



Regional Economic Report

April – June 2016



BANCO DE MÉXICO

September 14, 2016

Outline

- I. Regional Economic Report**
- II. Results April – June 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 2Q 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 four 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.

Outlook

I. Regional Economic Report

II. Results April – June 2016

A. Economic Activity

B. Inflation

C. Economic Outlook

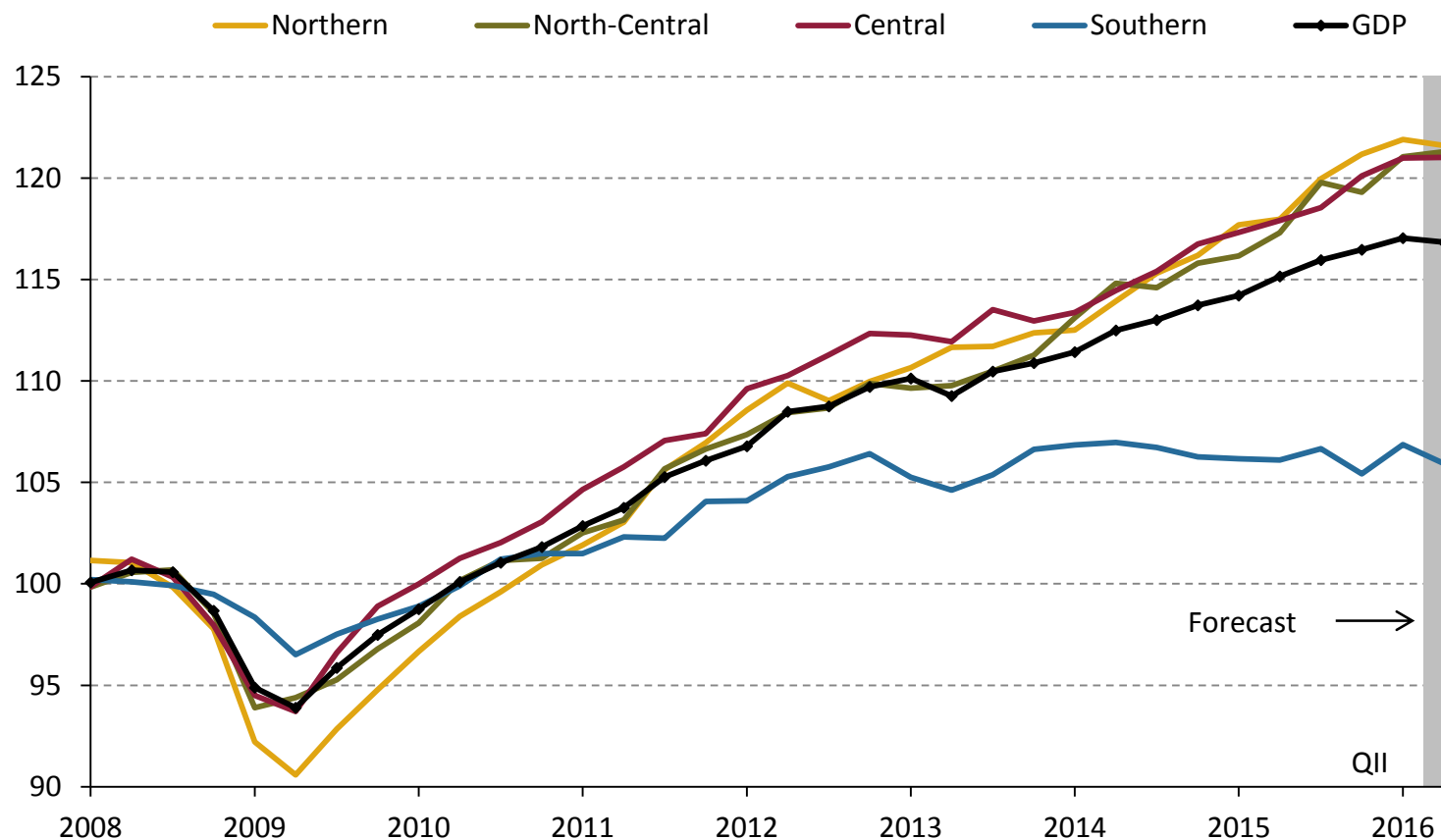
III. Final Remarks

Economic Activity

- Economic activity in Mexico contracted in 2Q 2016, after it had expanded in the 1Q 2016.
 - ✓ This evolution shows that the expansion of the tertiary activities practically came to a halt in the reported quarter, in a context in which the stagnation, presented by the secondary activities since mid-2014, persisted.
 - The manufacturing activity contracted, while the mining sector maintained a downward trend.
 - In contrast, construction somewhat improved, with respect to the stagnation in 2015, and the electricity sector recovered.
- Weakness in the Mexican productive activity in the reported quarter was perceived across most regional economies. Indeed, in the Northern and Southern regions, a drop in production levels is estimated, following the expansion of the activity in the referred regions in the previous quarter, while a stagnation was registered in the Central region. Likewise, in the North-Central region the timely indicators point to a noticeable deceleration as compared to the growth in the previous quarter.

Based on the available timely information, it is estimated that the deterioration of the Mexican productive activity was linked to the lower level of economic activity in the Northern and Southern regions, as well as to a notable deceleration in the North-Central region and a stagnation in the Central one.

Quarterly Indicator of Regional Economic Activity ^{1/} Index 2008=100



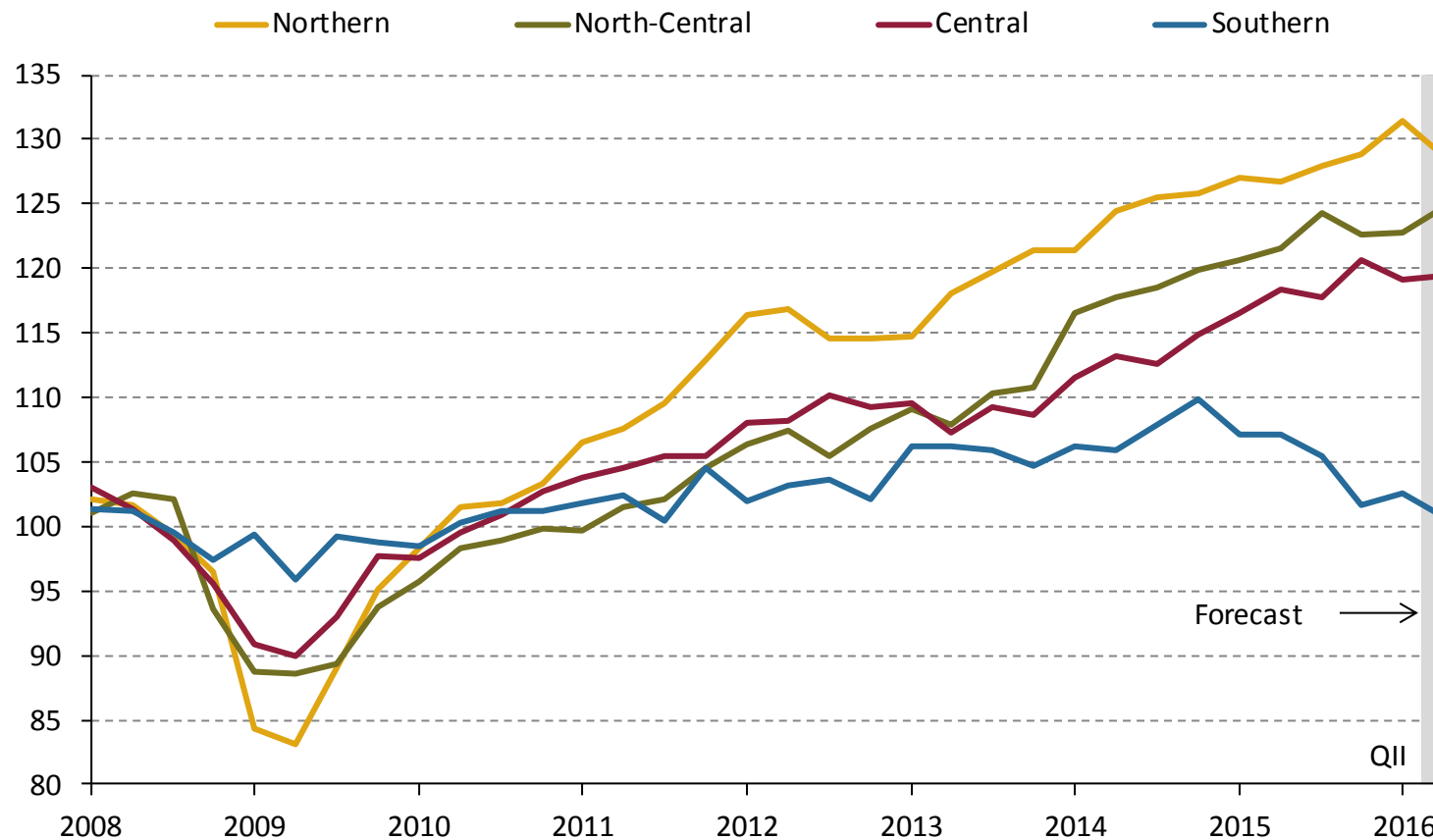
^{1/} The value of the Gross Domestic Product (GDP) for 2Q 2016 corresponds to the observed data.
Source: Estimated by Banco de México with seasonally adjusted data from INEGI.

Economic Activity

- In the Northern and Southern regions, the decline in the economic activity is largely explained by the unfavorable evolution of the manufacturing sector and the construction industry, as well as by a lower growth rate of trade, which was partially offset by higher dynamism in tourism.
- Meanwhile, the deceleration in the North-Central region and the stagnation in the Central region were associated to the weak mining and trade, although it was partly counterbalanced by an improvement in the manufacturing and agricultural production in the said regions.
 - ✓ It is noteworthy that despite the estimated expansion of the North-Central region in the reported quarter, its growth rate was notably below that registered in the previous quarter.

The manufacturing activity contracted slightly in 2Q 2016. In particular, in the Northern and Southern regions the activity level of this sector is estimated to have decreased. In contrast, in the North-Central region this activity maintained an upward trajectory, while in the Central one its production rebounded incipiently with respect to 1Q 2016.

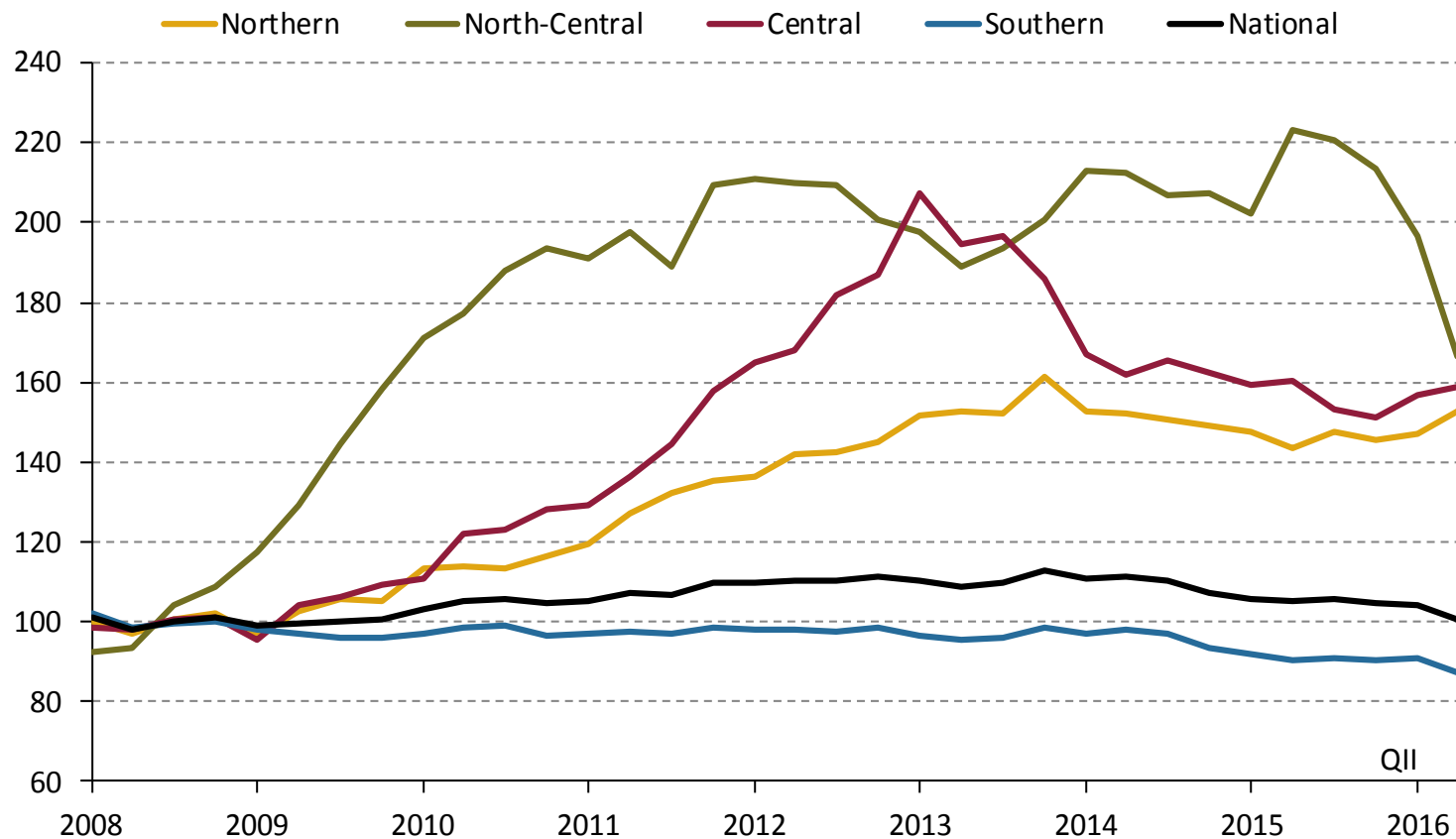
Regional Manufacturing Indicator Index 2008=100, quarterly average



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

In general, mining maintained a decreasing trend. This occurred in a context of declining oil production platform, which was reflected in a further deterioration of this sector in the Southern region. Meanwhile, in the North-Central region the decline, observed in the mining sector since early 2015, deepened, while in the Central one it lost dynamism. In contrast, in the Northern region the economic activity improved incipiently.

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



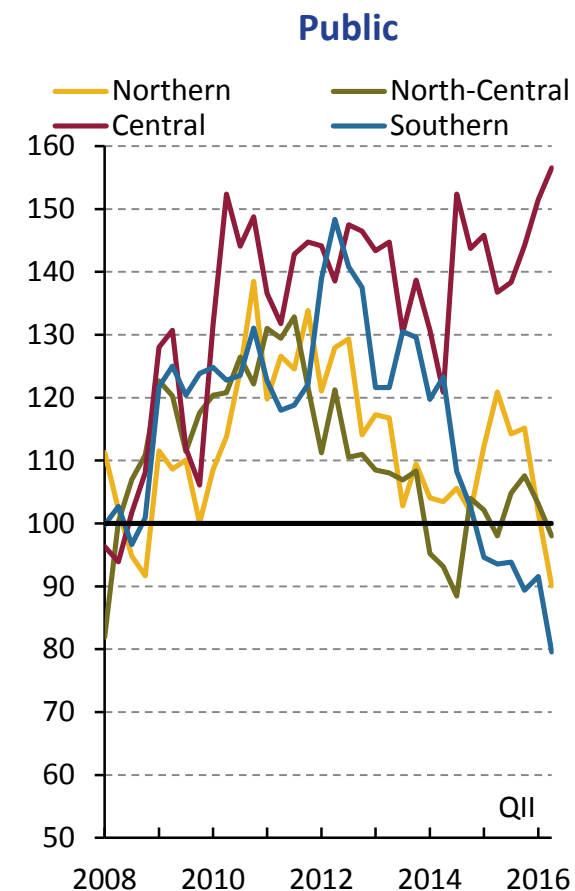
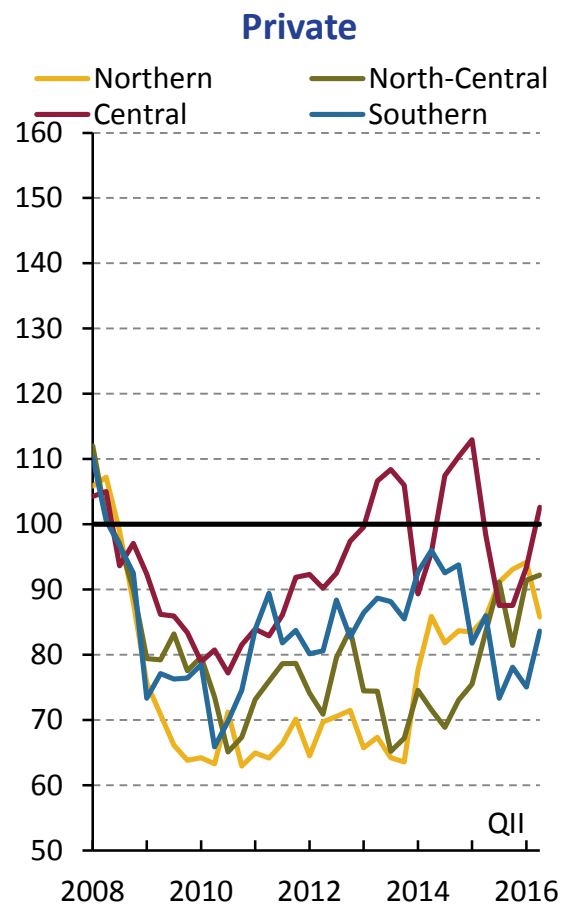
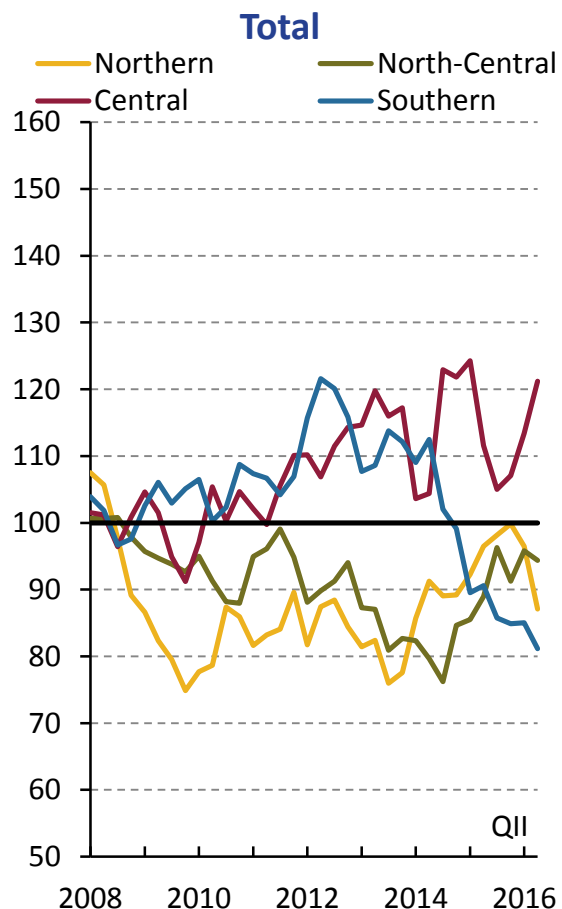
^{1/} The values in 2Q 2016 are preliminary.

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

During 2Q 2016, the construction sector kept slightly improving after the stagnation in 2015. This is largely attributed to the favorable evolution of private construction in most regional economies, except the Northern region. In contrast, public construction dropped in most regions with the exception of the Central one.

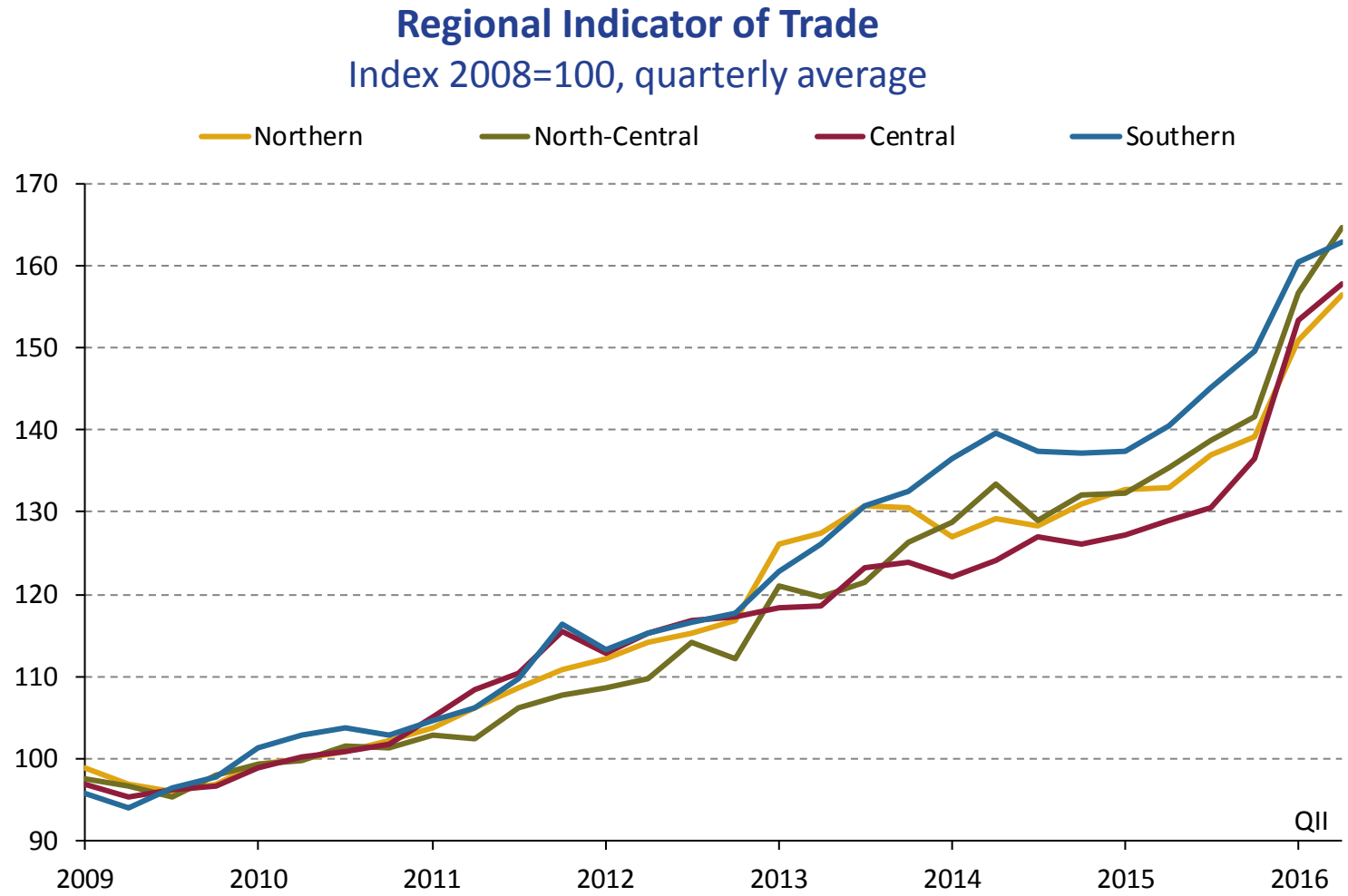
Real Value of Production in the Construction Industry by Region

Index 2008=100, quarterly average



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

During 2Q 2016, retail trade slowed down across all regions of Mexico, following a period of high dynamism during 2015 and in 1Q 2016.



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

Box:
**Productive Linkages between Manufacturing Industry
and Tertiary Activities at the Regional Level**

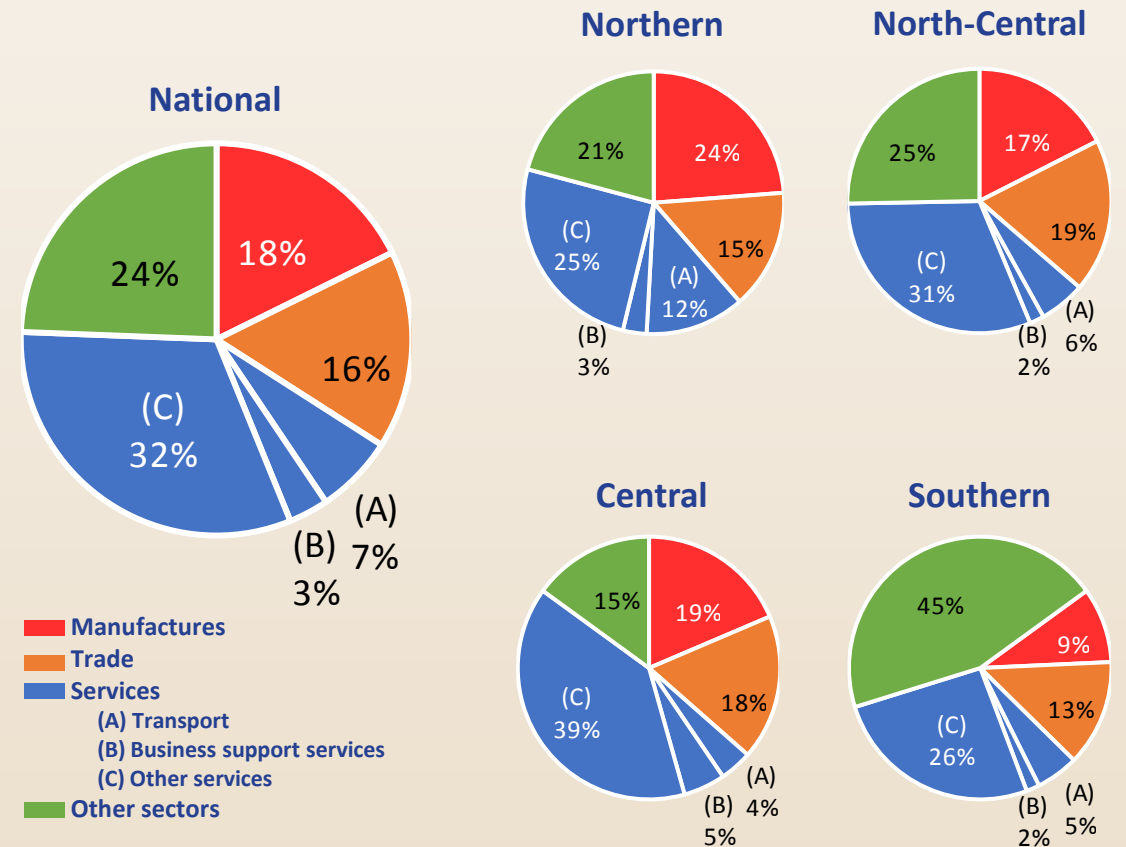
- Weakness of the manufacturing sector, in a context of the poor performance of exports, was reflected in the slowdown of the tertiary activities more closely associated to manufacturing.
 - ✓ Indeed, the growth rate of trade and a considerable part of services went down, insofar as the manufacturing production lost dynamism.
- In order to analyze the effects differentiated at the regional level that were generated by the performance of manufactures on trade and services, an estimate of the said effects is presented using productive linkages between manufacturing production and tertiary activities, based on the regional input-output matrices (RIOM).
 - ✓ The input-output approach allows to evaluate the impact that an exogenous shock on demand of a given sector generates onto economic activities it is connected to (indirect effects) at the regional level.

Box: Productive Linkages between Manufacturing Industry and Tertiary Activities at the Regional Level

- At the regional level, significant differences can be perceived in the share of different sectors in the GDP:
 - ✓ The economic structure of the Northern region presents a relatively large predominance of manufactures.
 - ✓ The North-Central and Central regions tend to specialize in trade and services, respectively.
 - ✓ In the Southern region, the economic activity is notably less concentrated in the secondary and tertiary sectors.

Sectoral GDP Composition, 2014

Percentages



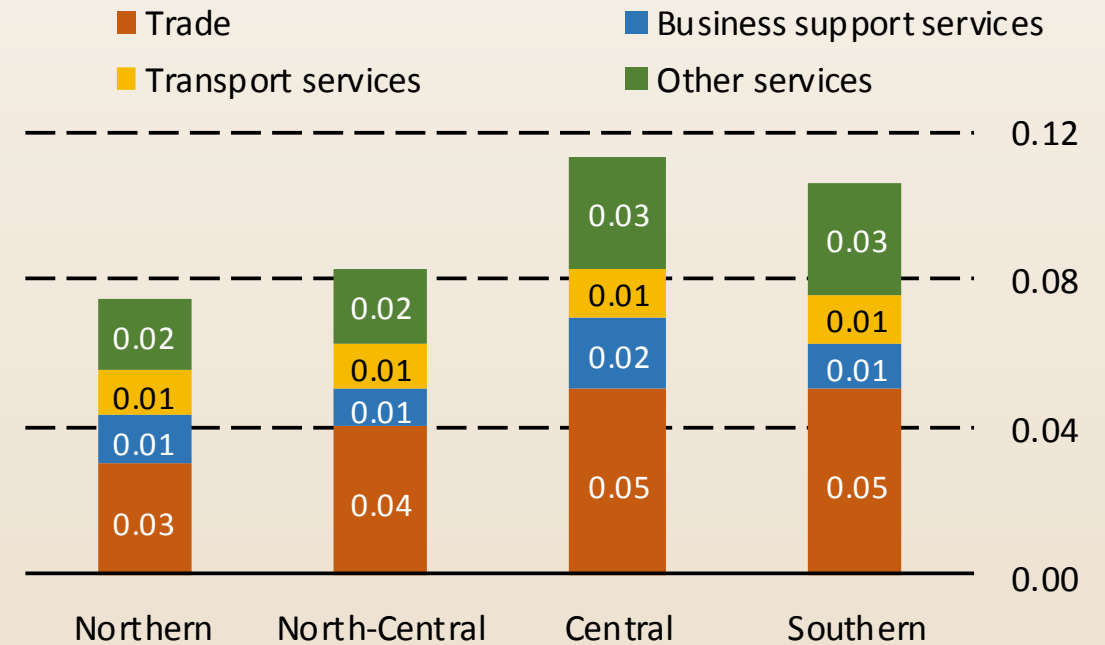
Source: System of National Accounts INEGI (2014).

Box: Productive Linkages between Manufacturing Industry and Tertiary Activities at the Regional Level

- The quantification of productive linkages of manufactures with trade and services exhibits differences across regions:
 - ✓ The manufacturing production of the Central and Southern regions presents a higher incidence in the tertiary sector with respect to other regions.
 - ✓ Across all regions, trade is the activity most closely linked to manufactures, followed by business support services and transport services.

Backward Linkage between the Manufacturing Sector and Tertiary Activities

Multiplier effect on aggregate value

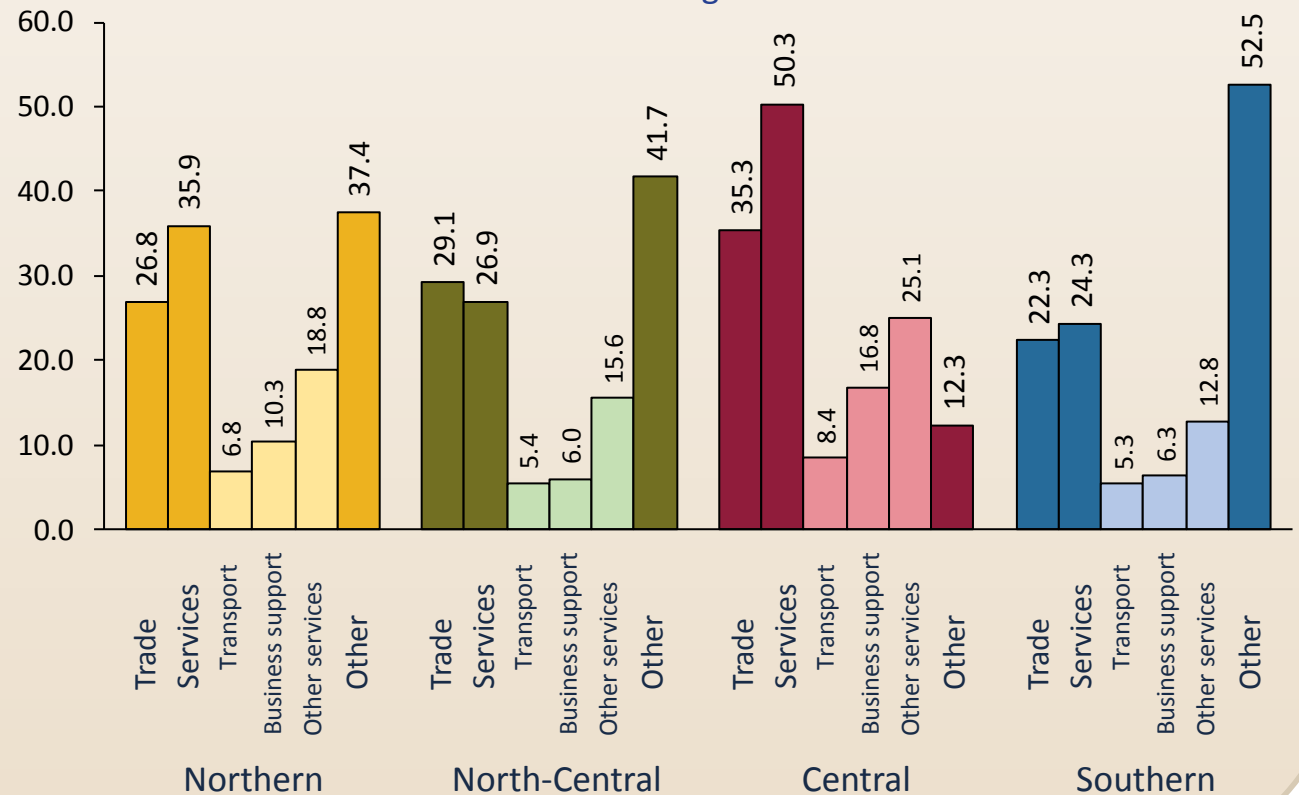


Source: Estimated by Banco de México with data from INEGI.

Box: Productive Linkages between Manufacturing Industry and Tertiary Activities at the Regional Level

- The results suggest that in most regions trade and services concentrate the majority of after-effects derived from the loss of dynamism of the manufacturing sector.
 - ✓ In this respect, the Central region stands out, as the participation of trade and services in the total indirect effect is by far bigger, compared to other regions.

**Sectoral Participation in the Indirect Effect
on Added Value**
Percentages



Note: The services sector is composed of transport services, business support services and other services.
Source: Estimated by Banco de México with data from INEGI.

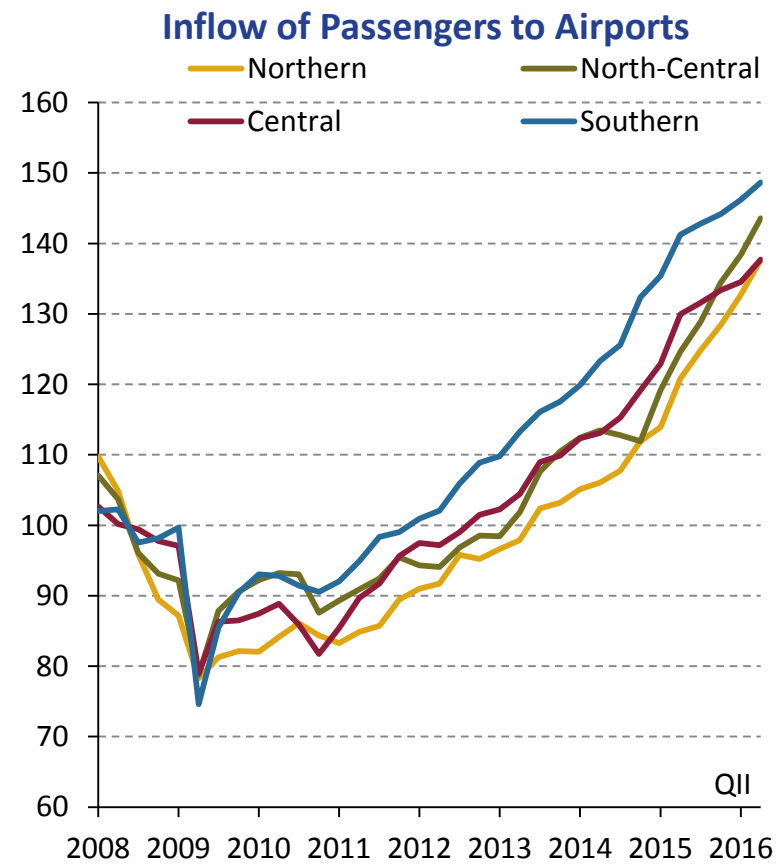
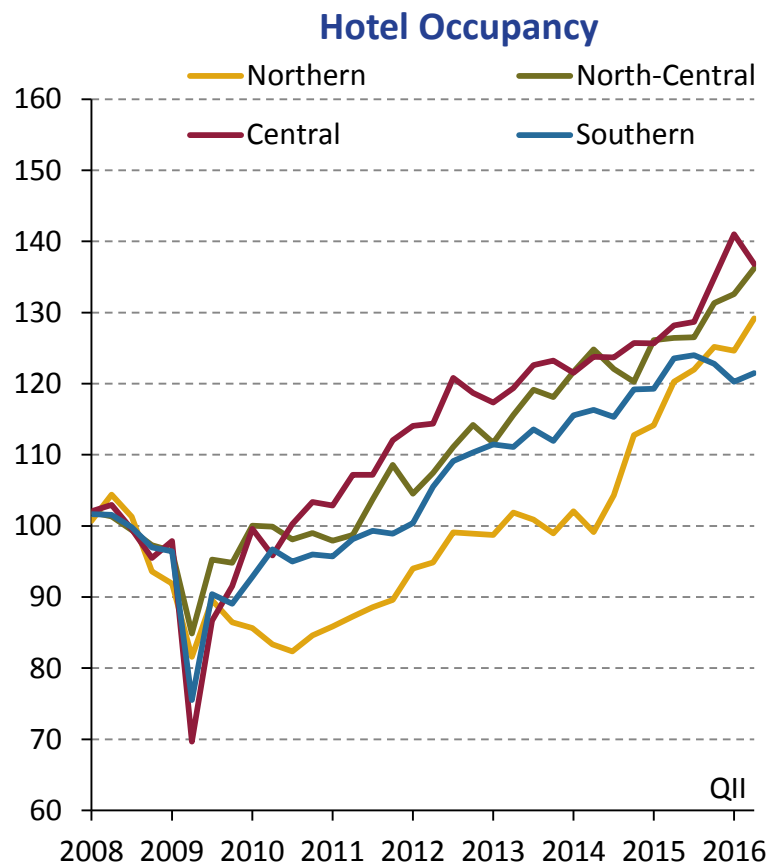
Box:
**Productive Linkages between Manufacturing Industry
and Tertiary Activities at the Regional Level**

- The analysis presented in this Box suggests that, given the linkage between tertiary activities and the manufacturing sector, the deceleration of the latter contributed to a lower dynamism in trade and services across all regions, especially the Central one.
- Indeed, a significant part of services in the economy are associated to the performance of the manufacturing sector, reason why they tend to be affected, although with a certain lag, by the weakness of external demand.
- In this context, although this type of interrelations is natural, the importance of continuing with the process of modernization of the economy's services by means of structural reforms is evident, as at least some of them could have a relatively more balanced dependence on external and domestic shocks, and, thus, be less vulnerable to the performance of Mexican exports.

Tourism kept performing favorably in 2Q 2016. Indeed, hotel occupancy maintained a positive trend in the Northern and North-Central regions, while in the Southern region it recovered incipiently. In contrast, in the Central one this activity observed a decline in hotel occupancy, which halted its positive trend. The inflow of passengers kept growing in all regional economies, thus maintaining an upward trajectory.

Regional Indicators of Activity in Tourism

Index 2008=100, quarterly average

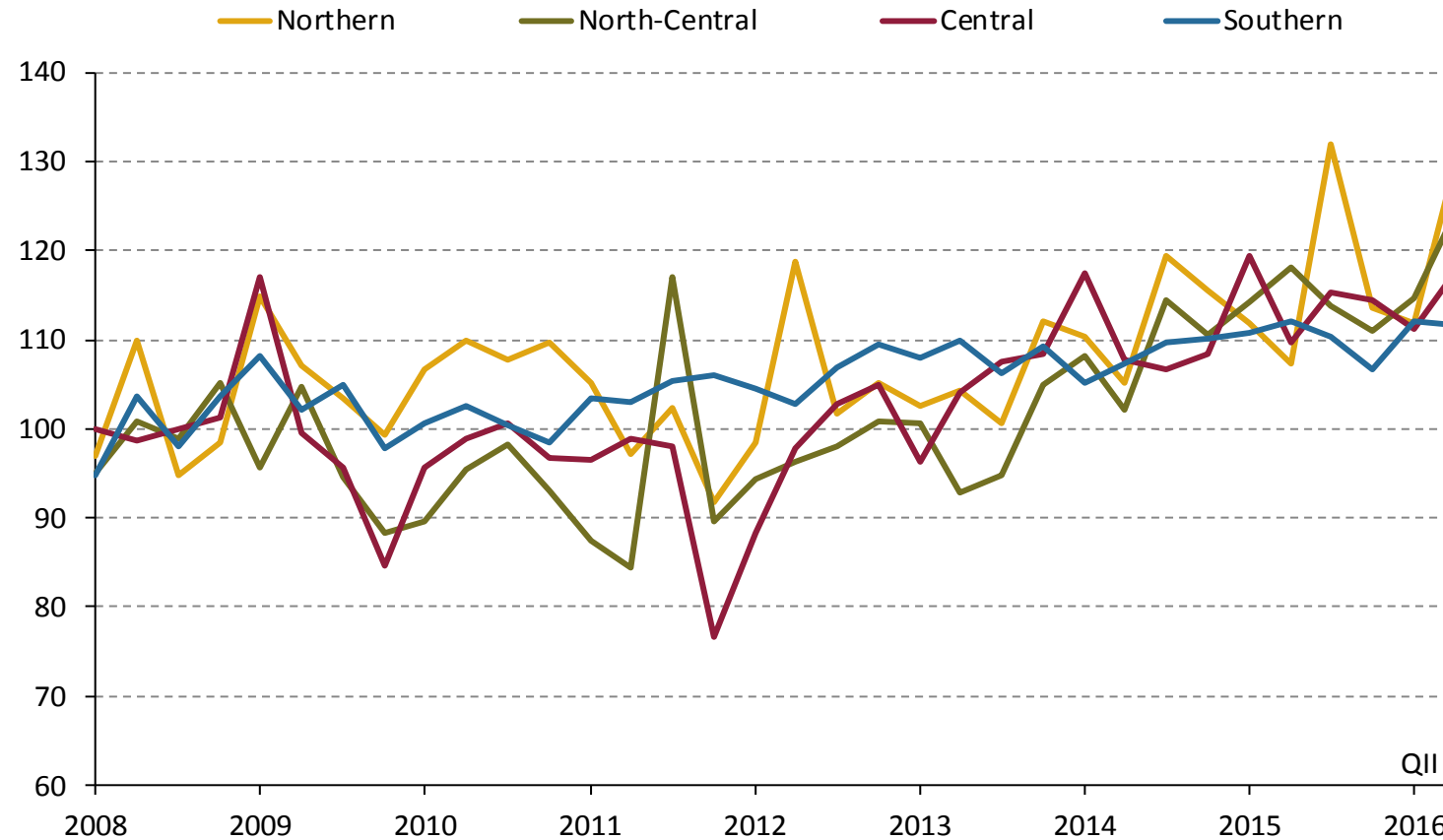


Source: Estimated and seasonally adjusted by Banco de México based on data from the Mexican Secretariat of Tourism and from Airports and Auxiliary Services (ASA).

In 2Q 2016, the agriculture and livestock industry in general expanded, although its performance was heterogeneous across different regions. In particular, in the Northern and Central regions the level of agricultural activity increased with respect to 1Q 2016. In contrast, in the Southern region this sector's production persisted at levels similar to those of 1Q 2016.

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 use of bank credit among businesses was more intensive in the reference quarter, which is reflected in the diffusion index that measures the change in the use of the bank credit during the reported quarter, and which located above the 50 points threshold in all regional economies of Mexico. Likewise, its use increased among businesses that resorted to financing via suppliers and with own resources in 2Q 2016.

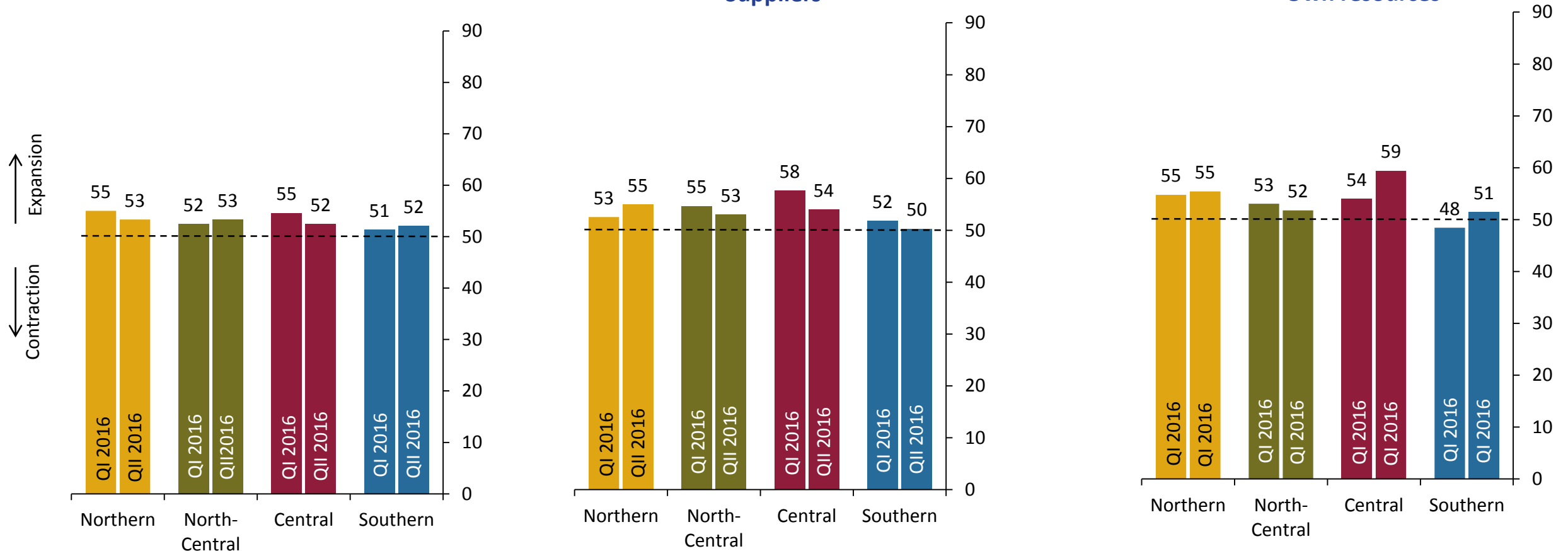
Change in the Use of the Main Sources of Financing

Diffusion indices

Commercial banks

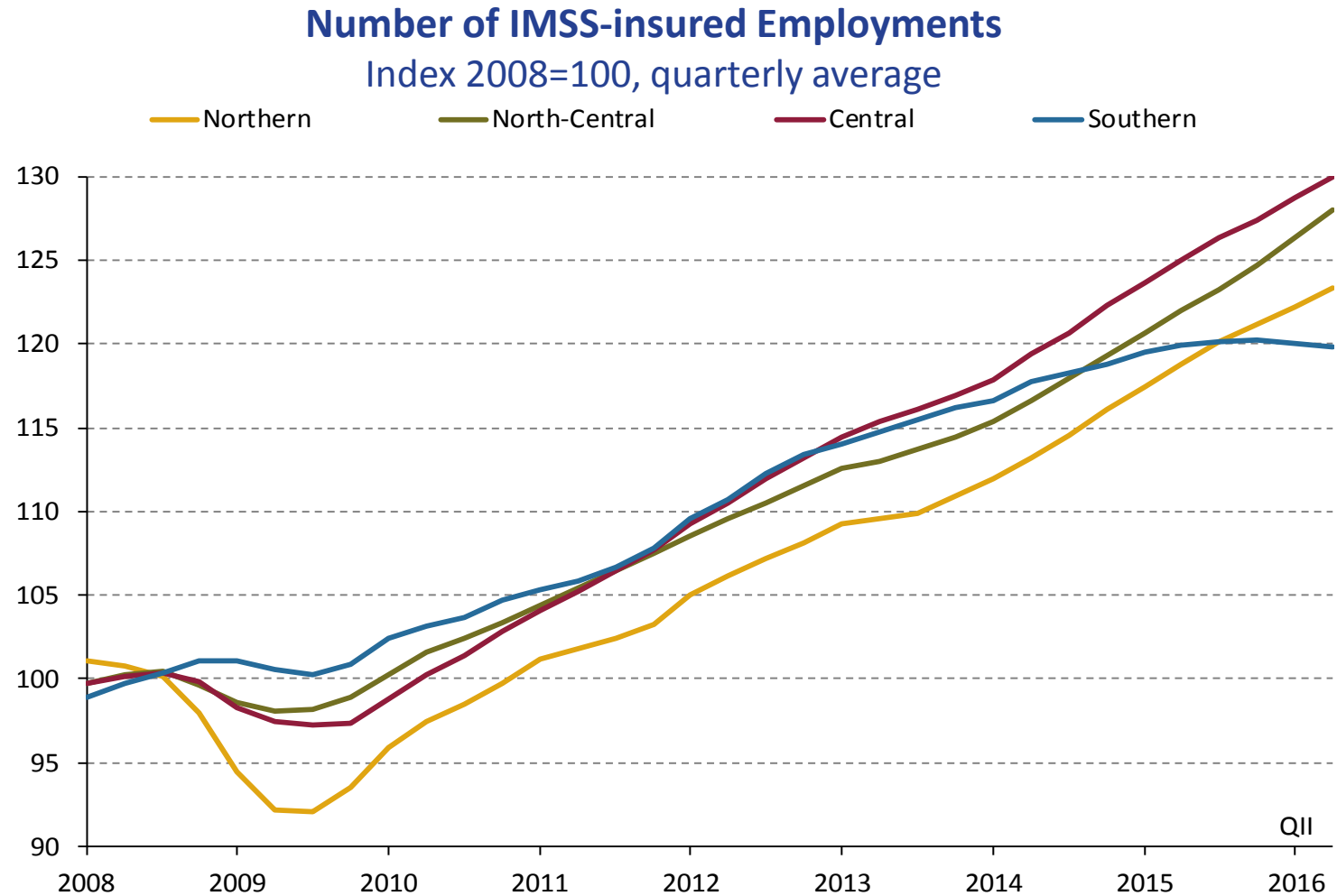
Suppliers

Own resources



Source: Banco de México.

In 2Q 2016, the number of IMSS-insured jobs maintained a positive trend in all regions, with the exception of the Southern one, in which a relative stagnation persisted. It should be noted that in the North-Central region the growth rate of this indicator accelerated, which is congruent with the fact that this region presented a greater expansion of economic activity in the reported quarter.



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

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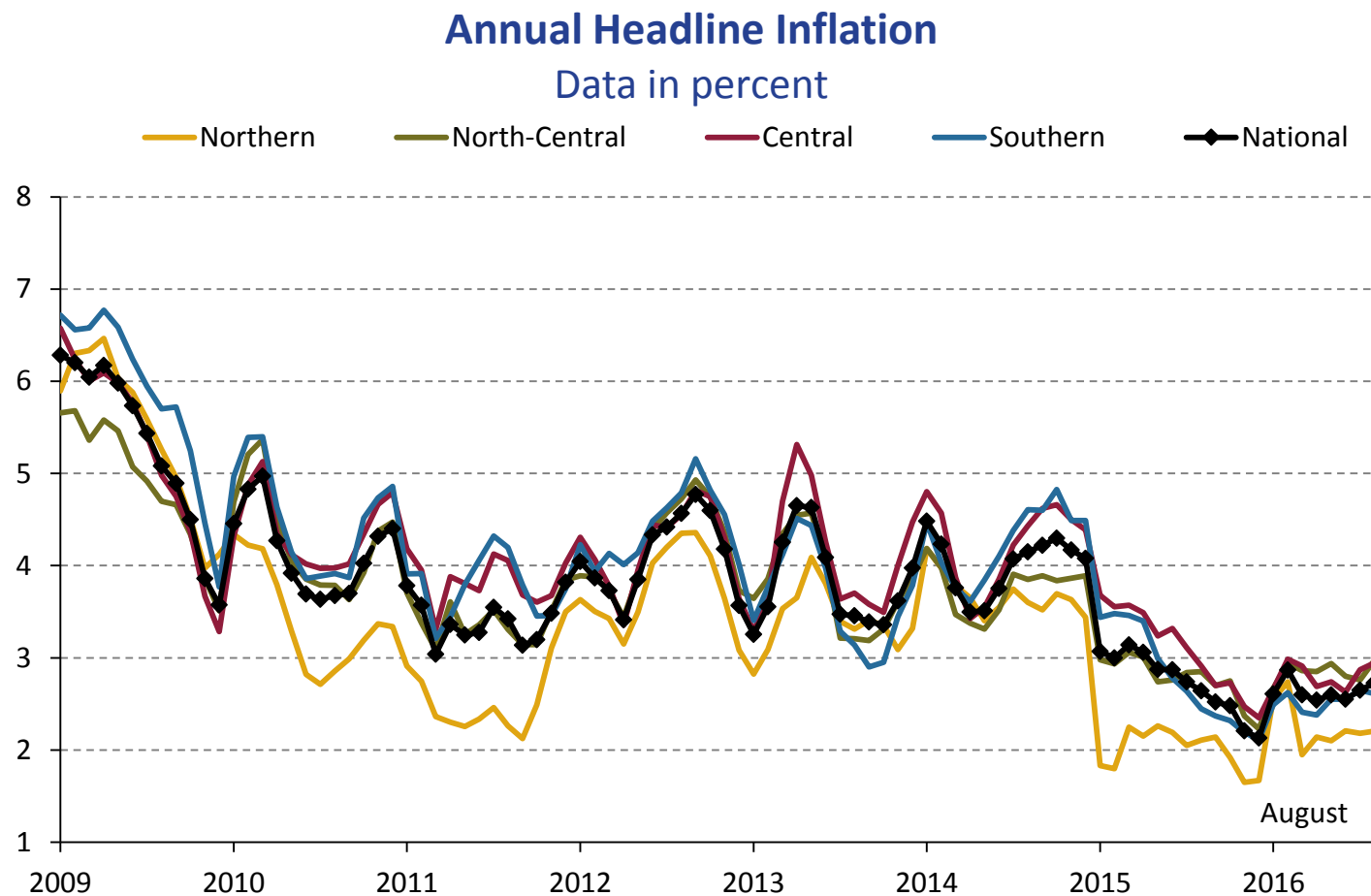
C. Economic Outlook

III. Final Remarks

Inflation

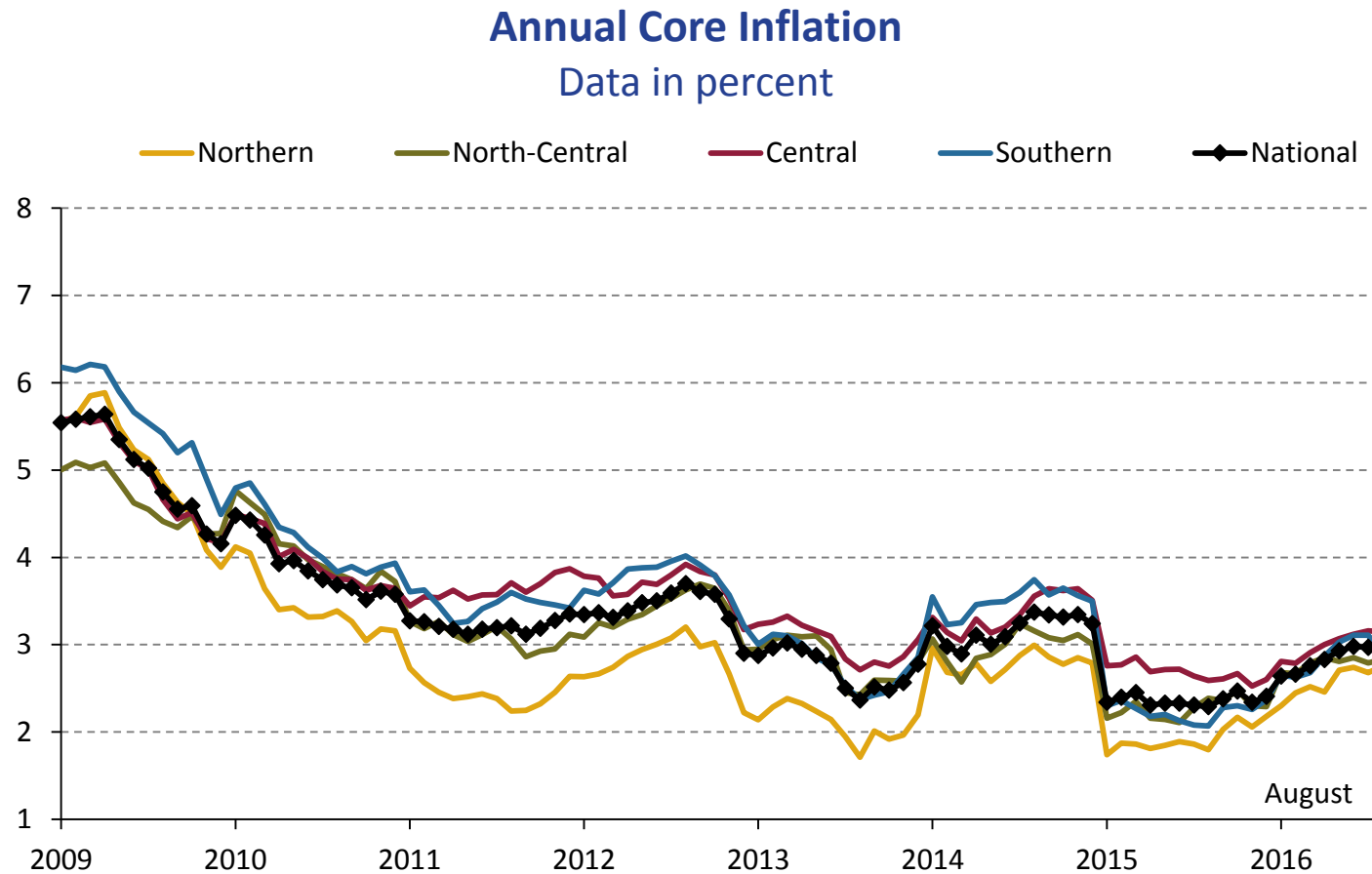
- As of August 2016, the dynamics of headline inflation remained favorable, despite the deterioration in the external environment. In particular, annual headline inflation has persisted below the permanent target for 16 consecutive months.
 - ✓ The good performance of inflation was caused by Banco de México's conduct of monetary policy, by the absence of aggregate demand-related pressures onto prices, as well as by low international prices of most commodities, which resulted from a weak dynamism of their demand at the global level.
 - ✓ Additionally, drops in telecom services' prices, along with a low growth of agricultural goods' prices and lower prices of some energy products at the beginning of the year also contributed to that.
- It is noteworthy that so far no second round effects were observed on the price formation process of the economy.

In general, the performance of inflation at the regional level was congruent with its evolution at the national level. Thus, across all regions it remained below 3 percent in the reported period.



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

Just as anticipated, annual core inflation continued exhibiting an upward trend in all regional economies, locating around 3 percent in most of them.

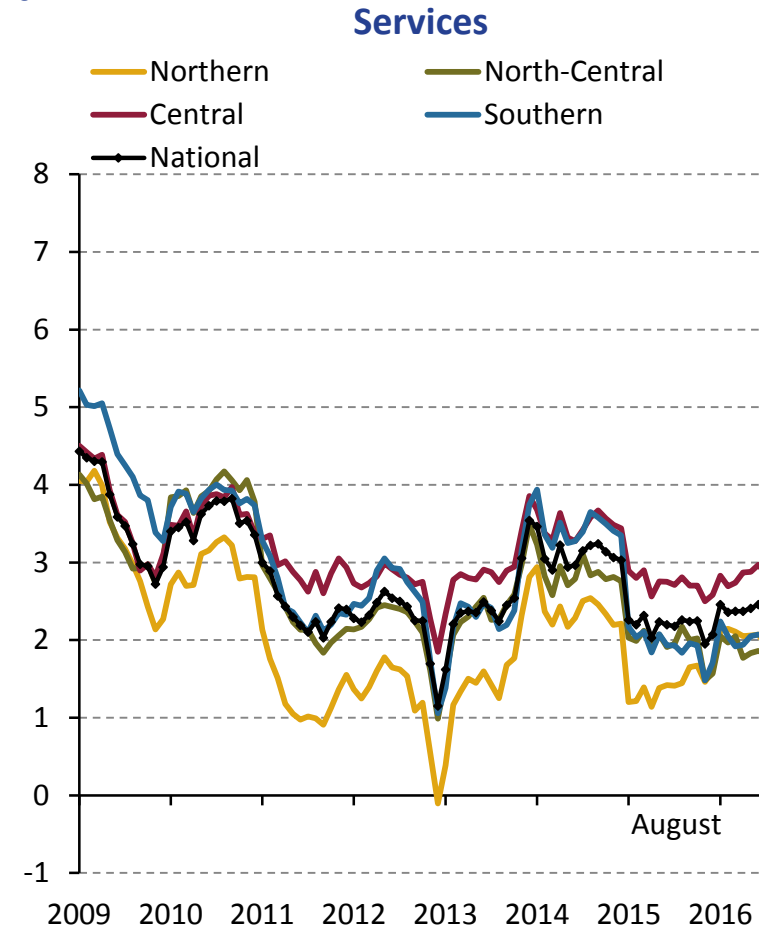
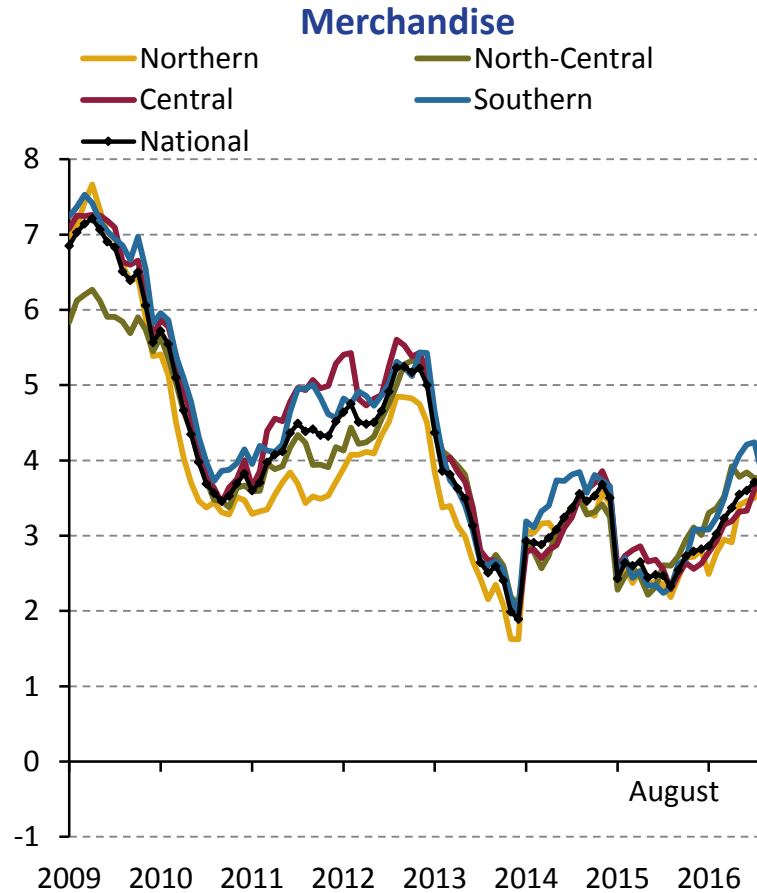


Source: Estimated by Banco de México with own data and data from INEGI.

The persisting upward trend of core inflation is mainly accounted for by the depreciation of the national currency, which affected merchandise prices. In contrast, the services' prices were characterized by remaining at low and stable levels. Thus, the increment in core inflation across the regional economies of Mexico was largely due to the adjustment in the relative prices of merchandise with respect to the services' prices.

Components of Annual Core Inflation

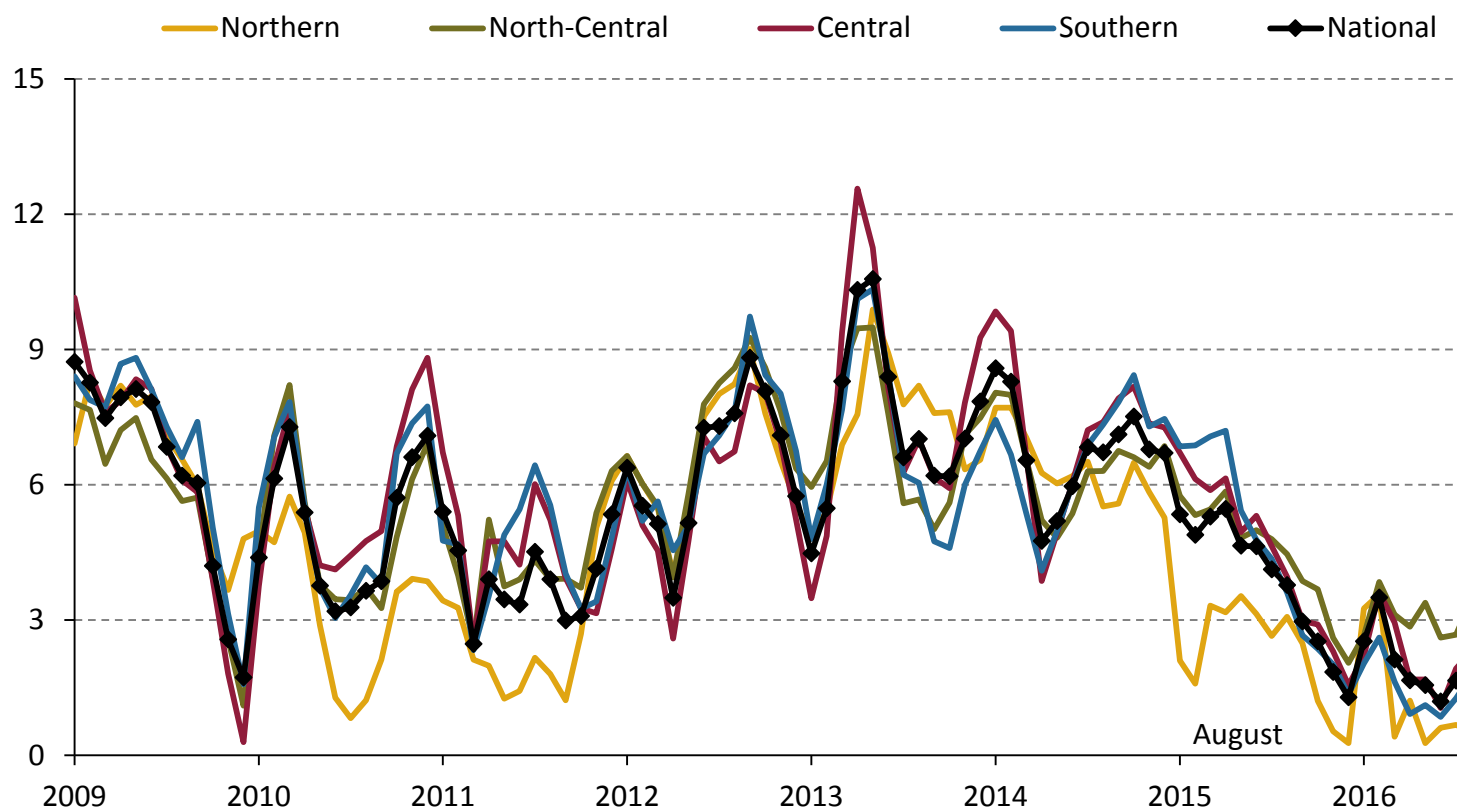
Data in percent



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

During the reference quarter, the non-core component presented low annual growth rates in all regions of Mexico. On the one hand, the prices of agricultural products were characterized by a low growth rate, while energy prices maintained negative annual change rates. However, in July, non-core inflation rebounded in all regions of Mexico, which continued in August in most of them.

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 agents interviewed by Banco de México in four regions considered for this Report anticipate demand for own goods and services to expand moderately over the next 12 months.
- The consulted contacts indicated that their expectations are based on the following factors:
 - ✓ Domestic environment: i) a modest growth of consumption, financial services and national tourism; and ii) the boost to residential and non-residential construction.
 - ✓ External environment: i) the expected rebound in the exports of cars, car parts, aerospace, electronic and electric products, as well as agricultural and aquaculture products; and ii) the recovery of foreign tourism. Both of the above derive from a better performance of the U.S. economy and the depreciation of the real exchange rate.

Box: Investment Climate in Mexican Regions

- This Box presents **the assessment of business agents interviewed** for this Report of different **determinants of the investment climate at the regional level**.
- In order to pinpoint positive and negative elements considered by business contacts across different regional economies when taking investment decisions, the referred contacts were requested to **assign values** on a scale **from 1 to 5** to each one of **11 factors considered** in this analysis, where **1** stands for a **“very negative”** factor and **5** represents a **“very positive”** factor regarding their investments.
- Subsequently, for each factor, an **average** of the values attributed by each consulted contact was obtained.
 - ✓ Factors with an average **over 3.5** are considered **positive elements for investment**.
 - ✓ Factors with an average **close to 3** are deemed **neutral** for investment decisions.
 - ✓ Factors with an average **below 2.5** are classified as **negative**.

Box: Investment Climate in Mexican Regions

- Business agents in all regional economies highlighted the **geographical location** and the **size of domestic market** as the main factors positively affecting their investment decisions.

Assessment of Factors Considered by Firms in Investment Decisions*

5 Very positive
 4 Positive
 3 Neutral
 2 Negative
 1 Very negative

	North-				
	National	Northern	Central	Central	Southern
Geographic location	4.1	4.3	4.3	4.2	3.8
Size of domestic market	4.1	4.1	4.1	4.2	3.9
Trade agreements	3.5	3.8	3.6	3.4	3.1
Work force quality and availability	3.4	3.2	3.5	3.6	3.4
Labor cost	3.4	3.2	3.5	3.4	3.5
Providers' certification level	3.4	3.4	3.7	3.4	3.1
Current macroeconomic situation	3.3	3.2	3.3	3.5	3.1
Local infrastructure	3.1	3.1	3.4	3.5	2.5
Legal protection and certainty	3.1	3.2	3.4	3.4	2.4
Effective market regulation	3.0	3.1	3.3	3.1	2.5
Fiscal regulation	2.9	2.8	3.1	3.2	2.4

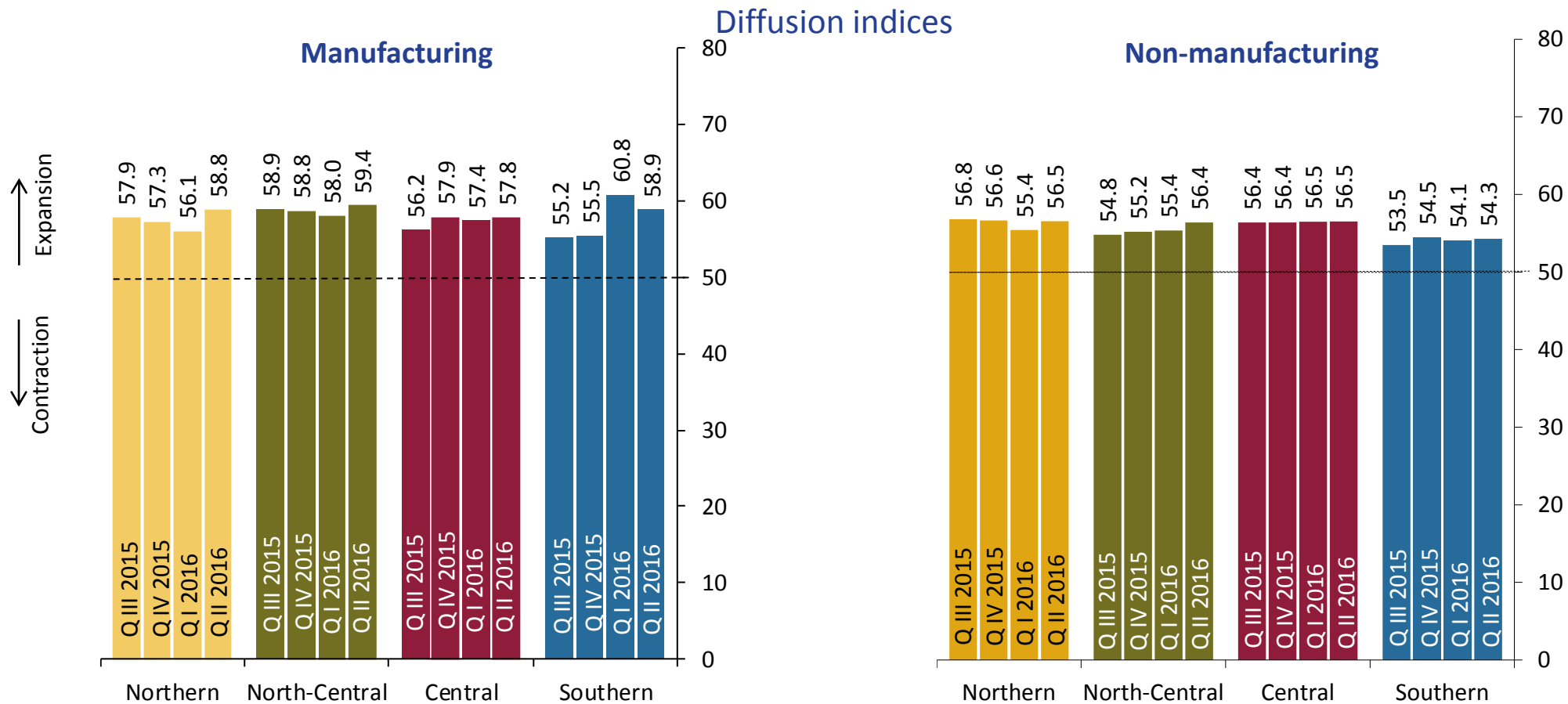


*/ It should be mentioned that the sample used for this Box is not necessarily representative of the business sector as a whole at either national or regional levels; therefore the results presented hereby should be treated with caution, exclusively considering them in illustrative terms of their magnitude and not as accurate statistics.

Source: Estimated by Banco de México based on data from the interviews among business agents carried out between June 27 and July 21 2016.

Indices of manufacturing and non-manufacturing orders indicate that activity in all regional economies of Mexico may expand over the next months. In the manufacturing sector, the signal of expansion somewhat strengthened across all regions, except for the Southern one. As regards the non-manufacturing sector, in the Central and Southern regions this signal remained relatively constant, while in the rest of them it strengthened.

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

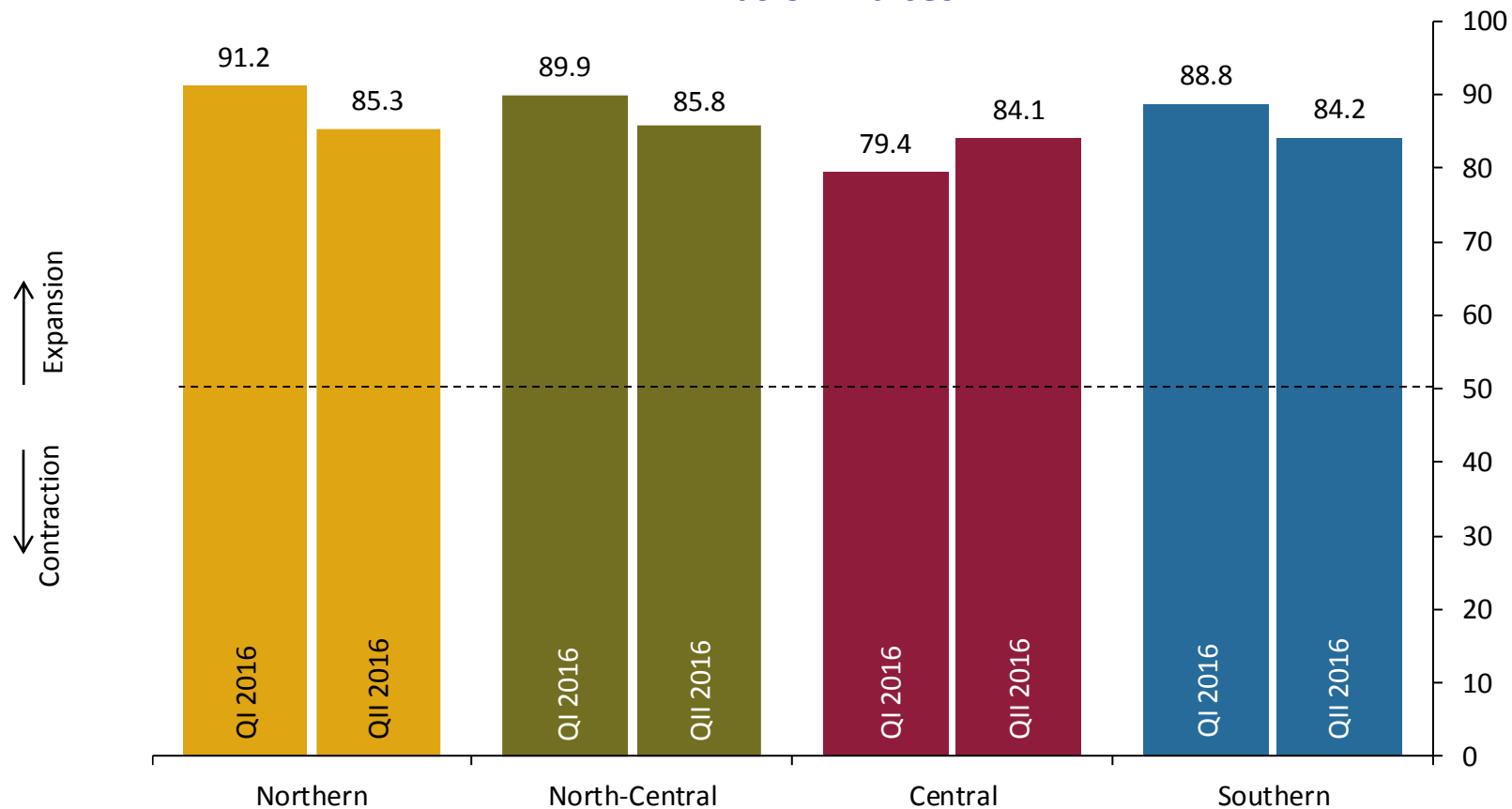


^{1/} Seasonally adjusted data.
Source: Banco de México.

Most business agents interviewed by Banco de México expect the demand for own goods and services to expand in all regional economies over the next 12 months. Nonetheless, in all regions, with the exception of the Central one, these prospects were more moderate with respect to the previous quarter.

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

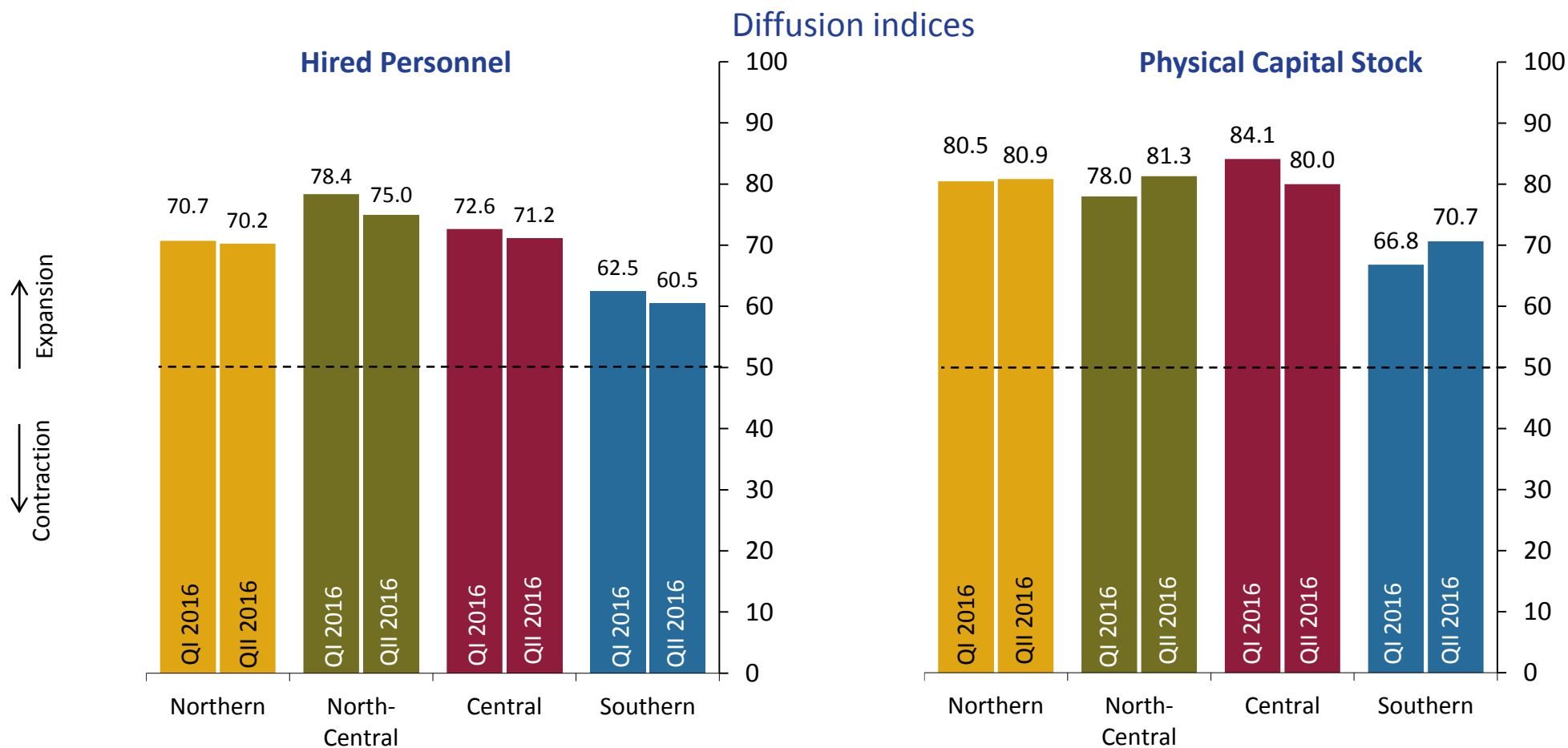
Diffusion indices



^{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 interviews conducted by Banco de México.

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

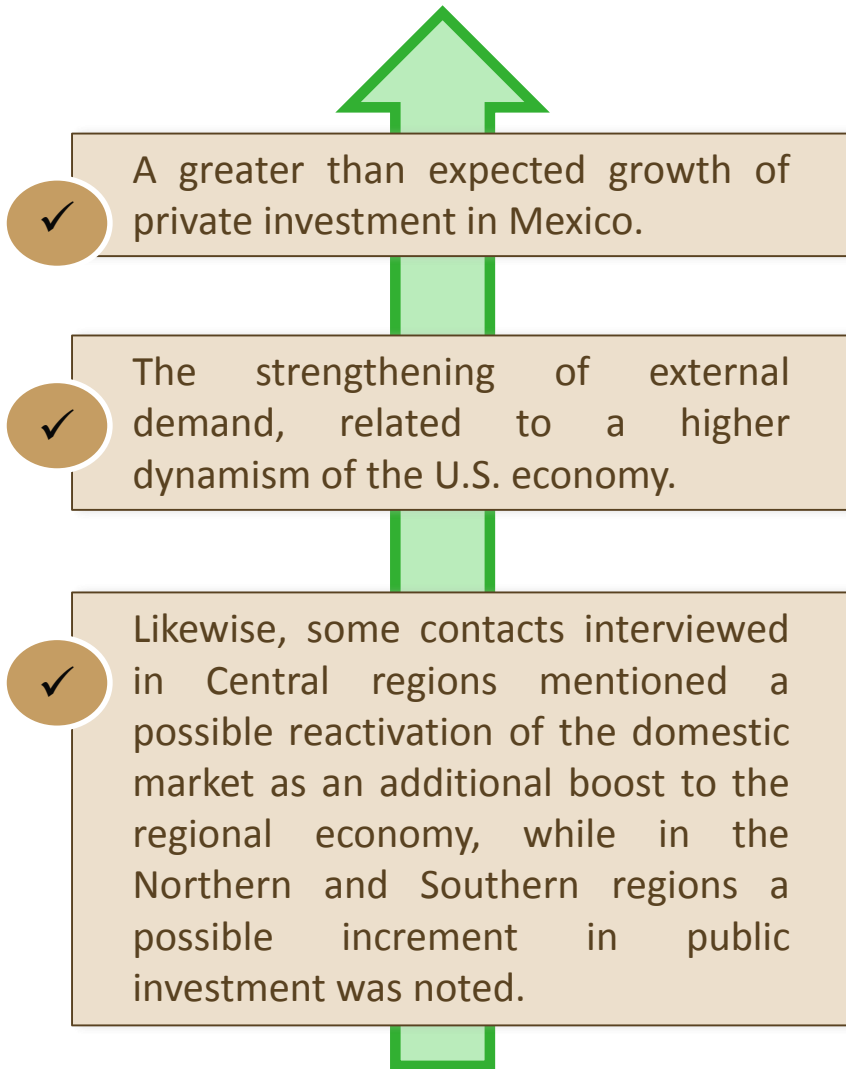
Business Agents' Expectations: Hired Personnel and Physical Capital Stock, Next 12 Months ^{1/}



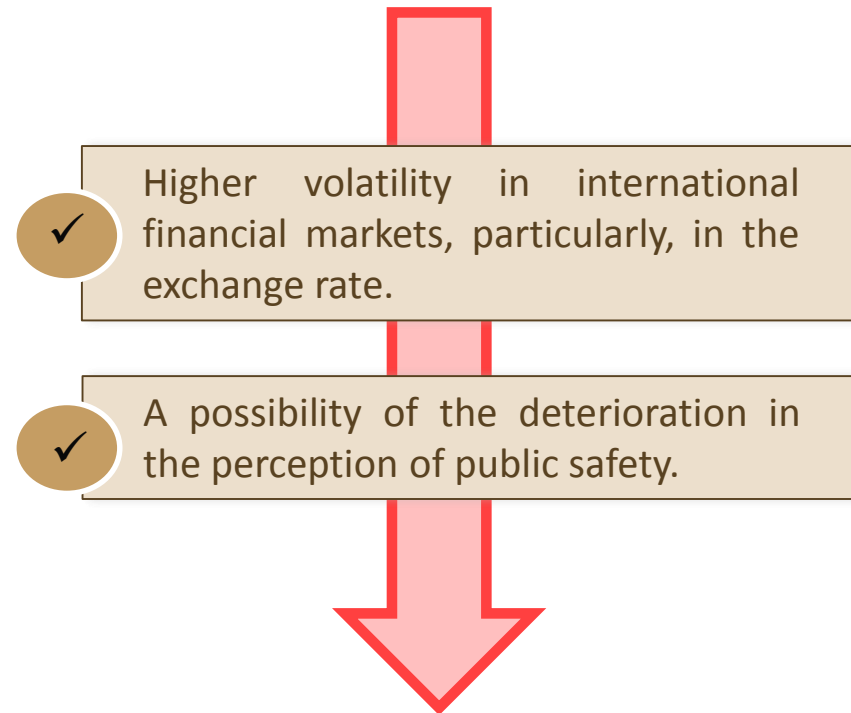
^{1/} Results obtained from responses to the question: "With respect to the situation in the current quarter, how do you anticipate the personnel hired in your firm to change over the next 12 months?", and "How do you anticipate the physical capital stock in your firm to modify over the next 12 months?",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

Risks to Economic Activity

Upward risks



Downward risks



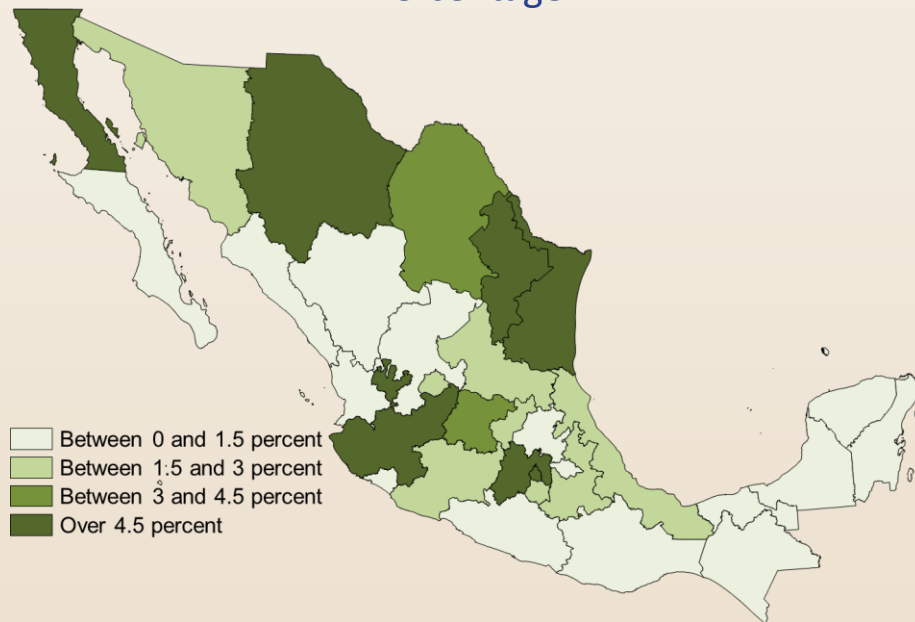
Box:
**Determinants of Attracting Foreign Direct Investment in the
Regional Manufacturing Industry, 1999 - 2015**

- This Box seeks to **analyze the determinants of attracting Foreign Direct Investment (FDI) in Mexican states**. Among other things, this gives developing economies an opportunity to engage with markets and global production systems via the access to technologies, productive chains and other intangible assets, not necessarily available at accessible costs in the local economy.
- Regional economies can create favorable conditions to attract FDI in order to use the benefits that are associated with it in order to boost growth and employment of local economies.
- Thus, a deeper understanding of the determinants of attracting FDI facilitates creation and implementation of better-structured and informed regional public and development policies.
 - ✓ In particular, there is a possibility that the FDI impact on the Mexican states and other factors affecting FDI flows may transcend administrative borders.

Box: Determinants of Attracting Foreign Direct Investment in the Regional Manufacturing Industry, 1999 - 2015

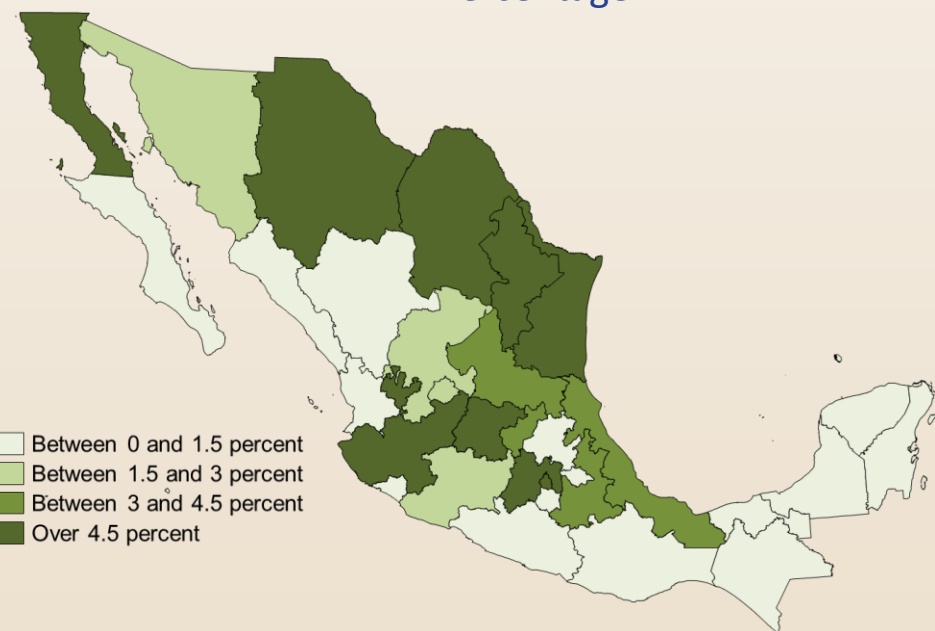
- Participation of Mexican states in FDI flows evolved heterogeneously in the analyzed period.

**Participation in Total Manufacturing FDI by Federal
Entity: Accumulated Flows 1999 - 2007**
Percentage



Source: Estimated by Banco de México with data from the Ministry of Economy.

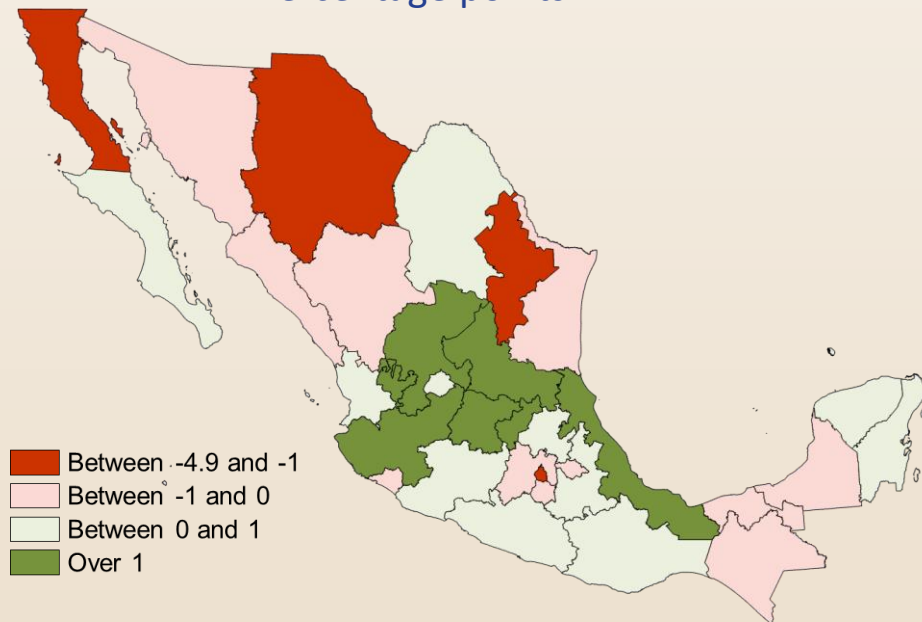
**Participation in Total Manufacturing FDI by Federal
Entity: Accumulated Flows 2008 - 2015**
Percentage



Source: Estimated by Banco de México with data from the Ministry of Economy.

Box: Determinants of Attracting Foreign Direct Investment in the Regional Manufacturing Industry, 1999 - 2015

Change in Participation in Total Manufacturing FDI by
Federal Entity: Accumulated Flows
(2008 - 2015) – (1999 - 2007)
Percentage points

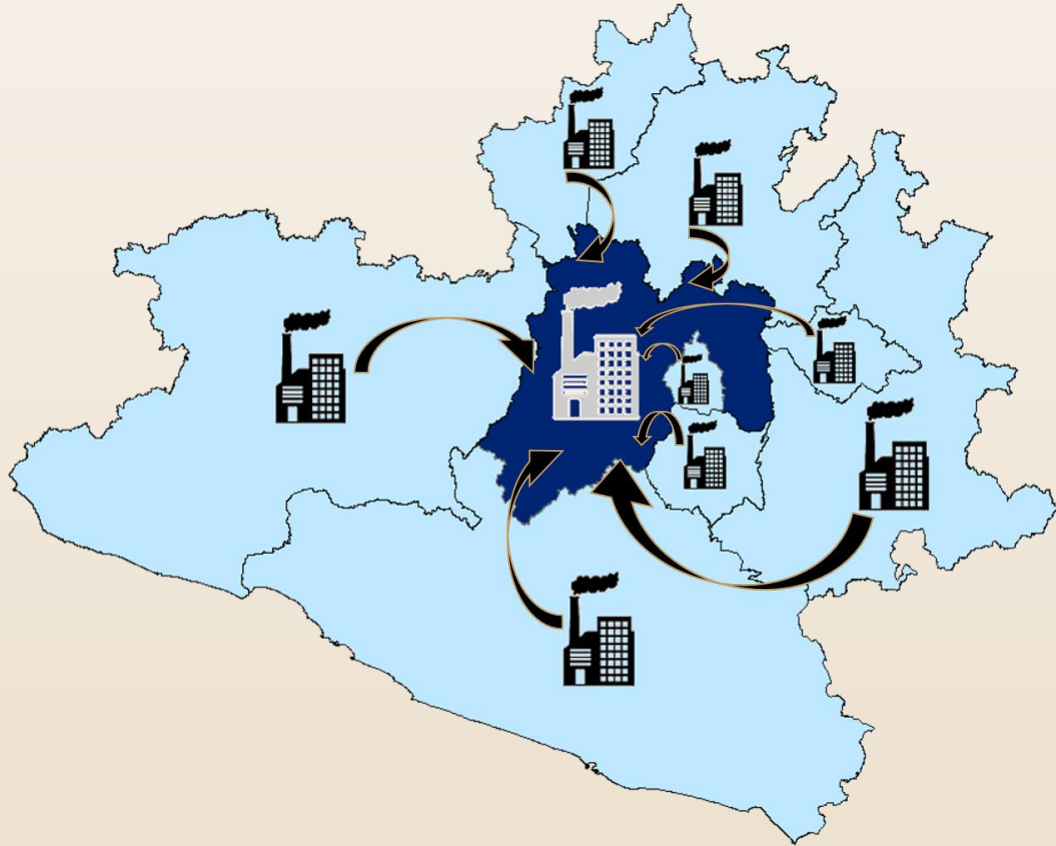


- Given the global crisis and its consequences for the external demand, which were experienced in Mexico starting from 2008, foreign investment in manufactures seemed to be largely destined to the Central regions, that are relatively more liked to the domestic market.
 - ✓ It is relevant that part of this performance also reflects that an important fraction of the referred investment was allocated to the automotive sector, located mainly in the zone of El Bajío, Mexico.

Source: Estimated by Banco de México with data from the Ministry of Economy.

Box:

Determinants of Attracting Foreign Direct Investment in the Regional Manufacturing Industry, 1999 - 2015



- To estimate the impact of the factors affecting the flows of manufacturing FDI received by federal entities, a model of panel data with spatial econometrics techniques was used.
 - ✓ Thus, a possibility was considered that the FDI impact and federal entities' characteristics may transcend administrative borders.
- The used methodology allows us to identify:
 - ✓ **The direct impact**, which measures the effect of the characteristics considered in a federal entity on the received FDI flow.
 - ✓ **The indirect impact**, which represents the effect of the characteristics of adjacent entities on the amount of received FDI.

Box:
**Determinants of Attracting Foreign Direct Investment in the
Regional Manufacturing Industry, 1999 - 2015**

Estimation Results

Variables	Direct impact	Indirect impact
Per capita GDP	1.05**	0.32**
Education level	3.27***	1.00***
Agglomeration	6.54***	1.98***
Fiscal space	1.94***	-3.17
Insecurity	-0.18**	-0.05*
Complementarity effect (ρ)		0.24***
N	544	

Note: ***, ** and * denote significance at the 1, 5, 10 percent levels, respectively. "N" stands for the number of observations.

Source: Estimated by Banco de México with data from the Ministry of Economy, INEGI and the Ministry of Finance.

Box:
**Determinants of Attracting Foreign Direct Investment in the
Regional Manufacturing Industry, 1999 - 2015**

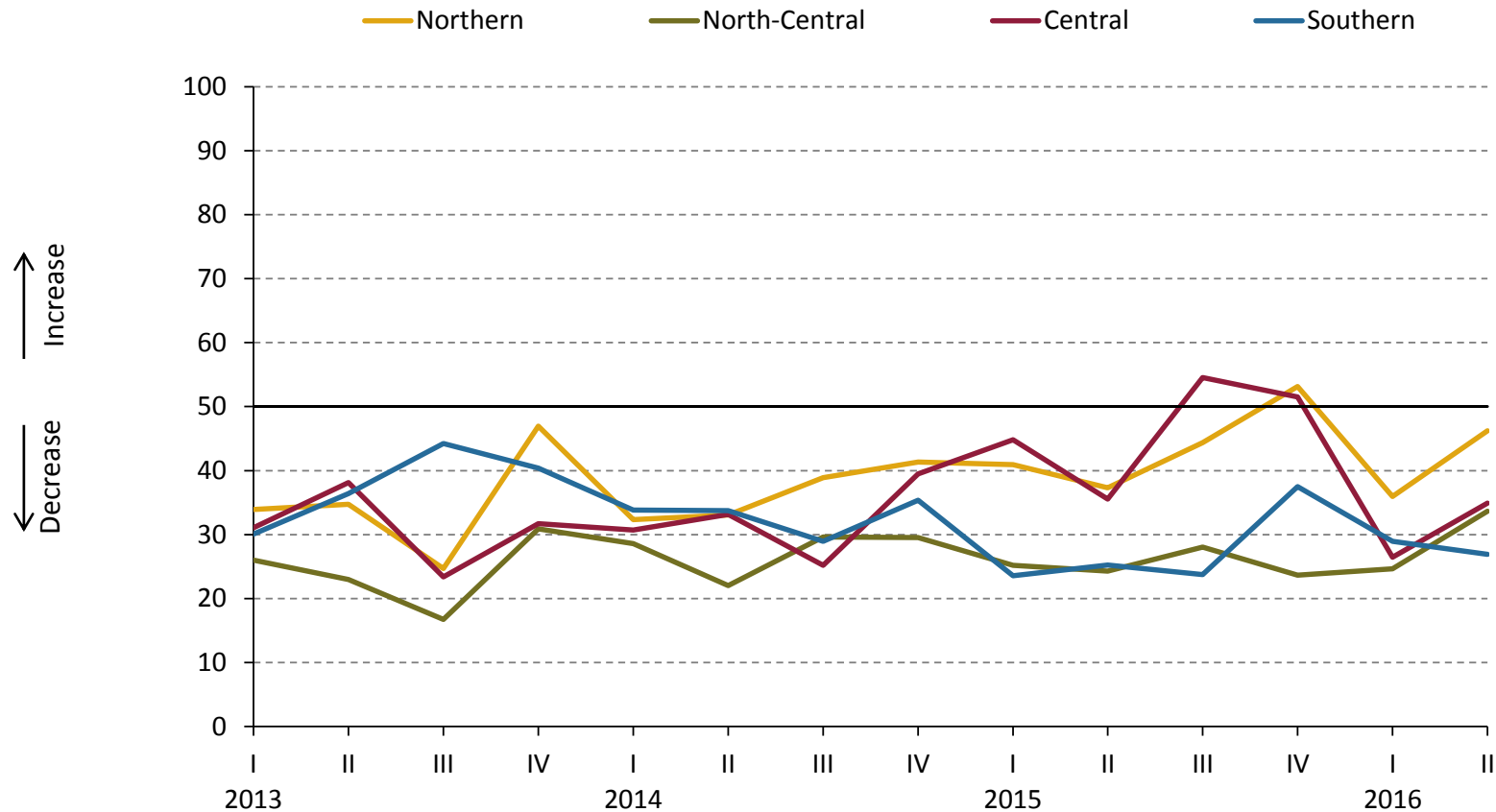
- The results of this Box indicate that the **FDI presents complementarity effects**, that is, if the amount of FDI received by adjacent entities goes up, then the amount of investment received by the reference entity tends to increase, as well.
- Both direct and indirect impacts found in variables, such as the size of the market, the education level, agglomeration, the fiscal space and insecurity suggest the **presence of externalities in the processes of attracting the manufacturing sector FDI**.
 - ✓ Thus, the said processes should be considered in a regional context and not only from a local perspective.

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 period.
 - ✓ However, this signal weakened with respect to 1Q 2016 across all regional economies, except for the Southern region.
- As regards 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 Central and Southern regions business agents expect a lower annual change rate of input prices for the next 12 months as compared to last year. In contrast, in the Northern region a higher change rate is estimated, relative to 2015.

Business agents generally expect annual change rates of own goods and services' prices to be lower than in 2015, for the 12-month horizon. Nevertheless, this signal faded in most regional economies.

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

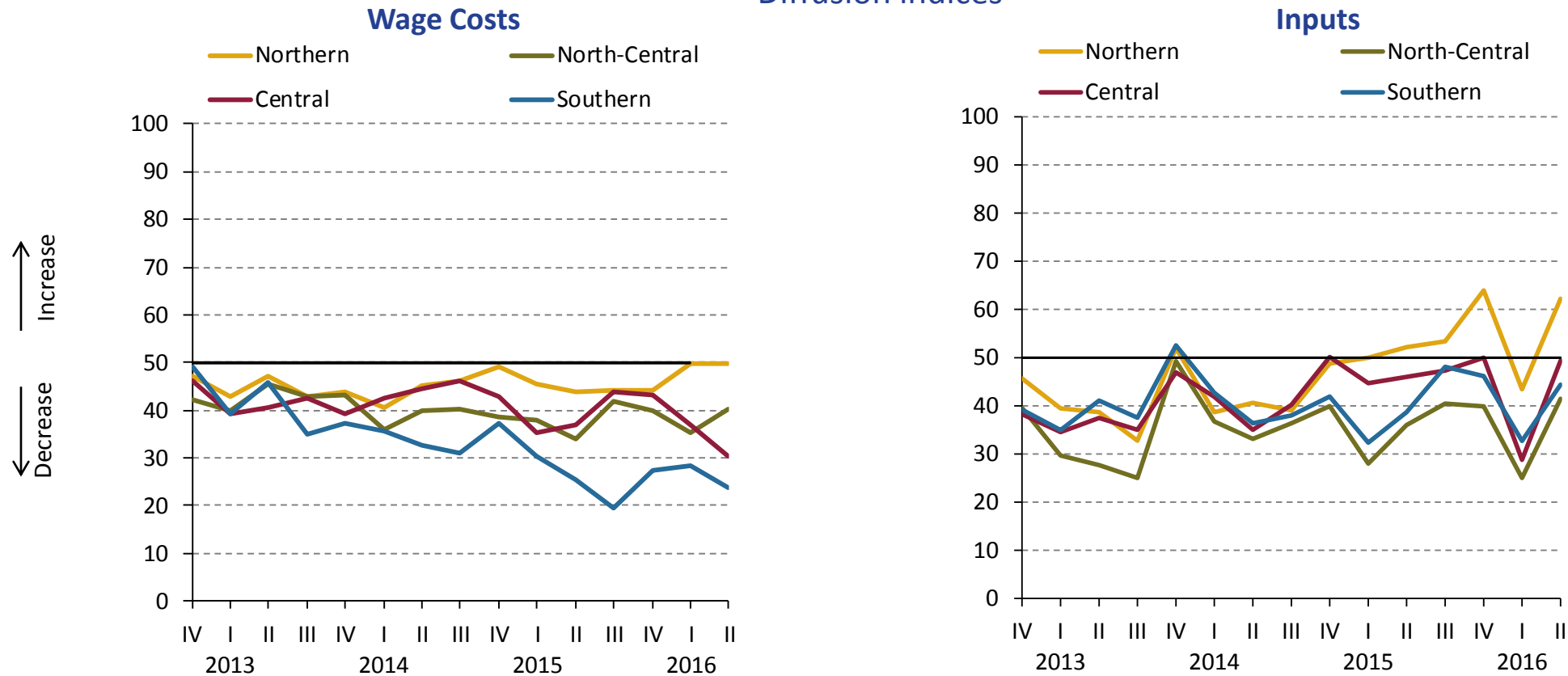


^{1/} Results obtained from responses to the question: "With respect to the situation in 2Q 2016, do you anticipate any modification in the sales' prices of produced goods and services, over the next 12 months?", and "As compared to the same period of last year, of what magnitude do you expect this adjustment: greater, same or smaller?", from interviews conducted by Banco de México.

Consulted business agents anticipate lower annual change rates of their wage costs and input prices, as compared to 2015, in Central and Southern regions. In contrast, the interviewed contacts in the Northern region expect the annual change rate of their wage costs to be similar to 2015, and annual inflation in input prices to be higher for the next 12 months.

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

Diffusion indices



^{1/} Results obtained from responses to the question: "With respect to the situation in 2Q 2016, do you anticipate any modification 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 interviews conducted by Banco de México.

Outlook

I. Regional Economic Report

II. Results April – June 2016

A. Economic Activity

B. Inflation

C. Economic Outlook

III. Final Remarks

Final Remarks

- 1 In 2Q 2016, the deteriorated productive activity was attributed to the slowdown observed in the tertiary activities, along with the persisting stagnation of the secondary activities. Thus, the lower dynamism of the tertiary activities and the stagnation of the industrial sector are estimated to have triggered a decline in the level of economic activity in the Northern and Southern regions, stagnation in the Central region and a lower growth rate in the North-Central one.
- 2 In 2Q 2016, annual headline inflation kept performing favorably, as of August 2016 accumulating 16 consecutive months below the permanent 3 percent target.
- 3 In general, business agents interviewed by Banco de México in all regional economies of Mexico anticipate an expansion in demand for own goods and services during next year. Likewise, business contacts estimate an increment in hired personnel and the physical capital stock in all regions of Mexico.
- 4 As regards inflation, in most regions business contacts expect annual growth rates of sales' prices and their wage costs to be lower than in 2015. Likewise, also in most regions the consulted agents estimate that the increment in input prices will be smaller as compared to 2015, although this signal weakened.



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