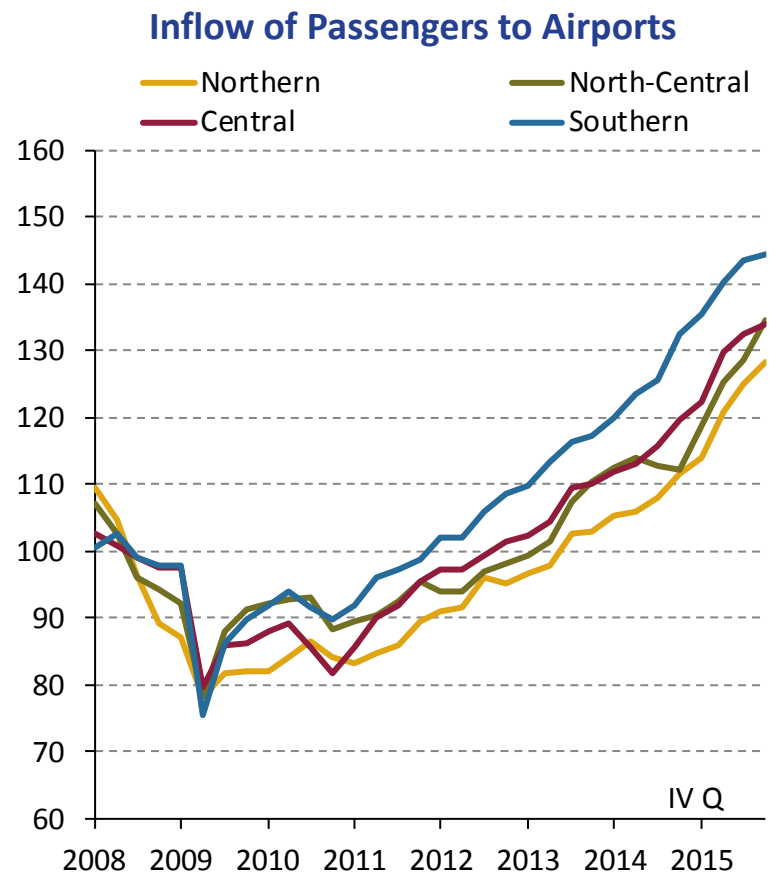
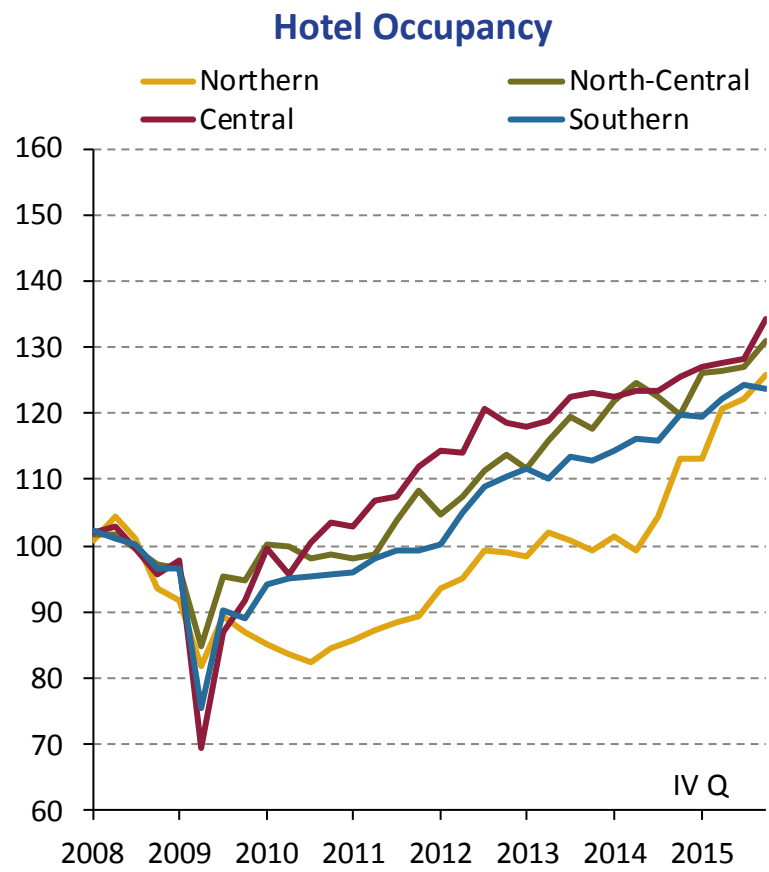


Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

In general, tourism performed favorably in 4Q 2015. In particular, the inflow of passengers to airports kept exhibiting an upward trend in all regional economies, and, with the exception of the Southern region, the expansion rate of hotel occupancy accelerated.

### Regional Indicators of Activity in Tourism

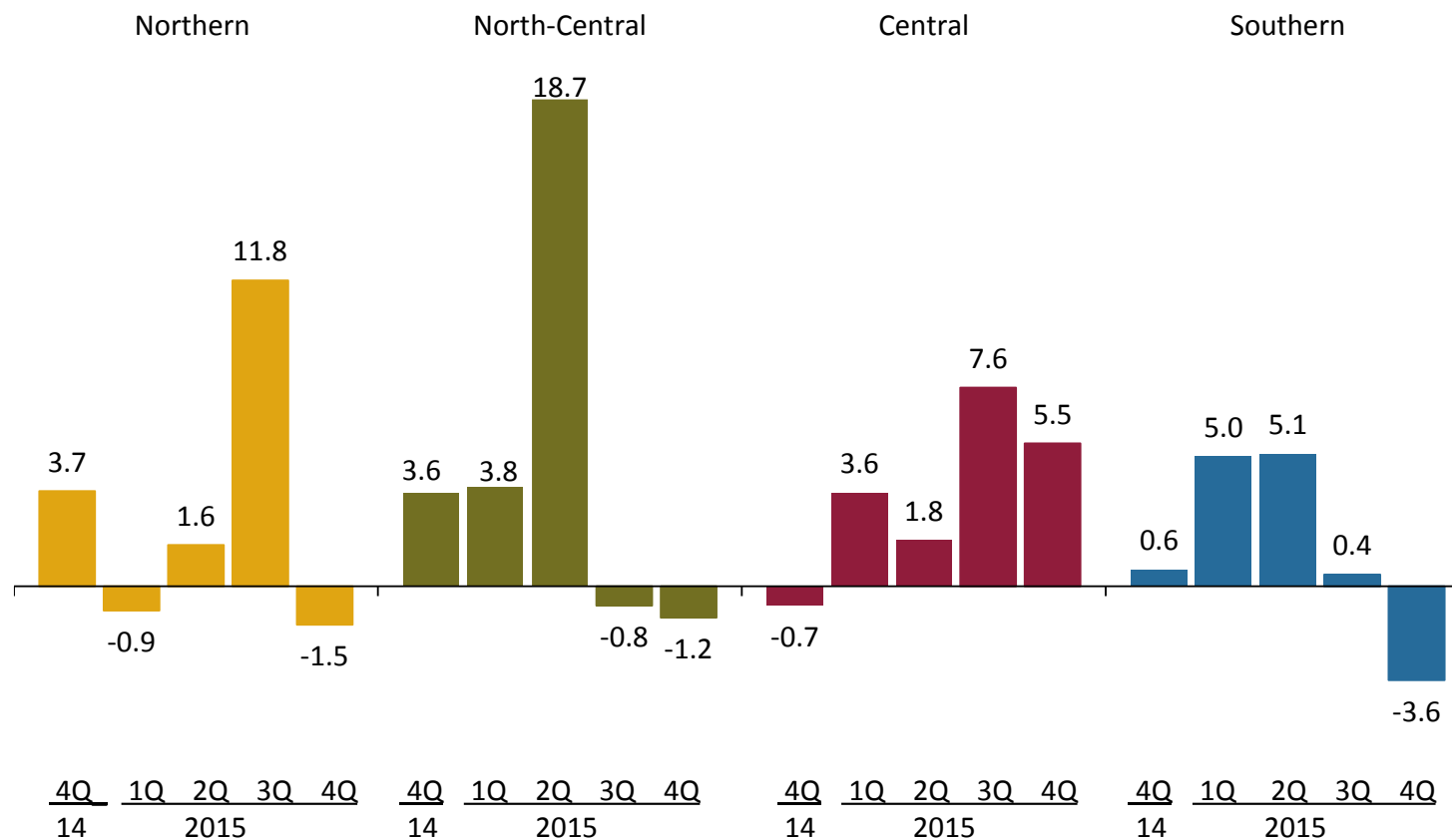
Index 2008=100, quarterly average



Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

In 4Q 2015, agricultural activity generally lost dynamism with respect to 3Q 2015. In particular, the agricultural sector activity contracted in the Northern, North-Central and Southern regions with respect to the same period of last year. Likewise, although in the Central region agricultural activity kept expanding, its annual growth rate moderated as compared to 3Q 2015.

### Index of Regional Agricultural Production Annual change in percent



Source: Estimated by Banco de México based on data from SAGARPA.

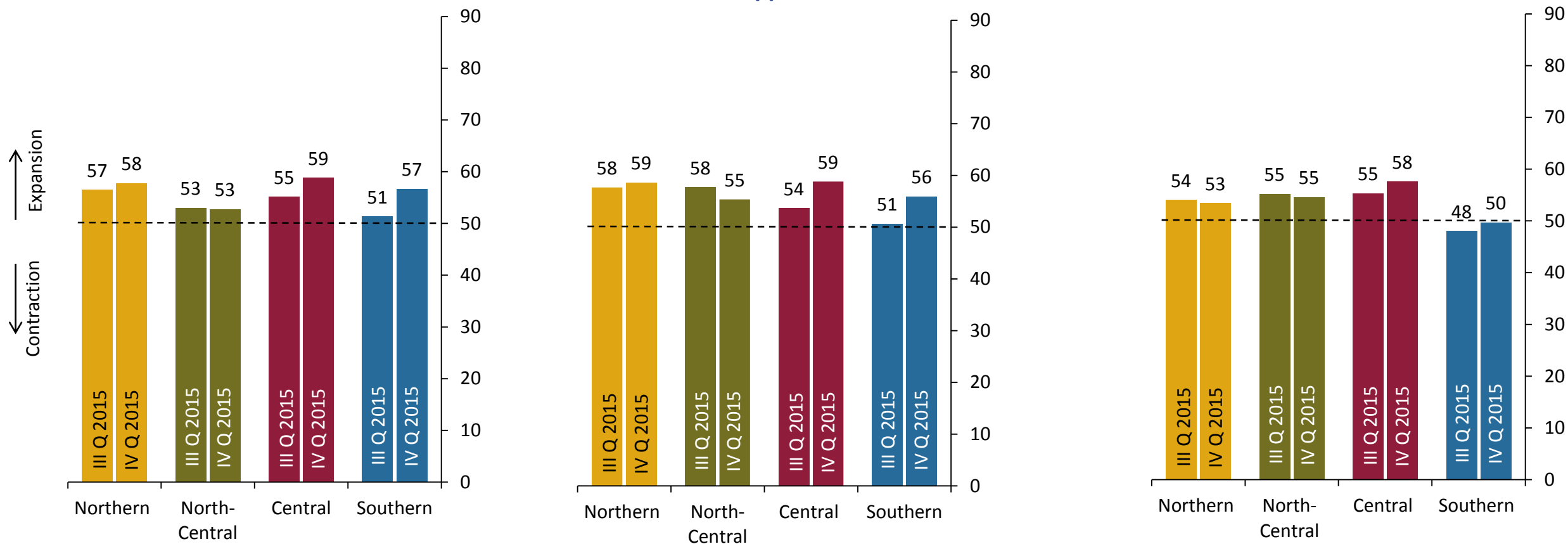
In 4Q 2015, financing conditions to firms tended to improve in all regional economies. The referred improvement was especially noticeable in the Central region.

### Main Sources of Financing to Firms Diffusion indices

Own Resources

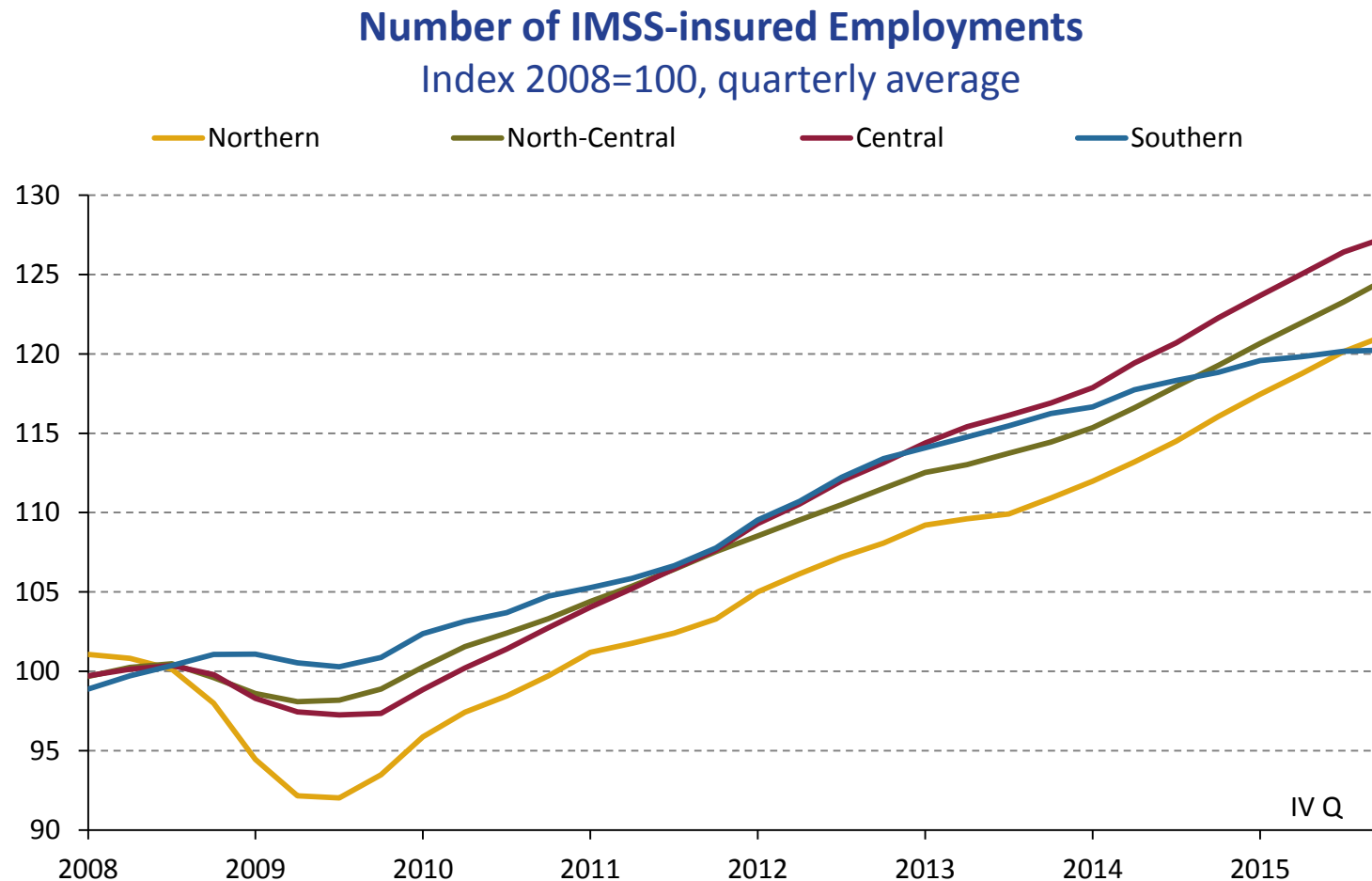
Suppliers

Commercial Banks



Source: Banco de México.

In 4Q 2015, the number of IMSS-insured jobs maintained high dynamism in most regions of Mexico. In contrast, in the Southern region, the growth rate of this indicator moderated.

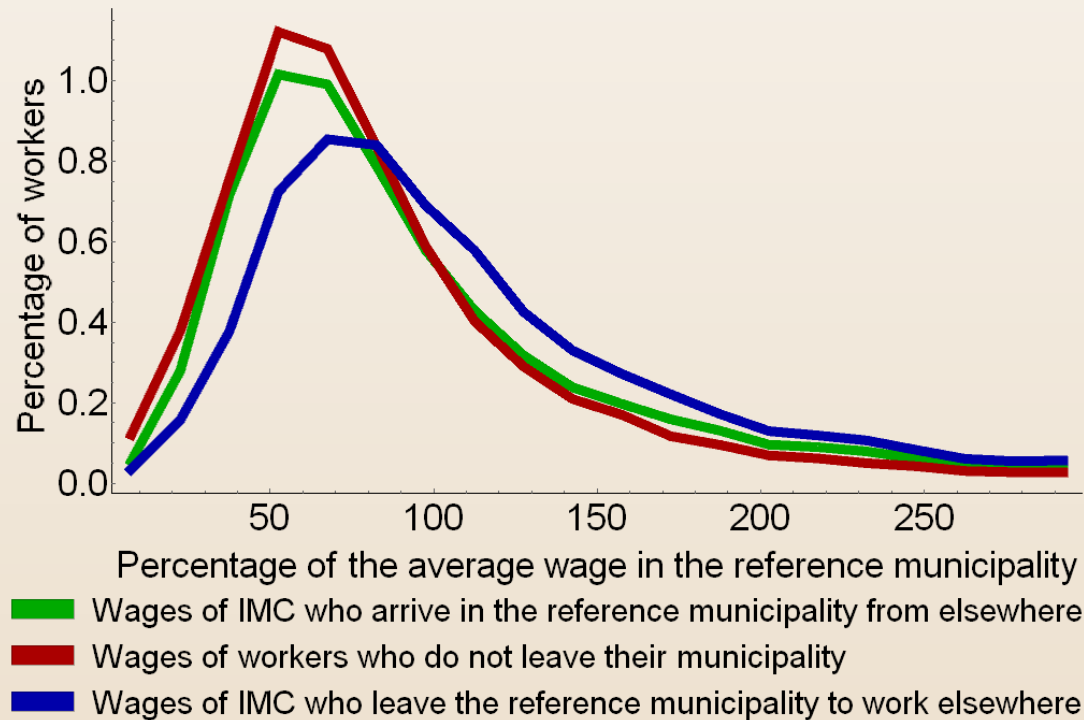


Source: Estimated and seasonally adjusted by Banco de México based on data from IMSS.

## Box:

### Inter-municipal Commuters and Productivity of Mexican Municipalities

- In 2015, approximately 19 percent of employed population were inter-municipal commuters (IMC), i.e. individuals working in a municipality different from the one they reside in.



Source: Estimated by Banco de México with data from 2015 Intercensal Survey by INEGI.

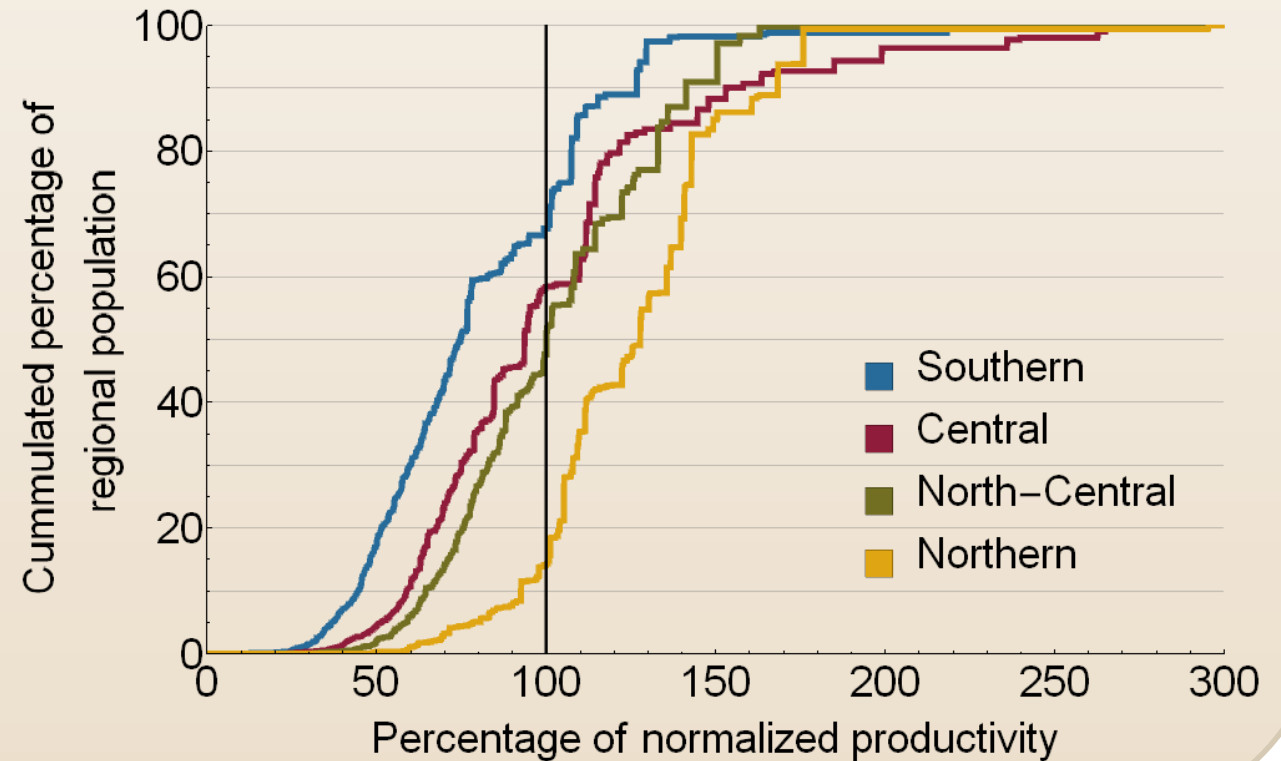
- The Chart presents the wage distribution of workers as a percentage of the average wage in the municipality they arrive in (green) and of the municipality they come from (blue).
- IMC earn, on average, 30 percent more than individuals who decided to work in the municipality of residence.
- Individuals who came to work from other municipalities, on average, had the same wage as the rest of the workers in the municipality.



## Box:

### Inter-municipal Commuters and Productivity of Mexican Municipalities

- Labor mobility implies that higher income in a municipality is not necessarily caused by higher local productivity, but rather can be triggered by higher productivity in the nearby areas where part of commuters of the municipality go to work.
- Mobility and local productivity should be analyzed separately, to distinguish the source of the changes in the income of a municipality.
- Using data from 2015 Intercensal Survey, the chart shows the cumulated distribution of population in accordance with the productivity of the municipality of residence. For example, 85% of the population in the Northern region are located in municipalities of high productivity.

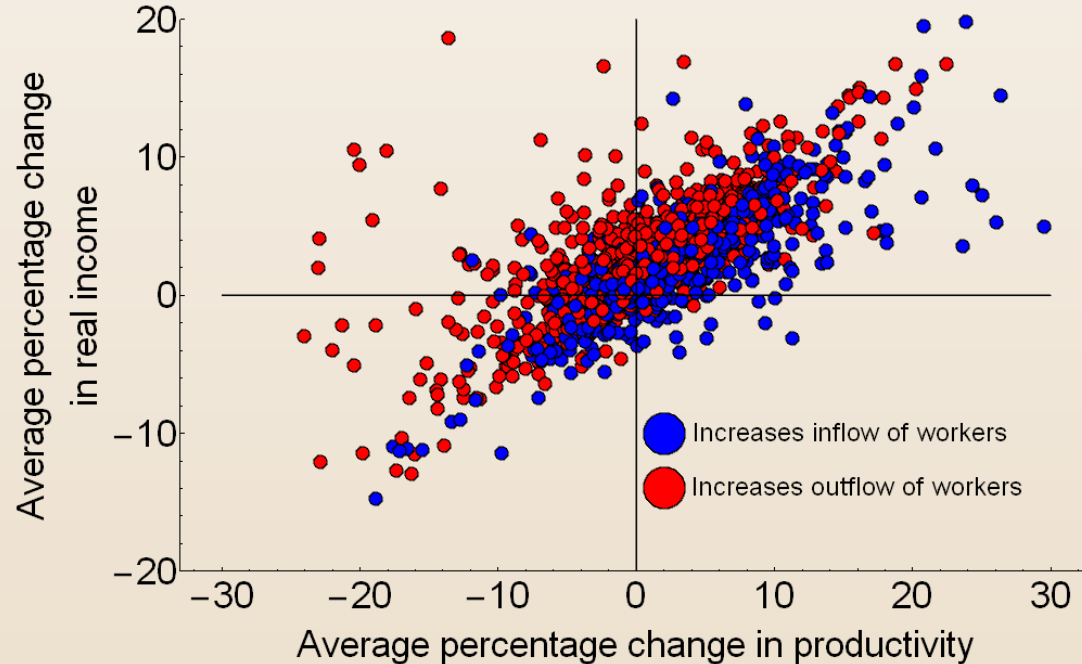


Source: Estimated by Banco de México with data from 2015 Intercensal Survey by INEGI.

## Box:

### Inter-municipal Commuters and Productivity of Mexican Municipalities

- Changes in the real income, in productivity and in workers' outflow of each municipality between 2010 and 2015 were calculated. Having mobility would enable individuals to not experience declines in real income, despite decreases in the local productivity.



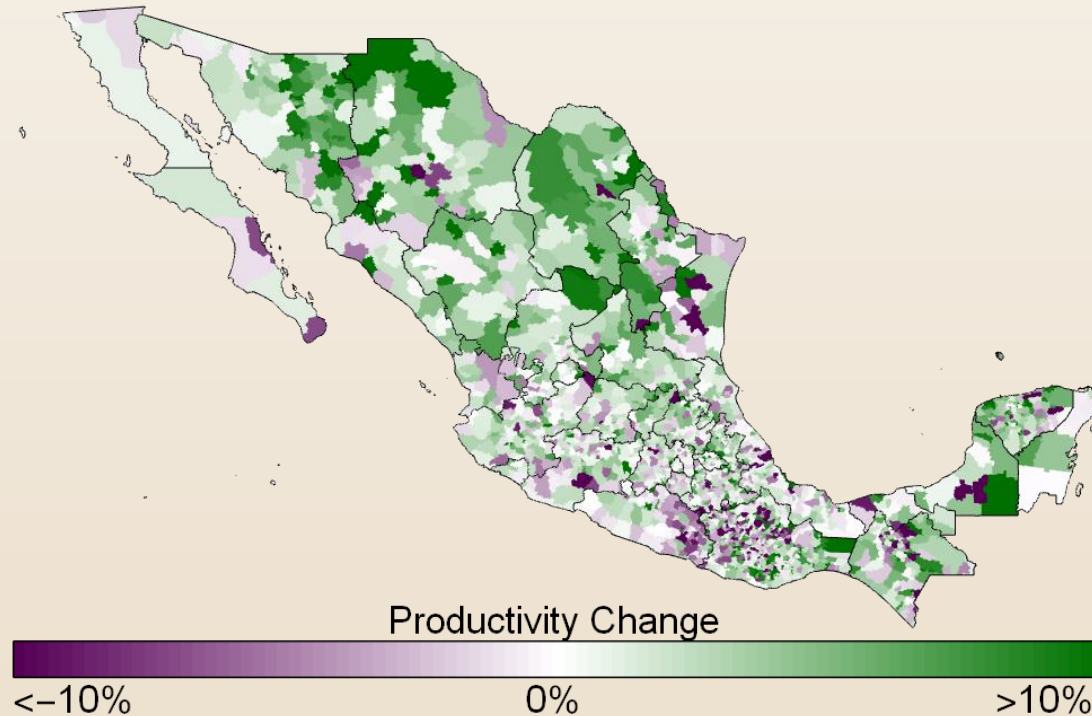
- The chart shows that in most municipalities, registering a decline in productivity, the outflow of workers increased, while in municipalities in which the productivity increased, their inflow also went up.
- However, mobility is not perfect, as there are municipalities that presented a decrease in productivity and in real income.

Source: Estimated by Banco de México with data from 2015 Intercental Survey, by INEGI and a sample of 2010 census microdata.

## Box:

### Inter-municipal Commuters and Productivity of Mexican Municipalities

- Changes in productivity have a positive spatial correlation, i.e., in a given country, municipalities with productivity shocks are geographically located close to other municipalities experiencing similar shocks.



Source: Estimated by Banco de México with data from the 2015 Intercensal Survey by INEGI and the sample of 2010 census microdata.

- The above suggests that transport infrastructure, that would allow more IMC, is a key component to mitigate negative shocks to productivity for the residents of municipalities.
- It would allow workers residing in these municipalities to commute over greater distances from the place of residence to work in an area characterized by higher productivity and not to decrease their income.

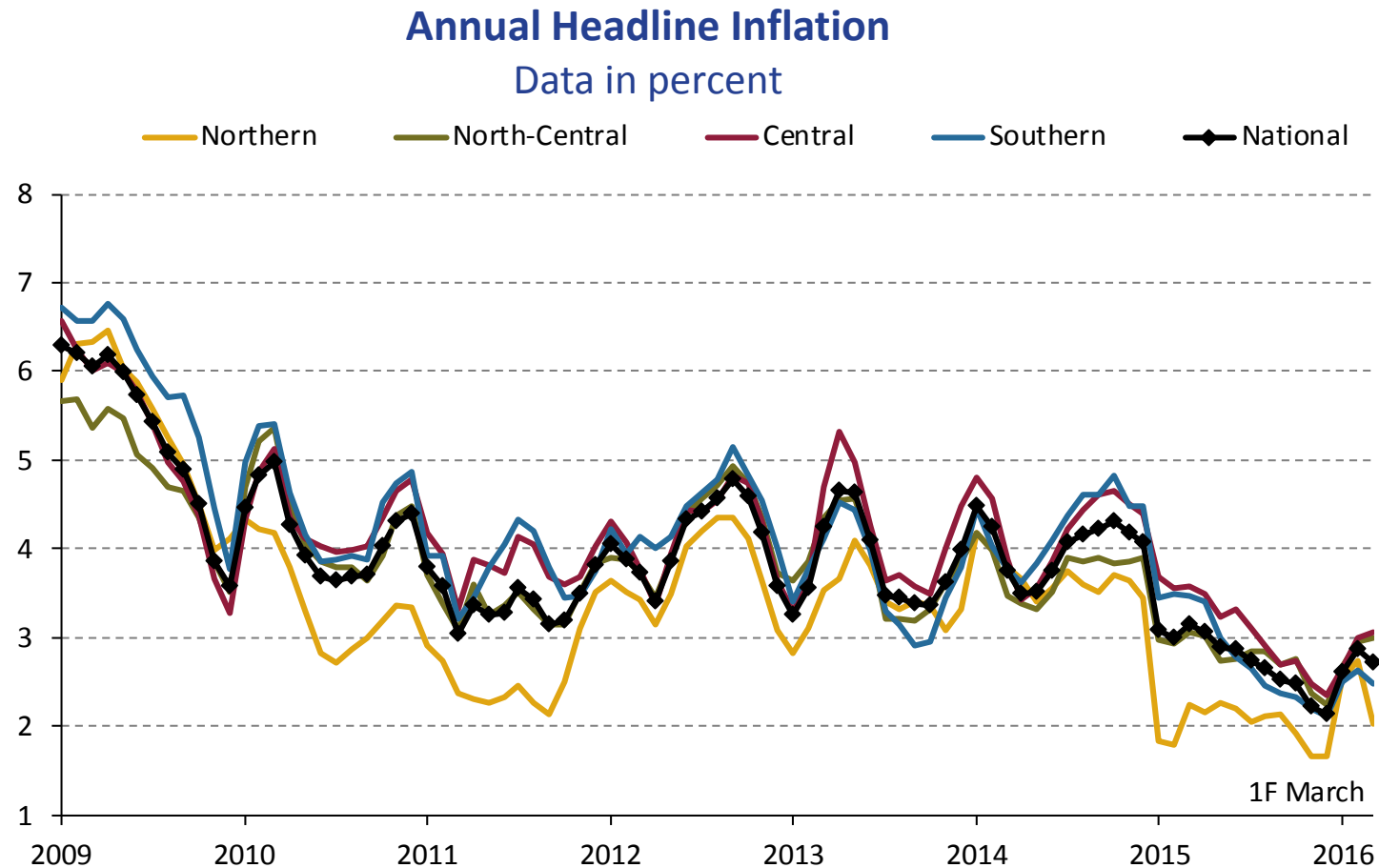
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# Inflation

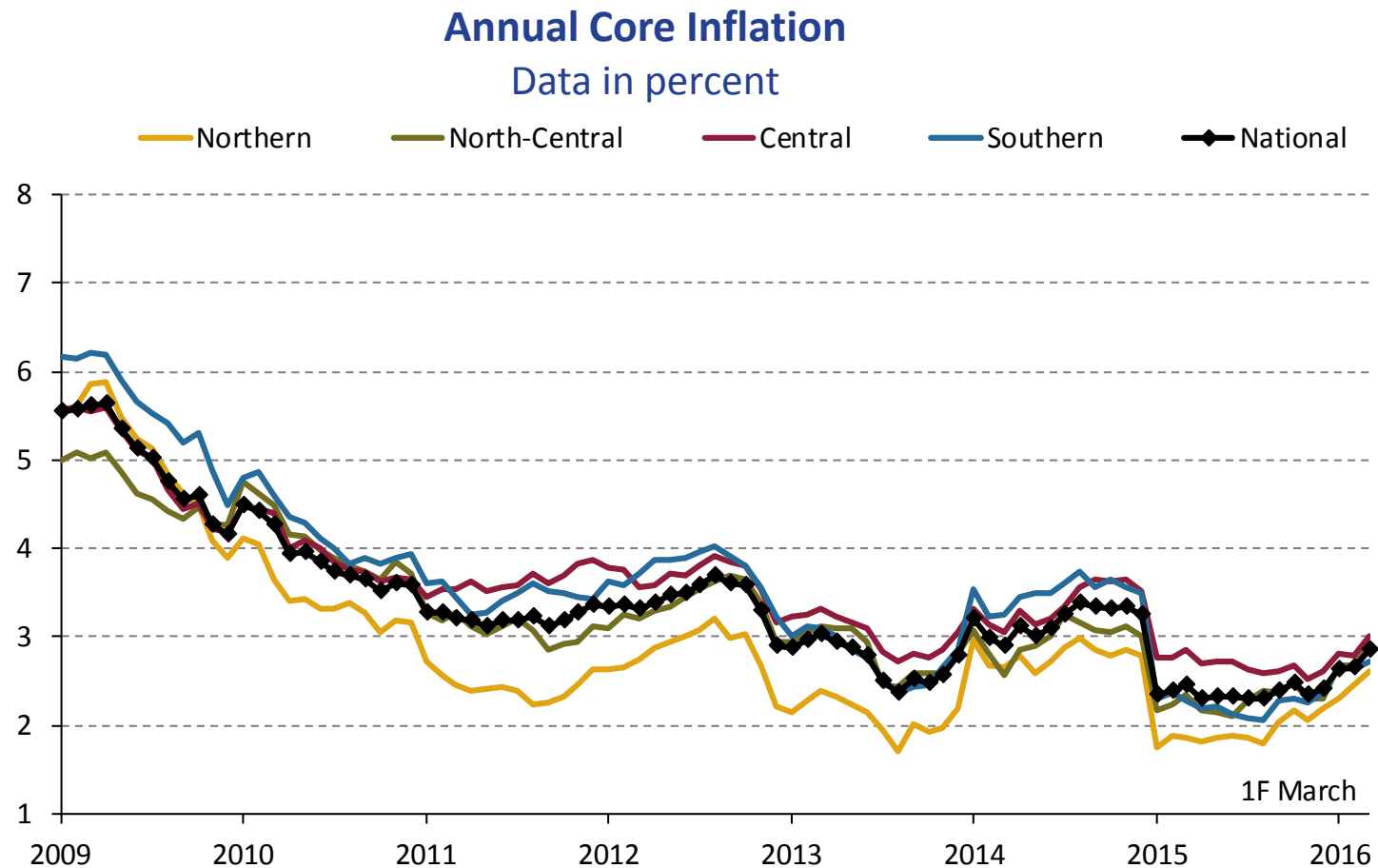
- In 4Q 2015, headline inflation maintained a downward trend, attaining a level of 2.13 percent in annual terms in December 2015, a historic low since the CPI is measured.
  - ✓ The inflation evolution was associated with the monetary policy stance adopted by Banco de México, in a framework of slack economic conditions and absence of demand-related pressures onto prices.
  - ✓ Moreover, its performance was contributed to by reductions in the prices of widely used inputs, such as energy products and telecommunication services, which, in a number of cases, resulted from the implementation of structural reforms.
- It should be noted that the above occurred in a context in which the pass-through of the exchange rate depreciation onto prices has been limited and has been manifested mainly in the prices of some durable goods, without any evidence of second round effects on the price setting process of the economy.

In 4Q 2015, annual headline inflation decreased in all regional economies, locating in all cases below 3 percent. Subsequently, in January and February, it rebounded, derived from the higher prices of some vegetables, which started to revert in the first fortnight of March.



Source: Estimated by Banco de México with own data and data from INEGI.

Even though annual core inflation remains moderate across all regions of Mexico, its increase in 4Q 2015 and over the first months of 2016 was primarily due to the changes in the prices of some merchandise, as a result of the depreciation of the national currency.

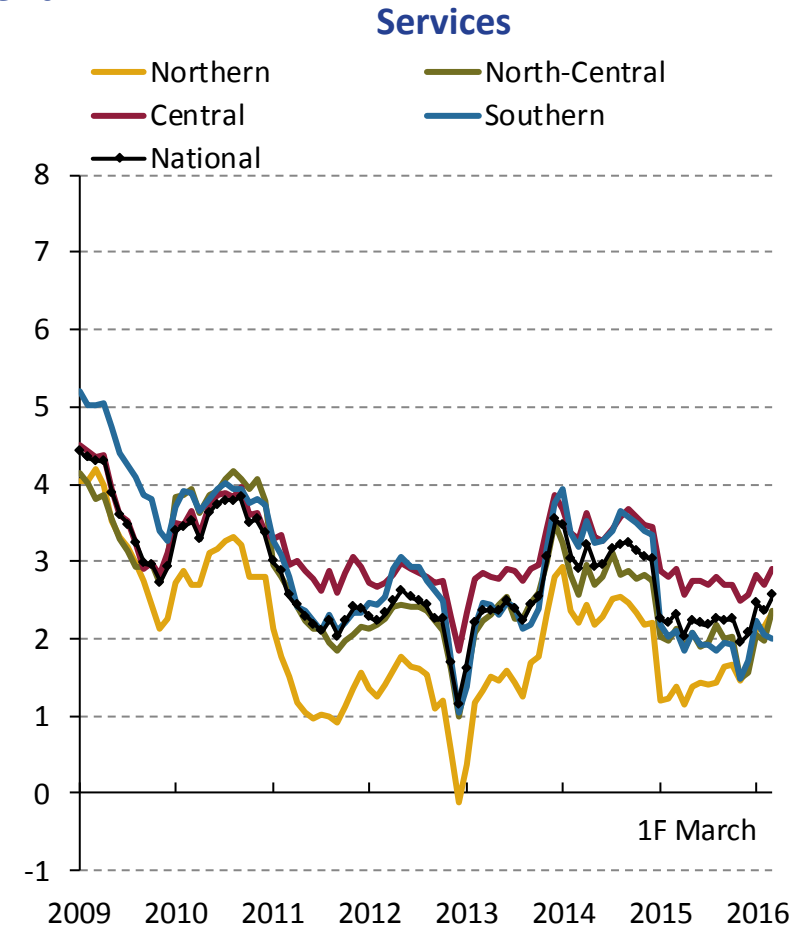
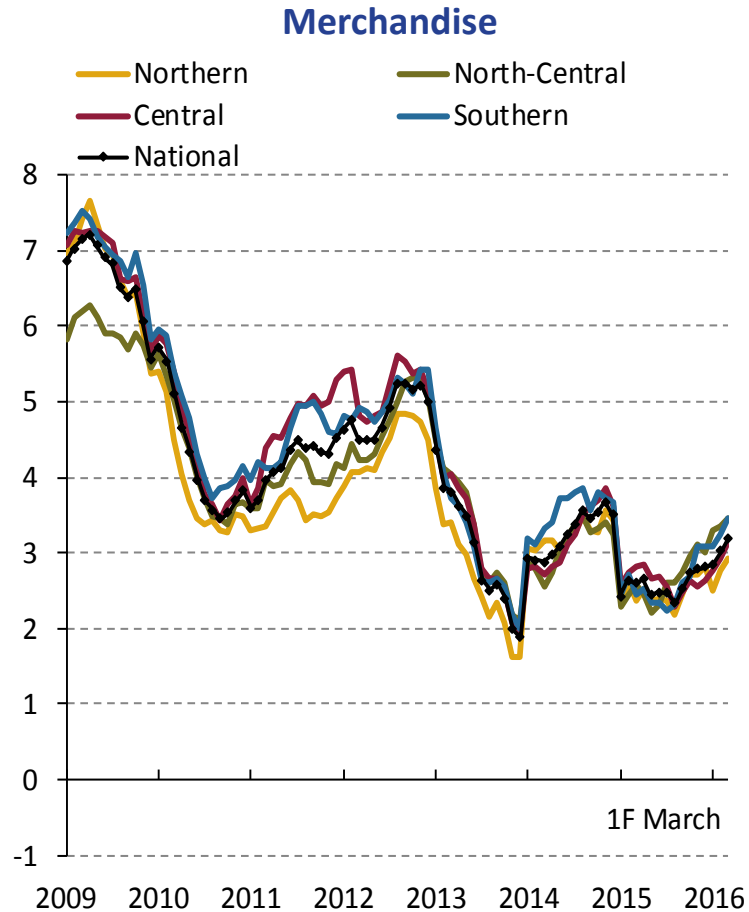


Source: Estimated by Banco de México with own data and data from INEGI.

The annual change of merchandise prices presented a growing trend in all regions of Mexico in 4Q 2015, although it continues exhibiting levels around 3 percent. On the other hand, the expansion of the services price subindex remained at low levels. Nonetheless, the annual growth rate of this subindex rebounded during the first fortnight of March, as a result of a transitory increment in the tourism services prices, derived from the Easter calendar effect.

## Components of Annual Core Inflation

Data in percent

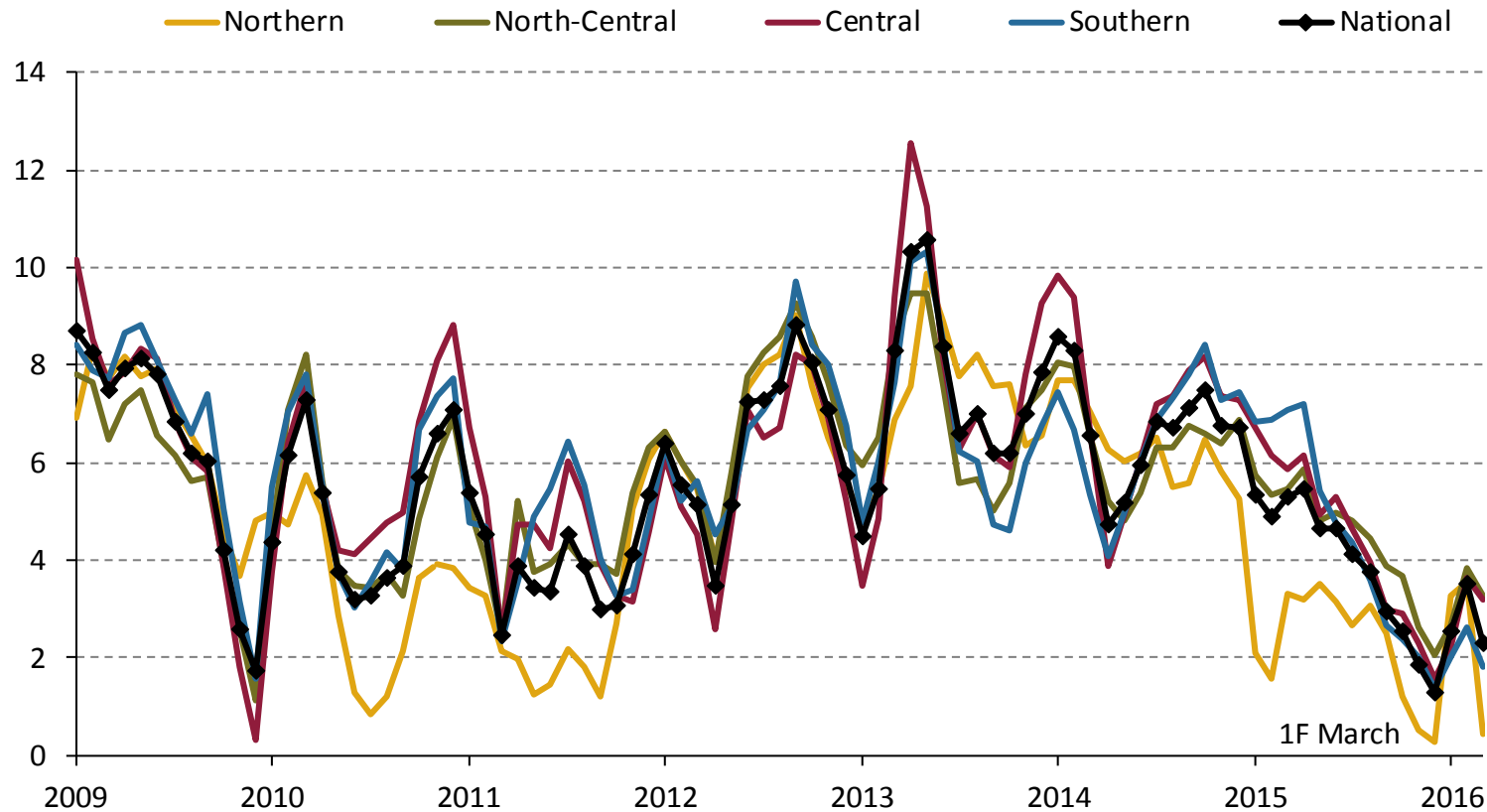


Source: Estimated by Banco de México with own data and data from INEGI.



The favorable performance of the prices of agricultural and energy products in 4Q 2015 allowed the non-core price index to continue observing a deceleration in its average annual growth rate in all regional economies. The rebound registered in the first months of the year was associated to a transitory increment in the prices of some agricultural products, which went down in the first fortnight of March, while the prices of energy products, in particular gasoline prices, exhibited considerably negative growth rates, especially in the Northern border region of Mexico.

### Annual Non-core Inflation Data in percent



Source: Estimated by Banco de México with own data and data from INEGI.

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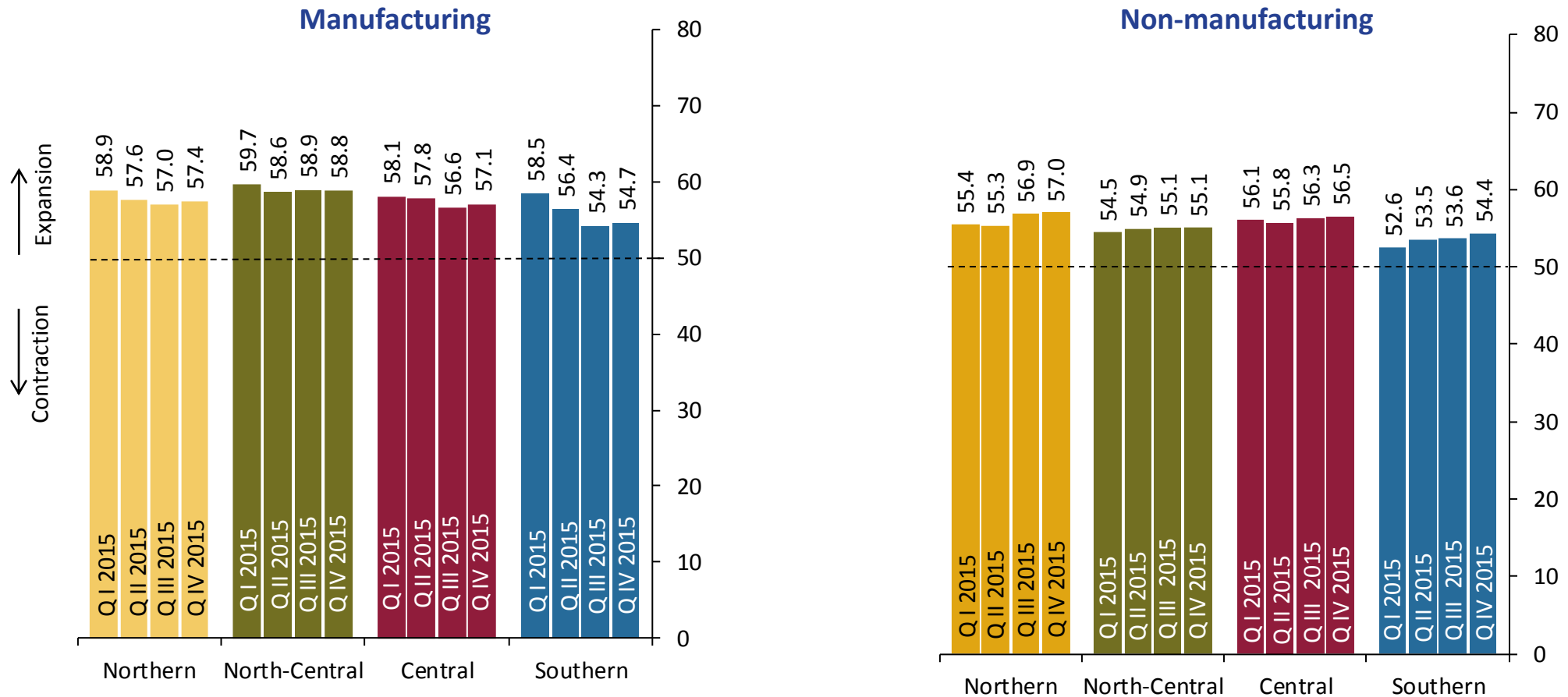
# Economic Outlook

- Most business contacts surveyed by Banco de México expect demand for own goods and services to expand in all regions of Mexico over the following twelve months.
- The contacted business agents indicated that their expectations are based on the following factors:
  - ✓ Domestic: i) the recovery of private consumption; ii) effects of structural reforms; iii) advertising strategies to attract clients; and iv) dynamism of some services, i.e. tourism.
  - ✓ External: i) the expectation that U.S. economy will continue expanding, which, together with the exchange rate depreciation, would tend to strengthen the national export sector.

The indices of manufacturing and non-manufacturing orders indicate higher levels of activity in the four regional economies of Mexico during the following months. However, while this signal has been strengthening for the non-manufacturing sector, it remains relatively constant for firms of the manufacturing one.

### Regional Index of Manufacturing and Non-manufacturing Orders: Activity Outlook over the Next 3 Months <sup>1/</sup>

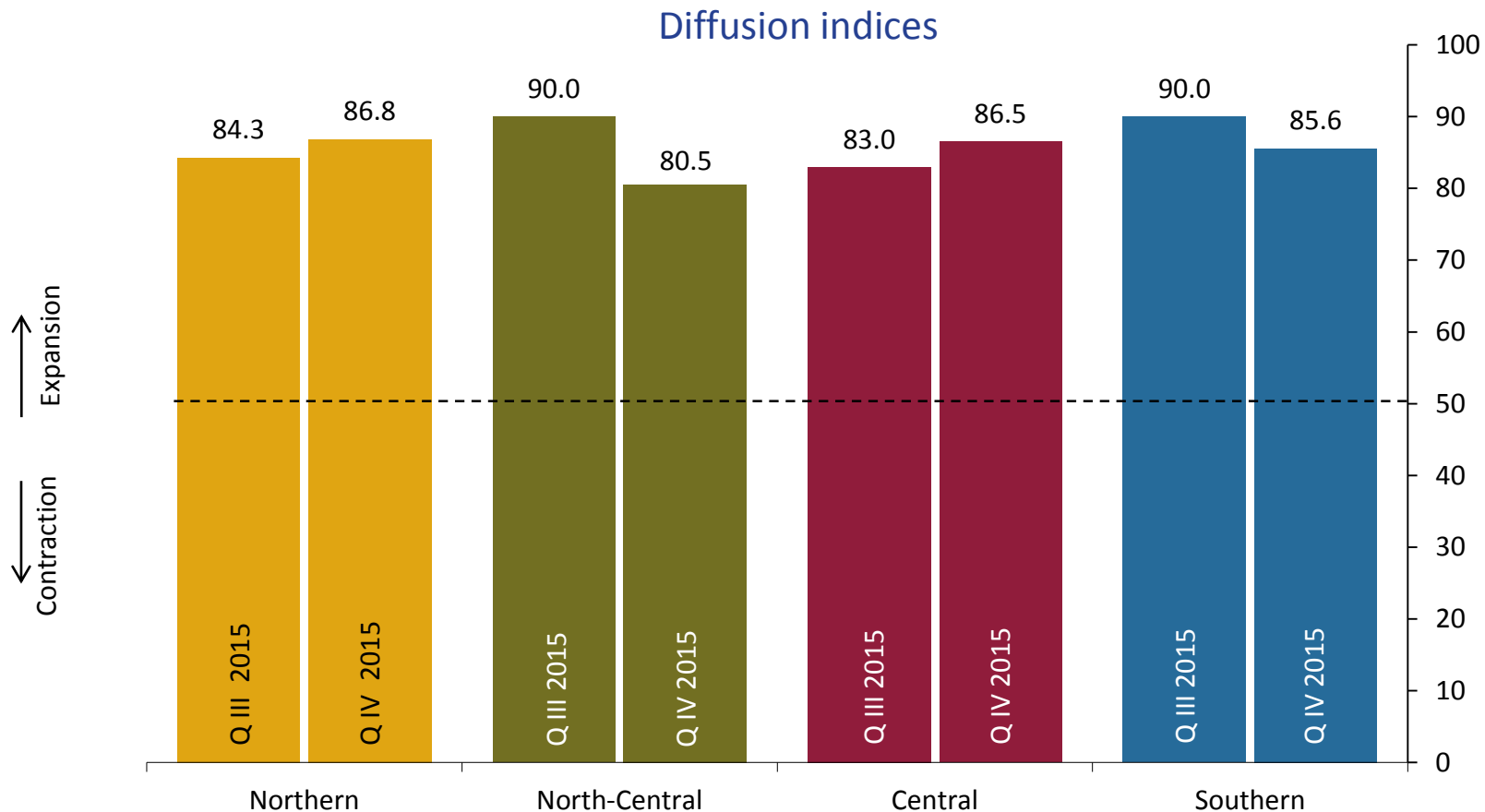
Diffusion indices



<sup>1/</sup> Seasonally adjusted data.  
Source: Banco de México.

Most business agents surveyed by Banco de México expect demand for own goods and services to expand in all regions of Mexico over the next 12 months, although in the North-Central and Southern regions the prospects were more moderate as compared to 3Q 2015.

### Business Agents' Expectations: Demand over the Next 12 Months <sup>1/</sup>

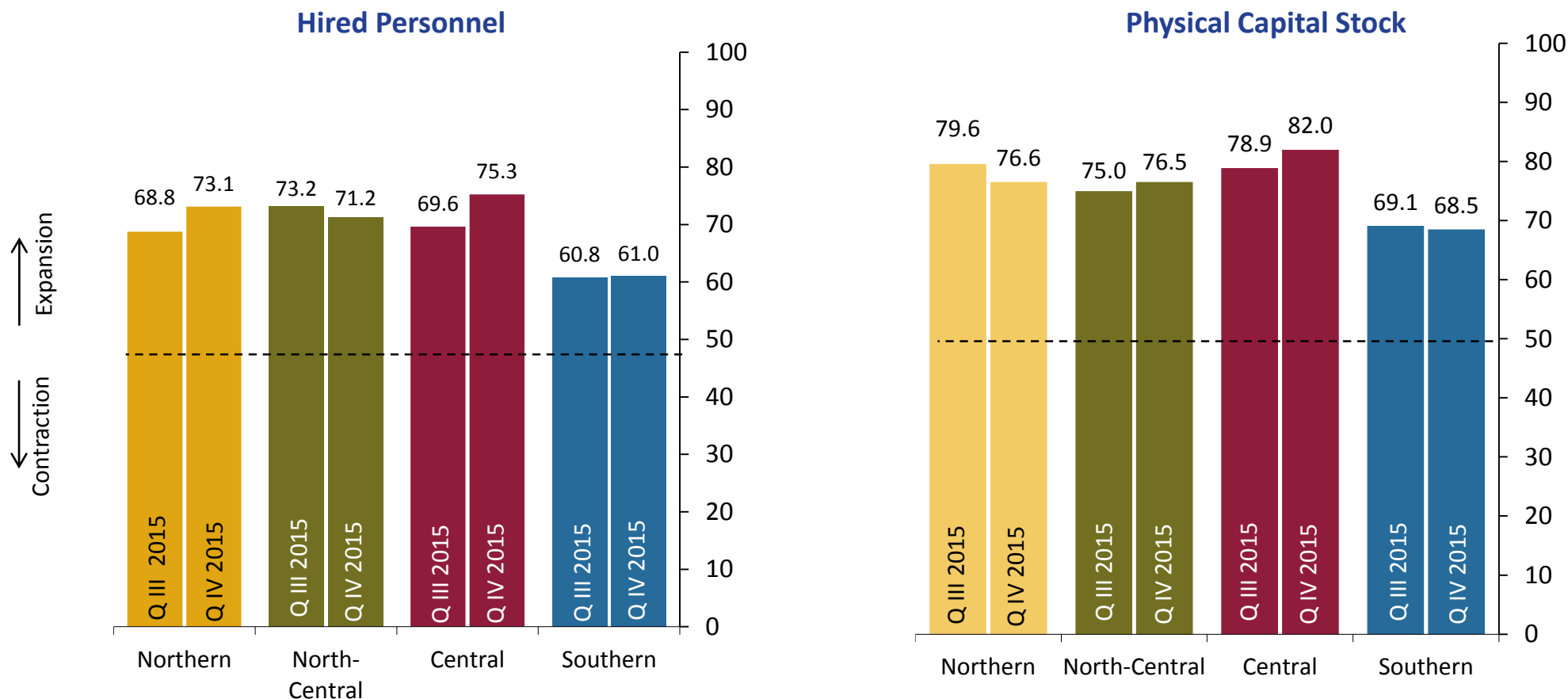


<sup>1/</sup> Results obtained from responses to the question: "With respect to the situation in the current quarter, how do you expect demand for own goods and services to modify over the next 12 months?", from the interviews conducted by Banco de México.

In accordance with the estimated increase in demand for own goods and services, business agents generally anticipate an expansion of hired personnel and of the physical capital stock in different regions.

## Business Agents' Expectations: Hired Personnel and Physical Capital Stock, Next 12 Months <sup>1/</sup>

Diffusion indices



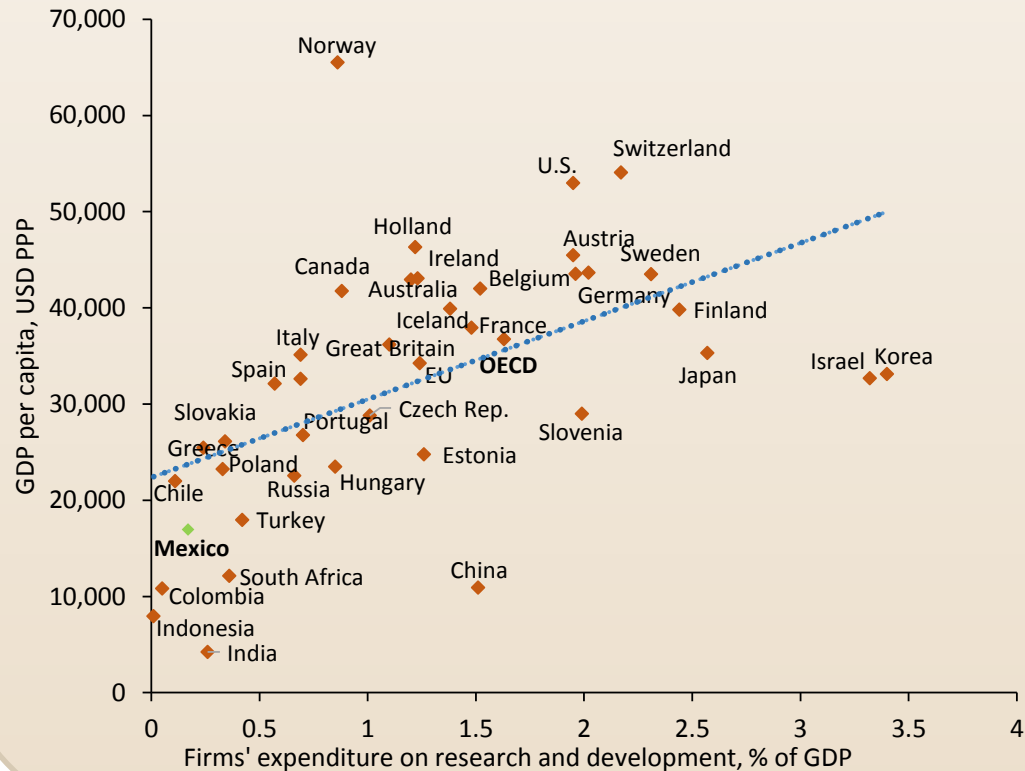
<sup>1/</sup> Results obtained from responses to the questions: "With respect to the situation of the current quarter, how do you anticipate the personnel hired in your firm to change over the next 12 months?" and "How do you anticipate the physical capital stock in your firm to modify over the next 12 months?", from the interviews conducted by Banco de México.

## Box:

### Main Characteristics of Innovation and Factors Limiting it in Firms in Mexico

- Innovation carried out by firms in an economy, either by means of developing new goods or services or by adapting new technologies, is crucial to boost productivity.

#### Investment in Innovation and Economic Wealth



Source: OECD.

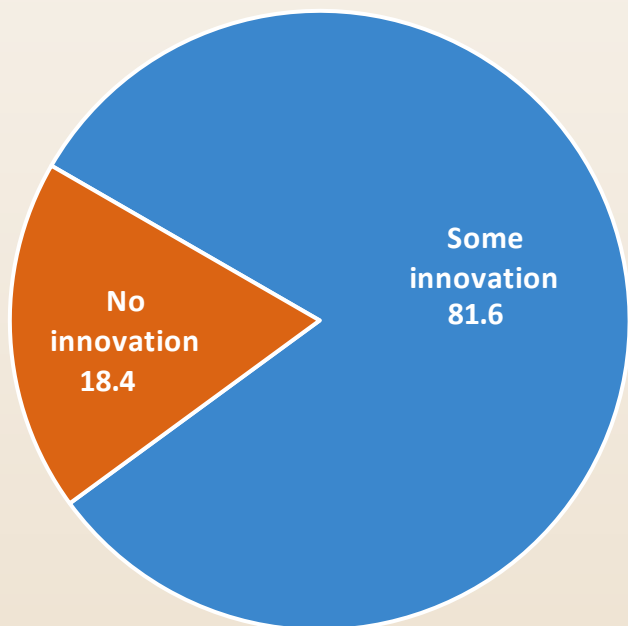
- International evidence points to an existing positive correlation between expenditure on research and development in firms (as a percentage of GDP) and GDP per capita of the country where the businesses operate.
- This suggests that the process of innovation in firms is key to enhancing greater productivity and real income of the population.

## Box:

# Main Characteristics of Innovation and Factors Limiting it in Firms in Mexico

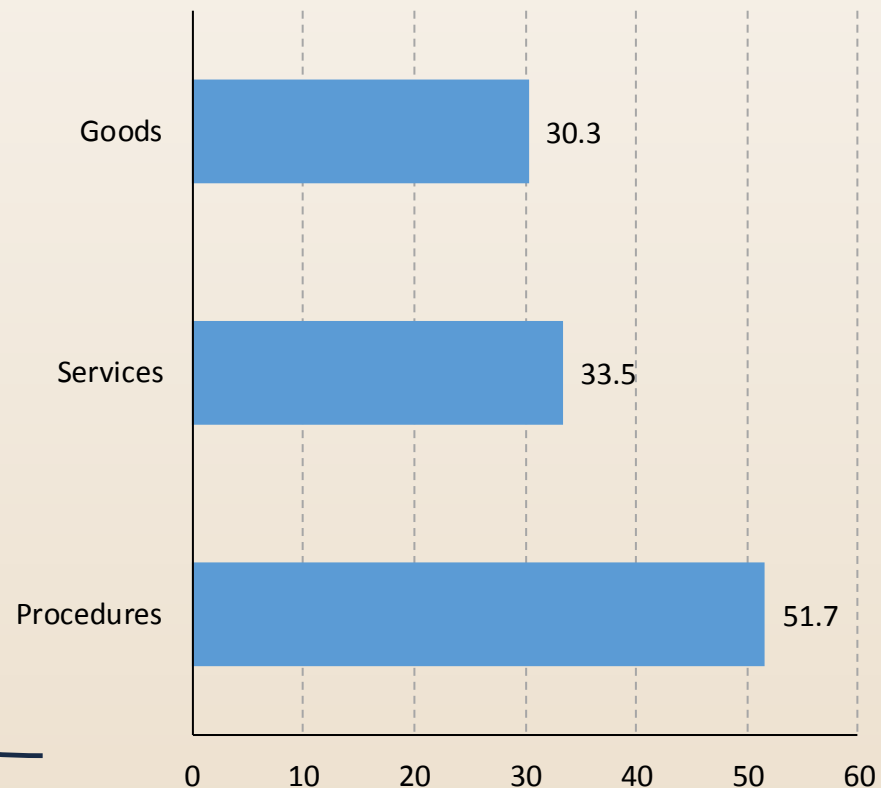
Firms that Innovated in the Period 2012-2015\*

Percentage



Types of Innovation\*

Percentage



\*/The sample of business agents used for this Box is not necessarily representative of the business sector as a whole at the national or regional level, reason for which the results presented here should be interpreted with caution, seeing them only in terms of their magnitude and not as precise statistics of businesses' innovation efforts in Mexico.

Source: Estimated by Banco de México based on data from interviews conducted among business agents between September 14 and October 15, 2015, and between January 4 and February 4, 2016.

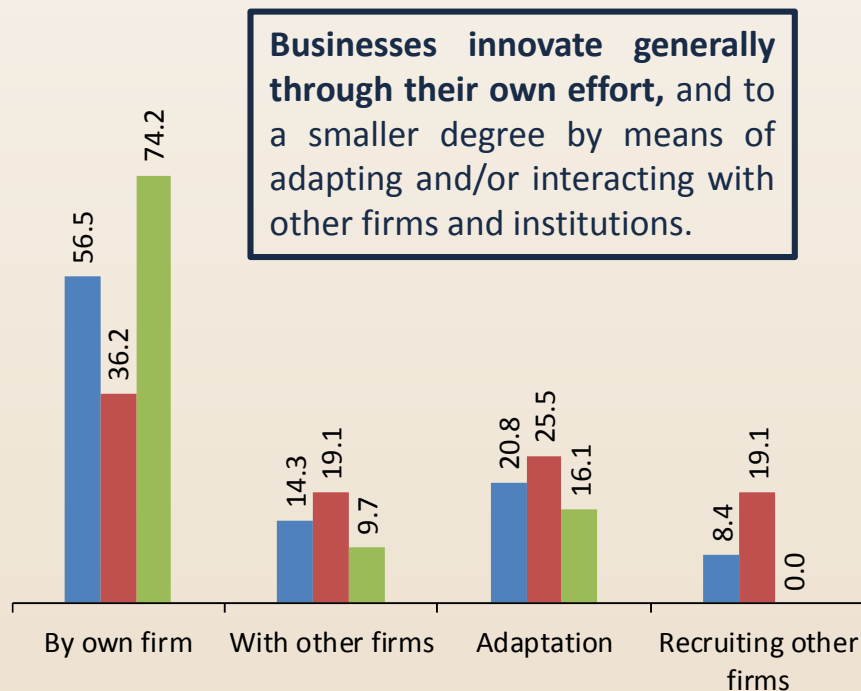


## Box:

# Main Characteristics of Innovation and Factors Limiting it in Firms in Mexico

Source of Innovation\*  
Percentage

■ Goods    ■ Services    ■ Procedures

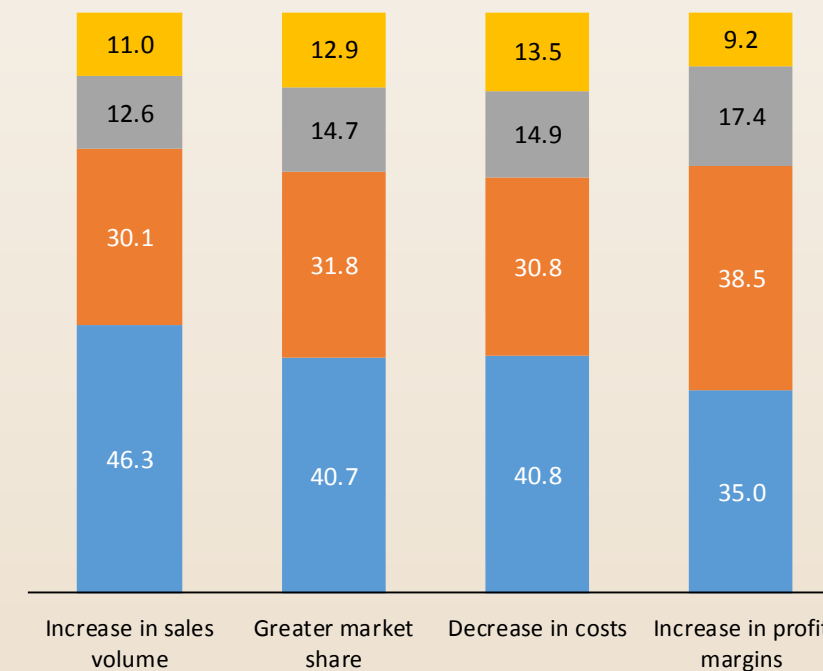


Businesses innovate generally through their own effort, and to a smaller degree by means of adapting and/or interacting with other firms and institutions.

Most business agents grant a medium to high level of importance to innovation, to reach the referred goals.

Importance of Innovation to Improve Businesses' Performance\*  
Percentage

■ High    ■ Medium    ■ Low    ■ None



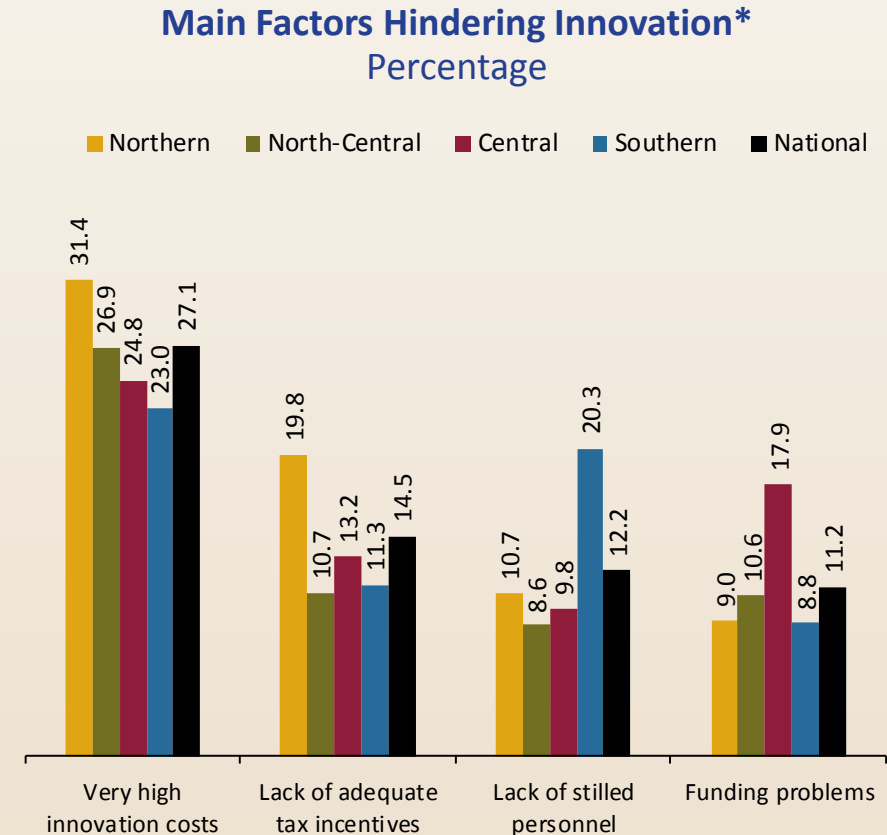
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## Box:

### Main Characteristics of Innovation and Factors Limiting it in Firms in Mexico

- Across all regions, business agents noted **high innovation costs** as a key factor hindering innovation in firms.
- At the regional level, business contacts stressed:
  - ✓ **In the Northern and North-Central regions:** high innovation costs and lack of adequate tax incentives.
  - ✓ **In the Central region:** problems of access to financing for innovation.
  - ✓ **In the Southern region:** lack of skilled personnel.



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## Box:

### Main Characteristics of Innovation and Factors Limiting it in Firms in Mexico

- The creation of a competitive environment in which businesses would innovate on a permanent basis would be more likely to occur, if, among other factors, the following is improved:
  - i. **Access to funding;**
  - ii. **Supply of skilled labor;**
  - iii. **Rule of law;**
  - iv. **Flexibility to adapt to new technologies and innovations developed in other countries; and**
  - v. **Dissemination of the knowledge.**

# Economic Outlook

- Among upward risks to the regional economic activity, in general, business contacts mentioned the following:
  - ✓ A greater than expected growth of the U.S. economy.
  - ✓ A higher level of private investment in the energy and manufacturing sectors, as well as in tourism.
- Furthermore, across regions, business agents highlighted the next among upward risks:
  - ✓ In the North-Central and the Southern regions, positive effects that in the future could lead to the creation of Special Economic Zones.
  - ✓ In the Central region, an additional impulse generated by the construction of some infrastructure projects, in particular, the New Airport in Mexico city, the train Mexico-Toluca and the new toll road bypass Mexico-Puebla.

# Economic Outlook

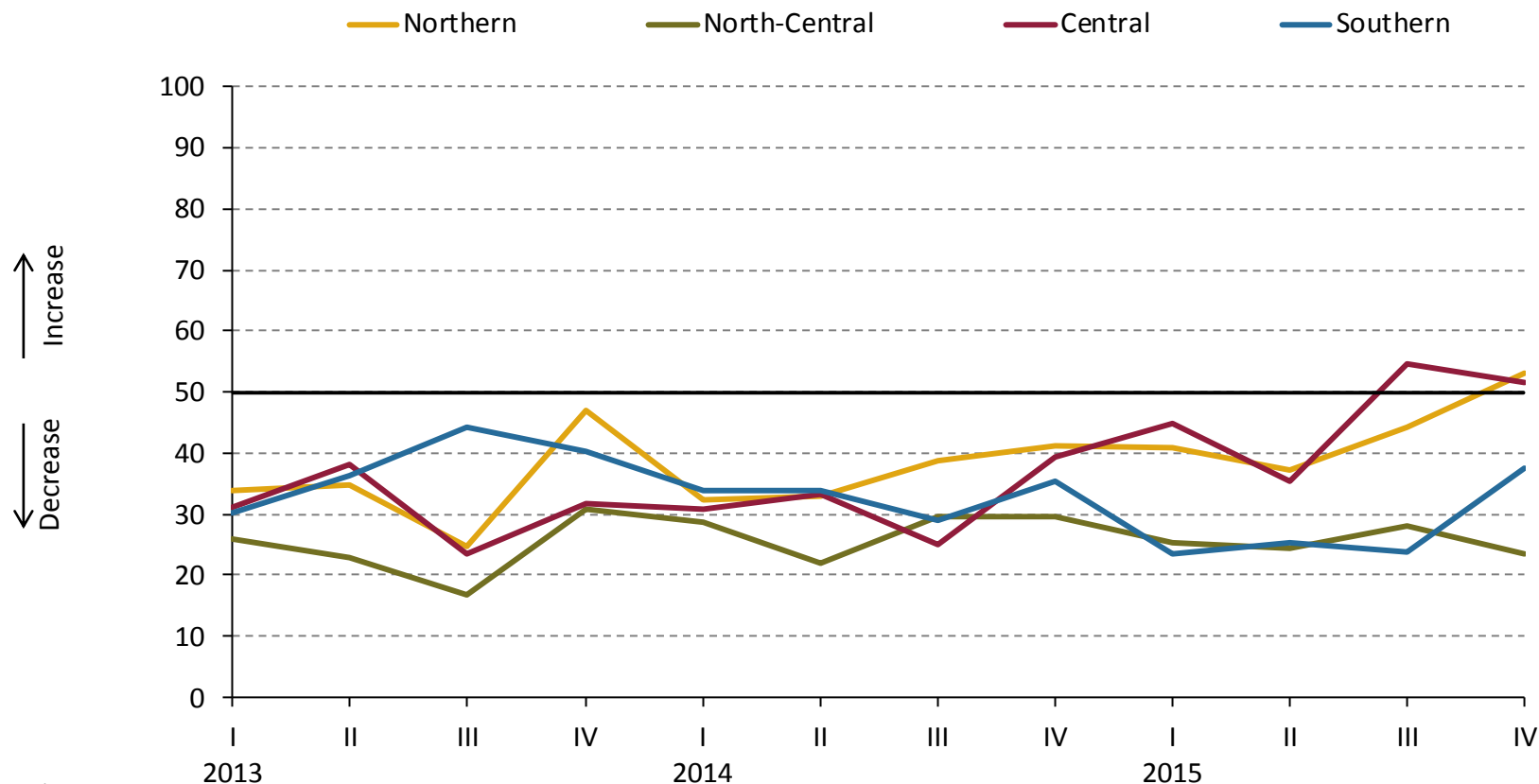
- With respect to downward risks to regional economic activity, interviewed business agents mentioned the following:
  - ✓ A slowdown of the U.S. economy.
  - ✓ Higher volatility in international financial markets.
  - ✓ An additional deterioration in the perception of public safety.
- Furthermore, in the Southern region business contacts indicated as a downward risk the fact that the level of investment in the energy sector could be lower than expected.

# Economic Outlook

- As regards the sales prices of own goods and services, business contacts interviewed in the North-Central and Southern regions manifested that, in general, they anticipate lower annual changes as compared to last year for a 12-month horizon. In contrast, in the Northern and Central regions, the corresponding diffusion index lies close to the 50-point baseline, which could imply the expectation, on average, of similar price increments to those of last year.
- For the same horizon, with respect to wage costs, business agents anticipate a lower annual change rate than in the previous year, for the next 12 months across all regions in Mexico.
- Regarding the outlook for the future evolution of input prices, in most regions business agents expect a lower annual change of these prices for the following 12 months, as compared to last year.

Business agents generally expect lower annual changes in the prices of own goods and services, as compared to the previous year, over the next 12 months.

### Business Agents' Expectations: Annual Inflation Dynamics of Sales' Prices, Next 12 Months <sup>1/</sup> Diffusion indices

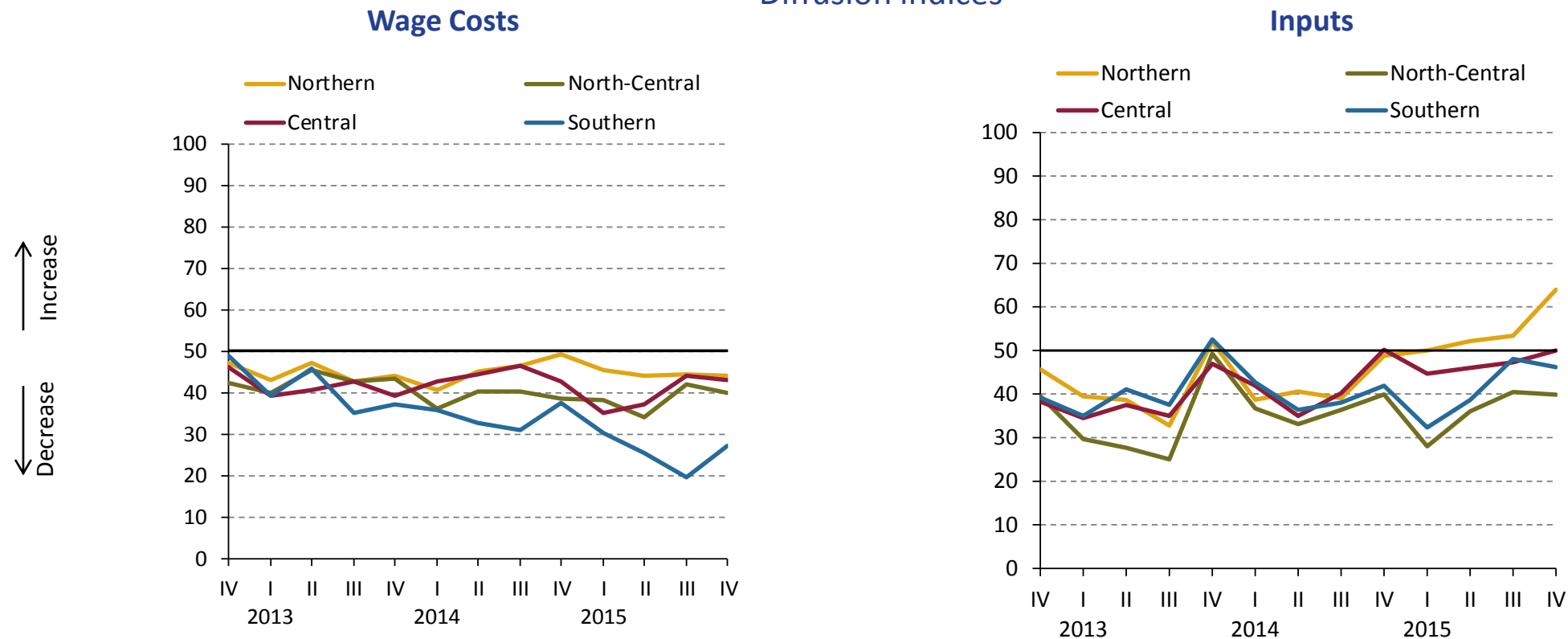


<sup>1/</sup> Results obtained from responses to the questions: "With respect to the situation in 4Q 2015, do you anticipate any modification in the sales' prices of produced goods and services, over the next 12 months?", and "As compared to the same period of last year, of what magnitude do you expect this adjustment: greater, same or smaller?", from interviews conducted by Banco de México.

The interviewed business agents expect lower annual changes in their wage costs, as compared to last year in all regional economies of Mexico. In turn, business contacts in most regions anticipate a lower annual change in their input prices for the next 12 months, with respect to the previous year.

### Business Agents' Expectations: Annual Inflation Dynamics of Input Prices and Wage Costs, Next 12 Months <sup>1/</sup>

Diffusion indices



1/ Results obtained from responses to the questions: “With respect to the situation in 4Q 2015, do you anticipate any adjustment in input prices and wage costs over the next 12 months?”, and “As compared to the same period of last year, of what magnitude do you expect this adjustment: greater, same or smaller?”, from the interviews conducted by Banco de México.



# Outline

- I. Regional Economic Report
- II. Results October – December 2015
  - A. Economic Activity
  - B. Inflation
  - C. Economic Outlook
- III. Final Remarks

## Final Remarks

- 1 In 4Q 2015, regional economies continued growing, mainly supported by the favorable performance in commerce and the services sector, while manufacturing production decelerated, as a result of weak exports, and the mining and construction sectors kept exhibiting a decreasing trajectory.
- 2 In 4Q 2015, annual headline inflation continued observing a downward trend, attaining a level of 2.13 percent at the end of the year.
- 3 Business agents interviewed by Banco de México across all regions of the country expect an expansion of demand for own goods and services over the next 12 months. Likewise, most of them anticipate an increment in hired personnel and the physical capital stock in different regions.
- 4 As regards inflation, business contacts expect, in general, lower annual growth rates in their wage costs and sales' prices, as compared to last year. In turn, in most regional economies, the contacted business agents anticipate that the annual change of input prices over the next 12 months will be lower than in the previous year.



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March 2016

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