



Regional Economic Report
January – March 2016



June 22, 2016

Outline

- I. Regional Economic Report**
- II. Results January – March 2016**
 - 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.¹
- 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 1Q 2016 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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Regional Economic Report

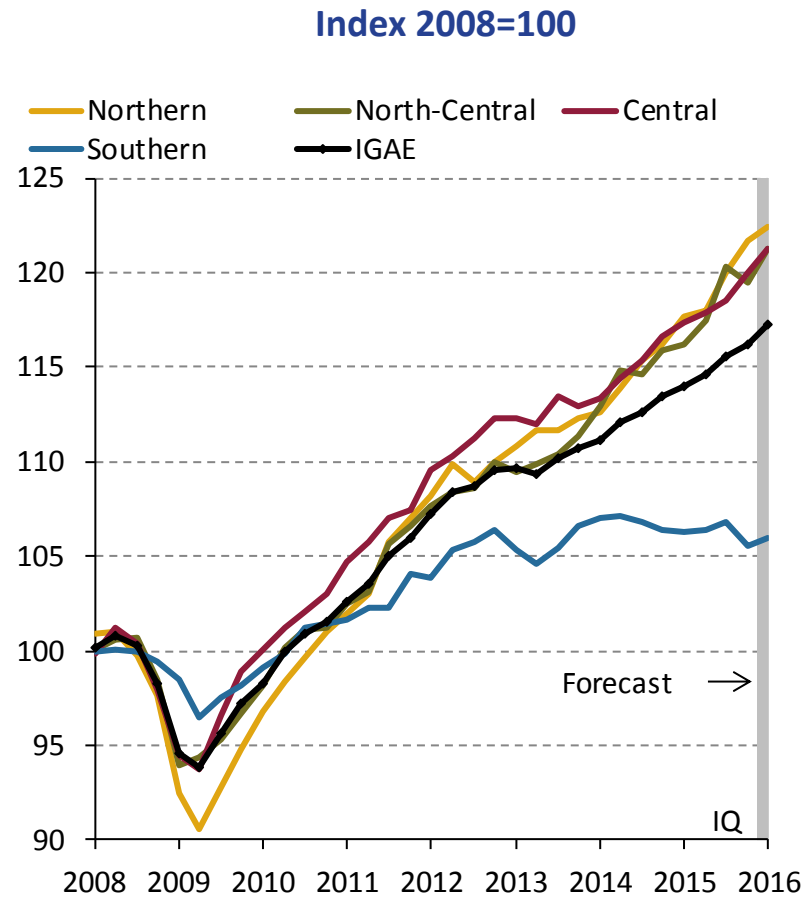
- In 1Q 2016, the growth rate of economic activity in Mexico was greater than in 4Q 2015.
 - ✓ This was largely due to the dynamism of the services sector and, to a lesser degree, due to the favorable evolution of the agriculture and livestock industry, as well as an incipient improvement in the construction sector.
 - ✓ In contrast, the rest of industrial sector activities remained weak.
 - Indeed, manufacturing production presented a low dynamism, fundamentally, as a reflection of the unfavorable evolution of this sector's exports.
 - Similarly, mining maintained a negative trend, while the electricity sector remained stagnated.
- The performance of the economic activity was heterogeneous across regions.
 - ✓ The increment in the growth rate of the Mexican economy was principally attributed to the rebounds in the levels of economic activity in the North-Central and Southern regions.
 - ✓ Meanwhile, in the Northern and Central regions economic activity somewhat decelerated.

Regional Economic Report

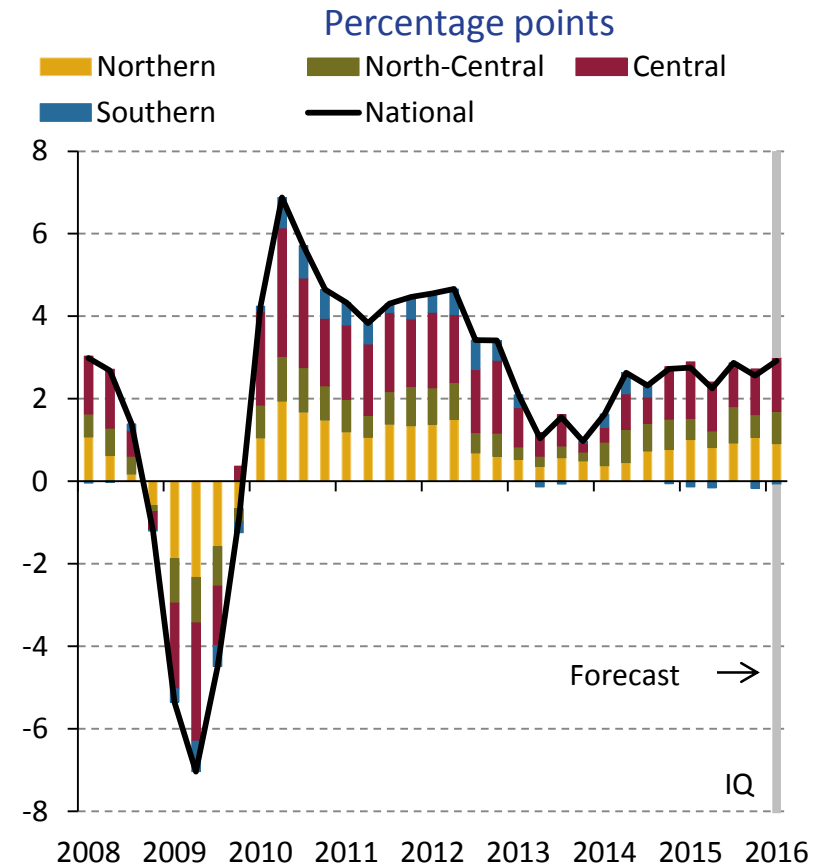
- A greater dynamism in the North-Central and Southern regions was related to the good performance of the construction sector, retail trade, the agriculture and livestock industry and manufactures more related to the domestic market.
- In contrast, in the Northern region the economic activity slightly decelerated, principally, due to the unfavorable performance in the construction sector and the manufacturing production for exports carried out in this region, although it was partially offset by the evolution of manufactures destined, to a larger degree, to the domestic market, as well as retail trade.
- Likewise, in the Central region the slight decline in the growth rate is fundamentally attributed to a less favorable performance of some manufacturing activities more oriented to meet external demand. In contrast, high dynamism persisted in those sectors that destine a large share of their production to the domestic market.

Based on the available timely information, the economic activity is estimated to have expanded with respect to the level of the 4Q 2015 across all regional economies of Mexico.

Quarterly Indicator of Regional Economic Activity ^{1/}



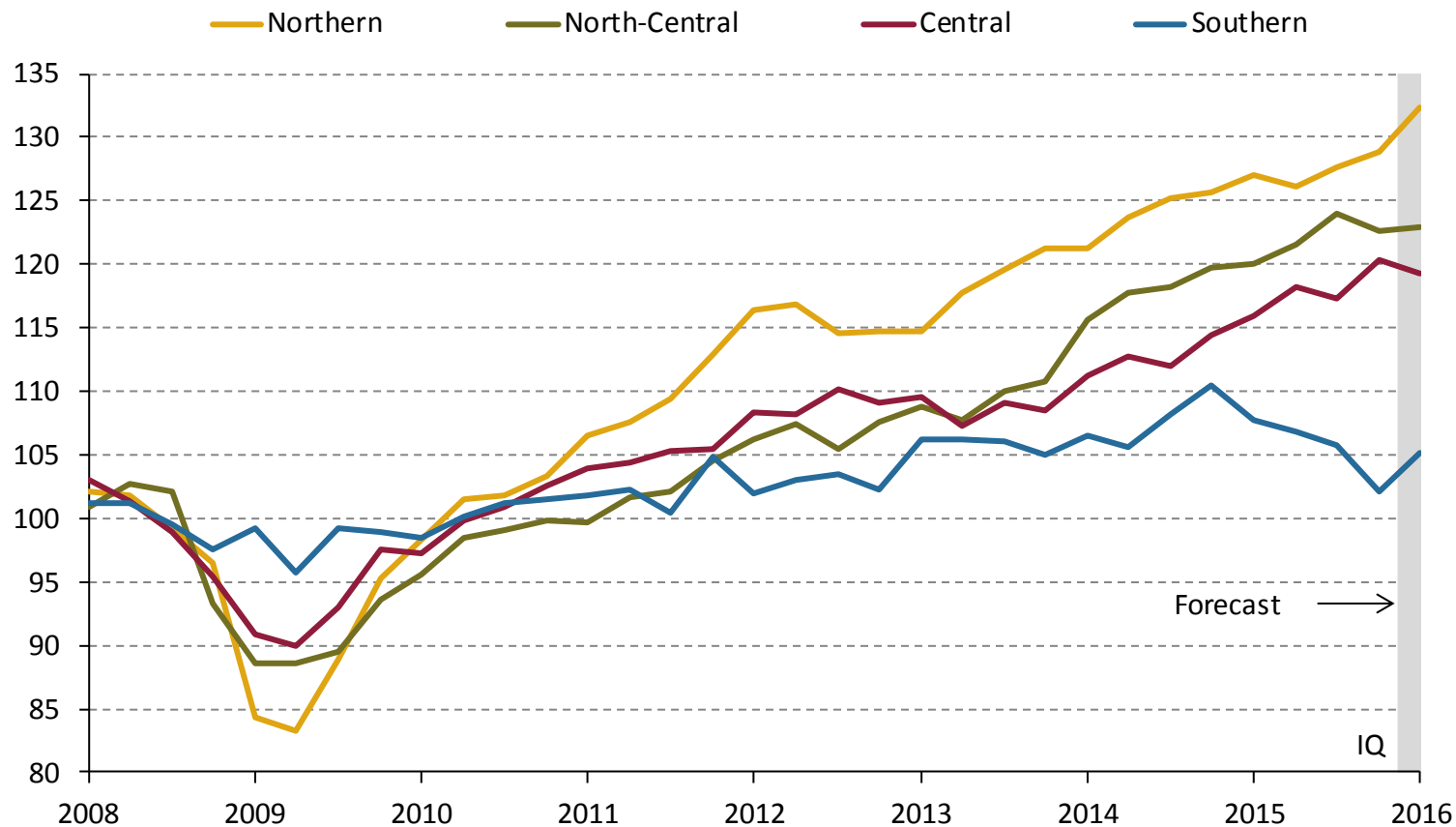
Contribution by Region to the Annual Growth of Economic Activity



^{1/} The value of the Global Economic Activity Indicator (IGAE) for 1Q 2016 corresponds to the observed data.
Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

Manufacturing production continued showing a weak growth rate in 1Q 2016. In particular, the Northern and Central regions are estimated to have maintained an upward trend. Likewise, the level of economic activity in the Southern region is calculated to have rebounded. In contrast, manufacturing production slightly contracted in the Central region.

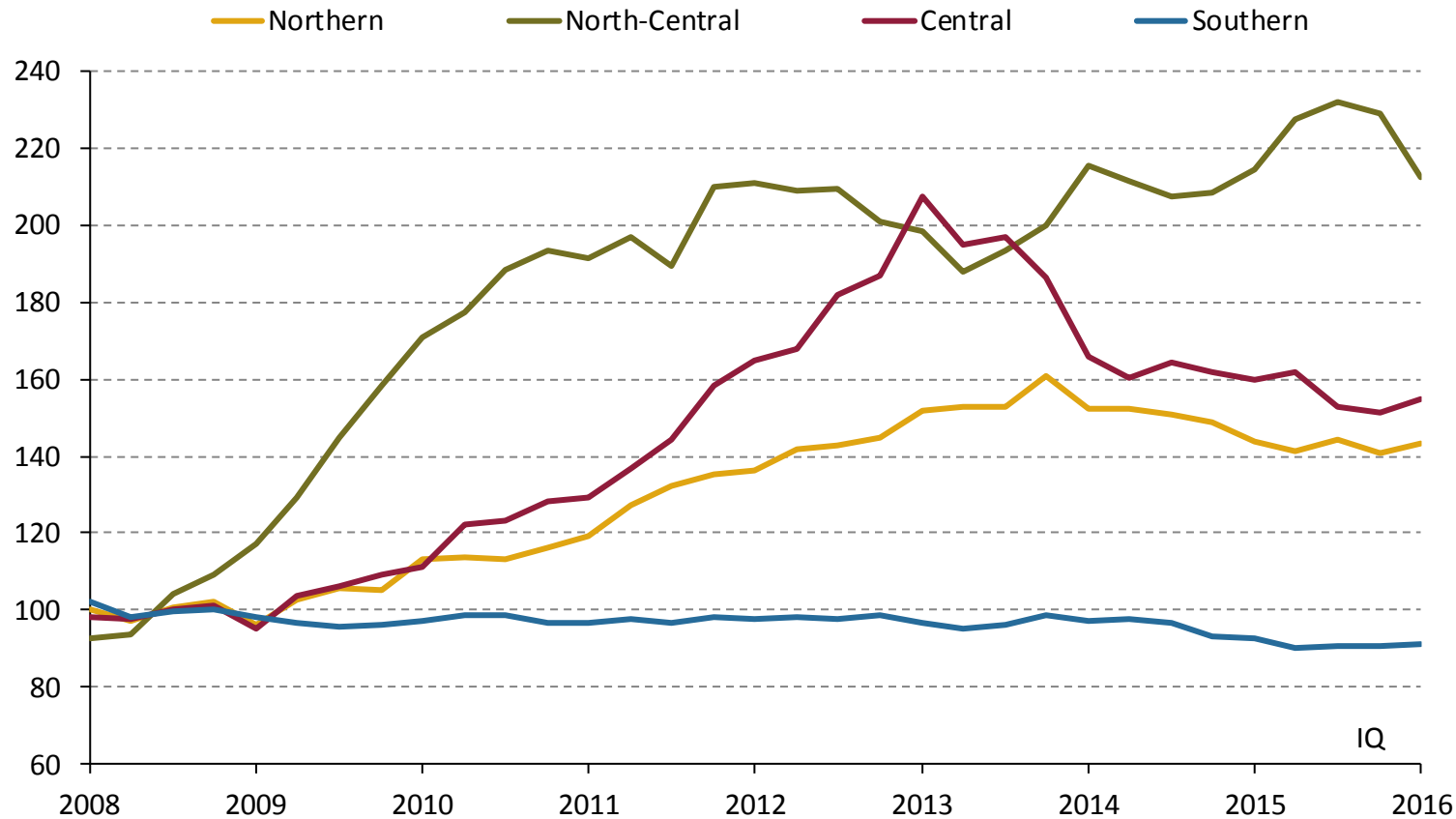
Regional Manufacturing Indicator Index 2008=100, quarterly average



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

Mining continued to generally show a negative trend, in a context in which the oil production platform kept deteriorating. In the Northern, Central and Southern regions, economic activity remained relatively stagnated, rising incipiently in some of them. In the North-Central region, economic activity contracted noticeably, thus reverting the positive trend that had been observed in this region.

Regional Indicator of the Mining Industry ^{1/}
 Index 2008=100, quarterly average

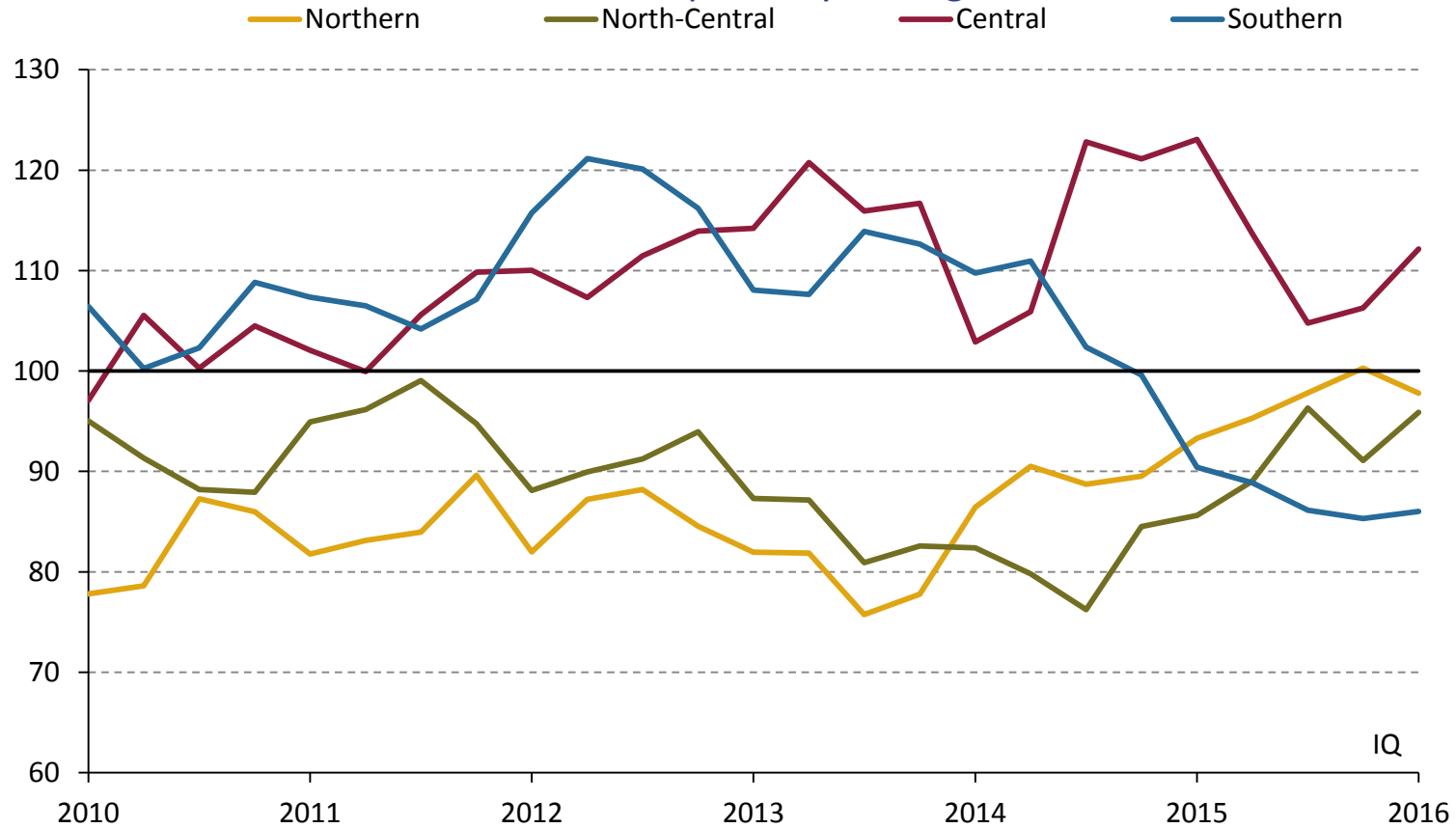


^{1/} The indicator's values in 1Q 2016 are preliminary.
 Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

In 1Q 2016, the construction sector slightly improved as compared to the weak performance in 2H 2015. In the Central region it continued expanding, at an even greater rate than in 4Q 2015, and in the North-Central region it reactivated after a drop in the previous quarter, thus resuming its positive trend. In turn, in the Southern region the construction sector slowed down the downward trend that had been registered since the first months of 2014. In contrast, in the Northern region, the sector slightly interrupted its positive trend.

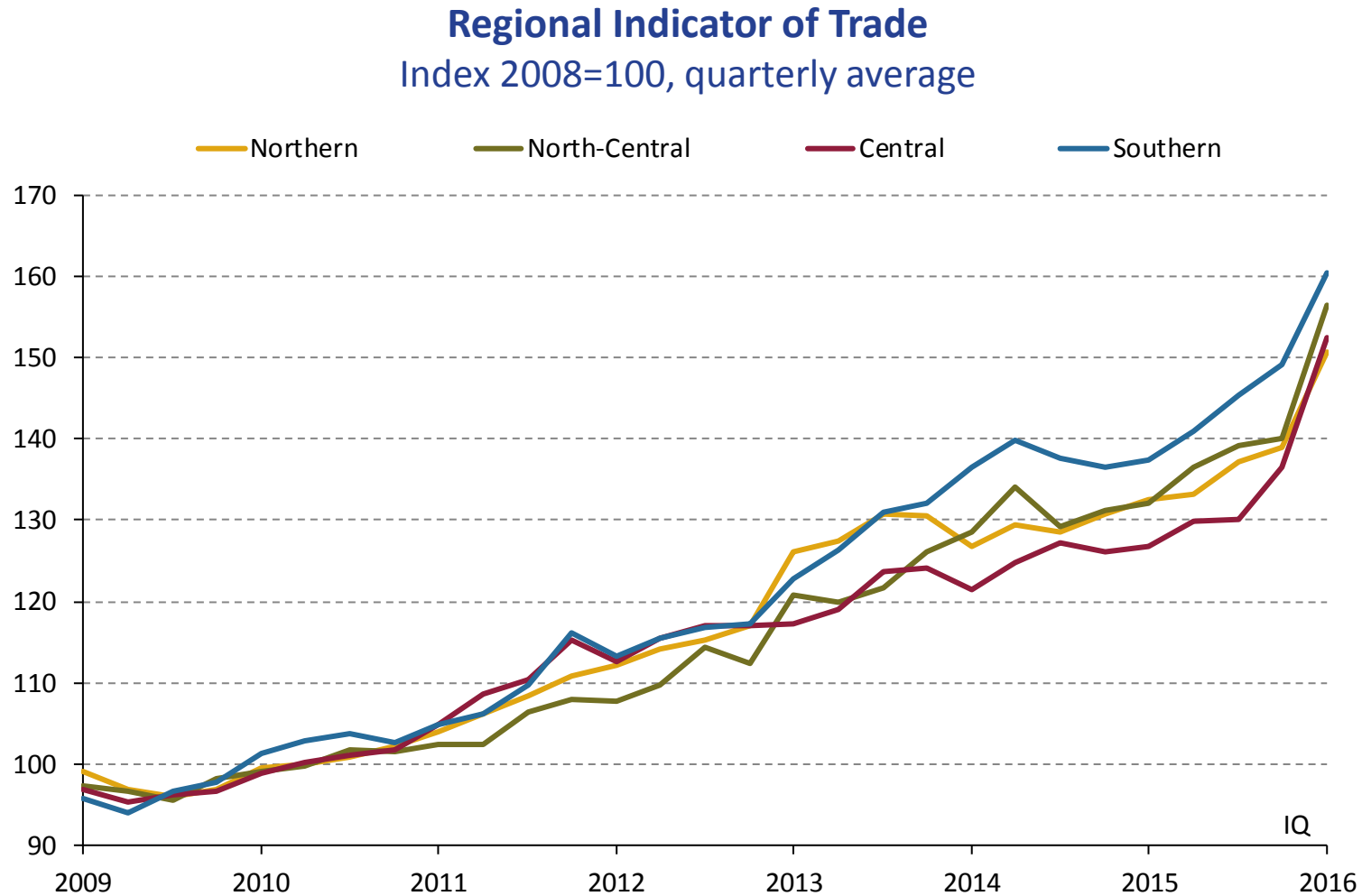
Real Value of Production in the Construction Industry by Region

Index 2008=100, quarterly average



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

In 1Q 2016, retail trade continued expanding, and its quarterly growth rate even accelerated across all regional economies.

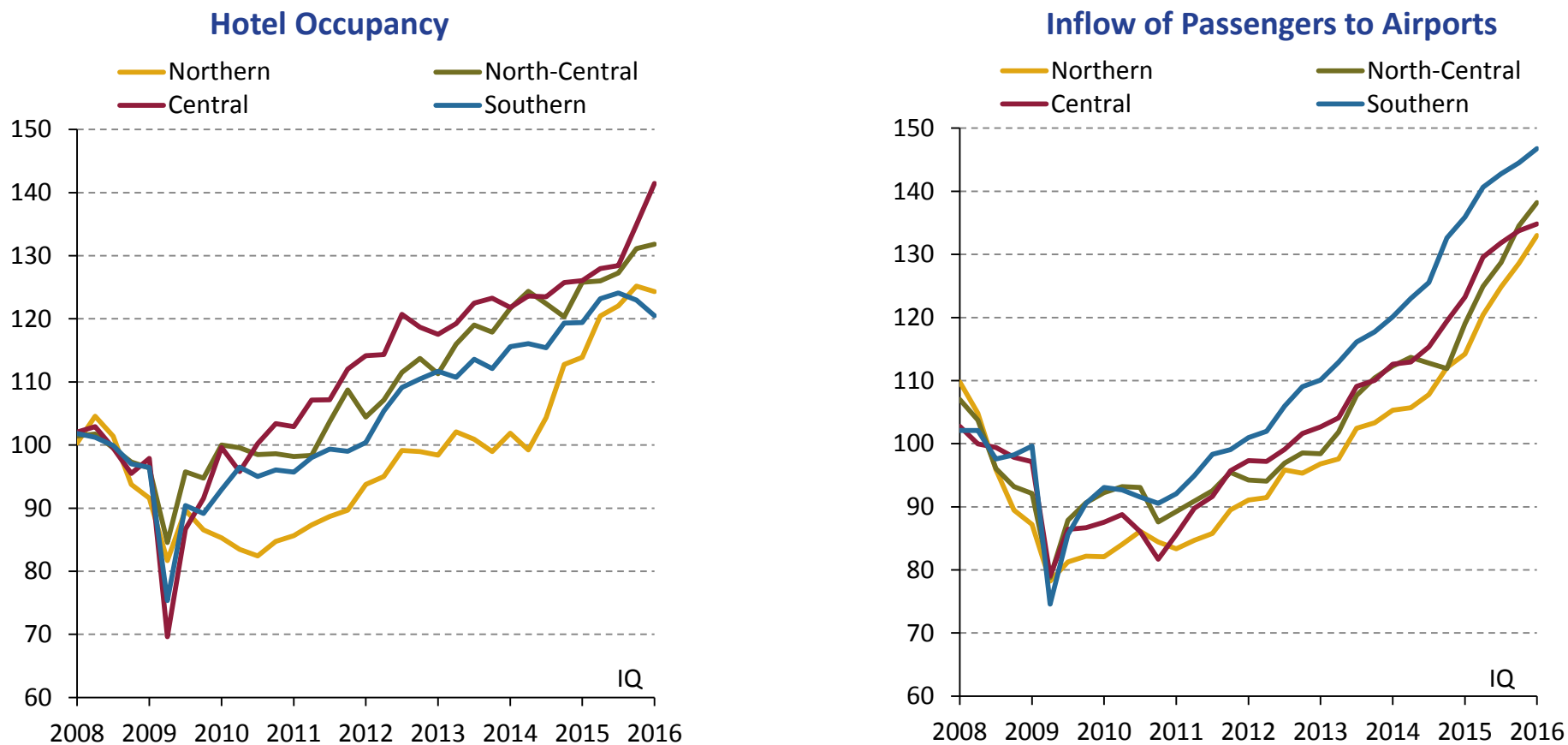


Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

Tourism continued performing favorably in 1Q 2016. Indeed, hotel occupancy maintained its growing trend in all regions with the exception of the Southern one (where the contraction observed in this indicator in 4Q 2015 accentuated), and of the Northern one (where it presented levels similar to those in the previous quarter). The inflow of passengers kept growing across all regional economies, thus maintaining an upward trajectory.

Regional Indicators of Activity in Tourism

Index 2008=100, quarterly average

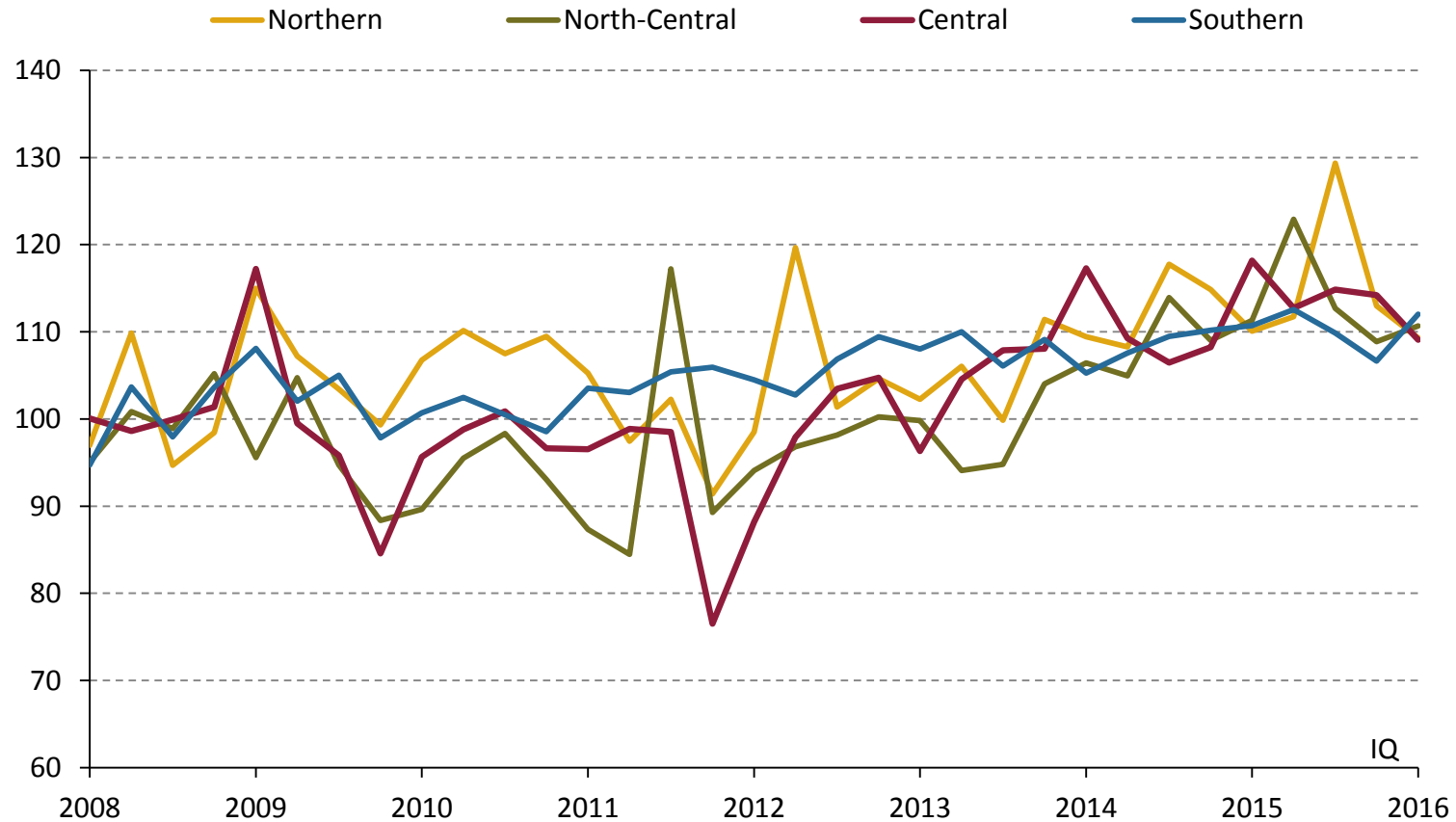


Source: Estimated and seasonally adjusted by Banco de México based on data from the Mexican Secretariat of Tourism and from Airports and Auxiliary Services (ASA).

In 1Q 2016, the agriculture and livestock industry generally expanded, although the sector's performance was far from homogeneous across regions. In the North-Central and Southern regions the performance was better with respect to 4Q 2015. In contrast, in the Northern and Central regions the sector contracted at a quarterly rate.

Index of Regional Agriculture and Livestock Production

Index 2008=100, quarterly average



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

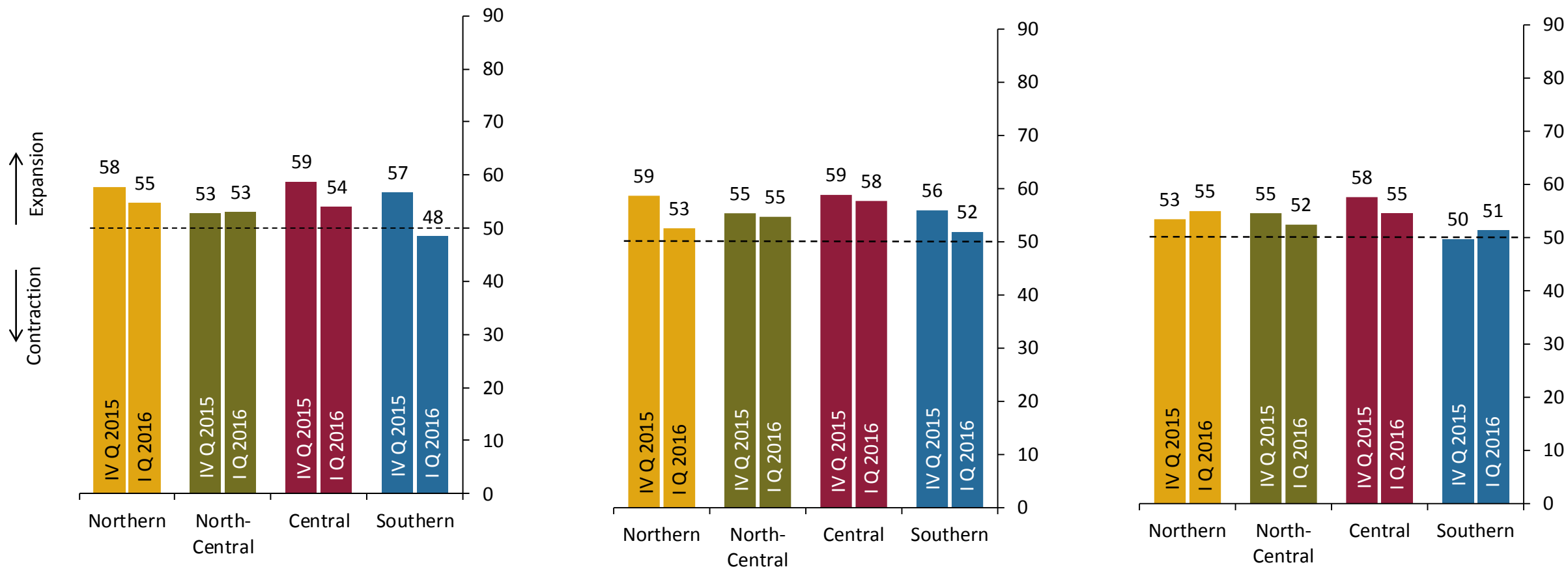
The diffusion indices that measure the change in the use of the main sources of financing to firms generally expanded in 1Q 2016, most of them locating above the 50-point threshold. Still, in line with the survey-based opinions, the intensity of the said expansion weakened with respect to 4Q 2015 for the considered sources of financing.

Change in the Use of the Main Sources of Financing Diffusion indices

Own resources

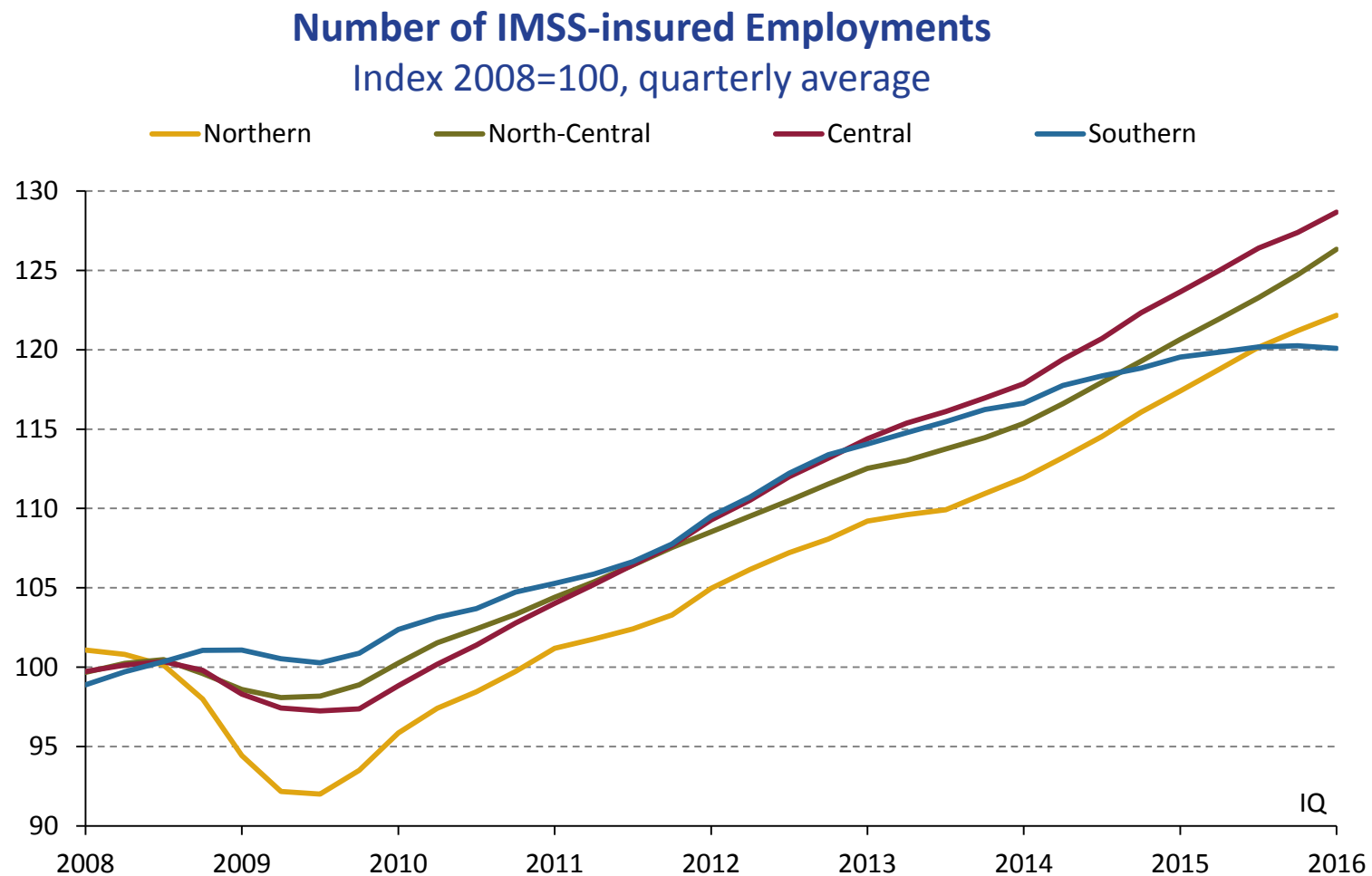
Suppliers

Commercial banks



Source: Banco de México.

In 1Q 2016, the number of IMSS-insured jobs continued expanding, although a certain slowdown was observed with respect to the average growth rate registered in 2015.



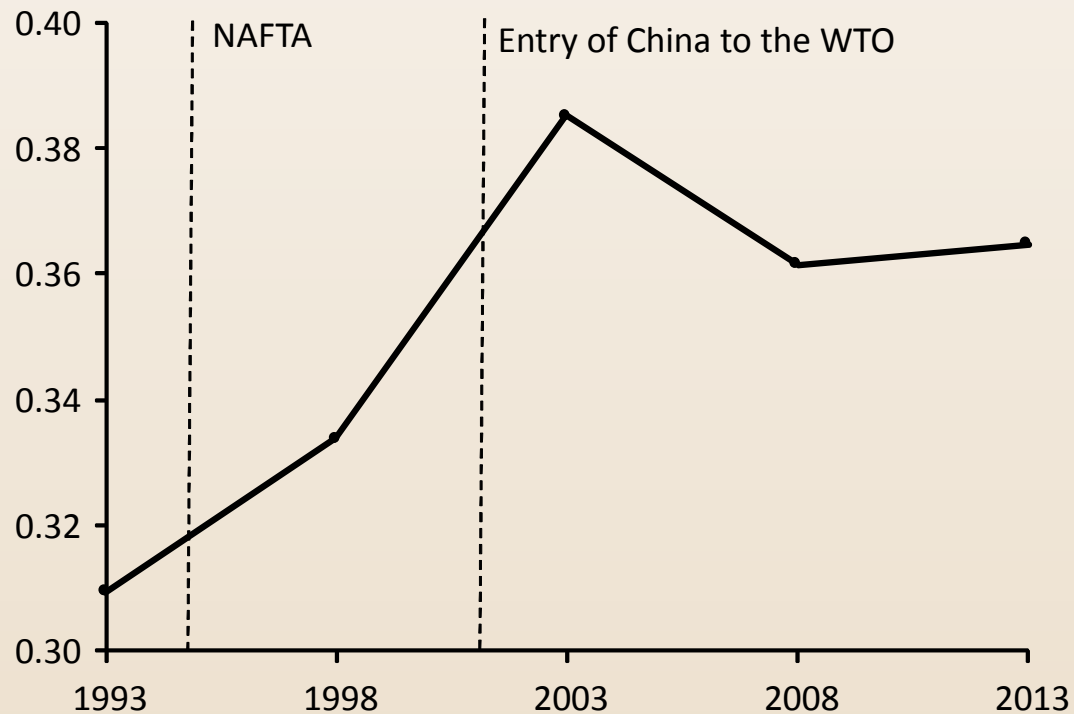
Source: Estimated and seasonally adjusted by Banco de México based on data from IMSS.

Box:
**Evolution of Regional Location and Specialization in the Mexican
Manufacturing Industry: 1993 - 2013**

- The goal of this Box is to analyze **the evolution of manufacturing industries' location and the degree of specialization inside the sector across different regions of Mexico over the period of 1993 – 2013**. This would allow to identify some key changes in the regional economic structure that were registered considering **the country's commercial openness and higher levels of competition** at the external market.
 - ✓ In particular, after the implementation of the **North American Free Trade Agreement (NAFTA)** and the **entry of China into the World Trade Organization (WTO)**.
- The obtained results suggest that the commercial openness and the environment of higher competition faced by Mexican exports affected **in a differentiated manner** the development of different manufacturing activities and, therefore, the regional economic structure, which was reflected in the changes in the location and specialization levels of federal entities.
 - ✓ It should be noted that the impact of NAFTA onto the levels of regional location and specialization of the manufacturing industry **partially reverted** after 2003.

Box: Evolution of Regional Location and Specialization in the Mexican Manufacturing Industry: 1993 - 2013

Evolution of Location and Specialization of
Manufactures in Mexico: 1993 - 2013



Source: Estimated by Banco de México based on data from Economic Census published by INEGI.

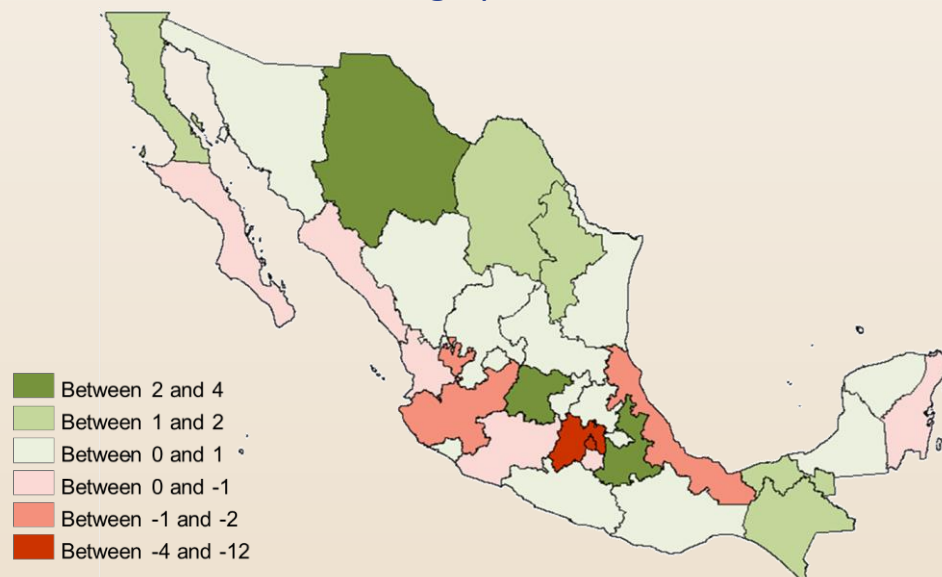
- An upward trend can be observed in the regional location and specialization of manufactures over the period of 1993 – 2003, which coincides with the time frame following the NAFTA implementation.
 - ✓ This trade agreement significantly increased Mexican exports to the U.S., which heterogeneously affected the economic structure of the federal entities.
- Subsequently, for the period 2003 – 2013, the levels of location and specialization of the manufacturing sector slightly went down at the national level.
 - ✓ Higher competition for the Mexican exports, derived from China's entry to the WTO, as well as the consequences of the global financial crisis, possibly moderated the impact of the NAFTA on the regional economic structure.

Box:

Evolution of Regional Location and Specialization in the Mexican Manufacturing Industry: 1993 - 2013

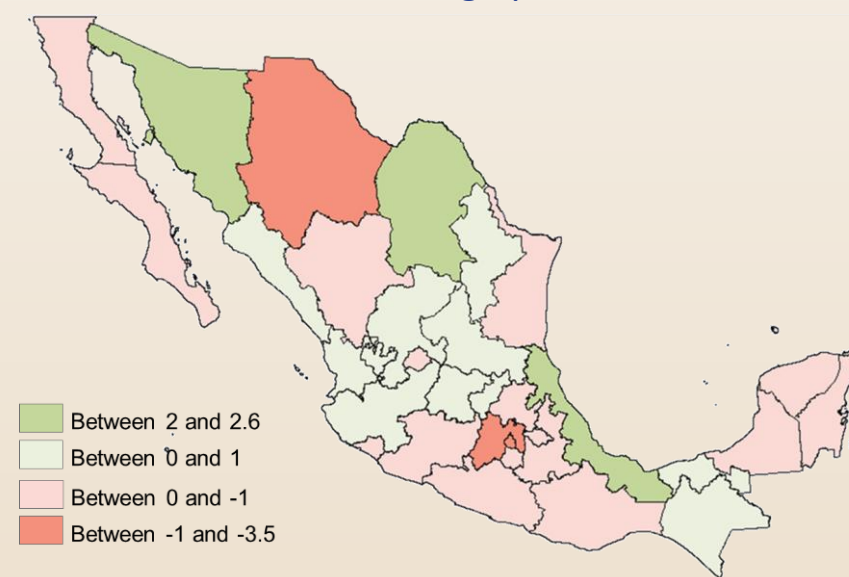
- The shift in the manufacturing activity from the center towards the north of Mexico, observed after the NAFTA implementation, moderated in the period of 2003 – 2013.

**Change in the Share of the National Manufacturing GDP
by Federal Entity: 1993 - 2003**
Percentage points



Source: Estimated by Banco de México based on data from the Economic Census published by INEGI.

**Change in the Share of the National Manufacturing GDP
by Federal Entity: 2003 - 2013**
Percentage points



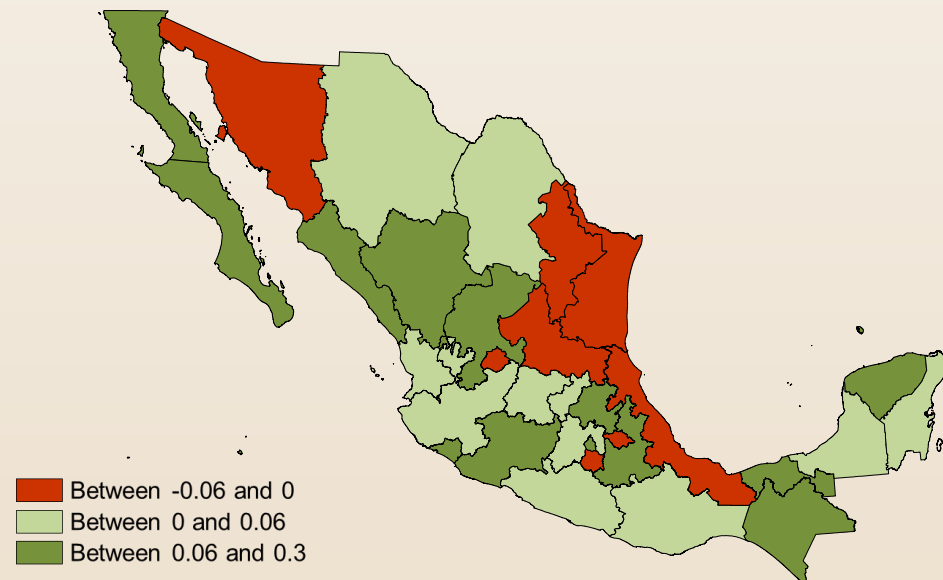
Source: Estimated by Banco de México based on data from the Economic Census published by INEGI.

Box:

Evolution of Regional Location and Specialization in the Mexican Manufacturing Industry: 1993 - 2013

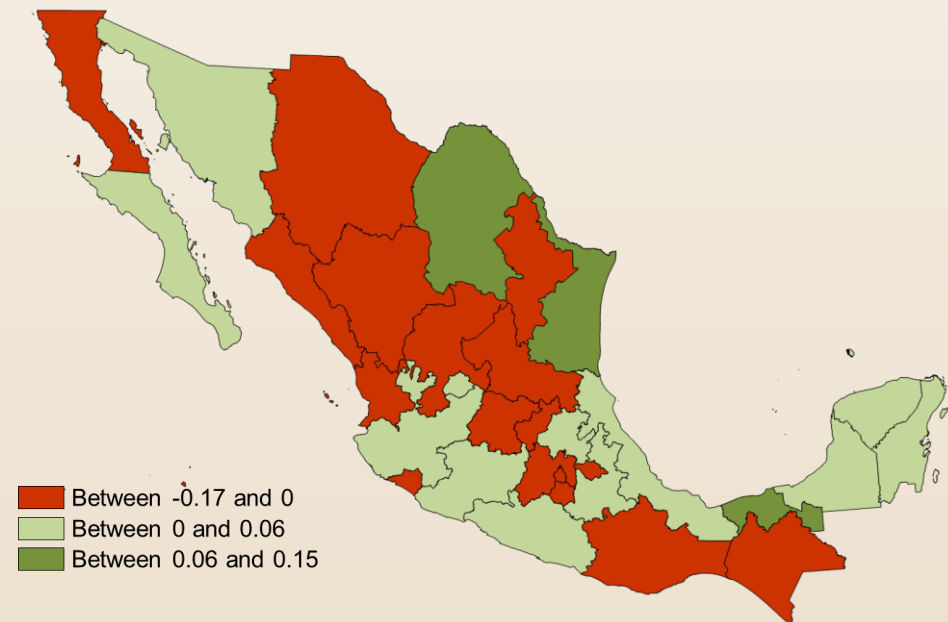
- Likewise, higher specialization levels registered after the NAFTA implementation partially reverted in most federal entities of Mexico during the period of 2003 - 2013.

Change in the Specialization Index by Federal Entity:
1993 - 2003



Source: Estimated by Banco de México based on data from the Economic Census published by INEGI.

Change in the Specialization Index by Federal Entity:
2003 - 2013



Source: Estimated by Banco de México based on data from the Economic Census published by INEGI.

Box: Evolution of Regional Location and Specialization in the Mexican Manufacturing Industry: 1993 - 2013

- The increment in the location levels in most manufacturing activities after the NAFTA implementation also partially reverted in a large number of manufacturing subsectors after 2003.
- Those more oriented to exports stand out, such as the manufacturing of transport equipment and electronic goods, which, in total, amounted to over 60 percent of all manufacturing exports in Mexico in 2014.

Index of the Industrial Location of the Manufacturing Industry: 1993 - 2013

Subsector	1993	2003	2013	Change 93-03	Change 03-13	Share of manufacturing exports ¹ 2014
Transport equipment	0.326	0.405	0.329	0.079	-0.076	40.9
Computation and communication	0.464	0.605	0.567	0.141	-0.037	21.7
Electric equipment	0.365	0.370	0.377	0.005	0.007	6.1
Other industries	0.323	0.365	0.412	0.042	0.047	4.9
Machinery and equipment	0.213	0.362	0.368	0.149	0.006	4.3

Subsector	1993	2003	2013	Change 93-03	Change 03-13	Share of manufacturing exports ¹ 2014
Leather and pelt	0.602	0.655	0.690	0.053	0.035	0.3
Textile inputs	0.366	0.400	0.472	0.034	0.072	0.2
Printing	0.373	0.380	0.376	0.006	-0.004	0.2
Textile goods	0.517	0.294	0.336	-0.224	0.043	0.2
Timber	0.503	0.332	0.375	-0.171	0.043	0.1

1/ Percentage share relative to total manufacturing.

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

Box:
**Evolution of Regional Location and Specialization in the Mexican
Manufacturing Industry: 1993 - 2013**

- Commercial openness and an environment of higher competition of Mexican exports affected the development of different manufacturing activities, and, therefore, the regional economic structure in a differentiated manner.
- Greater opportunities offered by international trade seem to have been largely absorbed by the entities in the North and some in the Center of Mexico.
- Although the proximity to the U.S. is a key element to explain this performance, there are other factors that are also related to this outcome; in particular:
 - i. Regional allocations of human capital;
 - ii. Industrial infrastructure and communications and transport infrastructure;
 - iii. Institutional strength and the strength of the rule of law at the local level to facilitate operation and to grant legal certainty to economic agents.
- The referred factors are fundamental so as to benefit not only from the advantages offered by international trade, but also to boost domestic sources of growth and, in this way, to achieve a more balanced regional economic development.

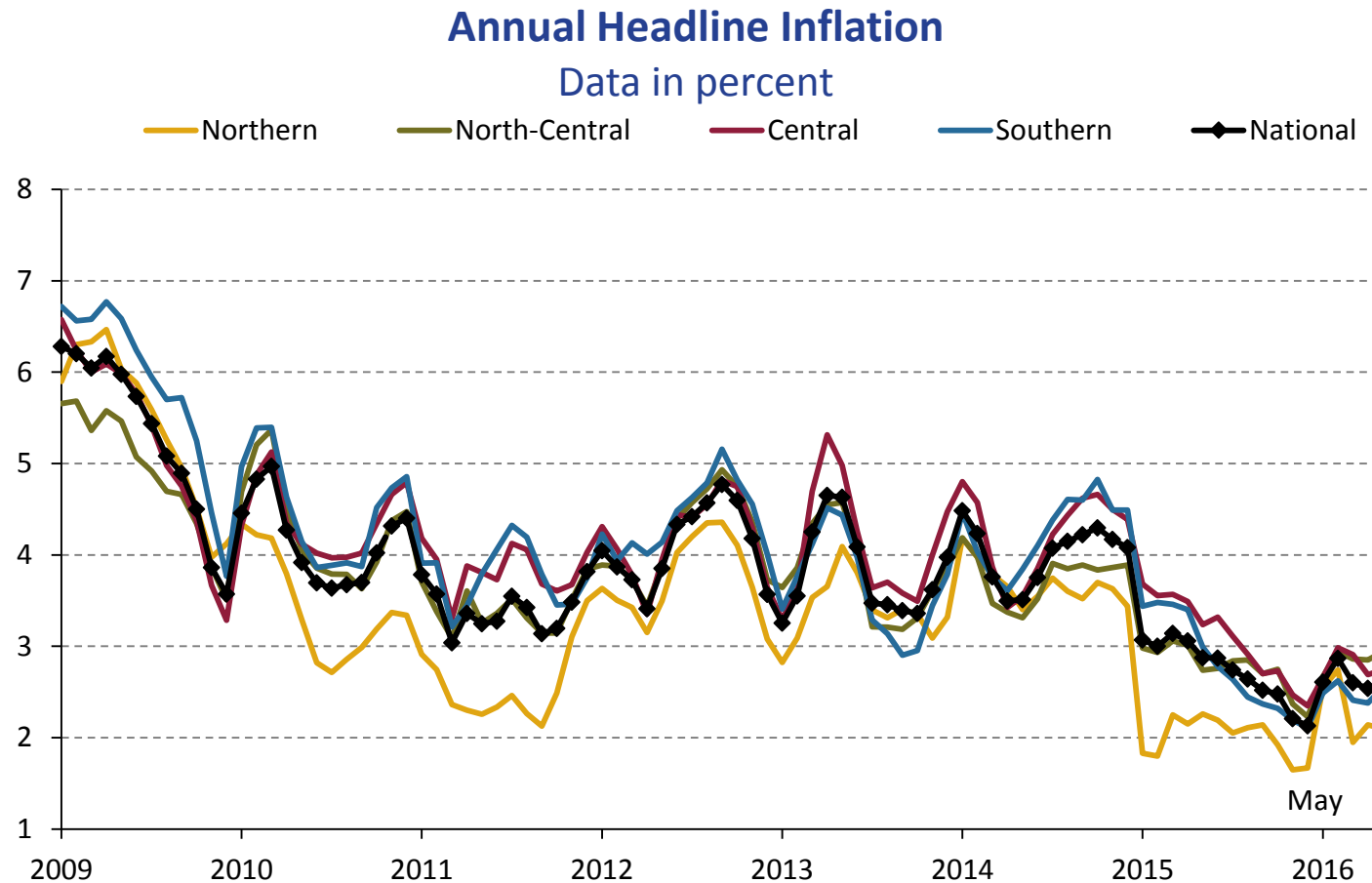
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Inflation

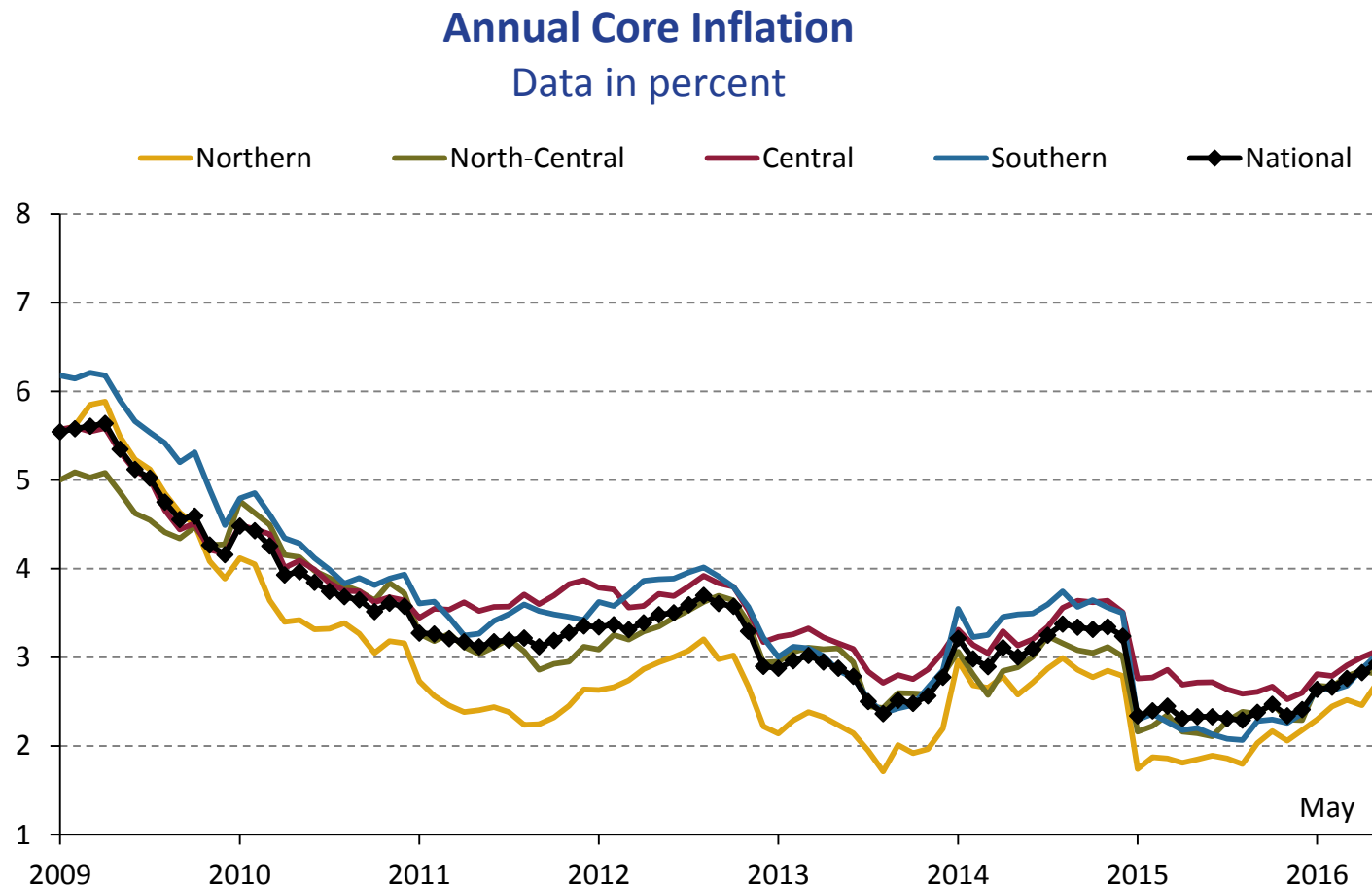
- In 1Q 2016, headline inflation continued performing favorably despite a complex global environment faced by the Mexican economy. In particular, annual headline inflation remained below the permanent target during 13 consecutive months.
 - ✓ The good performance of inflation derived from an adequate monetary policy stance adopted by Banco de México, from the slack conditions persisting in the economy, and from both direct and indirect effects of the price drops in some generalized-use inputs onto inflation, as well as from the environment of low international prices of most primary goods.
- The low exchange rate pass-through onto prices in 2015 and in 2016 so far is noteworthy, which reflects the structural change that had been taking shape over the years regarding a more effective anchoring of inflation expectations.

The described inflationary behavior in Mexico, as a total, was reflected in all regions, given that, in general, they were all affected by similar factors. Thus, despite a rebound of inflation in early 2016, it persisted under 3 percent in all regions.



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

Annual core inflation presented a moderate upward trend across all regions in Mexico. This pattern reflects the change in the prices of merchandise relative to the services prices.

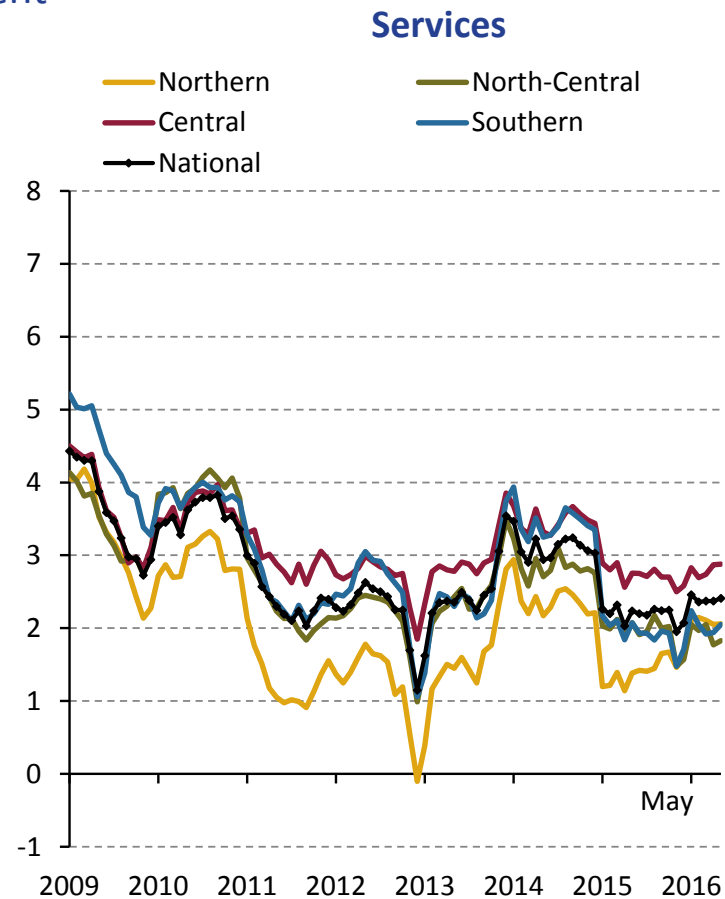
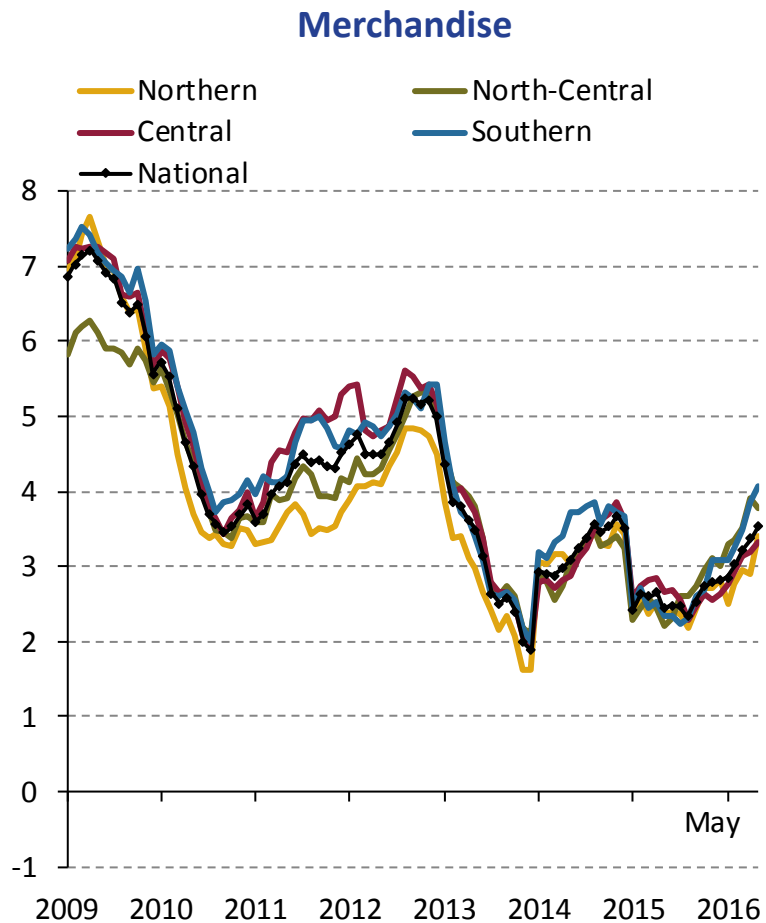


Source: Estimated by Banco de México with own data and data from INEGI.

The annual change rate of the merchandise prices increased in all considered regions. The services prices kept registering relatively low growth rates in all regions, which is mainly a consequence of the degree of slack conditions prevailing in the economy, as well as the effect of the telecom structural reform on the prices of this type of services.

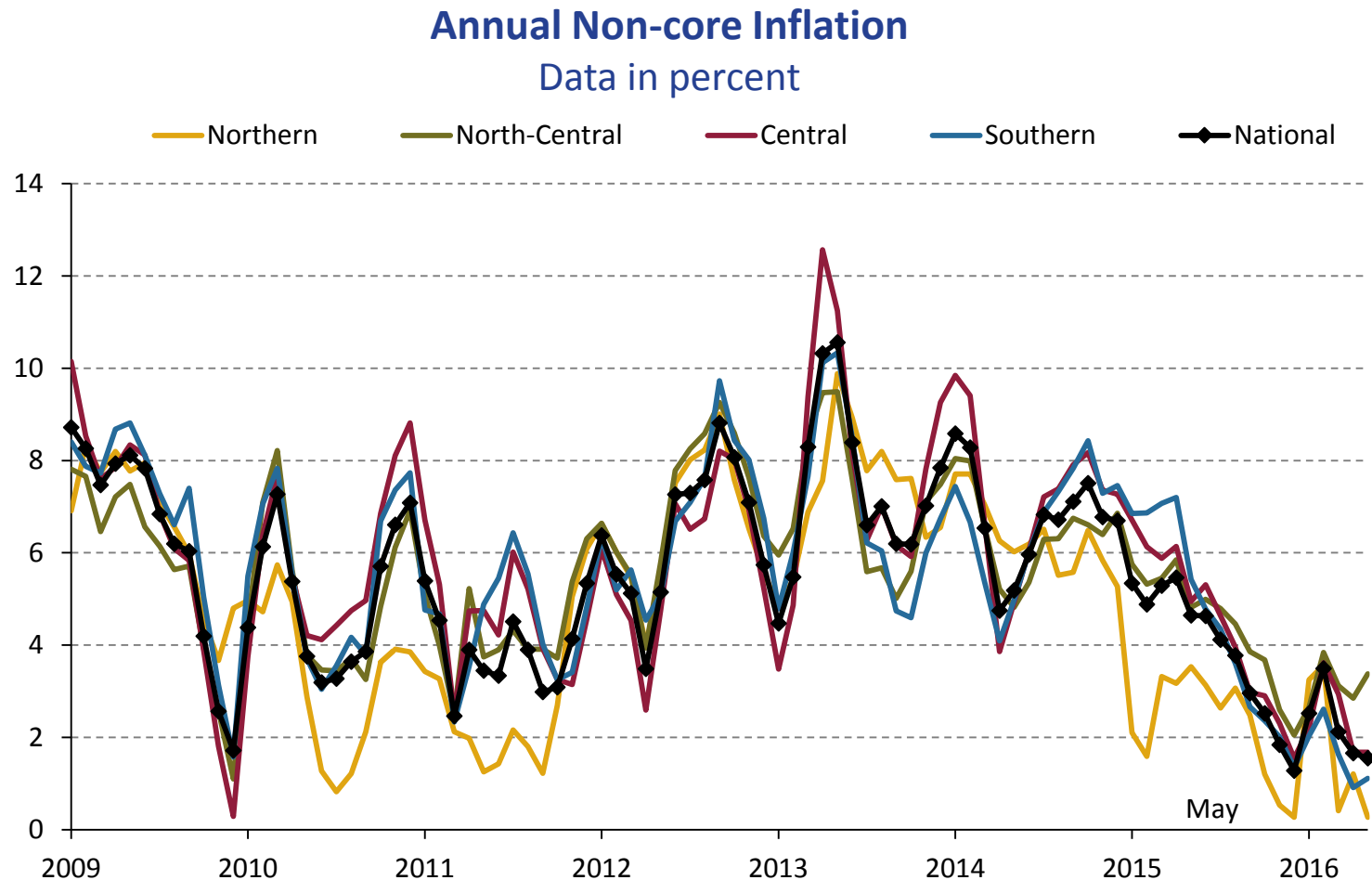
Components of Annual Core Inflation

Data in percent



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

In early 2016, the non-core component of the CPI index observed an increment in its annual change rate across all regions of Mexico. This increase was associated to the rise in some vegetables' prices during January and February, as a result of adverse weather conditions. Furthermore, the negative annual change rates of the energy prices also significantly affected it in all regional economies, with the exception of the Northern region during the first two months of the year.



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

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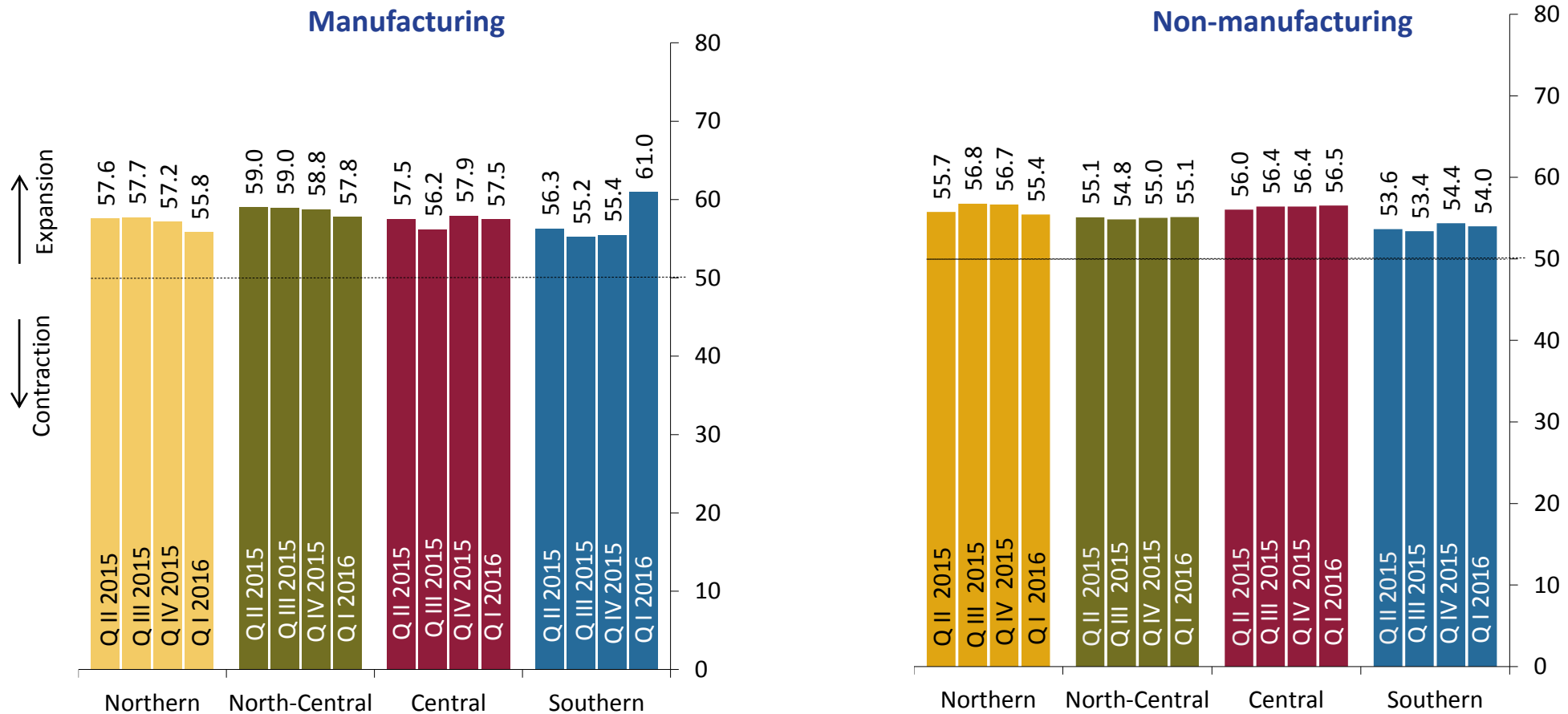
Economic Outlook

- Most business agents interviewed by Banco de México in four regions considered for this Report anticipate demand for own goods and services to expand over the next 12 months.
- Business contacts stated that their expectations are based on the following factors:
 - ✓ Domestic environment: i) the persistent dynamism of private consumption; ii) the good performance of some services, such as tourism and financial services; and iii) the momentum of private investment in residential and non-residential construction.
 - ✓ External environment: i) the operational start-up of different projects funded with foreign resources in such sectors as the automotive sector, the tourism industry, the energy sector and the sector of beverages; and ii) the expectation of the recovery of manufacturing exports and an increment of tourism from abroad supported by the recovery of the U.S. economy and the depreciated real exchange rate.

The indices of manufacturing and non-manufacturing orders indicate that activity in all regional economies of Mexico will continue expanding during the following months. Still, in the manufacturing sector the signal of expansion slightly weakened in all regions, with the exception of the Southern region.

Regional Index of Manufacturing and Non-manufacturing Orders: Activity Outlook over the Next 3 Months ^{1/}

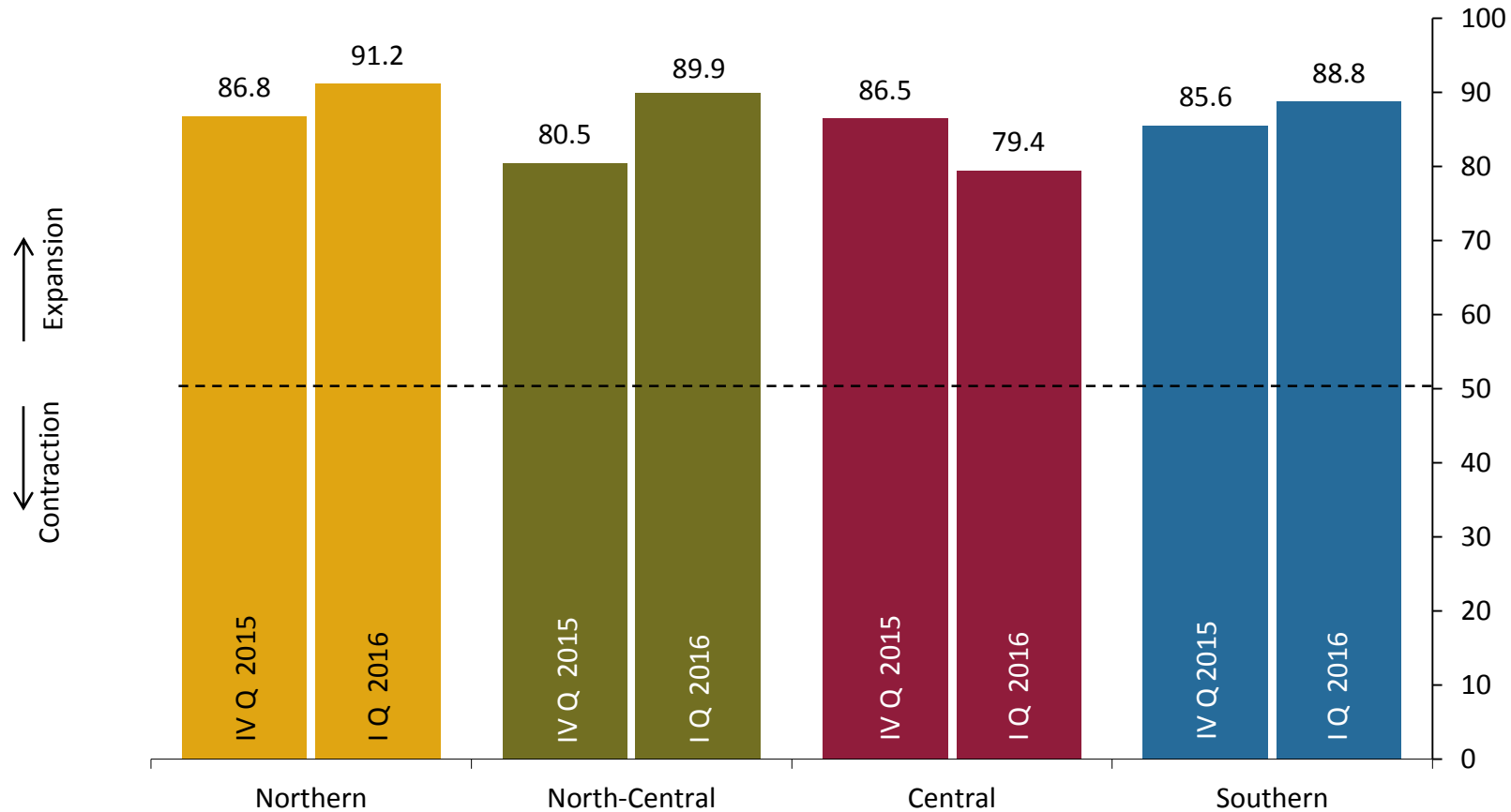
Diffusion indices



^{1/} 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 regional economies over the next 12 months. Still, in the Central region these prospects were more moderate as compared to 4Q 2015.

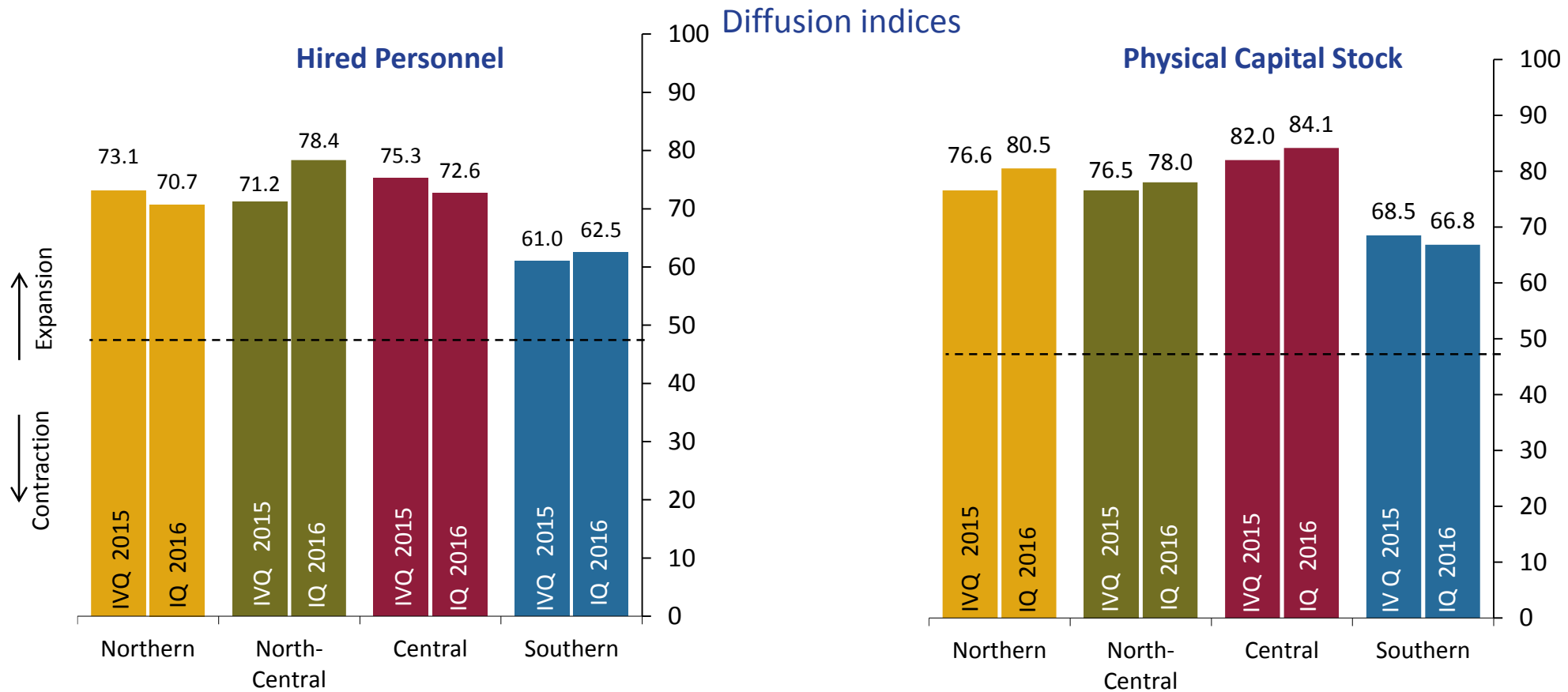
Business Agents' Expectations: Demand over the Next 12 Months ^{1/} Diffusion indices



^{1/} 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.

Consistent with the expected increment in demand for own goods and services, surveyed business contacts generally anticipate an expansion of hired personnel and physical capital stock across different regions of Mexico.

Business Agents' Expectations: Hired Personnel and Physical Capital Stock, Next 12 Months ^{1/}



^{1/} Results obtained from responses to the question: "With respect to the situation in 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.

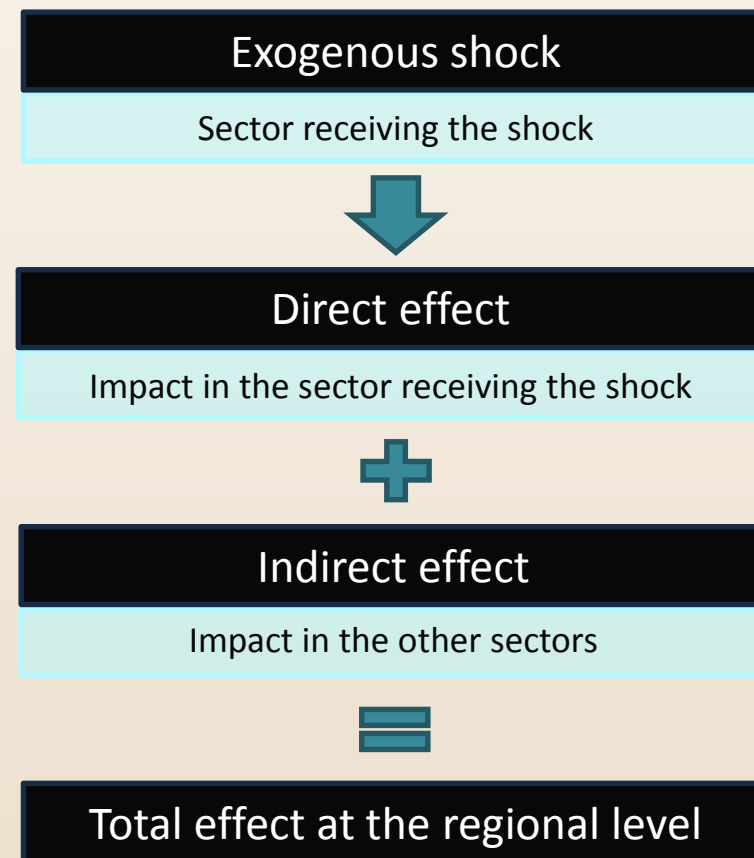
Box:

Estimation of Regional Input-Output Matrices for Mexico: An Application to the Automotive Sector

- The input-output matrix (IOM) of a country is a tool that can yield relevant information for the evaluation of the aggregate impact of certain shocks that initially affect a particular activity.
- In order to analyze the effects of these shocks at the regional level, regional input-output matrices (RIOM) are required that would reflect their distinctive features. Banco de México constructed the RIOM based on the regionalization used for this Report.
- So as to illustrate the application of the RIOM, the Report uses this methodology to estimate the effects of constructing a USD 1,000-million worth automobile assembly plant, able to produce 200,000 vehicles annually, figures that correspond to average values derived from the automobile plants set up in the country over the last 5 years.

Box:
**Estimation of Regional Input-Output Matrices for Mexico:
An Application to the Automotive Sector**

- The impact of exogenous shocks on the regional economy is captured via the so-called multiplier effects, that are classified into:
 - ✓ **Direct:** The effect on the economic sector receiving the exogenous shock.
 - ✓ **Indirect:** The effect produced by the affected sector on the remaining sectors of the economy it interacts with.
- The **total multiplier effect** of the shock is the sum of both effects.

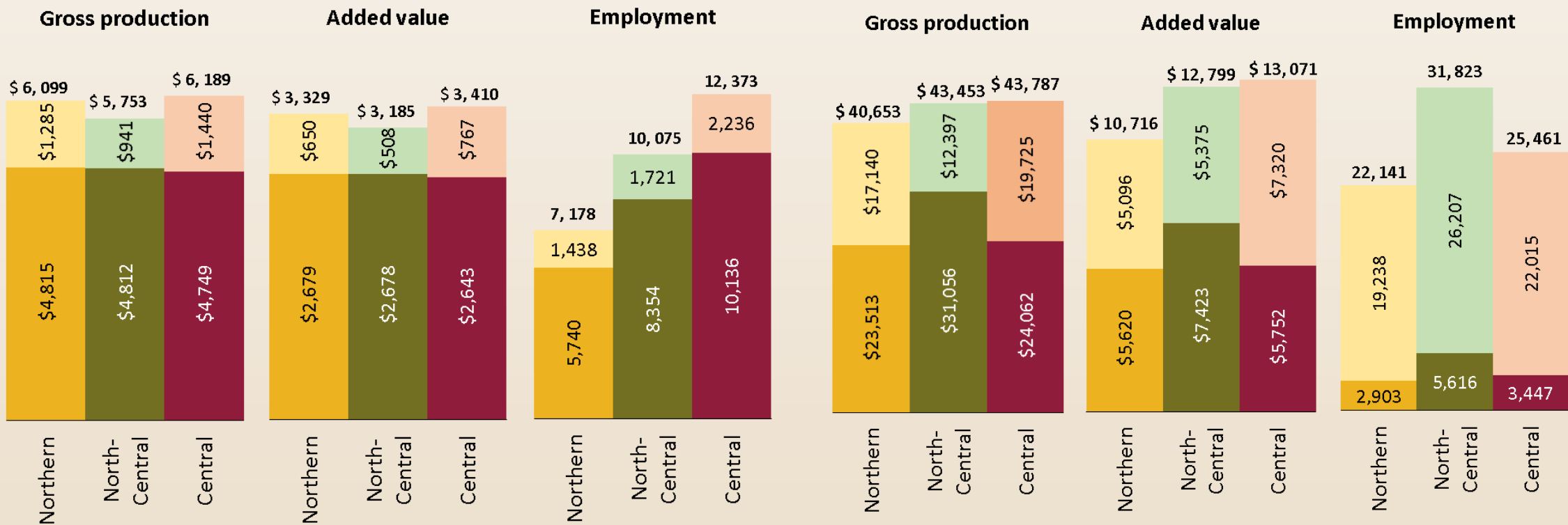


Box: Estimation of Regional Input-Output Matrices for Mexico: An Application to the Automotive Sector

Regional Impact Produced by Setting up an Automobile Assembly Plant ^{*/}

Construction of the Plant

Vehicle Manufacturing

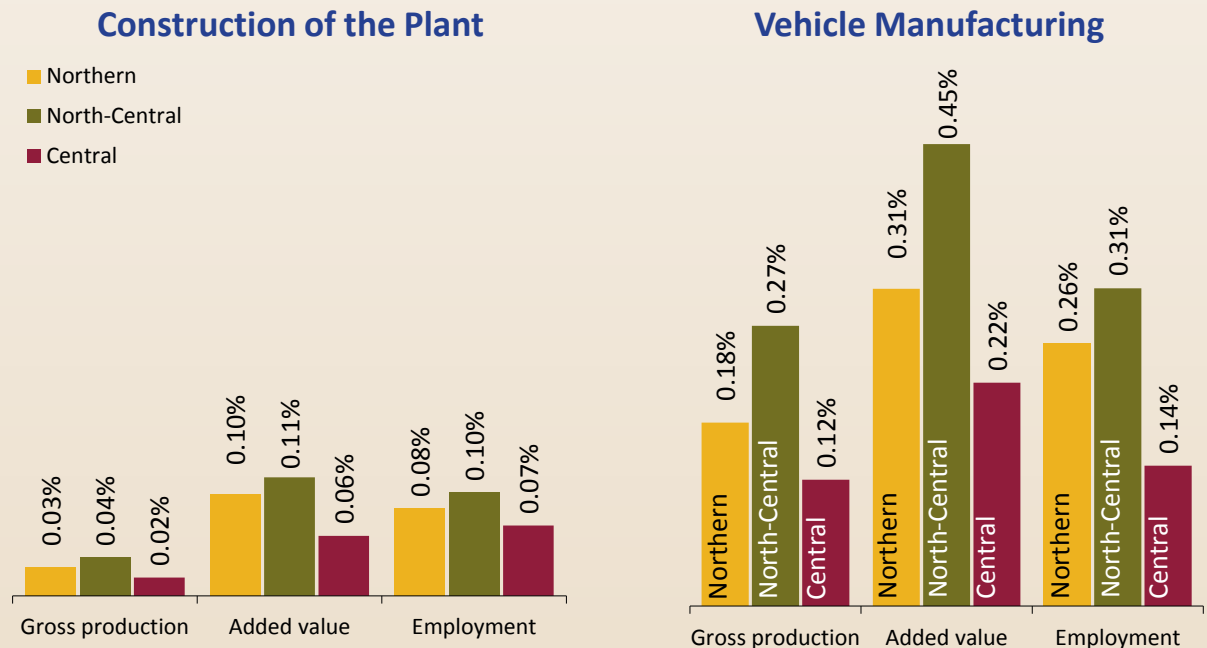


^{*/} The results of Gross Production and Aggregate Value are expressed in millions of constant MXN of 2012, given that the IOM used to obtain regional coefficients corresponds to that year.
Source: Estimated by Banco de México with data from INEGI.

Box: Estimation of Regional Input-Output Matrices for Mexico: An Application to the Automotive Sector

- Finally, the chart exhibits different relative impacts generated by setting up an automobile assembly plant on regional economies.
- The results show a larger relative impact in the North-Central region, with respect to the Northern and Southern regions.
- The high relative impact on the added value of the North-Central region is noteworthy.
 - ✓ In particular, if in the said region the automobile assembly plant produced at maximum capacity, the added value of the region would be boosted by 0.45 percent by the end of the period.

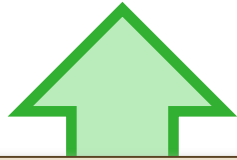
Regional Impact of Setting up an Automobile Assembly Plant



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

Economic Outlook

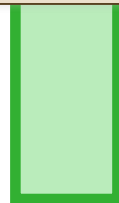
Upward risks



A greater than expected growth of private investment in the manufacturing sector and tourism.



Strengthening of external demand.



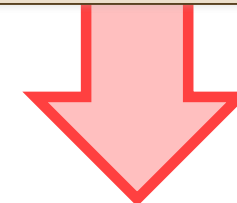
Downward risks



Higher volatility in international financial markets.



A possibility of the deterioration in the perception of public safety.



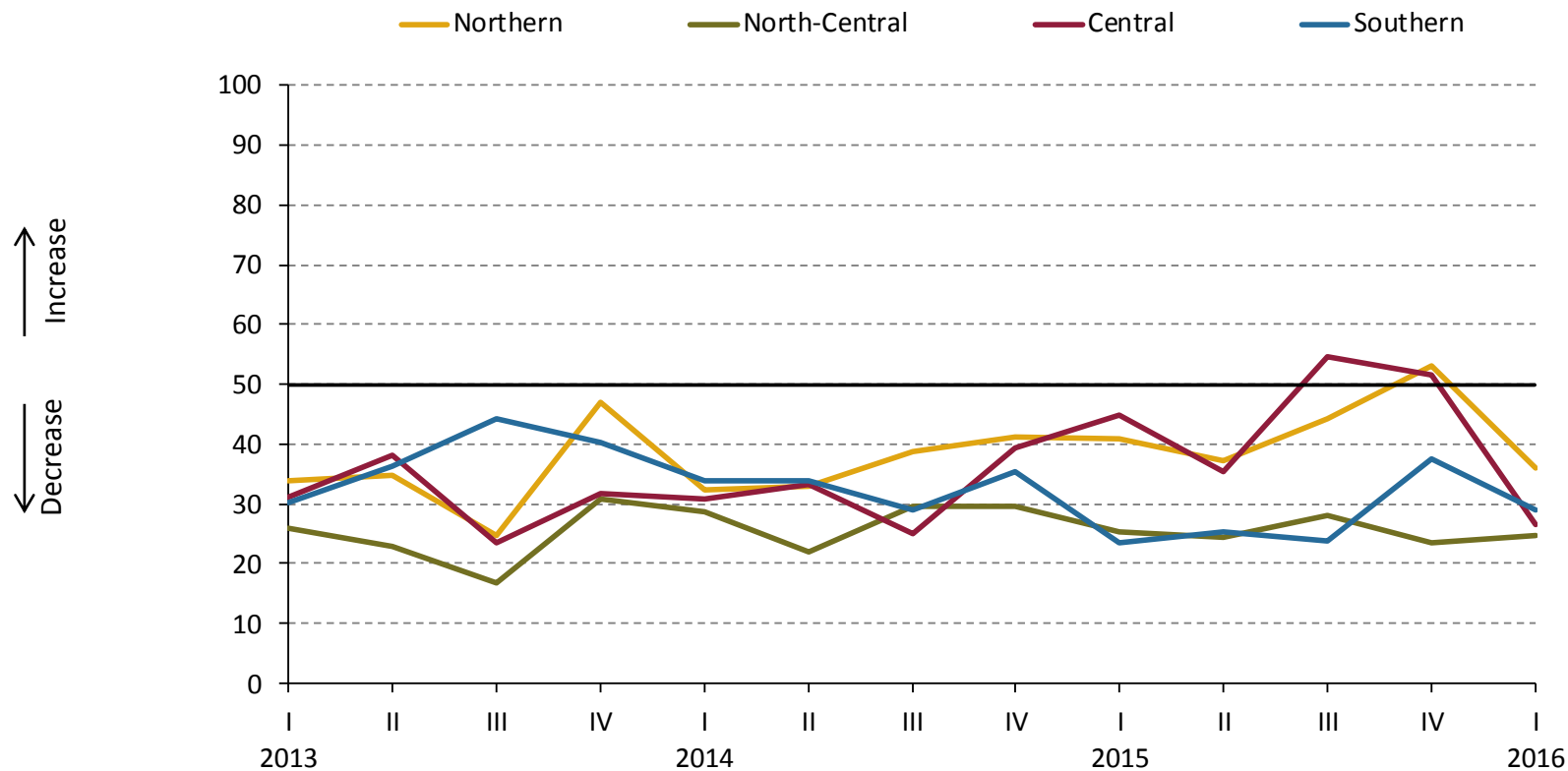
It should be noted that business agents surveyed in the Southern region stressed the possibility of a larger than expected impact of the energy reform, given a possible recovery of hydrocarbon prices, as well as a greater than estimated dynamism of tourism.

Economic Outlook

- Regarding the sales' prices of own goods and services, business agents generally anticipate lower annual change rates as compared to 2015 for a 12-month horizon.
 - ✓ In the Northern, Central and Southern regions, this signal even strengthened with respect to that observed in 4Q 2015, while in the North-Central region it remained relatively constant.
- With respect to the expectations of wage costs, the interviewed business contacts in all regional economies anticipate a smaller or equal annual change rate relative to that of 2015 for the next 12 months.
- In all regions of Mexico business agents expect the annual change of input prices to be lower than in 2015 over the next 12 months.

Business agents generally expect the annual changes of own goods and services' prices to be lower than in 2015 for the 12-month horizon.

Business Agents' Expectations: Annual Inflation Dynamics of Sales' Prices, Next 12 Months ^{1/} Diffusion indices



^{1/} Results obtained from responses to the question: "With respect to the situation in 1Q 2016, 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.

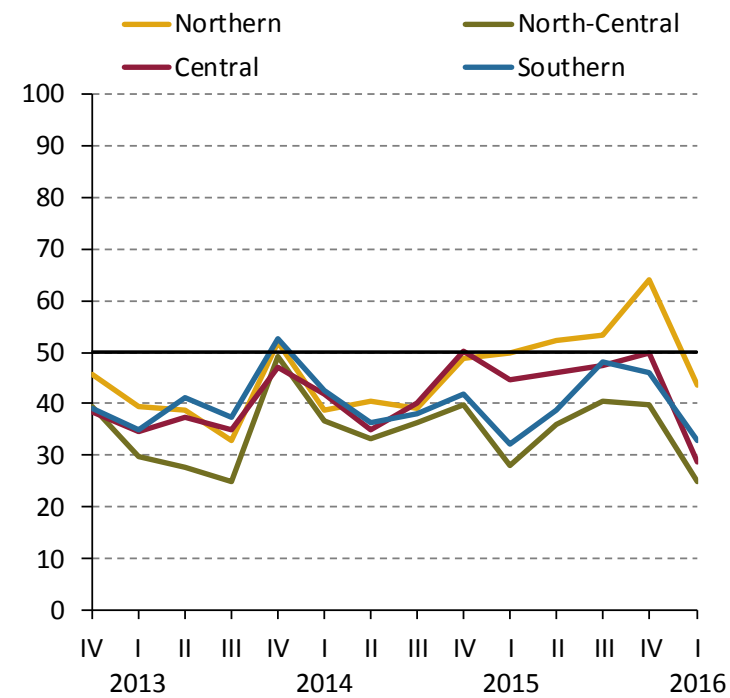
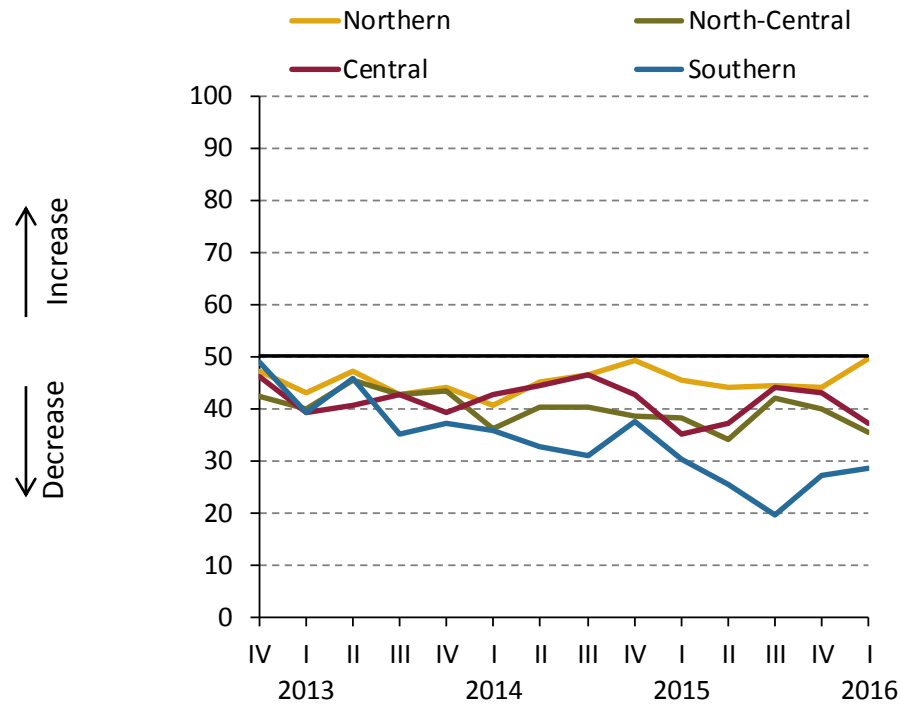
Business agents anticipate an annual change in their wage costs to be smaller than in 2015 in the Central and Southern regions, while in the Northern one they expect a similar annual change to that registered last year. On the other hand, business contacts across all regions expect the annual change of input prices for the next 12 months to be lower than in 2015.

Business Agents' Expectations: Annual Inflation Dynamics of Input Prices and Wage Costs, Next 12 Months ^{1/}

Diffusion indices

Wage Costs

Inputs



^{1/} Results obtained from responses to the question: “With respect to the situation in 1Q 2016, 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 January – March 2016
 - A. Economic Activity
 - B. Inflation
 - C. Economic Outlook
- III. Final Remarks

Final Remarks

- 1 In 1Q 2016, regional economies continued expanding mainly supported by the dynamism of the tertiary sector. On the contrary, manufacturing production remained weak, as a result of the unfavorable performance of its exports, while domestic demand for manufactures was dynamic. Thus, as a result of the greater dynamism of tertiary activities and some manufactures oriented to the domestic market, in general the growth of economic activity in some regions was higher than that observed in 4Q 2015.
- 2 In 1Q 2016, annual headline inflation continued performing favorably. It is noteworthy that so far in 2016 it maintained below the permanent target in all regions.
- 3 Business contacts interviewed by Banco de México in different regions generally expect an expansion of demand for own goods and services during next year. Similarly, they anticipate an expansion of hired personnel and the physical capital stock in all regional economies.
- 4 As regards inflation, business agents, in general, expect annual growth rates of input prices and their sales' prices to be lower than in 2015. Meanwhile, in all regional economies, business contacts estimate an increment in wages costs to be equal or smaller than in the previous year.



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