

Regional Economic Report

April – June 2019

BANCO DE MÉXICO

September 12, 2019

Outline

I. Regional Economic Report

II. Results April – June 2019

A. Economic activity

B. Inflation

C. Economic outlook

(based on data collected between June 24 and July 18, 2019)

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 Mexico's regions.[1]
- The information herein presented is taken into account by Banco de México's Governing Board when evaluating the economic situation and the forecast for the Mexican economy.
- The economic performance of the regions in Q2 2019 and business agents' prospects for regional economic activity and inflation over the following 12 months are analyzed herein.

[1] For the purposes of this Report, Mexico's states 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; and, Southern: Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco, Veracruz and Yucatán.

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- During Q2 2019, the stagnation that the Mexican economy had been exhibiting since the previous quarters persisted.
  - ✓ This behavior has been due to a further weakening of the domestic aggregate demand components, in an environment of marked uncertainty derived from both external and domestic factors.

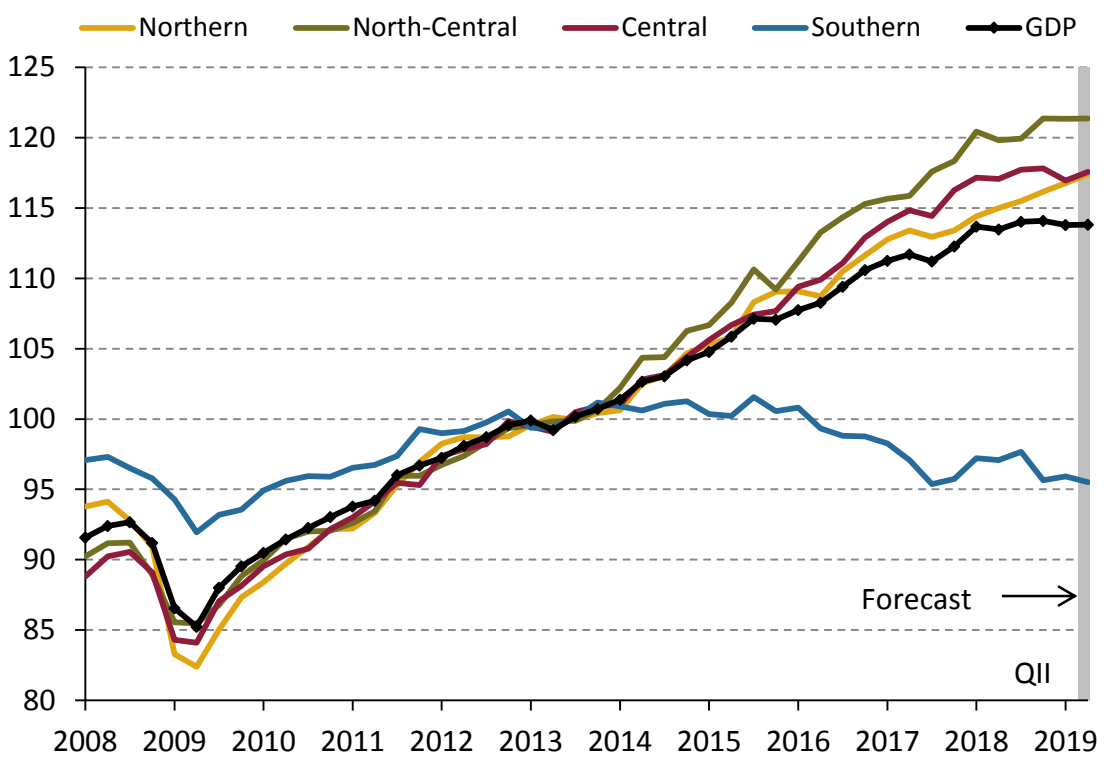
- Domestic economic activity exhibited a mixed behavior in the different regions of Mexico in Q2 2019.

Economic activity in the Northern region is estimated to have continued to follow an upward path, while in the Central region it is estimated to have partly recovered from the fall in Q1 2019. In contrast, economic activity in the North-Central region is estimated to have remained at a standstill, while in the Southern one, to have continued its negative trend.

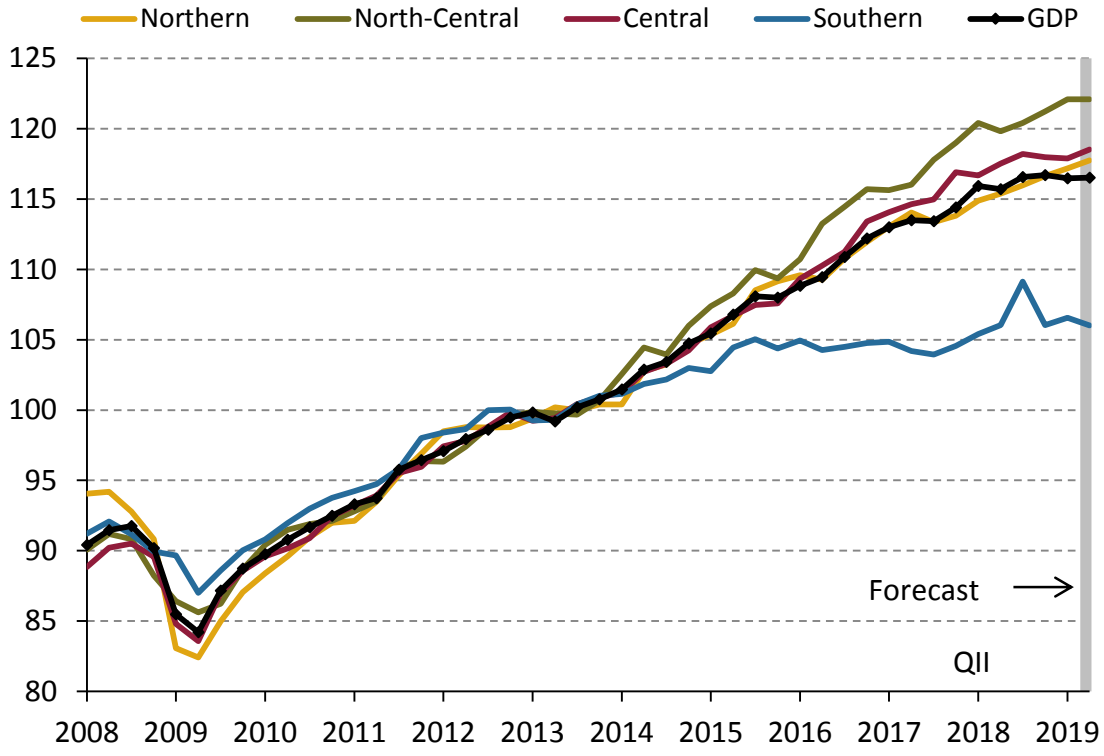
Quarterly Indicator of Regional Economic Activity [1/]

Index 2013=100

Total



Non-oil



1/ The value of Gross Domestic Product (GDP) for Q2 2019 corresponds to observed data.

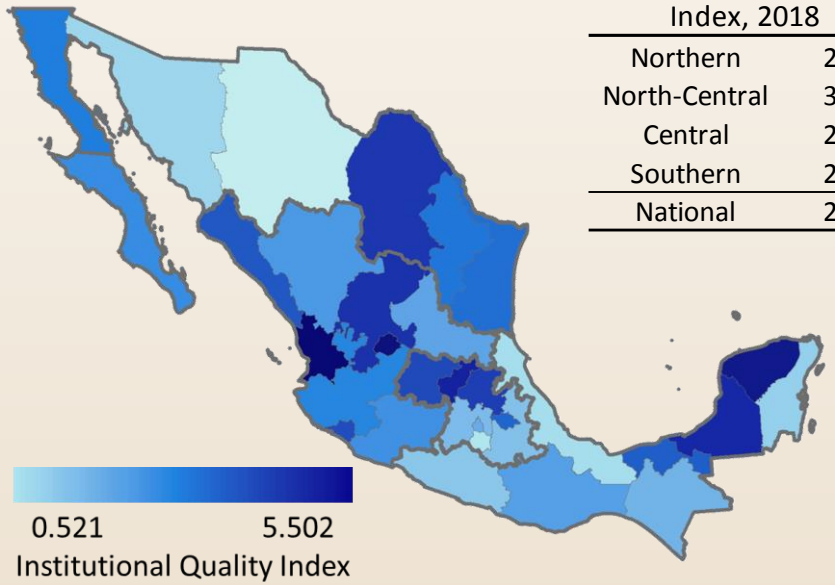
Source: Estimated by Banco de México with seasonally adjusted series of domestic GDP and of the Quarterly Indicator of Economic Activity by State. *Instituto Nacional de Estadística y Geografía* (INEGI, for its acronym in Spanish).

Box:
Institutional Strength and Firms' Size and Export Vocation in Regional Economies

- The strength of institutions is one of the main determinants of a country's economic performance, as it guarantees the return on investment that allows firms to grow, innovate, and increase their productivity.
- As firms become larger, they can benefit from the economies of scale, enter international markets and, thus, have a greater contribution to economic growth. Similarly, better institutions encourage firms' capacity to gain access to global markets, boost their exports as well as to have a greater interaction with other countries, which, in turn, fosters the establishment of better quality institutions.
- This Box estimates the causal effect of institutional quality on firms' size and export vocation.
  - ✓ The results suggest that an improvement in institutional quality promotes firms of larger sizes and more export oriented.

Box:
Institutional Strength and Firms' Size and Export Vocation in Regional Economies

Institutional Quality Index, 2018 [1,2/]



Institutional Quality Index, 2018	
Northern	2.9
North-Central	3.7
Central	2.7
Southern	2.2
National	2.8

1/ Has a scale from 0 to 10, where 0 indicates the worst institutional performance and 10, the best.
2/ Aggregates by region of the Institutional Quality Index were estimated by weighing each entity's ranking by the size of the population, as reported by CONAPO.
Source: Prepared with information from ID-DDI and CONAPO, 2018.

Relevant Features of Firms by Region, Economic Census 2014 [1/]

Region	Average **size** of firms[2/]	Percentage of **large** firms in the region[3/]	Percentage distribution of large firms at the national level [4/]	Percentage of manufacturing firms that **export** in the region[5/]	Percentage distribution of firms at the national level [6/]
Northern	8.2	1.0%	28.3%	0.17%	14.4%
North-Central	4.5	0.4%	18.7%	0.08%	22.3%
Central	5.1	0.5%	40.3%	0.10%	41.0%
Southern	3.7	0.3%	12.7%	0.02%	22.3%
National	5.1	0.5%	100.0%	0.09%	100.0%

1/In 2013, out of 4,230,745 firms registered in the Economic Census, 43.5% had one worker and all regions of the country had a mode of one in the distribution of the firm's size and a median of two, according to the number of workers.
2/ Firms' size was calculated using the number of employees working in the company and then the average by region was estimated.
3/ The share of large firms corresponds to the share of firms with over 100 workers in each region.
4/ The percentage distribution of large firms at the national level corresponds to the share of firms with over 100 workers in each region.
5/ This indicator was estimated as the percentage of all manufacturing firms in the region, which reported export sales.
6/ The distribution of firms by region was estimated as the percentage of firms with respect to the national total.
Source: Prepared with data from the 2014 Economic Census, consulted in INEGI's microdata laboratory.

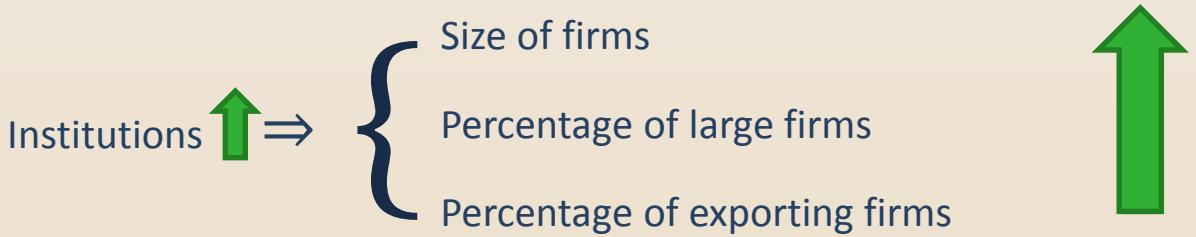
Box:
Institutional Strength and Firms' Size and Export Vocation in Regional Economies

- An instrumental variable approach is used to address the problem of double causality between the variables of interest.
- The instrument used was the number of large-scale crops of high value in world markets during Mexico's colonial period, by state.
- According to the estimates, if states in the Southern region increased, on average, one point in the Institutional Quality Index, which would imply that the quality of their institutions would be close to that of the Northern region, the average size of their firms would increase to a level similar to that in the North-Central region.

Impact of Quality of Institutions on Firms' Size and Export Vocation

	Dependent variables		
Variables	Logarithm of average size of firms	Percentage of large firms	Percentage of exporting firms
Institutional quality	**0.2233*** **	**0.0128** **	**0.0036***
	(0.0539)	**(0.0051)**	**(0.0021)**

Heteroscedasticity robust standard errors in brackets.
*, **, *** indicate statistical significance at 10%, 5% and 1%, respectively.



Box:
Direct and Indirect Spillover Effects on Gross Production, Employment and Value Added of Clusters of Related Industries

- Evidence of spillovers among industries suggests that the presence of clusters of related industries would not only generate greater dynamism within the industries that constitute them, but also across clusters.
- In this context and based on the 21 clusters of related industries identified in Box 1 of the Regional Economic Report October – December 2018, this Box seeks to quantify the effects on the economy of such agglomerations based on the estimation of their spillover effects on other clusters.
- These interdependencies among clusters could encourage the development of local economies. Thus, growth of clusters could boost the dynamism across other sectors of the economy, creating synergies that favor long-term growth through the dissemination of knowledge, innovation, and productivity growth.

Box:
Direct and Indirect Spillover Effects on Gross Production, Employment and Value Added of Clusters of Related Industries

Direct and Indirect Multipliers for 21 Clusters of Related Industries

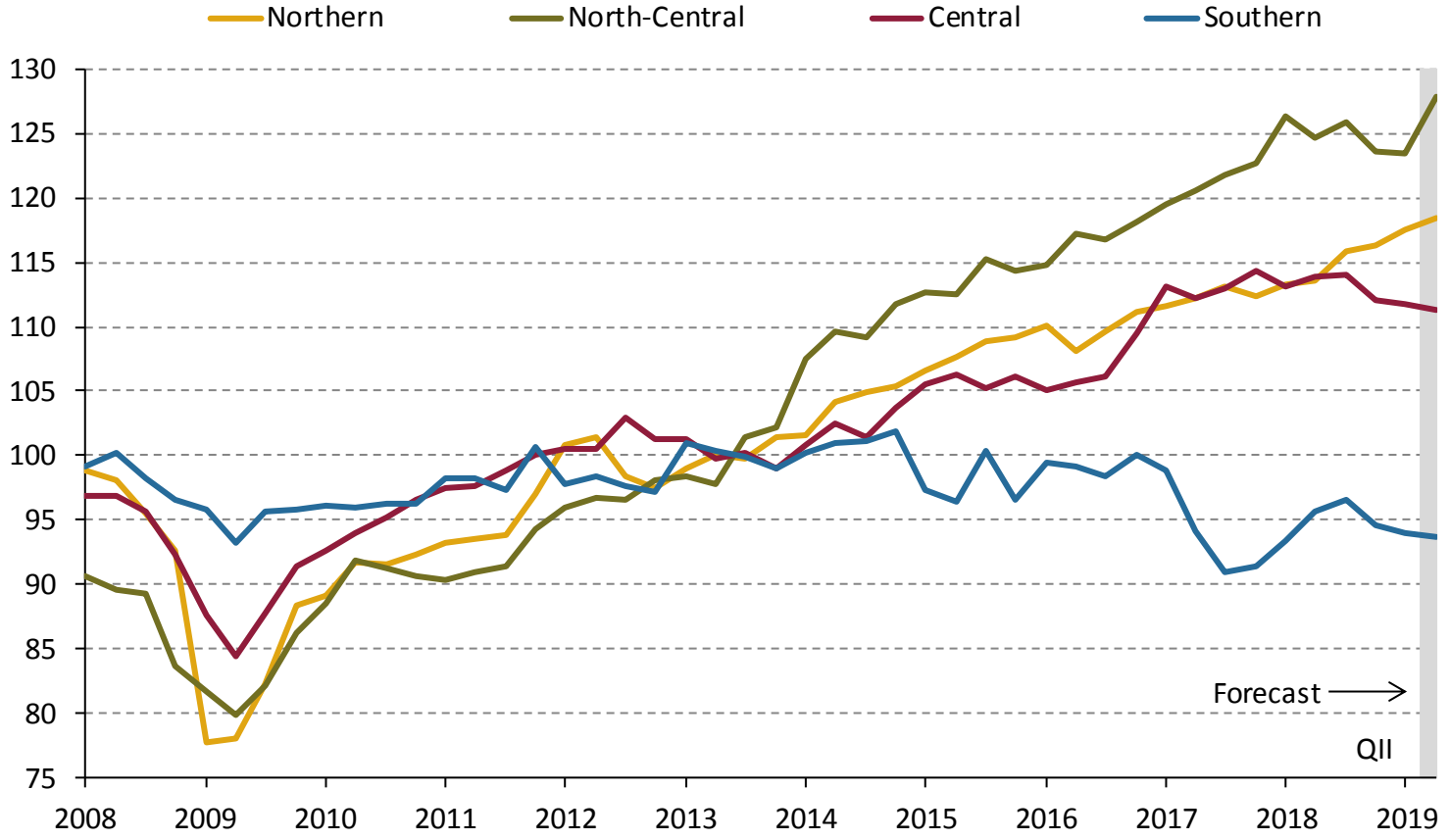
Cluster	Direct effects			Indirect effects			Total effect			Total effect as a percentage of GDP 2018
	Percentage in gross production[1/]	Percentage in added value[1/]	Thousands of employments[2/]	Percentage in gross production[1/]	Percentage in added value[1/]	Thousands of employments[2/]	Percentage in gross production[1/]	Percentage in added value[1/]	Thousands of employments[2/]	
1 Manufacture of plastic products	107.2	27.7	1.5	146.8	59.7	3.2	254.0	87.5	4.6	0.12
2 Other food industries	108.0	37.3	1.2	116.4	49.3	3.2	224.4	86.6	4.4	0.12
3 Manufacture of automobiles and trucks	111.0	29.2	0.5	94.5	44.9	2.0	205.5	74.0	2.5	0.10
4 Oil and gas extraction	127.8	61.6	0.1	54.6	23.5	0.7	182.4	85.1	0.8	0.11
5 Wired telecommunications operators	104.9	49.8	0.6	59.8	27.9	1.1	164.7	77.7	1.7	0.10
6 Manufacture of pharmaceutical products	105.8	39.9	2.5	47.5	23.2	1.1	153.4	63.1	3.6	0.09
7 Apparel manufacture	104.3	43.7	3.0	47.6	21.1	1.4	151.9	64.7	4.4	0.09
8 Retail trade of groceries and food	100.9	51.5	8.7	47.9	26.4	1.4	148.8	77.9	10.1	0.11
9 Beverage industry	102.5	38.9	2.5	43.0	20.6	1.1	145.5	59.5	3.6	0.08
10 Wholesale trade of groceries and food	102.0	57.0	2.2	43.4	22.9	1.0	145.4	79.9	3.3	0.11
11 Corporate	108.0	58.6	1.4	33.9	18.6	1.0	141.9	77.2	2.4	0.10
12 Manufacture of iron and steel products	107.9	27.5	1.0	24.7	11.8	0.6	132.6	39.2	1.6	0.05
13 Fixed-route intercity collective passenger transport	100.6	30.1	1.8	29.6	14.9	0.6	130.2	45.0	2.4	0.06
14 Commercial banks	102.6	67.6	0.5	26.0	16.1	0.8	128.6	83.8	1.3	0.11
15 Manufacture of basic chemicals	106.0	37.0	0.1	14.8	7.3	0.2	120.8	44.3	0.3	0.06
16 Manufacture of other electric equipment and accessories	100.4	35.9	1.6	20.4	9.2	0.5	120.7	45.0	2.1	0.06
17 Footwear manufacture	112.0	35.7	2.8	3.8	1.6	0.1	115.8	37.3	2.9	0.05
18 Manufacture of clay-based products and refractory mineral products	109.2	31.4	2.3	5.9	2.8	0.1	115.0	34.2	2.4	0.05
19 Mining of metallic minerals	100.8	56.7	1.3	13.8	7.3	0.3	114.6	64.0	1.6	0.09
20 Manufacture of other textiles products different from apparel	103.1	31.6	4.6	3.5	1.8	0.1	106.6	33.4	4.7	0.05
21 Employment services	100.4	80.6	5.3	1.4	0.6	0.0	101.8	81.2	5.3	0.11

*/ The three clusters with the highest increases given a one-billion peso increase in the clusters' final demand are highlighted in each column.
1/ Percentage in the reference variable with respect to the value of a one-billion increase in the final demand shock.
2/ Thousands of jobs created as a result of a one-billion peso final demand shock.
Source: Estimated based on data from the 2014 Economic Census, INEGI.

During Q2 2019, manufacturing recovered somewhat with respect to the slowdown observed in 2H 2018. In the Northern region, this activity is estimated to have continued its upward trend. In the North-Central region it is also expected to have shown certain expansion. In contrast, this sector is estimated to have continued to contract in the Center and in the South.

Regional Manufacturing Indicator

Index 2013=100, quarterly average



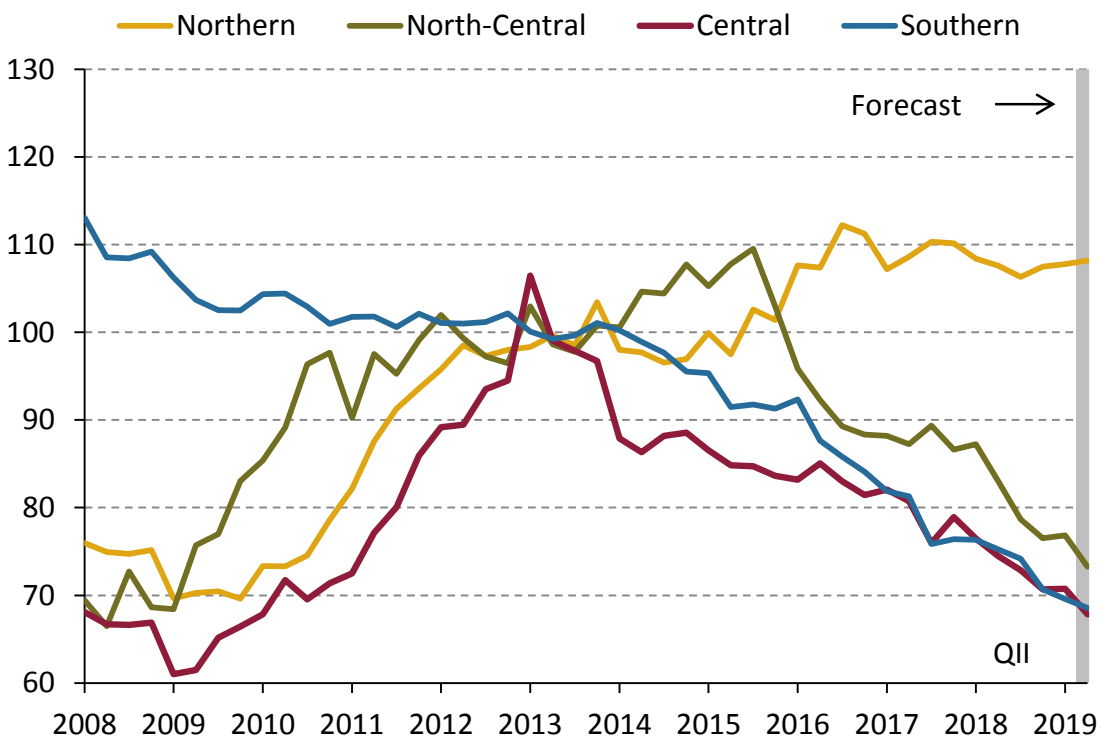
Source: Estimated by Banco de México with seasonally adjusted series of the Monthly Indicator of Manufacturing Activity by State. INEGI.

During Q2 2019, mining activity is estimated to have continued observing a decreasing trend in the Southern region and in the central regions, whereas in the Northern one it is expected to have remained stagnant.

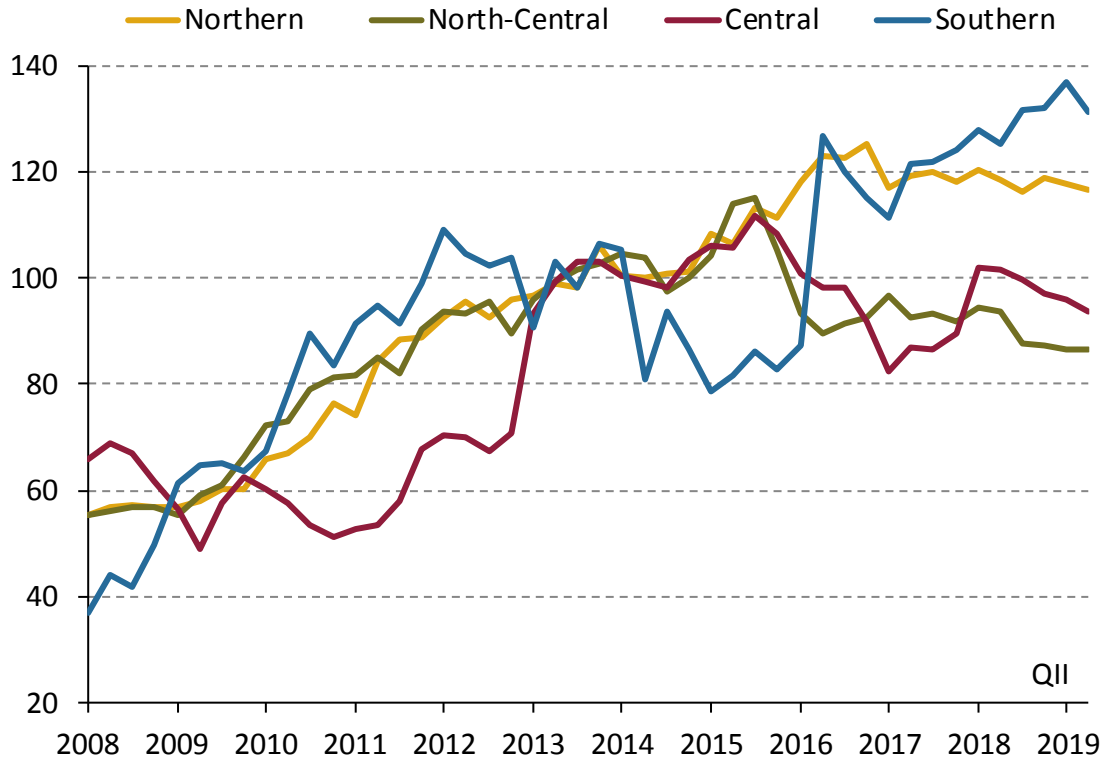
Regional Indicator of Mining, Quarrying, and Oil and Gas Extraction

Index 2013=100, quarterly average

Total



Metal and Non-metal Minerals

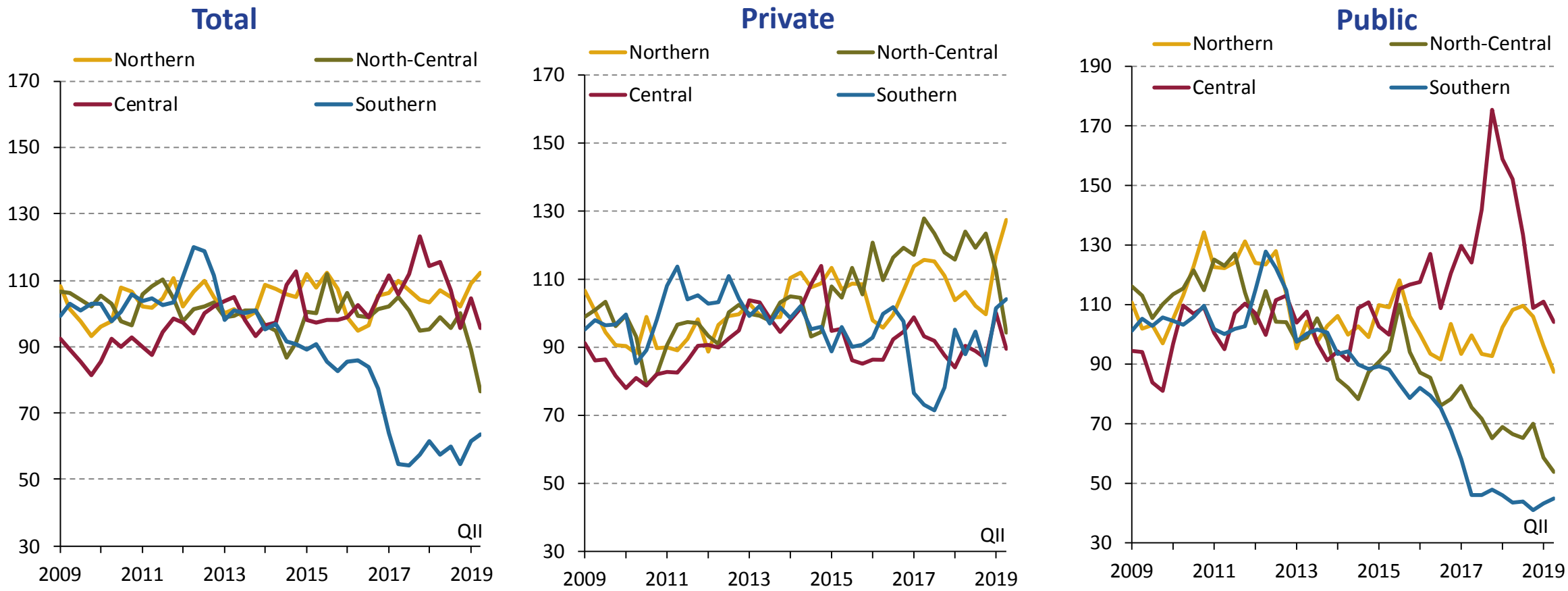


Source: Estimated and seasonally adjusted by Banco de México with the series of the Monthly Indicator of Mining Activity by State and the Volume of Mining Production by Main States and Municipalities. INEGI.

In the construction sector, the negative trajectory observed since the beginning of 2018 has become more evident, although its monthly evolution has exhibited higher volatility.

Real Value of Production in the Construction Industry by Region

Index 2013=100, quarterly average

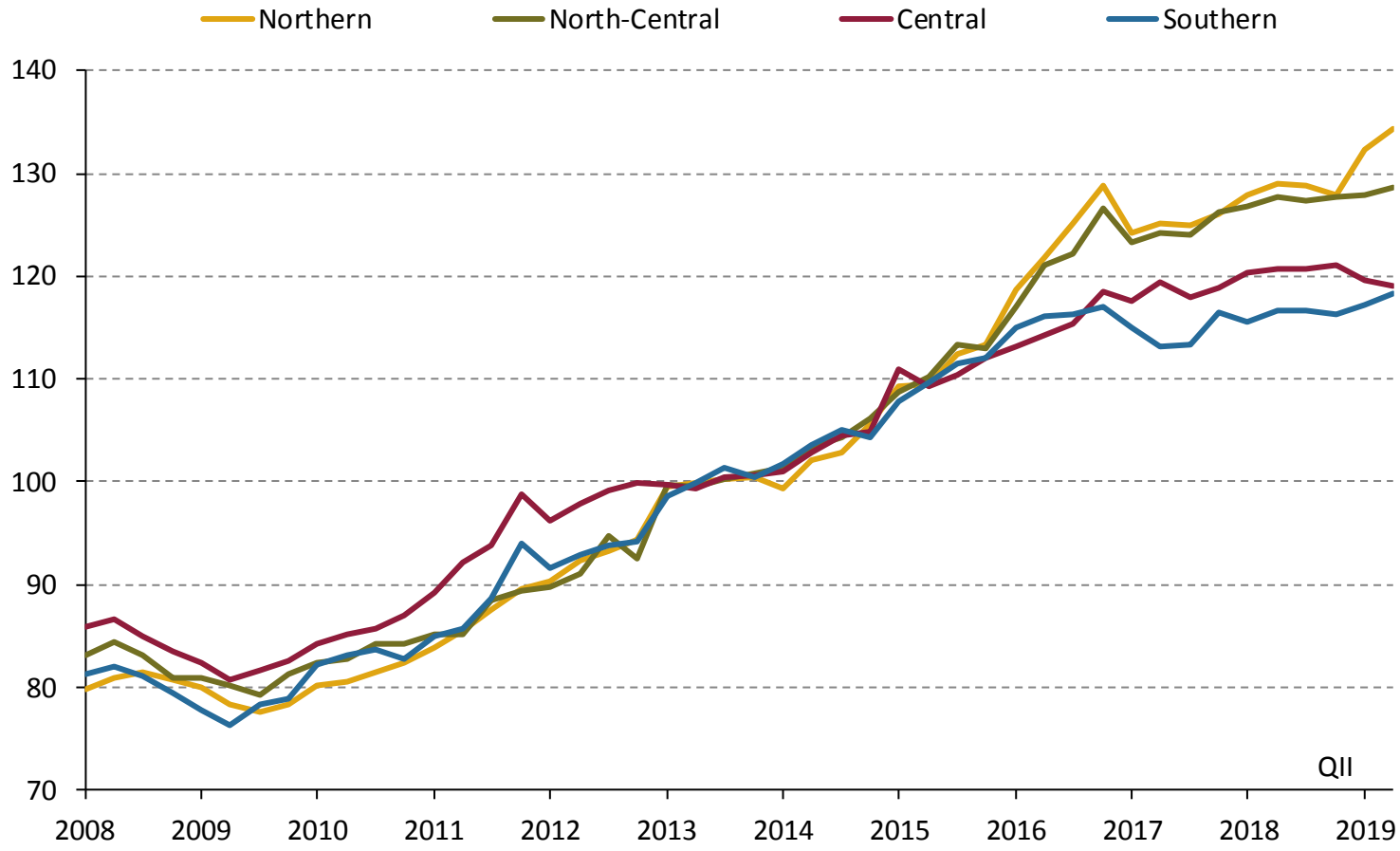


Source: Prepared and seasonally adjusted by Banco de México with data from the National Survey of Construction Companies, INEGI.

Retail trade continued to expand in the Northern, North-Central and Southern regions, while in the Central one it continued to contract.

Regional Trade Indicator

Index 2013=100, quarterly average



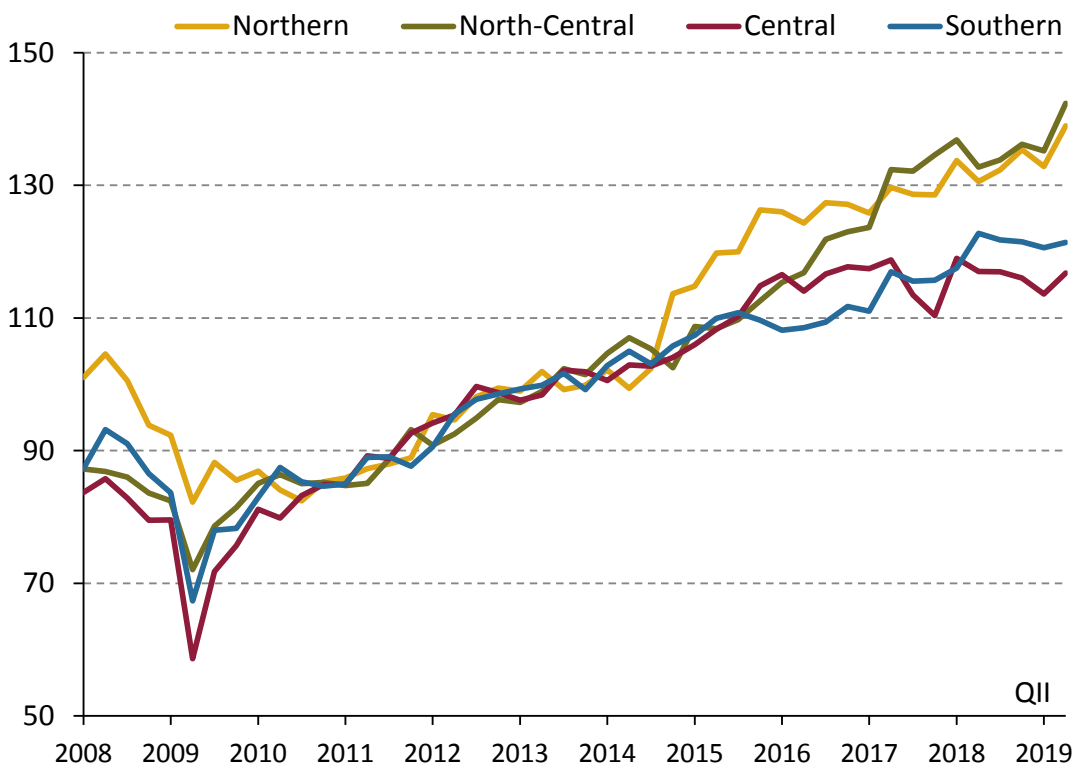
Source: Prepared and seasonally adjusted by Banco de México with the series of Revenues from the Supply of Goods and Services of retailers by State. INEGI.

Tourism activity expanded across all regions during Q2 2019, albeit a certain weakness in hotel occupancy in the Central and Southern regions is perceived.

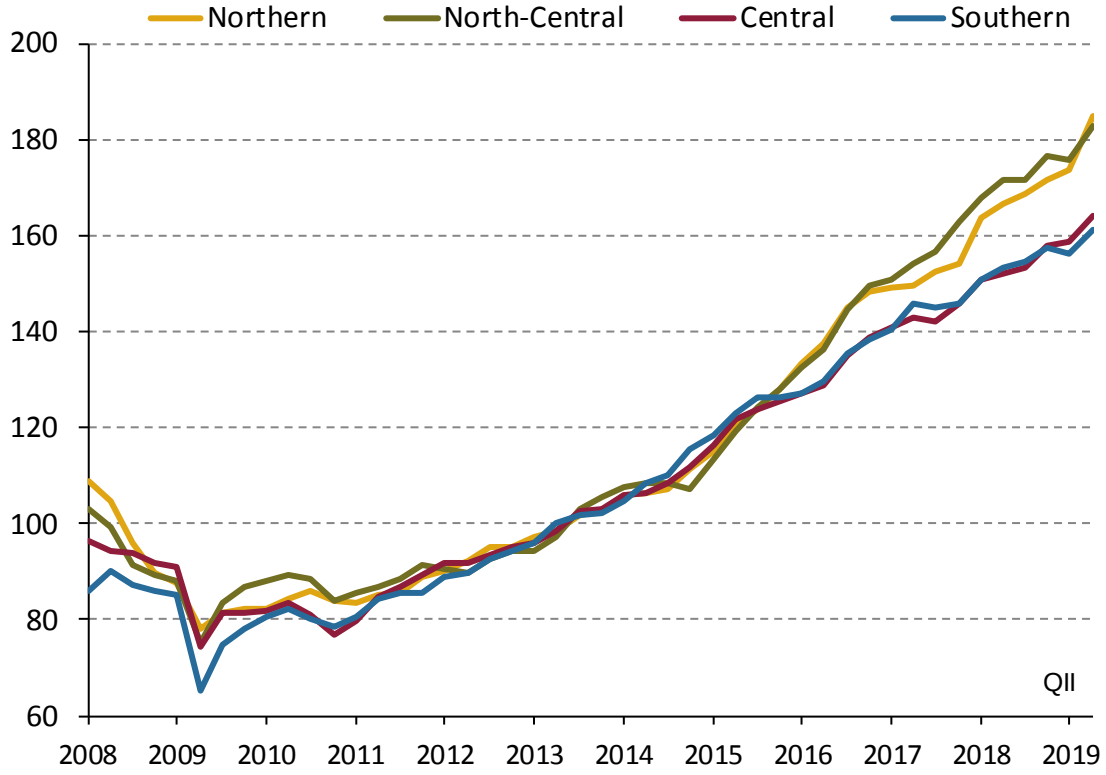
Regional Indicators of Tourism (Air Transportation and Traveler Accommodation)

Index 2013=100, quarterly average

Hotel Occupancy



Inflow of Passengers to Airports

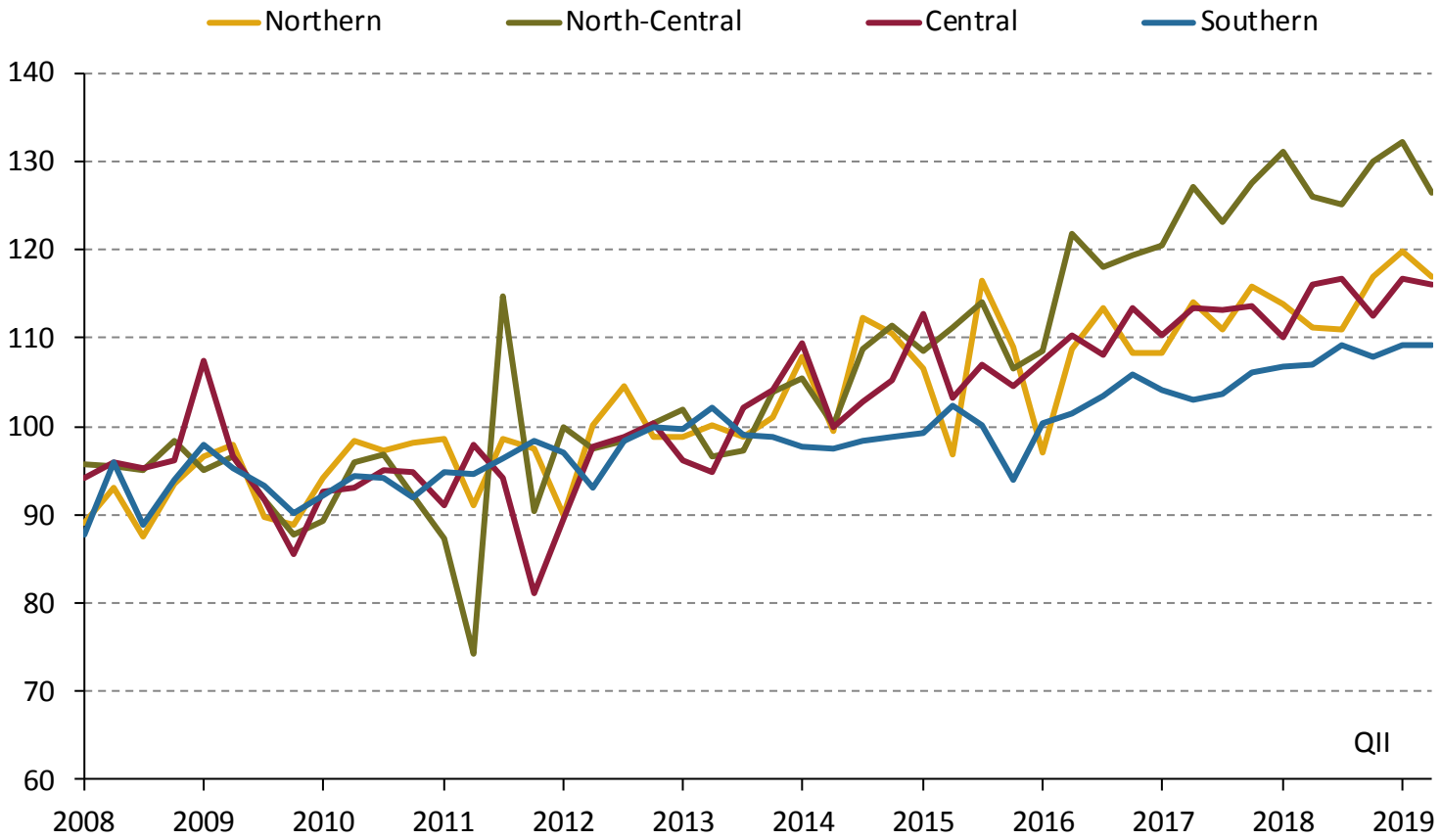


Source: Prepared and seasonally adjusted by Banco de México based on data from the Mexican Secretariat of Tourism and the state-owned company Airport and Auxiliary Services (ASA, for its acronym in Spanish).

The agricultural and livestock product industry contracted in the Northern and central regions and stagnated in the Southern region, after having expanded in all regions in Q1 2019.

Index of Regional Agricultural and Livestock Product Production

Index 2013=100, quarterly average

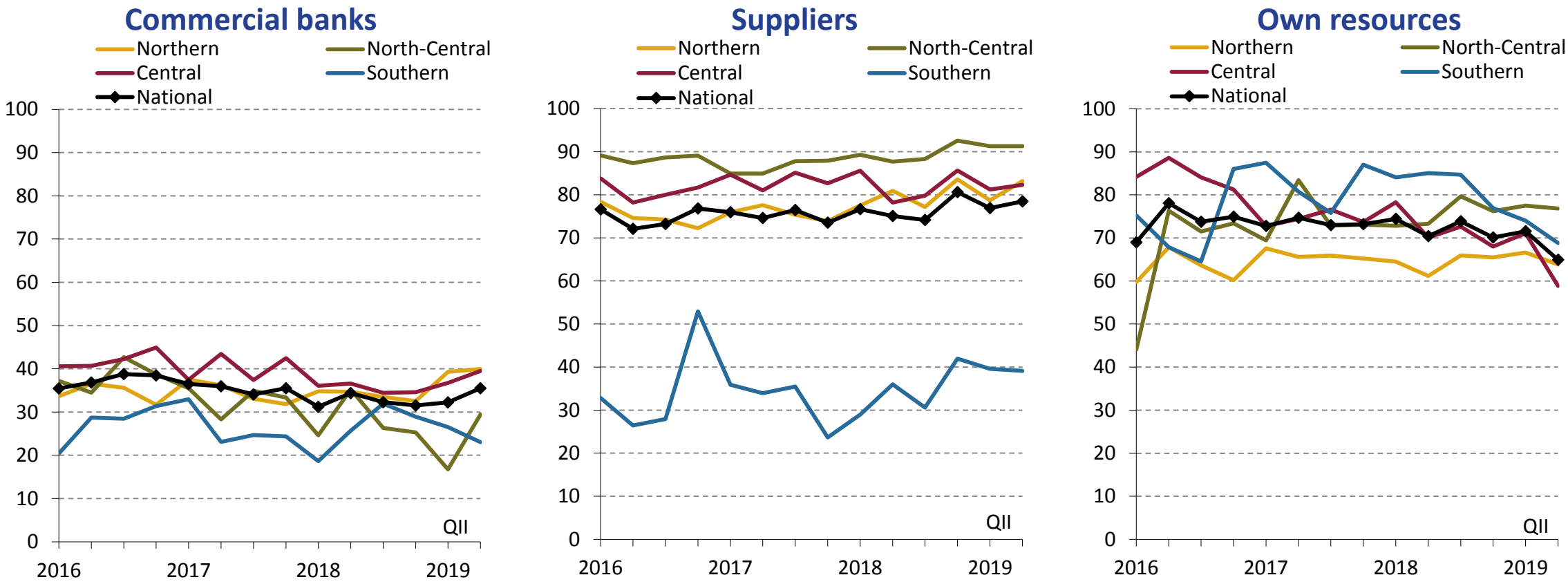


Source: Estimated and seasonally adjusted by Banco de México based on data from the Agricultural and Fisheries Information Service (SIAP, for its acronym in Spanish). Unlike GDP estimates, this indicator excludes information on the value generated by land cultivation and approximates a measurement of the gross production value, rather than a measurement of the added value generated in the sector.

The share of firms that resorted to financing their activities through commercial banks increased in all regions, except for the Southern one. On the other hand, the share of firms that used financing by suppliers remained practically unchanged in all regions. The share of firms that resorted to financing with own resources contracted in all regions.

Main Sources of Financing by Firms in Q2

Percent of businesses that used each source of financing

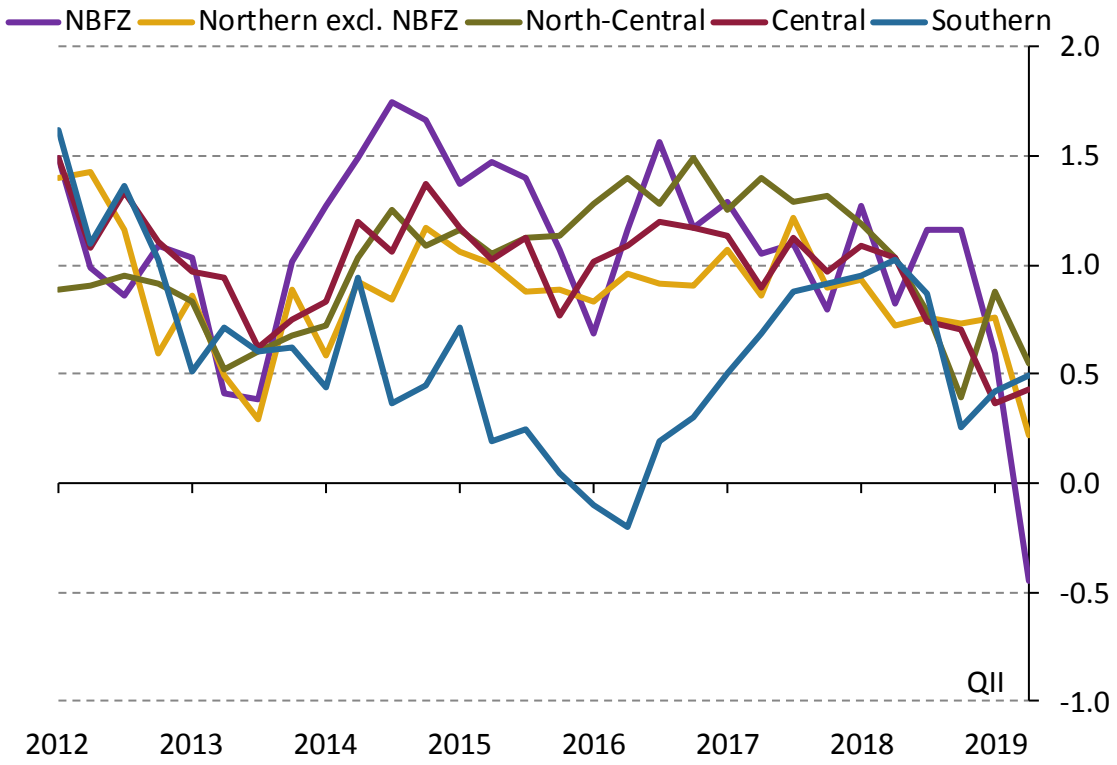


Source: Banco de México.

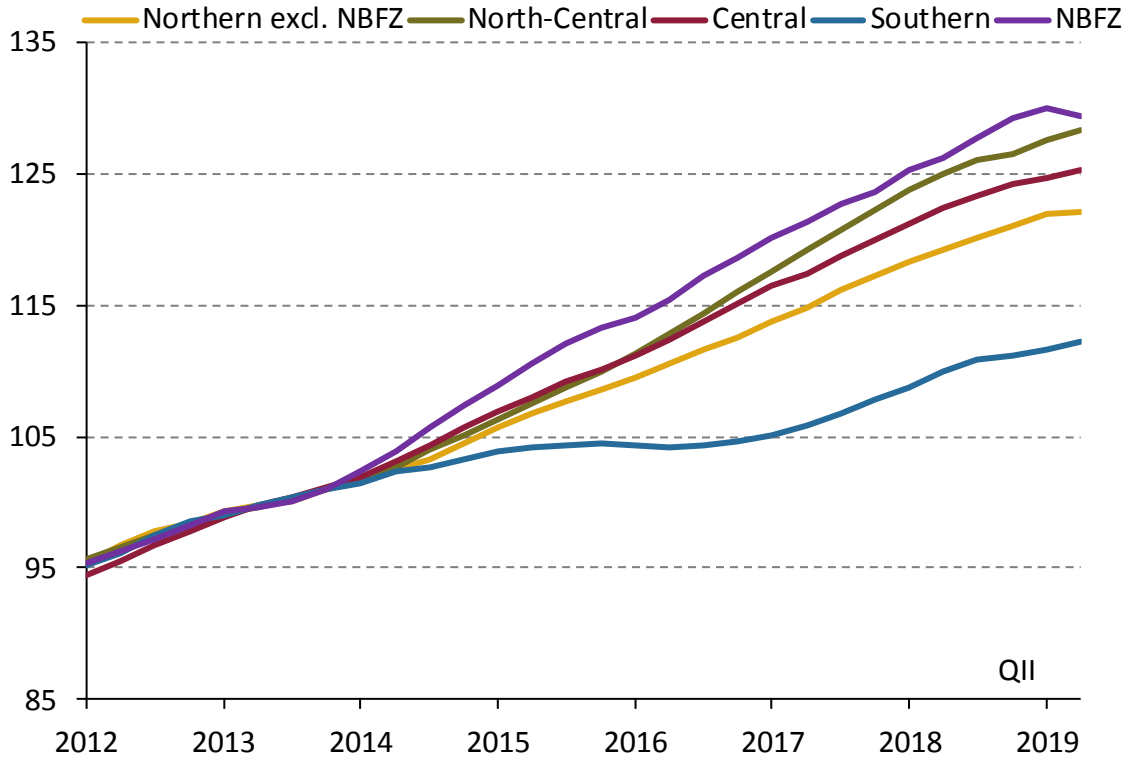
During Q2 2019, the slowdown in the creation of IMSS-insured jobs persisted, especially in the Northern Border Free Zone (NBFZ).

Number of IMSS-insured Workers 1/

Quarterly change, percent

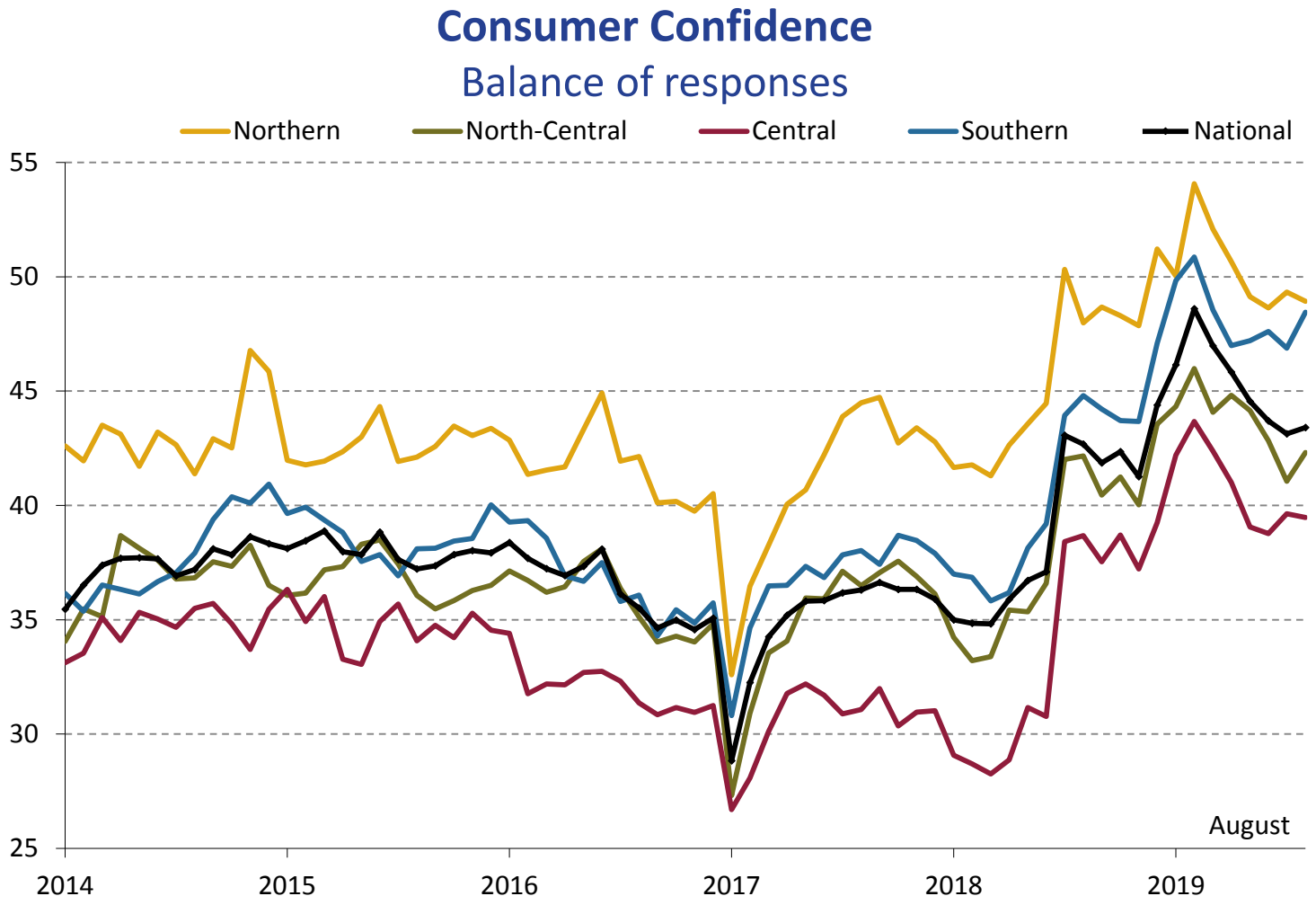


Index 2013=100



1/ Permanent and temporary jobs in urban areas.
Source: Estimated and seasonally adjusted by Banco de México with IMSS data.

Despite continuing to be at relatively high levels, the Consumer Confidence Index decreased during the April – July period in the four regions of Mexico, as compared to Q1 2019.



Source: Prepared and seasonally adjusted by Banco de México with data from the series of the Consumer Confidence Index (INEGI) and Banco de México.

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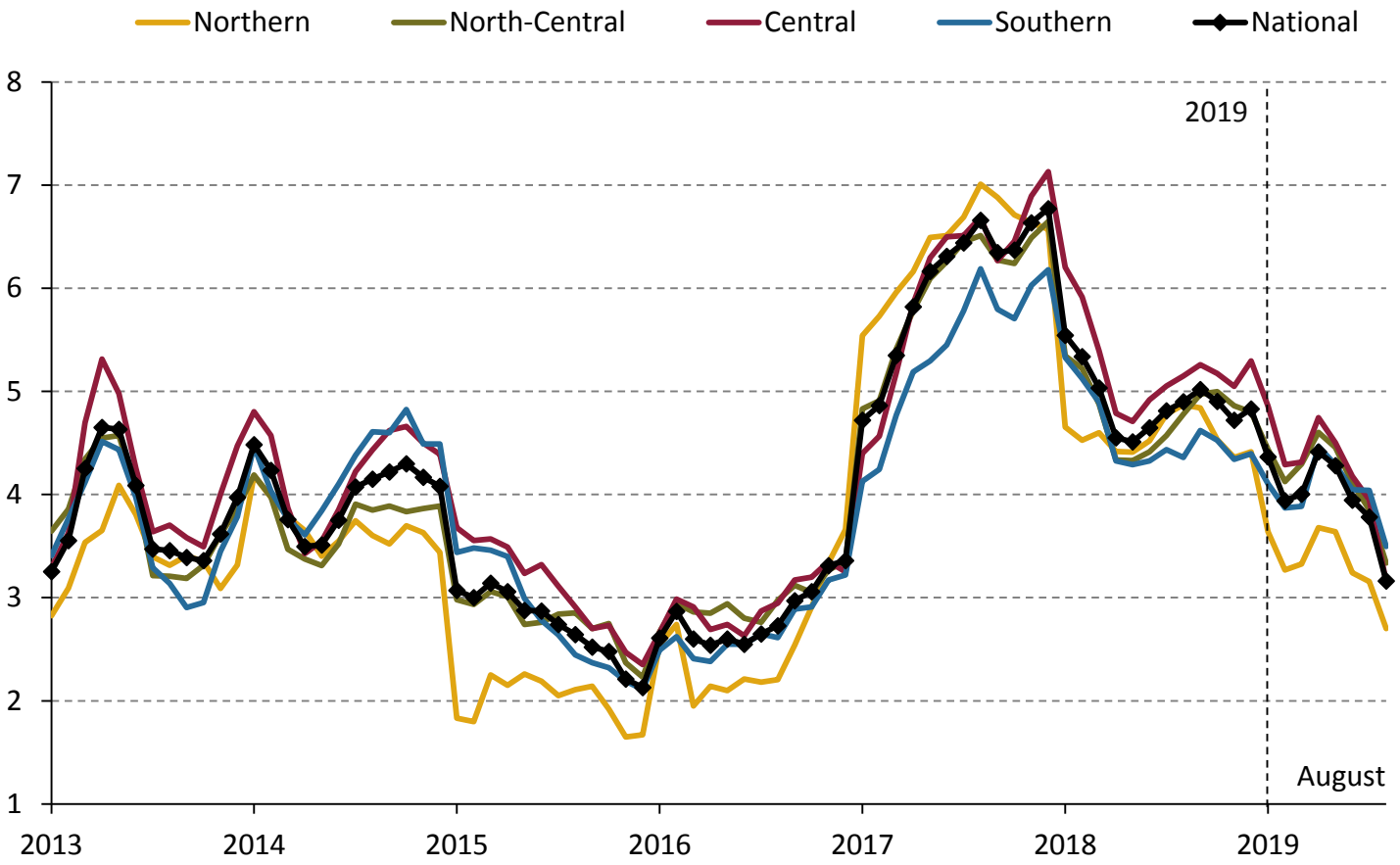
(based on data collected between June 24 and July 18, 2019)

III. Final remarks

Most regions observed an increase in their levels of average annual inflation between Q1 and Q2 2019, although they have recently followed a downward trend.

Annual Headline Inflation, by Region

Data in percent

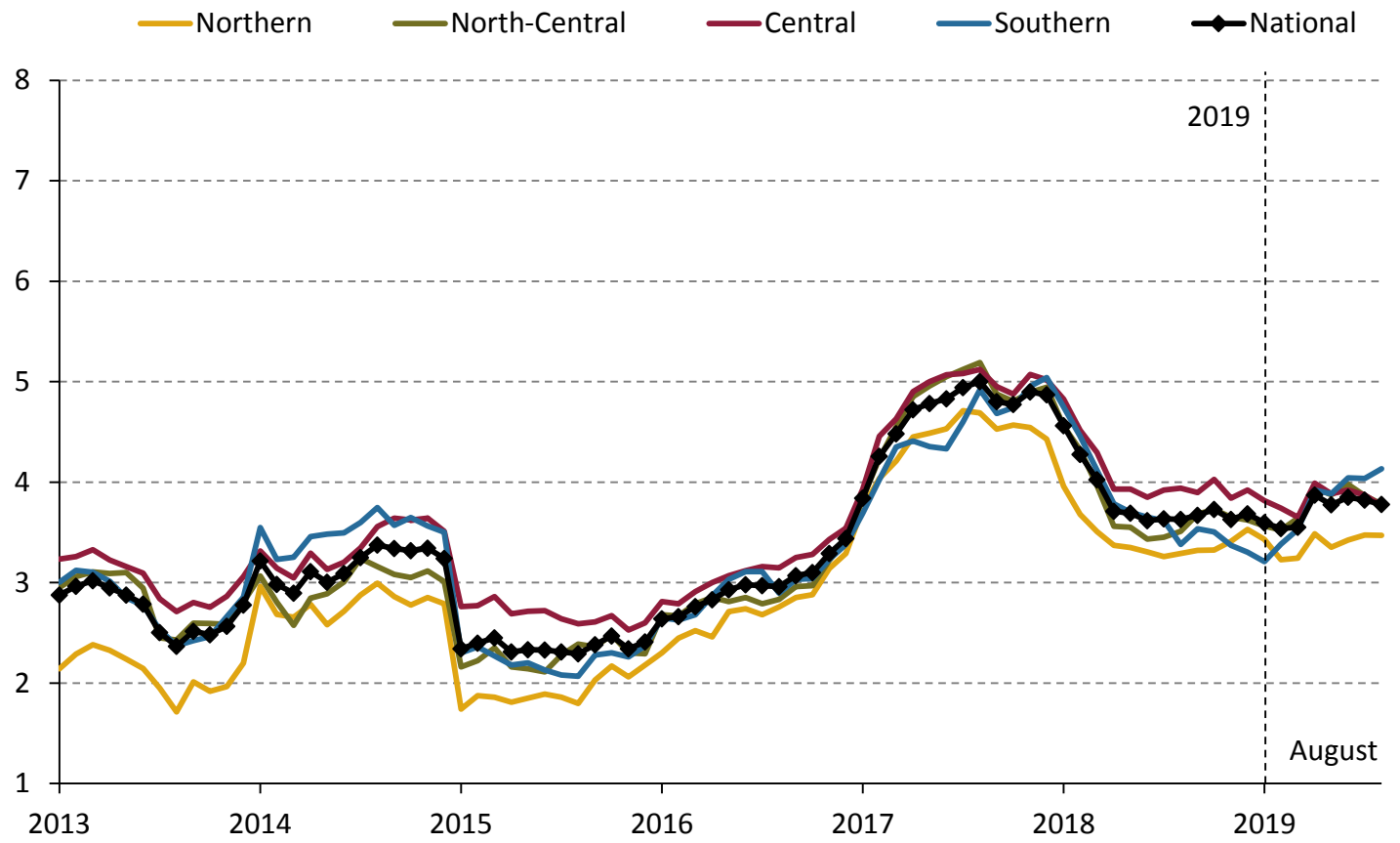


Source: Prepared by Banco de México with data from INEGI and Banco de México.

In all regions, average annual core inflation remained at high levels and has maintained its persistence.

Annual Core Inflation, by Region

Data in percent

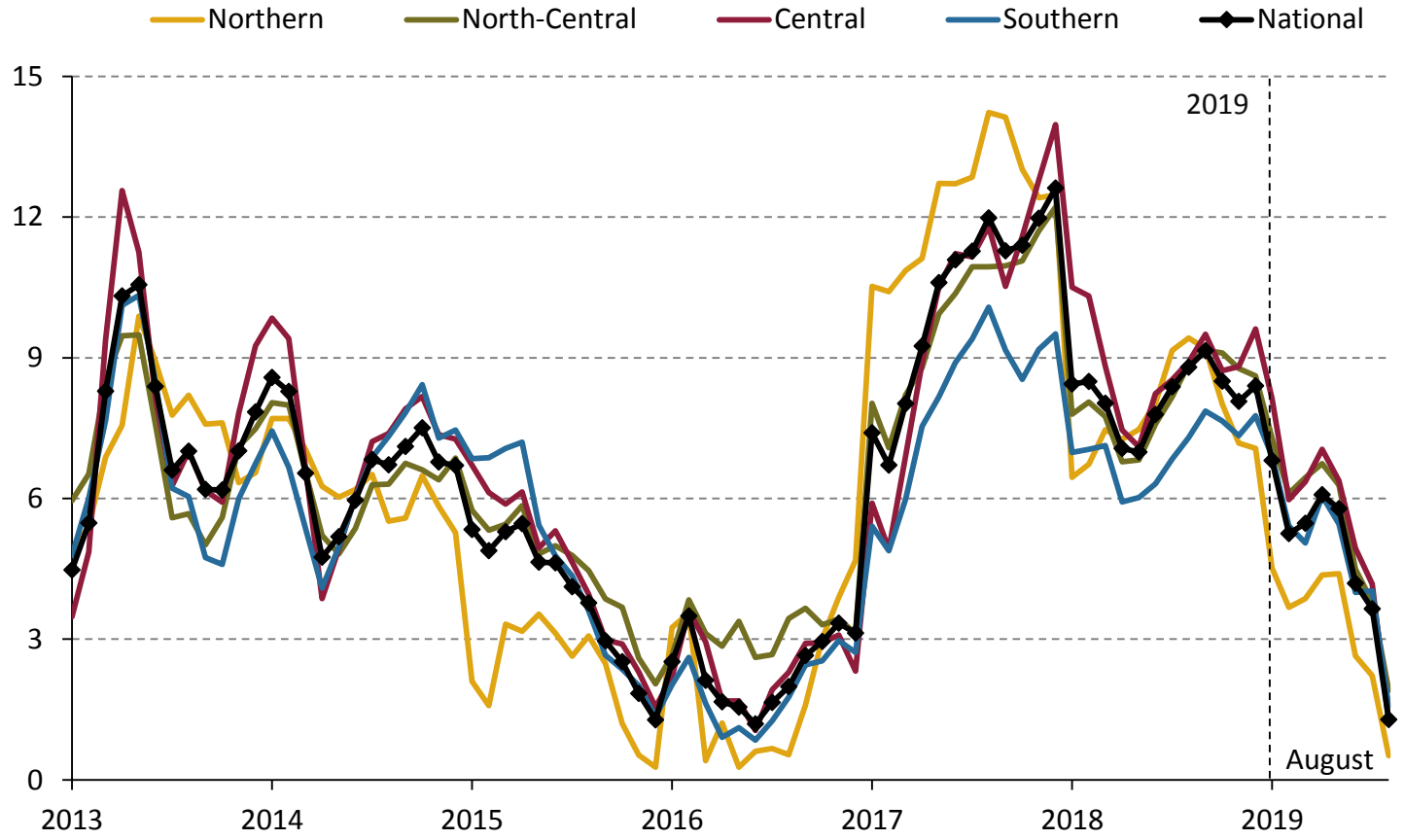


Source: Prepared by Banco de México with data from INEGI and own data.

Between Q1 and Q2 2019, average annual non-core inflation declined in all regions. This behavior became more evident since the end of Q2. Thus, all regions registered levels below 2% in August, while in the Northern region, close to 0.5%.

Annual Non-core Inflation, by Region

Data in percent



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

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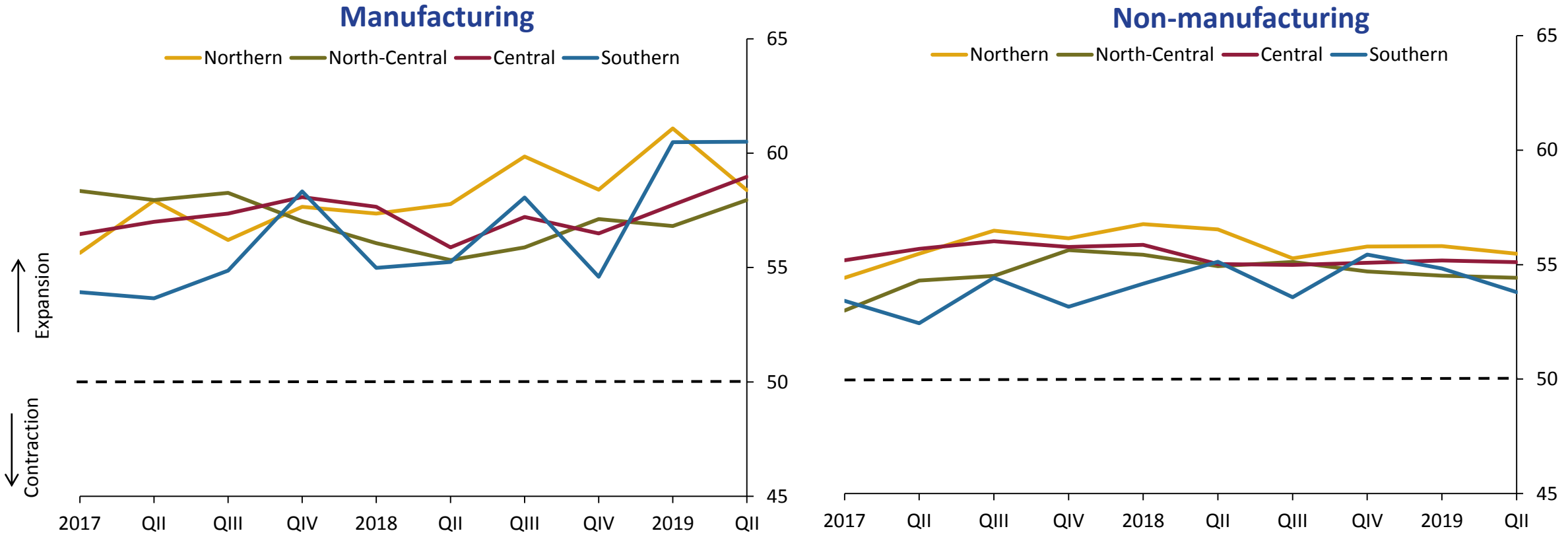
(based on data collected between June 24 and July 18, 2019)

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Regional indices signal that both manufacturing and non-manufacturing activity will continue to expand during the next 3 months. In the manufacturing sector, the signal of expansion strengthened in the central regions, remained stable in the south, and weakened in the north. In the non-manufacturing sector this signal remained practically unchanged, except for the south, where it weakened.

Regional Index of Manufacturing and Non-manufacturing Orders: Activity Outlook, Next 3 Months [1/]

Diffusion indices

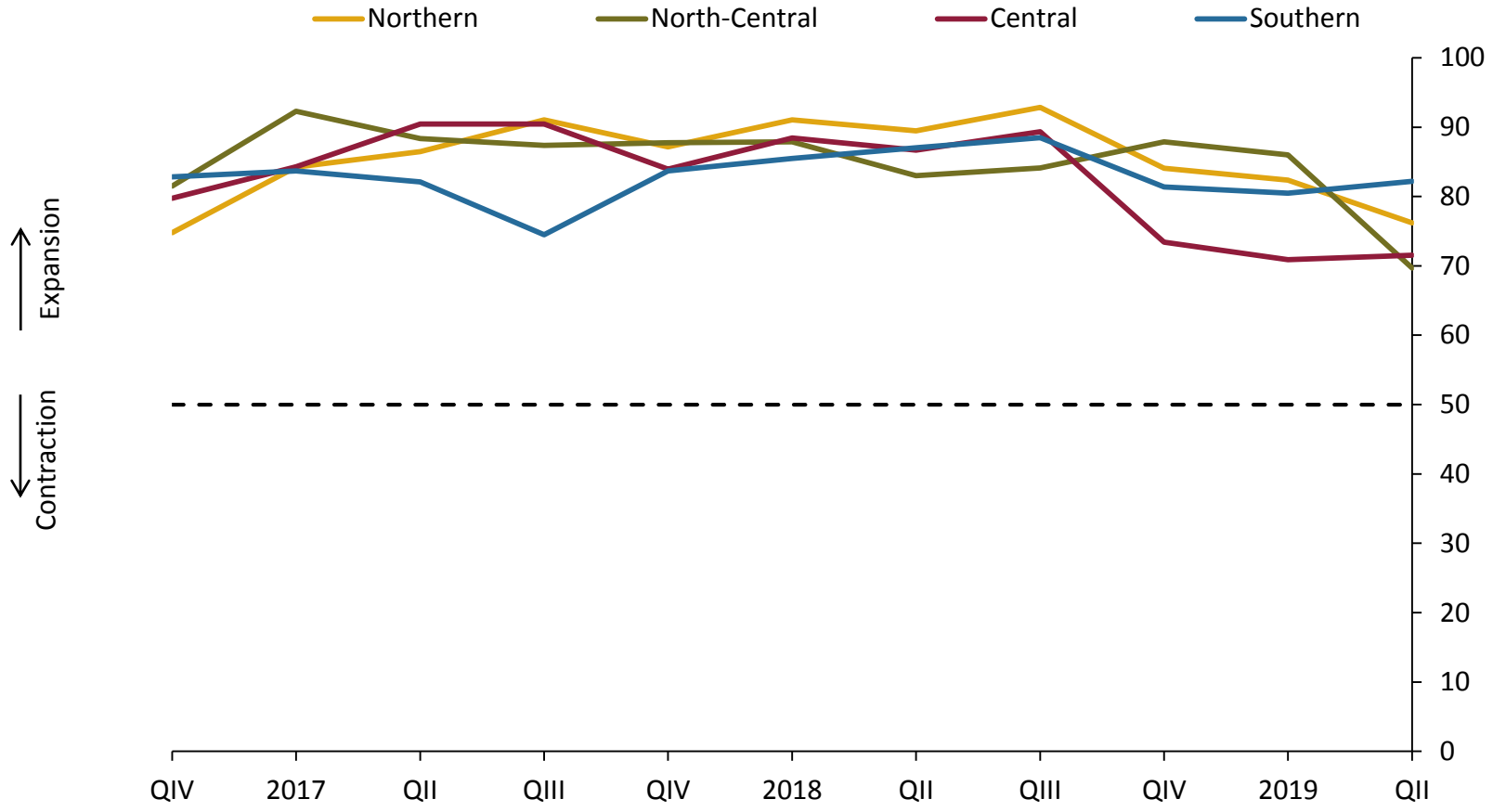


1/ Seasonally adjusted data.
Source: Banco de México.

For the next 12 months, business agents consulted in different regions anticipate a higher demand for their goods and services. However, in the Northern and North-Central regions the signal was weaker than in Q1, while it strengthened slightly in the Central and Southern ones.

Business Agents' Expectations: Demand over Next 12 Months 1/

Diffusion indices

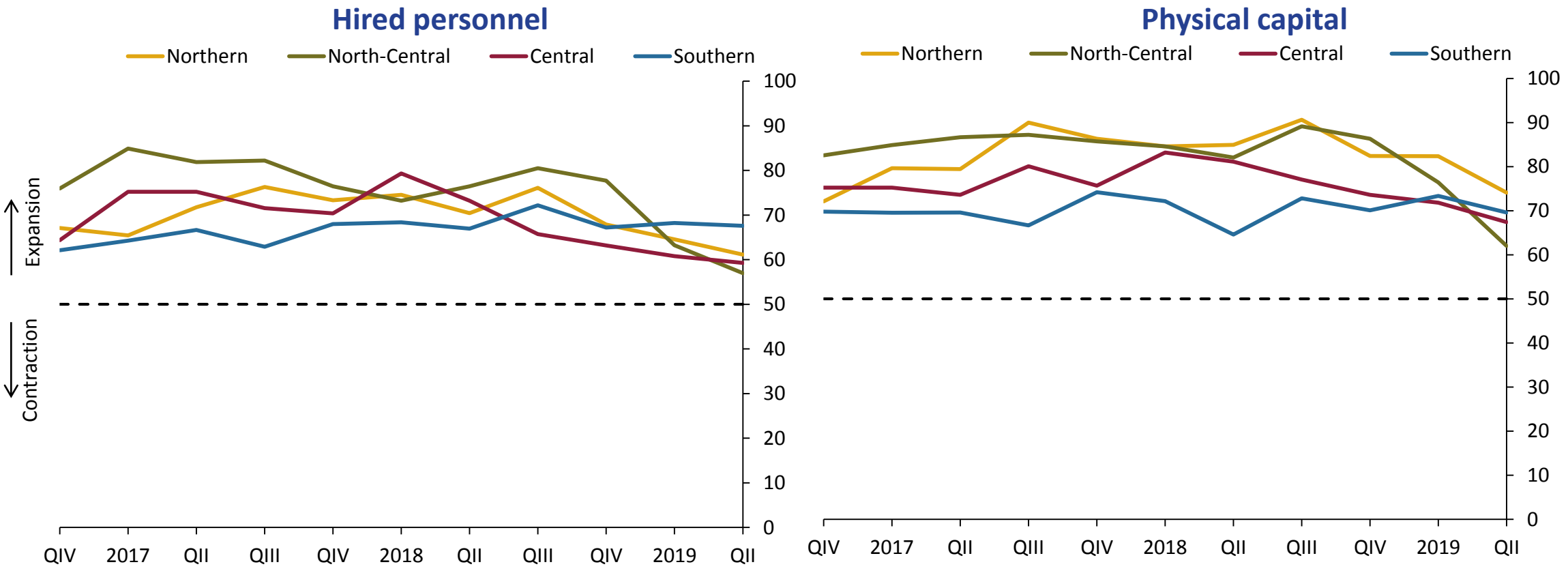


1/ Results obtained from responses to the question: "With respect to the volume of sales of your goods and services in the previous 12 months, how do you expect your sales volume to change in the next 12 months?", from interviews conducted by Banco de México.

Consistent with the expected growth in demand for their own goods and services, business agents anticipate an increase of hired personnel and physical capital in all regional economies, although the signal for this expansion was lower than that observed in Q1 2019, especially in the case of physical capital.

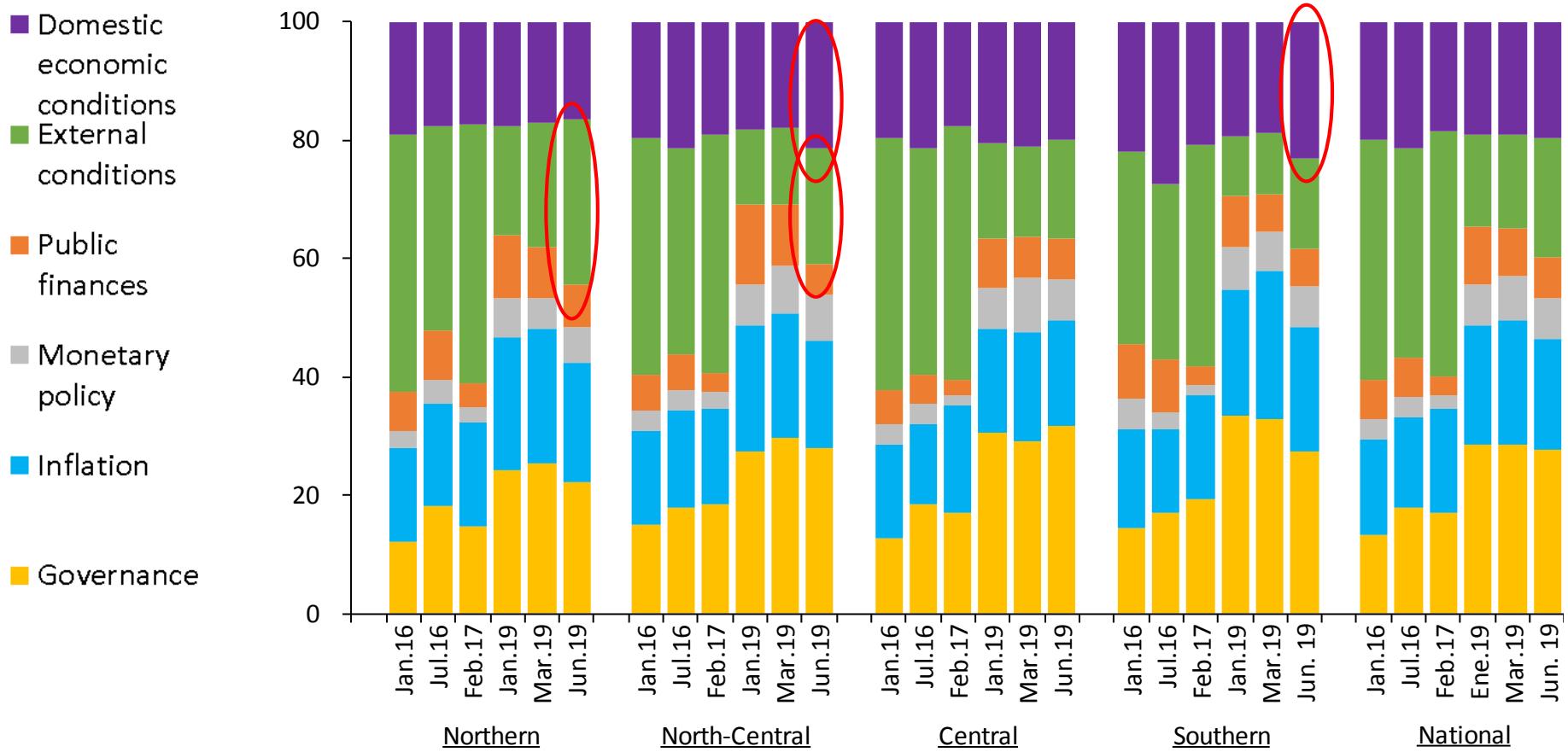
Business Agents' Expectations: Hired Personnel and Physical Capital, Next 12 Months [1/]

Diffusion indices



1/ Results obtained from responses to questions: "With respect to the previous 12 months, how do you expect the total number of workers in your firm to change in the next 12 months?", and "With respect to your firm's investment in fixed assets during the previous 12 months, how do you expect investment levels to change in the following 12 months?", from interviews conducted by Banco de México.

Percentage Distribution of Business Agents' Responses when Interviewed about the Main Three Factors that Could Hinder Growth of Economic Activity in their States in the Next Six Months [1/]



1/ Question: "Which do you consider to be the main three limiting factors for growth of economic activity in your state during the next six months?" This question is similar to that included in the questionnaire of Banco de Mexico's Survey of Professional Forecasters.
Source: Banco de México.

Box:
Businesses' Risk Perception of Economic Activity in view of a Possible US Imposition of Tariffs on Mexican Exports

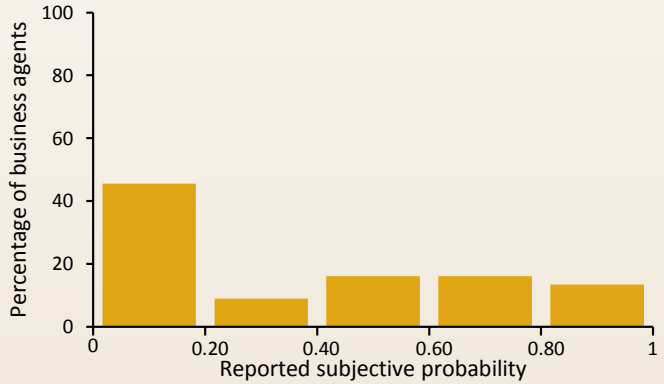
- In late May, the U.S. expressed its intention to impose a 5% tariff on all imports from Mexico, which would gradually climb to 25% if Mexico did not make significant progress in reducing migration flows through the border between both countries.
  - ✓ The possibility of the U.S. announcing trade policy actions against Mexico, possibly associated to non-trade issues, persists.
- Using a subjective expectations methodology, this Box measures the concern of interviewed business contacts regarding the possible negative impact of the announcement of a possible imposition of tariffs by the U.S. to Mexican exports on investment, production and employment in their businesses in the next 12 months.
  - ✓ The results suggest that business agents in the Northern region and, to a lower degree, in the central regions, perceive a higher risk of a negative impact on firms' activity for the next 12 months, which is consistent with the stronger links to the US economy.
  - ✓ Thus, it is possible that the higher degree of uncertainty faced by firms, as a consequence of the threat to impose tariffs, is reflected in lower investment levels and in lower levels of employment in the short and medium terms, especially in regions with stronger links to the US economy.

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Businesses' Risk Perception of Economic Activity in view of a Possible US Imposition of Tariffs on Mexican Exports

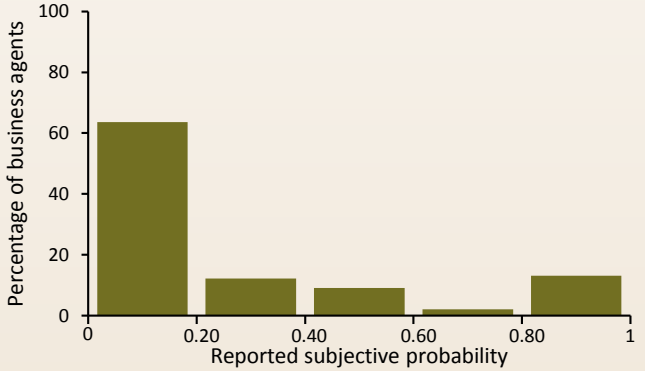
Histograms of Subjective Probability of a Negative Impact for the Next 12 Months

Production

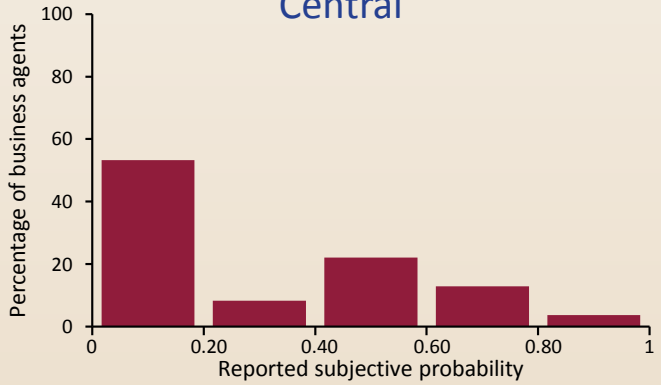
Northern



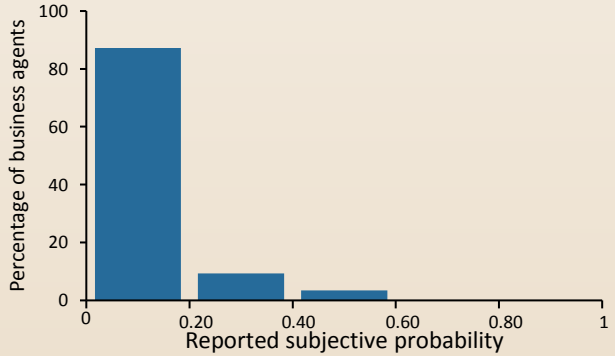
North-Central



Central



Southern

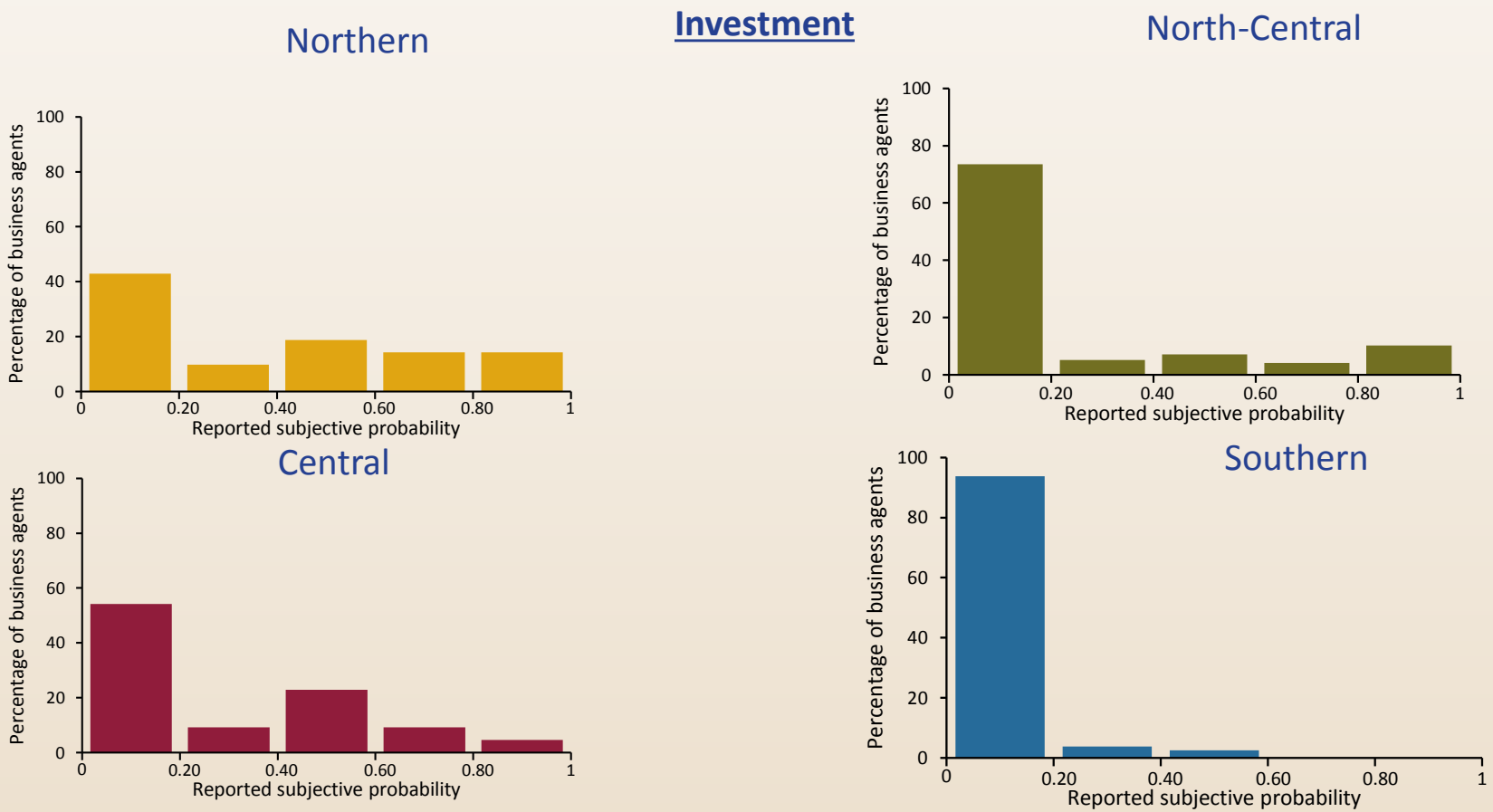


Source: Banco de México.

Box:
Businesses' Risk Perception of Economic Activity in view of a Possible US Imposition of Tariffs on Mexican Exports

Histograms of Subjective Probability of a Negative Impact for the Next 12 Months

Investment

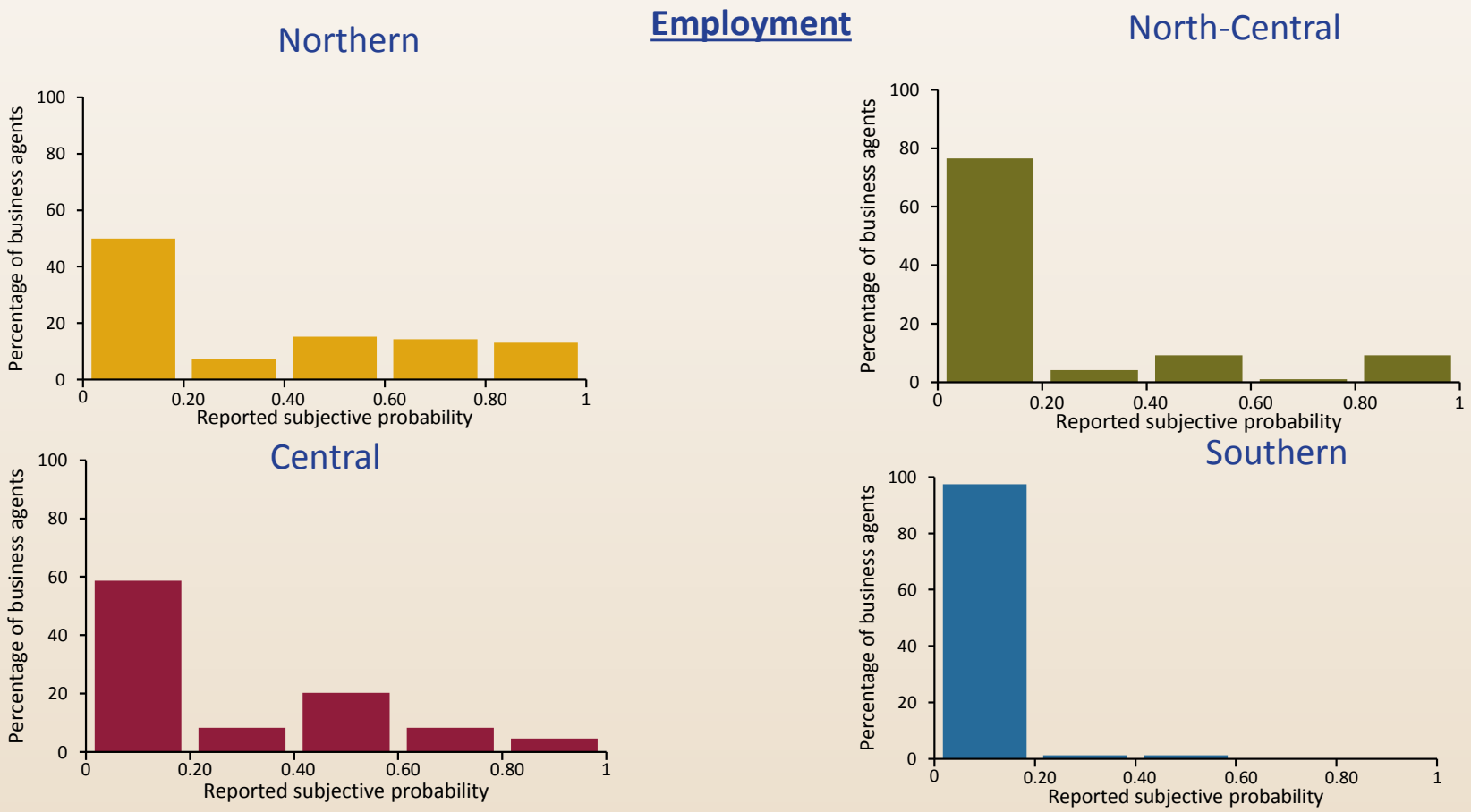


Source: Banco de México.

Box:
Businesses' Risk Perception of Economic Activity in view of a Possible US Imposition of Tariffs on Mexican Exports

Histograms of Subjective Probability of a Negative Impact for the Next 12 Months

Employment

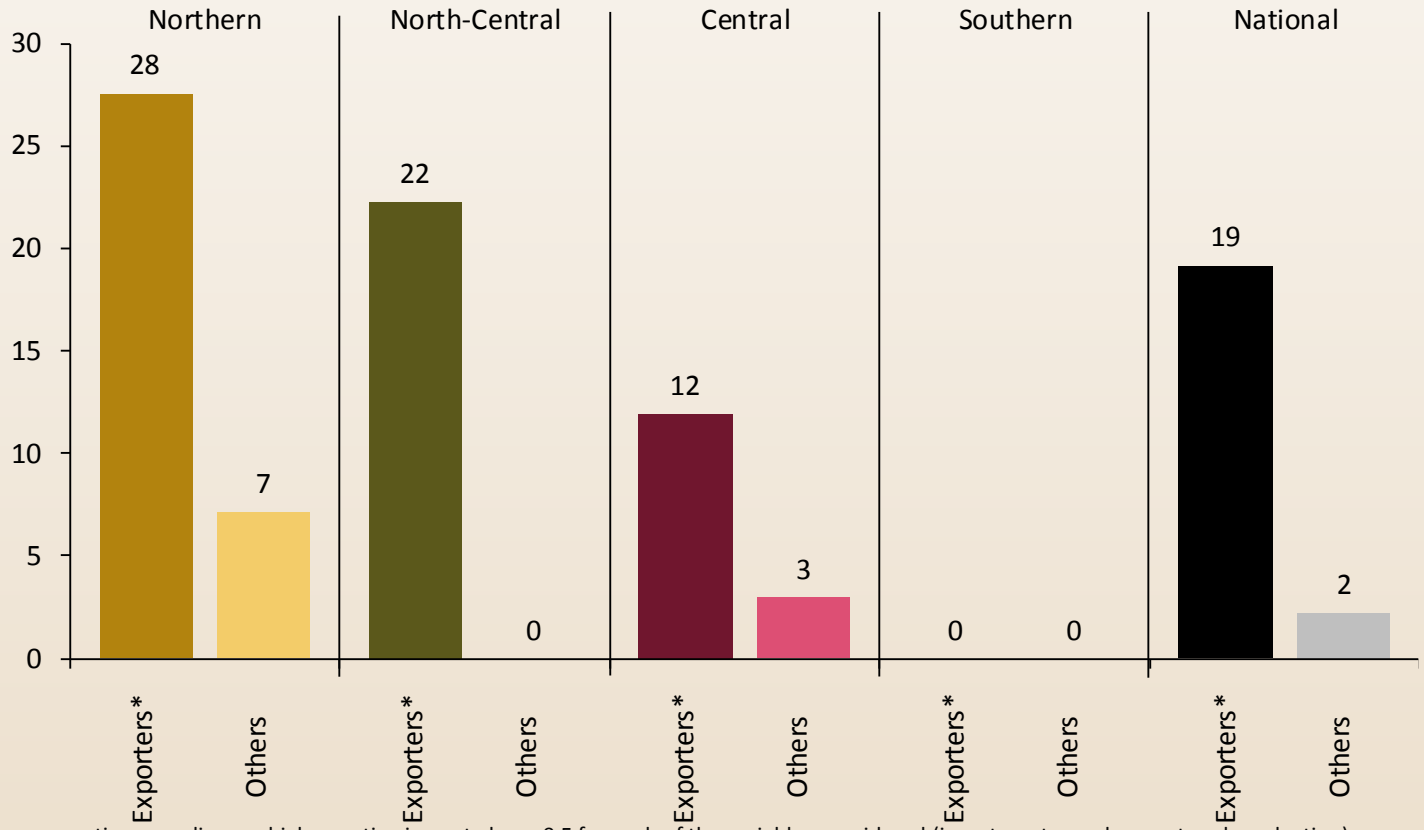


Source: Banco de México.

Box:
Businesses' Risk Perception of Economic Activity in view of a Possible US Imposition of Tariffs on Mexican Exports

Indicator of the Relative Risk[1/] of a Medium or High Negative Impact, by Type of Firm

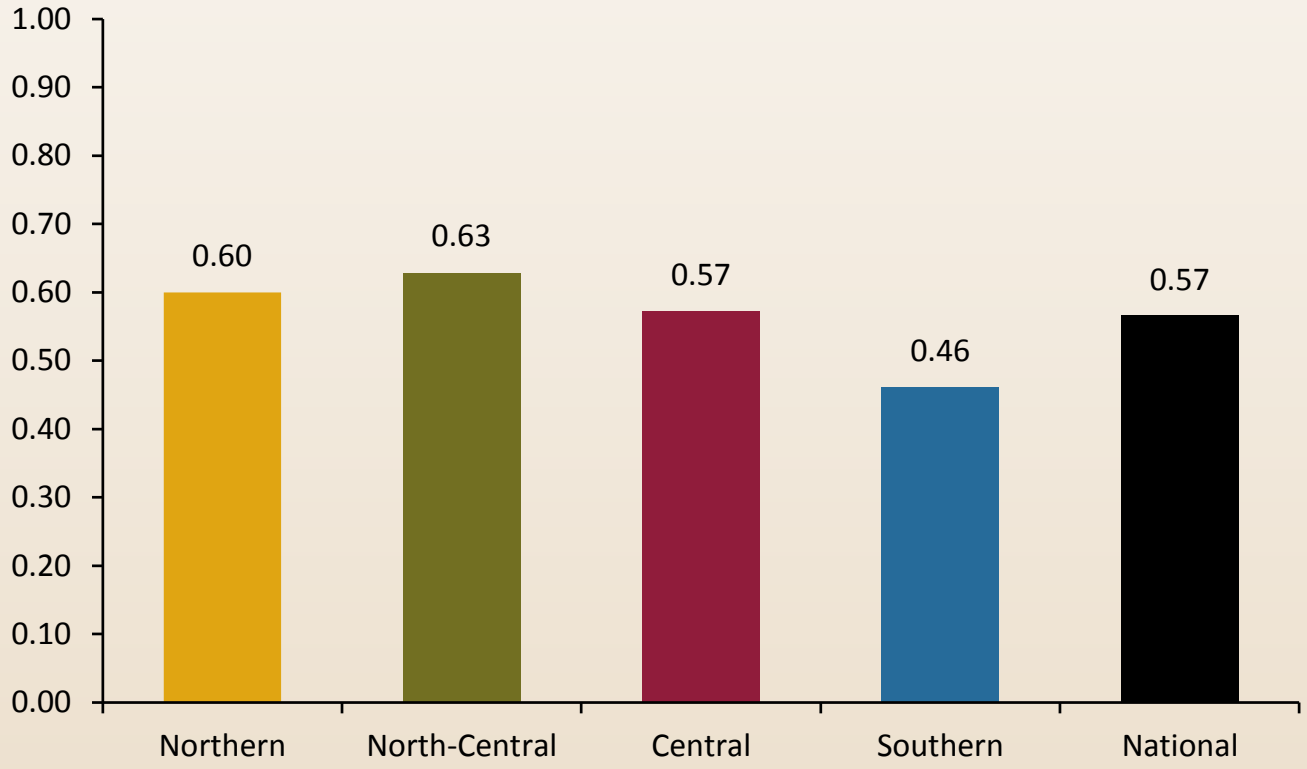
Percentage



1/ Measured as the percentage of firms reporting a medium or high negative impact above 0.5 for each of the variables considered (investment, employment and production).
*/ Firms exporting to the U.S.
Source: Banco de México.

Box:
Businesses' Risk Perception of Economic Activity in view of a Possible US Imposition of Tariffs on Mexican Exports

Average Subjective Probability of a New US Threat to Impose Tariffs



Source: Banco de México.

Business Agents' Opinion on Risks to Regional Economic Activity (based on data collected between June 24 and July 18) 1/

Upward risks

- ✓ That both public and private investment recover.
- ✓ That the U.S. – Mexico – Canada agreement is ratified.

Downward risks

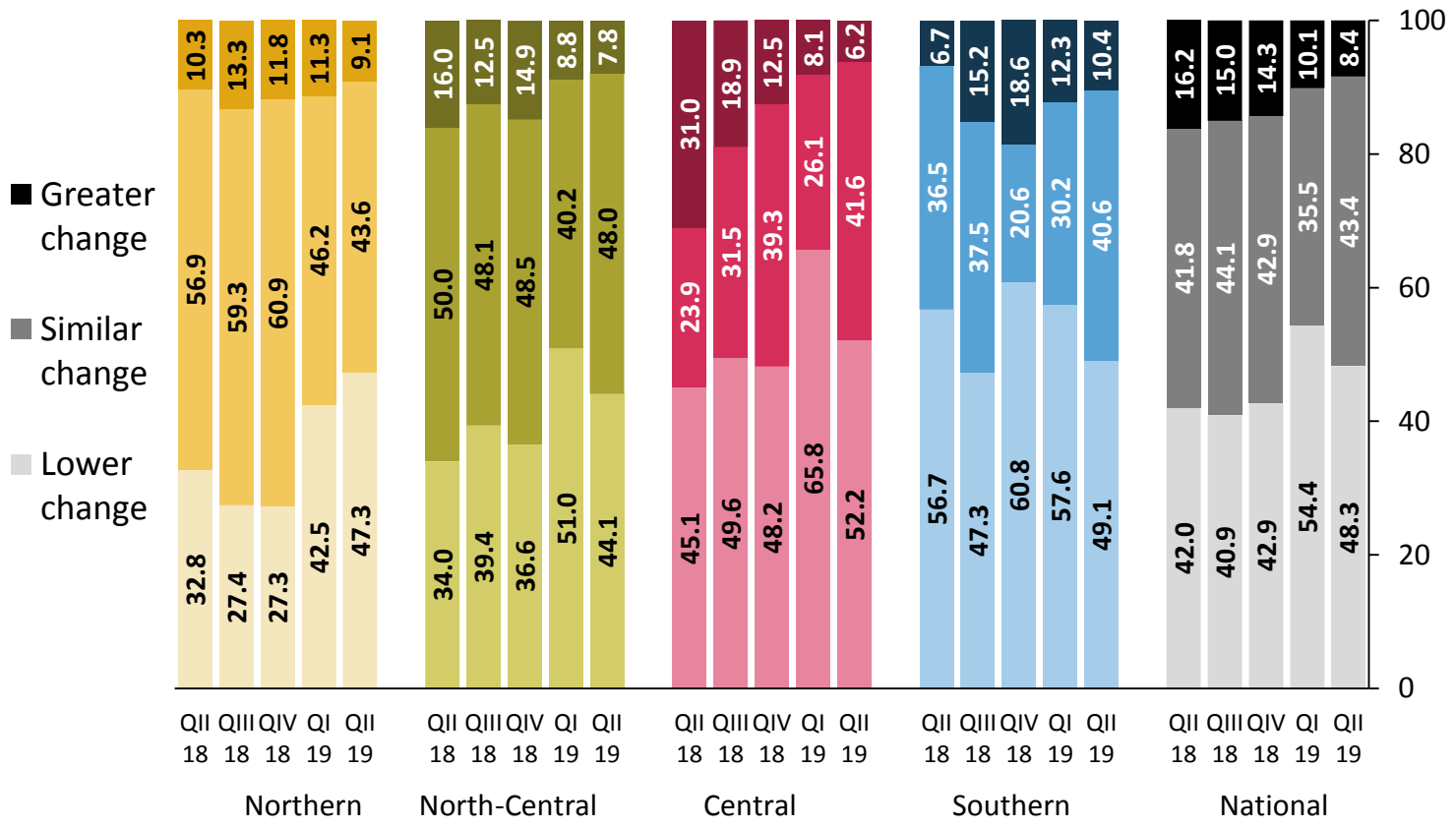
- ✓ That public insecurity levels increase.
- ✓ That the environment of both domestic and external uncertainty faced by firms prevails, and that this is reflected in lower investment levels.
- ✓ That the U.S. imposes tariffs on Mexican export products.

1/ Results obtained from responses to the questions: "Which are the main two events/situations/facts that, if they occur, would boost economic performance in your state in the next 12 months?" and "Which are the main two events/situations/facts that, if they occur, would hinder economic growth in your state in the next 12 months?", from interviews conducted by Banco de México between June 24 and July 18, 2019.

Regarding sales prices of their own goods and services, most business contacts interviewed in different regions between June 24 and July 18, 2019 anticipate similar or lower growth rates, as compared to those observed in the previous 12 months.

Business Agents' Expectations: Annual Change of Sales Prices, Next 12 Months 1/

Percentage of responses

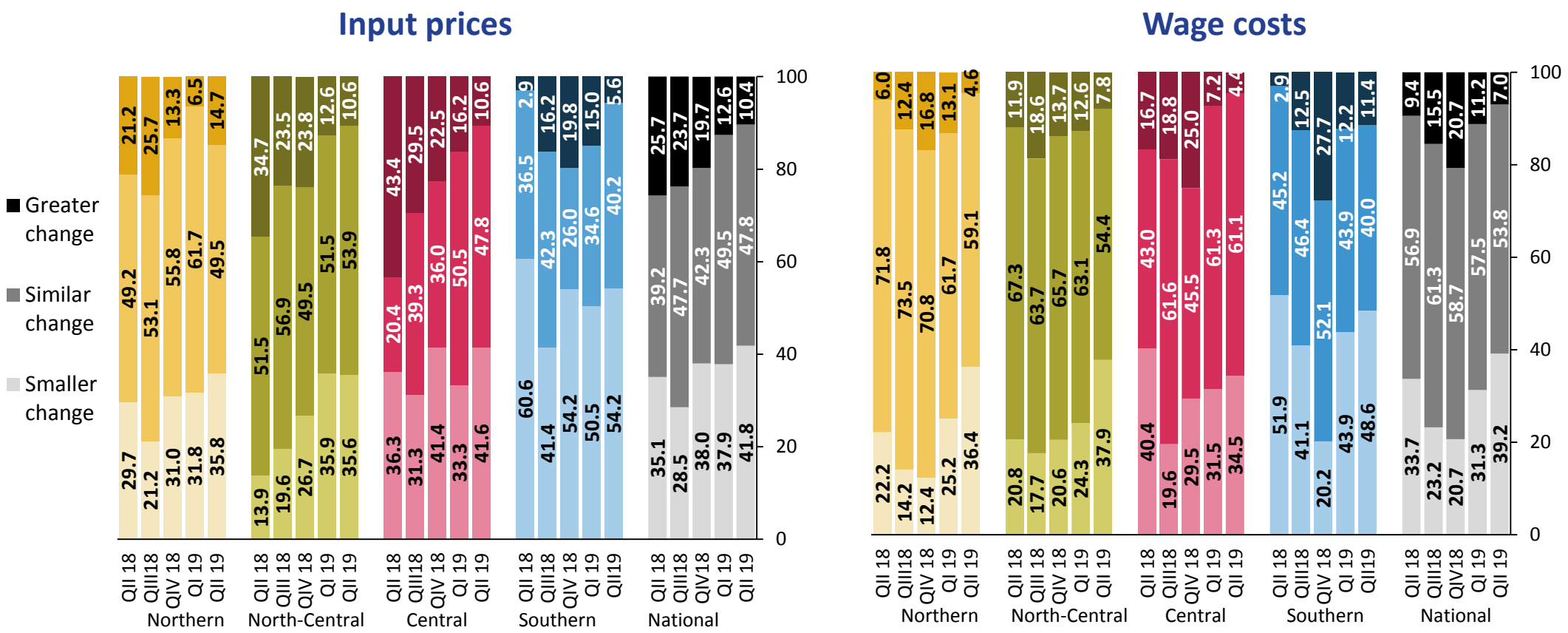


1/ Results obtained from responses to the question: "With respect to the previous 12 months, how do you expect sales prices in your sector to change over the next 12 months?", from interviews conducted by Banco de México.

Likewise, most business contacts interviewed in all regions expect input prices and wage costs to grow at similar or lower annual growth rates, as compared to those observed in the previous 12 months.

Business Agents' Expectations: Annual Change of Input Prices and Wage Costs, Next 12 Months [1/]

Percentage of responses



1/ Results obtained from responses to the question: "With respect to the previous 12 months, how do you anticipate the change in input prices (goods and services) used in your sector to be for the next 12 months?", and "With respect to the previous 12 months, how do you anticipate the change in wages of workers in your sector to be in the next 12 months?", from interviews conducted by Banco de México.

Outline

I. Regional Economic Report

II. Results April – June 2019

A. Economic activity

B. Inflation

C. Economic outlook

(based on data collected between June 24 and July 18 2019)

III. Final remarks

Final remarks

- To promote the recovery of economic activity in the short and medium terms, and to address the challenges and lags that Mexican regional economies are facing from a long term perspective it is key to implement and maintain public policies that improve economic efficiency, correcting the structural and institutional setbacks that have prevented such economies from attaining higher productivity and higher investment levels.

- Indeed, as stated in previous reports, it is fundamental to strengthen the rule of law in order to guarantee legal certainty, compliance with the legal framework and respect for private property, while at the same time it is necessary to fight insecurity and tackle corruption and impunity.

- Insofar as progress is made in these areas, an environment of greater certainty and confidence in the business climate that prevails in all Mexican regions could be achieved, fostering investment and, consequently, a higher growth rate of the regional economies.



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