

Regional Economic Report

October – December 2020

BANCO DE MÉXICO

Outline

I. Regional Economic Report

II. Results October – December 2020

A. Economic activity

B. Inflation

C. Economic outlook

(based on data collected between January 4 and January 28, 2021)

III. Final remarks

Regional Economic Report

- The Regional Economic Report is a quarterly publication on the trends in economic activity, inflation and business agents' expectations in Mexico's regions.
- The information presented herein 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 and inflation in the regions during Q4 2020, and the prospects of business agents surveyed between January 4 and January 28, 2021 on regional economic activity and inflation over the following twelve months are analyzed herein.

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III. Final remarks

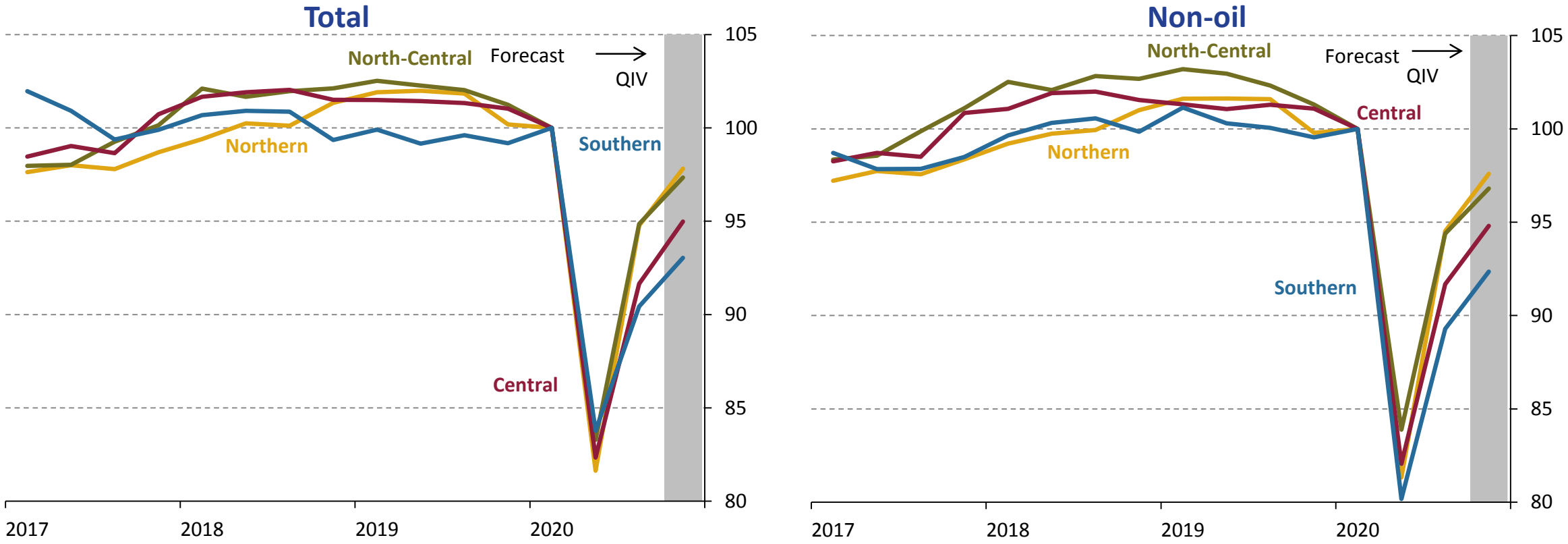
Regional Economic Activity

- During Q4 2020, Mexico's economic activity continued to recover, after the strong contraction registered during the second quarter in the context of the COVID-19 pandemic.
  - ✓ During Q4 2020, GDP grew at a more moderate rate than in Q3 2020 and registered some weakening by the end of the year.
- Economic activity continued to recover in all regions of Mexico during Q4 2020, although heterogeneously depending on their different productive structures.
  - ✓ By the fourth quarter of 2020, the Northern, North-Central and Central regions are estimated to have shown a higher level of recovery than the South, as compared to pre-pandemic levels. This is mainly due to their higher specialization in manufacturing production, while in the Southern region production is relatively more concentrated on the non-manufacturing sectors, which have shown a less vigorous recovery.

The Northern, North-Central, and Central regions are anticipated to continue showing a greater recovery than the Southern region with respect to the activity levels in Q1 2020.

Quarterly Indicator of Regional Economic Activity [1/]

Index Q1 2020=100, s. a.



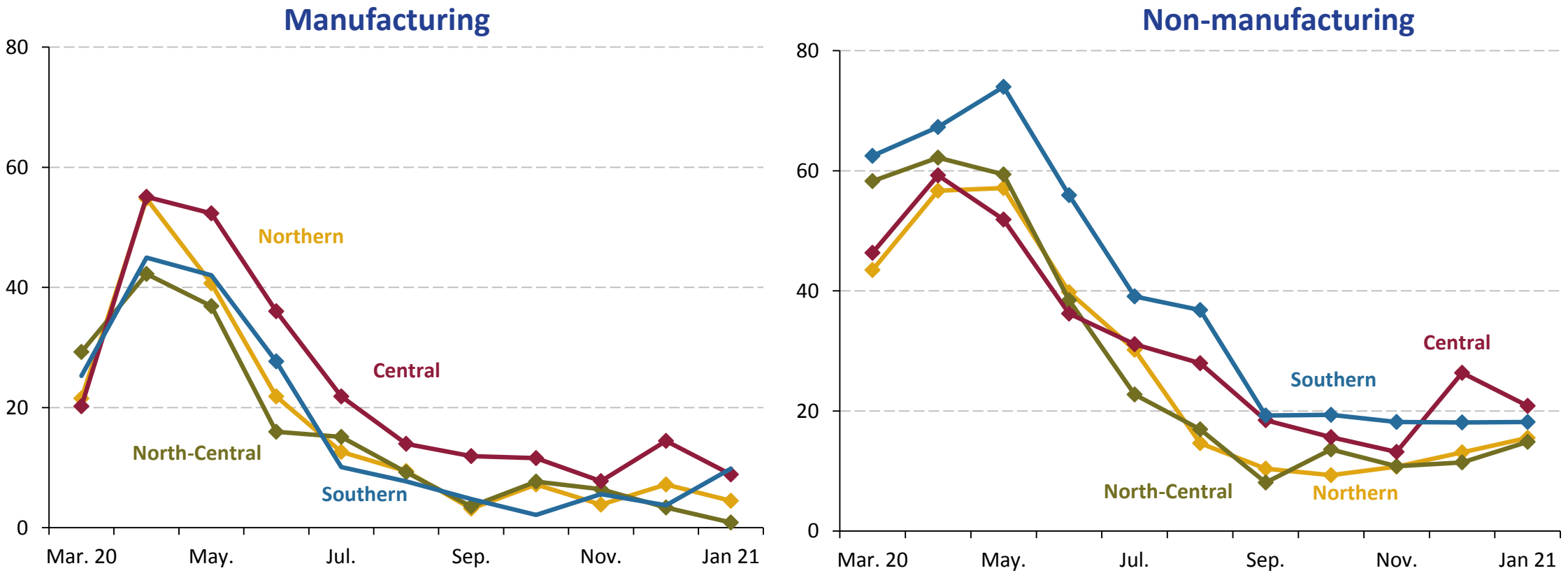
s. a. / Seasonally adjusted data.

Source: Estimated by Banco de México with seasonally adjusted series of domestic GDP and the Quarterly Indicator of Economic Activity by State from INEGI.

During Q4 2020, the gradual resumption of business operations continued in all Mexican regions, especially in manufacturing. However, in December and in January, a certain setback in said process of reopening was observed, especially in the Central region.

Share of Firms that Suspended Activities Partially or Fully as a Consequence of the COVID-19 Pandemic

Data in percent

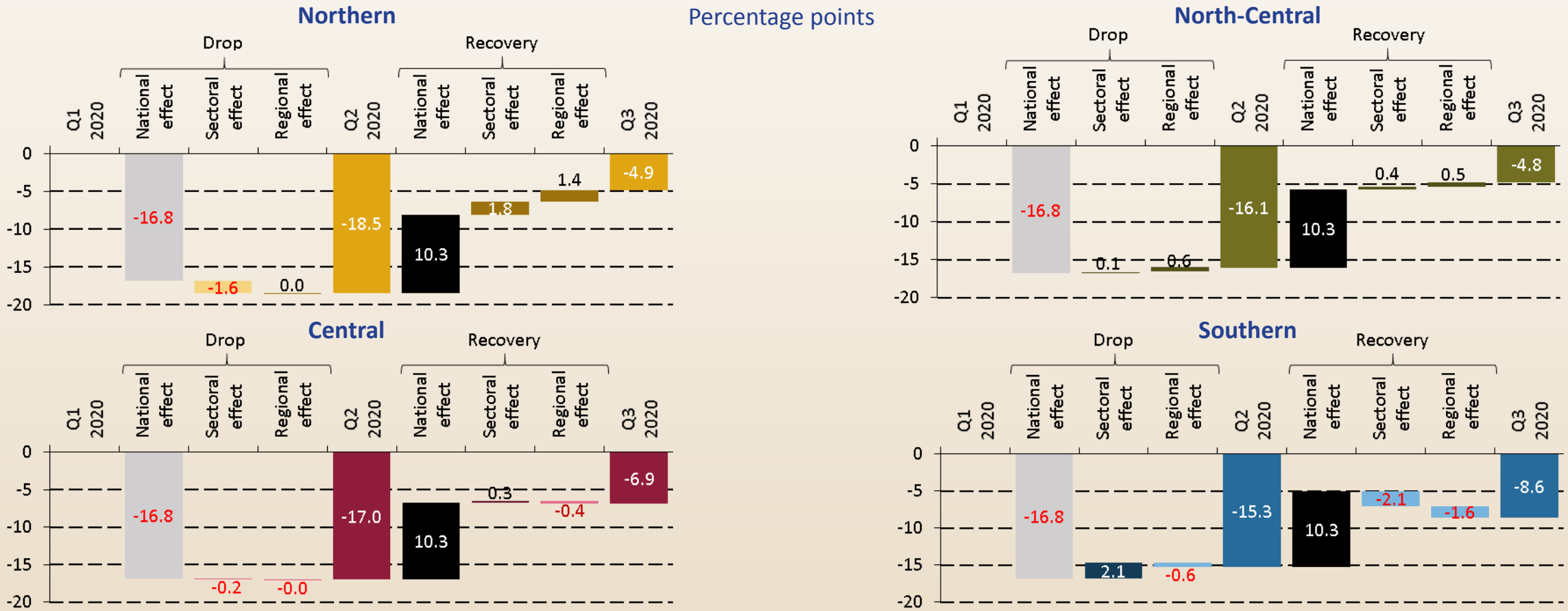


Source: Prepared by Banco de México with data from the Monthly Regional Economic Activity Survey, conducted between April 1 and 29, 2020, between May 4 and 28, 2020, June 1 and 29, 2020, July 1 and 31, 2020, August 3 and 28, 2020, September 1 and 29, 2020, October 1 and 29, 2020, November 3 and 27, 2020, December 1 and 30, 2020, January 4 and 28, 2021, and February 2 and 25, 2021. The results are from responses to the question: "Due to the contingency to stop the spread of COVID-19, please indicate if the productive process in your firm was suspended fully or partially, exclusively due to this factor".

Contribution of Common and Idiosyncratic Effects to the Fall and Recovery of Regional Economic Activity during the Pandemic

Decomposition of the Fall and Recovery of Regional Economic Activity with respect to Q1 2020 Levels

Percentage points

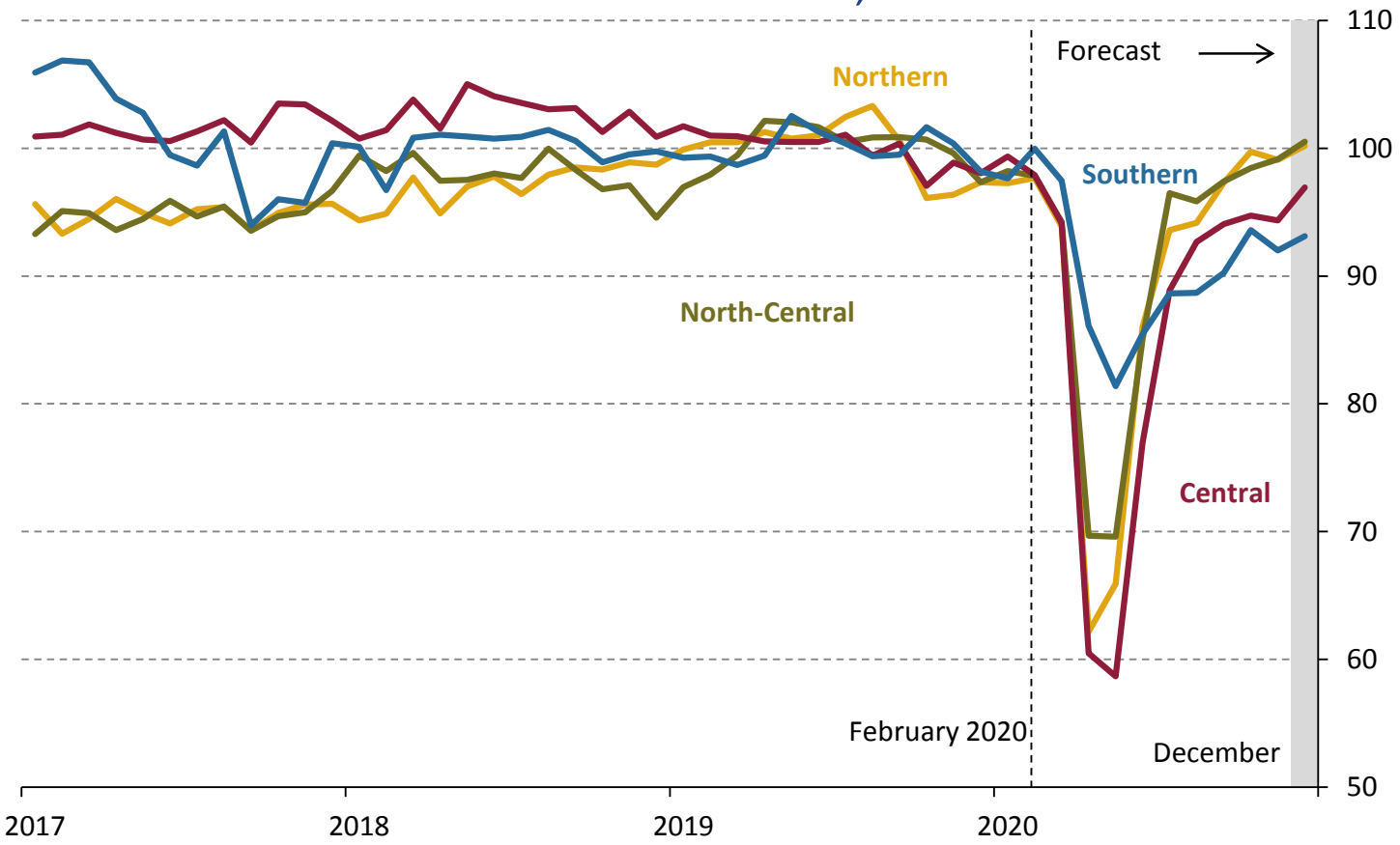


Source: Prepared by Banco de México with seasonally adjusted data from INEGI.

During the period October – December 2020, manufacturing production in the Northern and Central regions is estimated to have registered activity levels similar to those observed in February of the same year, the South being the only region where it still remained below said level.

Regional Manufacturing Indicator

Index 2019=100, a. e.



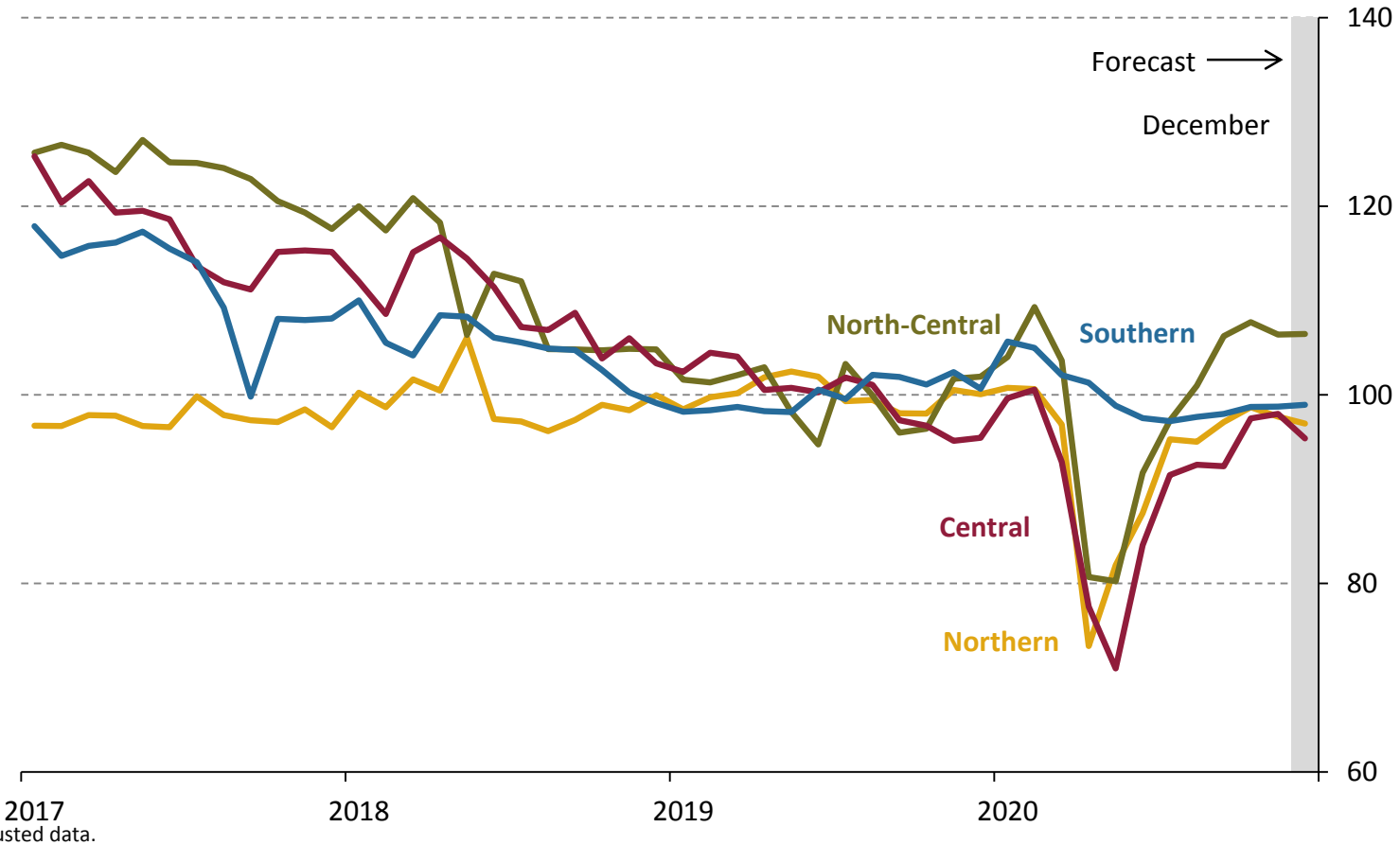
s. a. / Seasonally adjusted data.

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

During the October – December quarter, mining remained weak, as a reflection of the sluggish performance of the oil and gas extraction sector. In contrast, the subsector of metal and non-metal minerals continued expanding and even reached levels above those registered prior to the pandemic.

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

Index 2019=100, s. a.



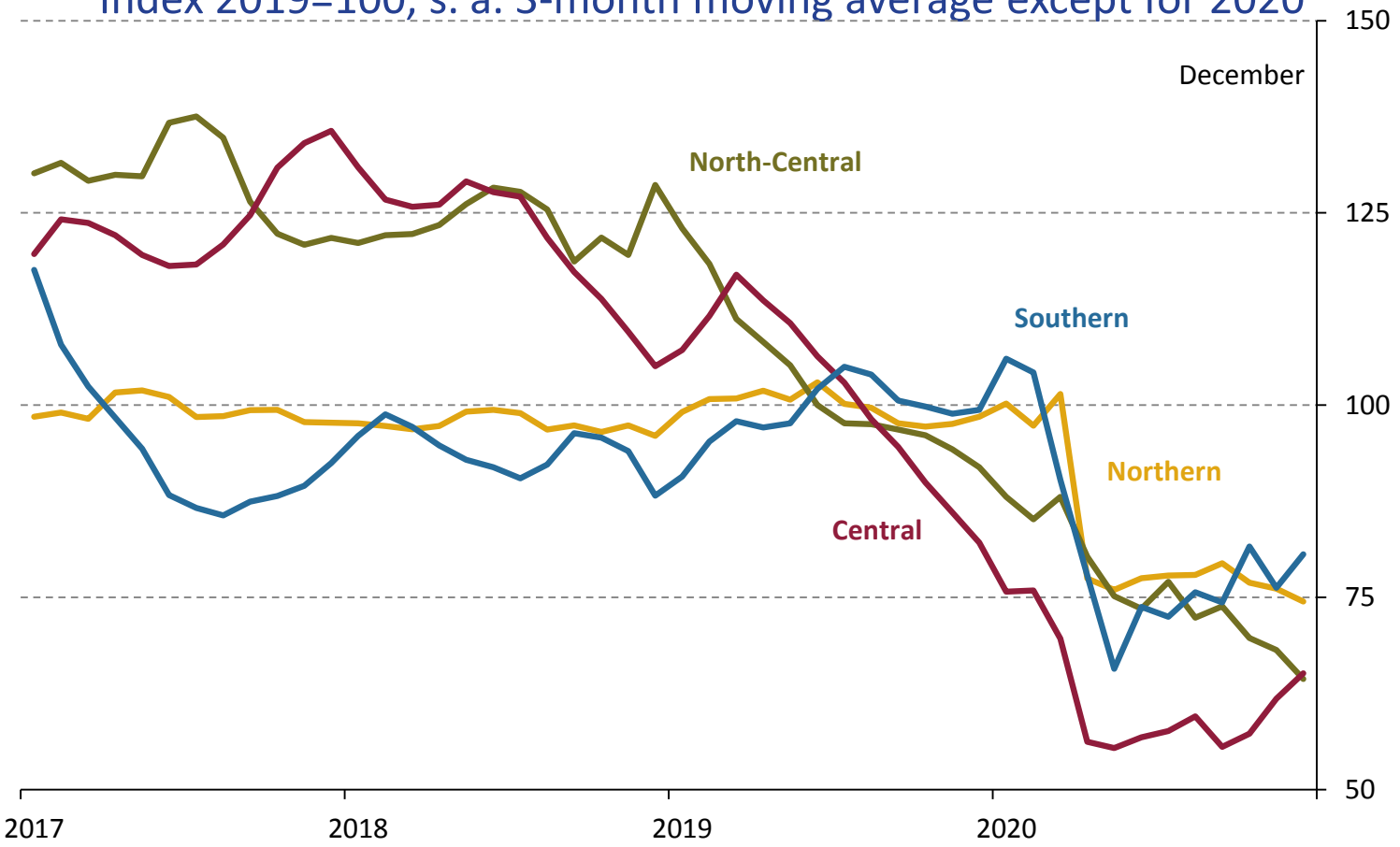
s. a. / Seasonally adjusted data.

Source: Estimated and seasonally adjusted by Banco de México with the series of the Monthly Indicator of Mining Activity by state (INEGI).

The incipient recovery of construction that began between June and July in all Mexican regions weakened in the Northern and North-Central regions in Q4 2020. In contrast, in the Central and Southern regions construction activity continued to recover, although it remains at particularly low levels.

Real Value of Production in the Construction Industry by Region

Index 2019=100, s. a. 3-month moving average except for 2020



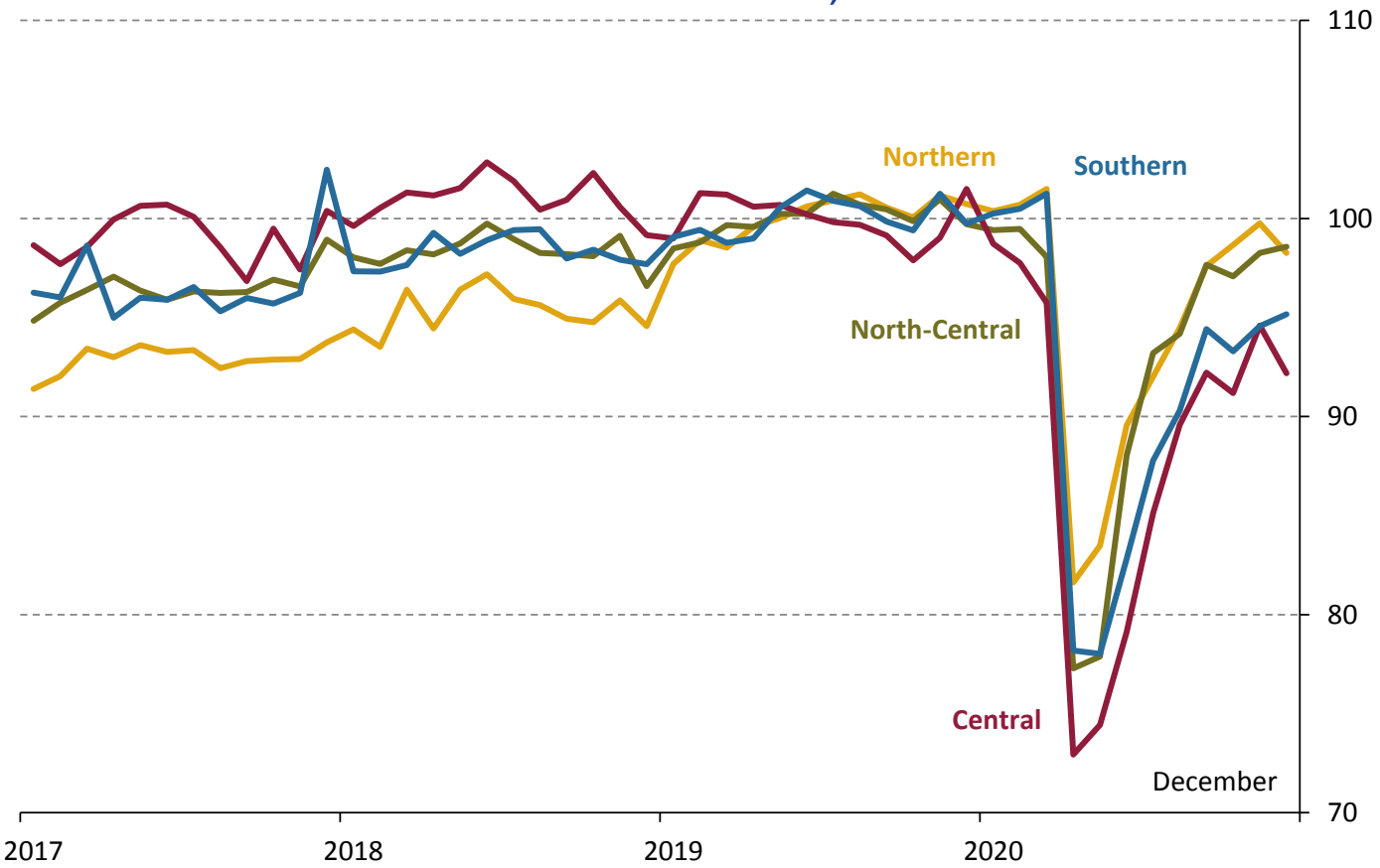
s. a. / Seasonally adjusted data.

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

During Q4 2020, trade continued reactivating in all regions, although at a more moderate rate than in Q3 2020, and in the Northern and Central regions a contraction was observed in December.

Index of Revenues from Retailers' Supply of Goods and Services

Index 2019=100, s. a.



s. a. / Seasonally adjusted data.

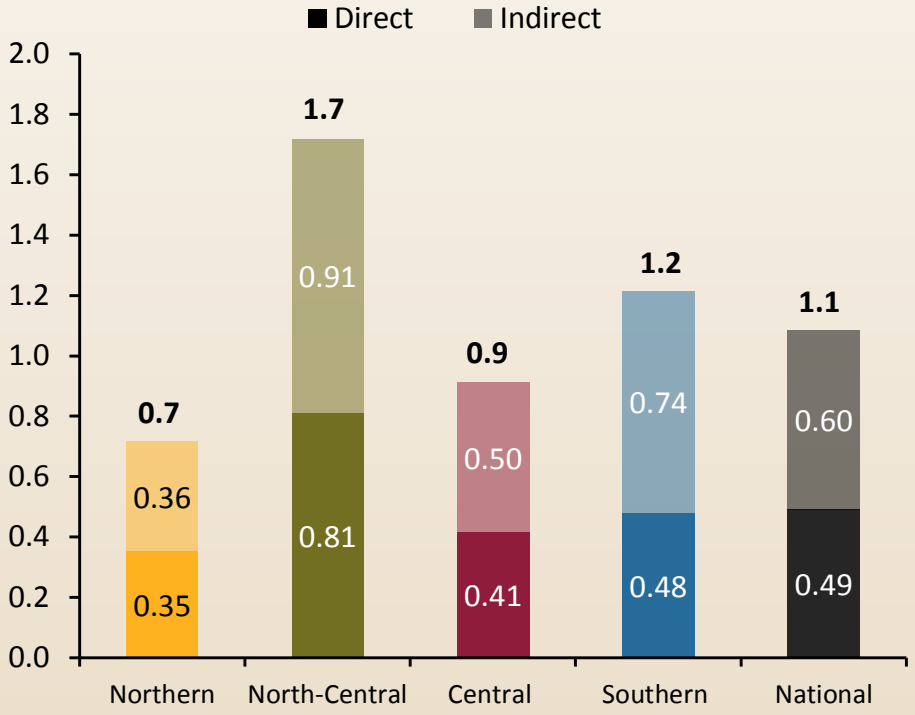
Source: Prepared and seasonally adjusted by Banco de México, with the series of Revenues from Retailers' Supply of Goods and Services by state (INEGI).

Remittances and its Impact on Households' Consumption in Mexican Regions in the Context of the COVID-19 Pandemic

Effects on Domestic Final Goods and Services Consumption by Households, in view of Higher Levels of Remittances in 2020

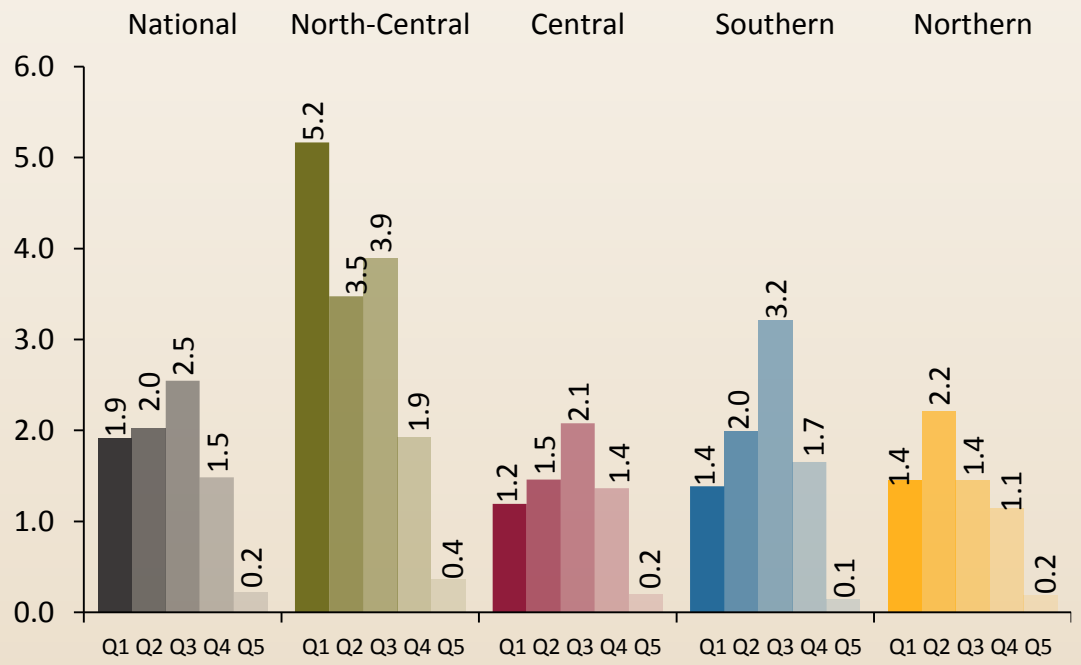
Percentage change

Direct and Indirect Impact



Source: Estimated by Banco de México based on Regional Social Accounting Matrices, 2013.

Increases by Income Quintile and Region

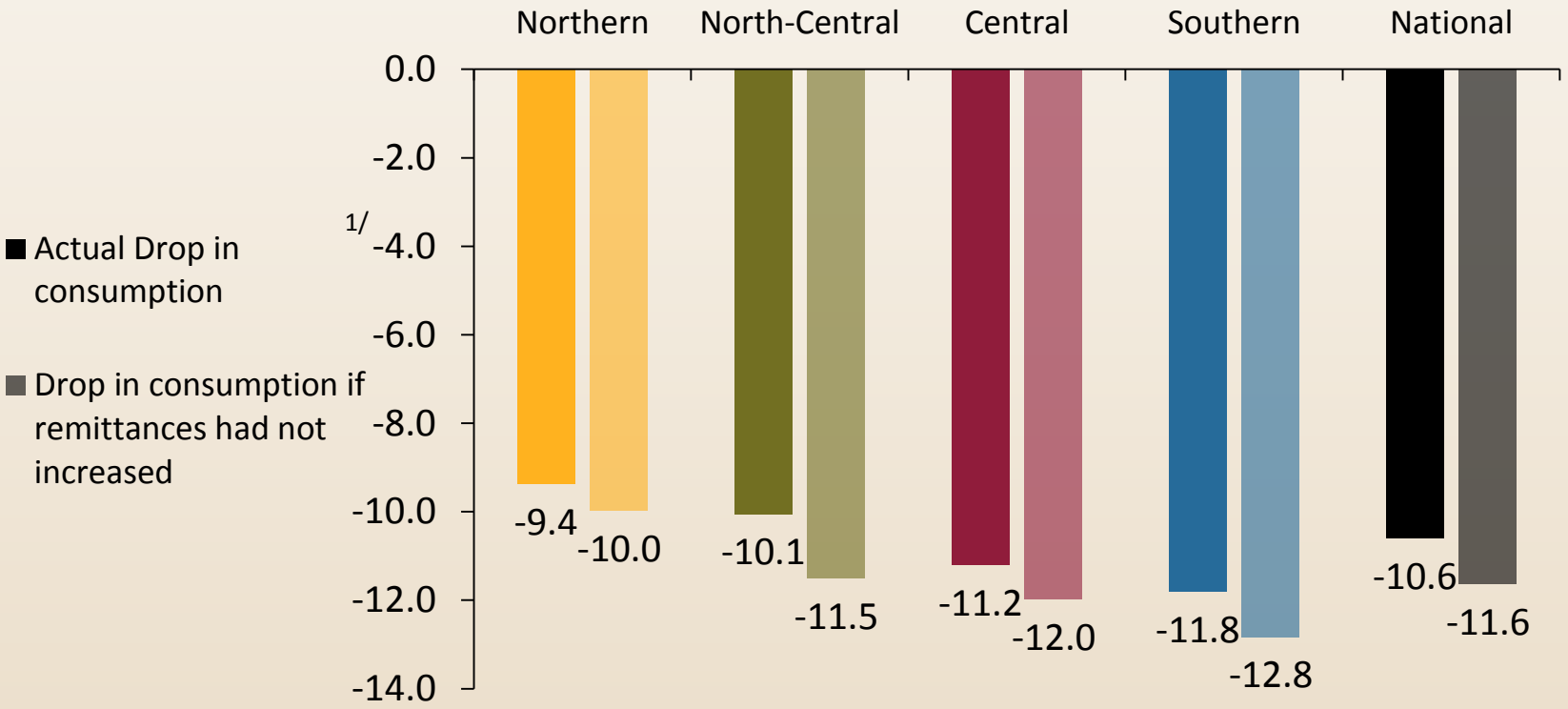


Source: Estimated by Banco de México based on Regional Social Accounting Matrices, 2013.

Remittances and its Impact on Households' Consumption in Mexican Regions in the Context of the COVID-19 Pandemic

Estimated Change in Regional Consumption in 2020

Percent



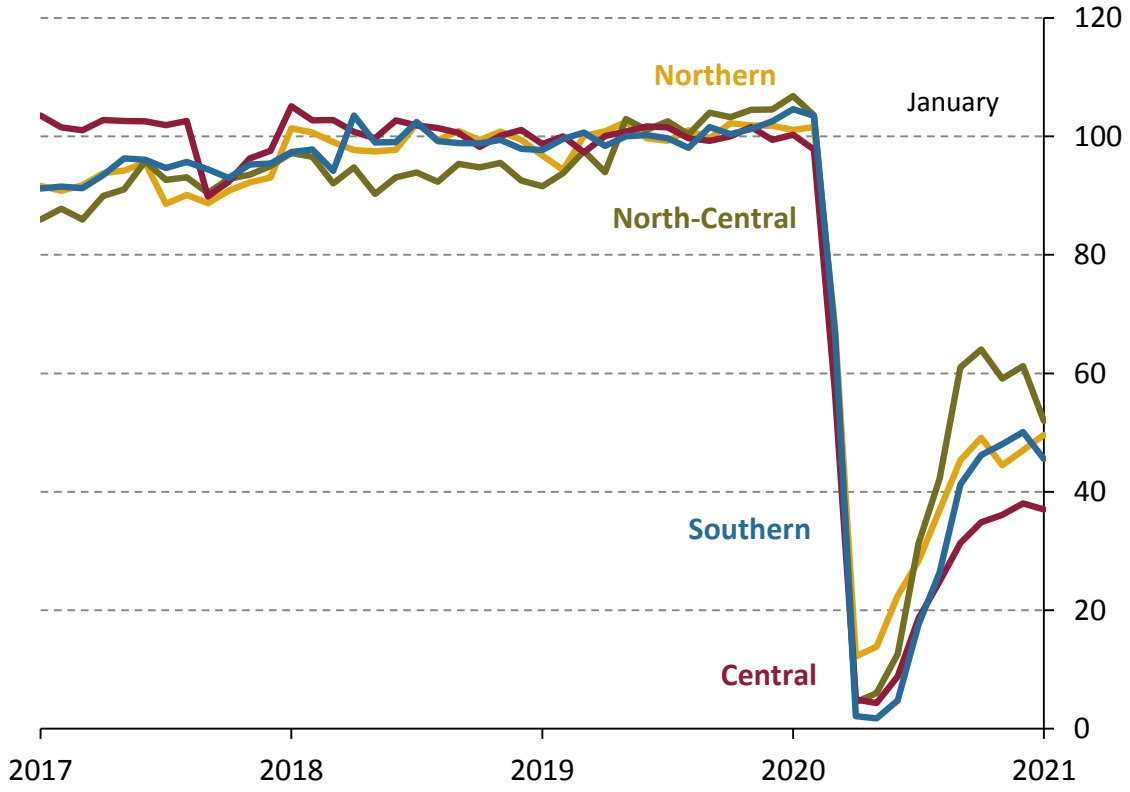
1/ The change in the domestic consumption of goods and services corresponds to the change in the Monthly Indicator of Private Consumption in the Internal Market (IMCPMI), seasonally adjusted by INEGI. The rest of data are Banco de México's estimates.

The tourism sector continued to recover slowly in all regions of Mexico during Q4 2020, although indicators for hotel occupancy and inflow of passengers to airports maintain levels significantly lower than those observed prior to the pandemic. In January both indicators even contracted in the South and Central regions.

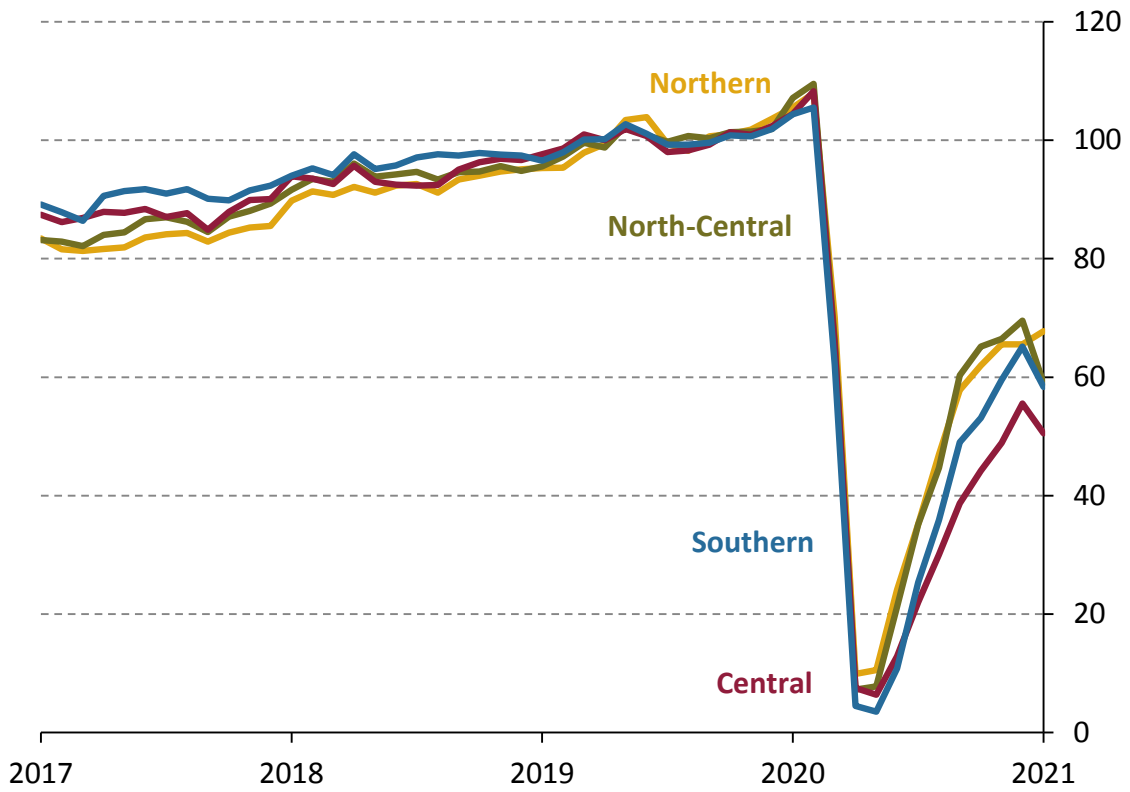
Regional Indicators of Tourism

Index 2019=100, s. a.

Hotel Occupancy



Inflow of Passengers to Airports



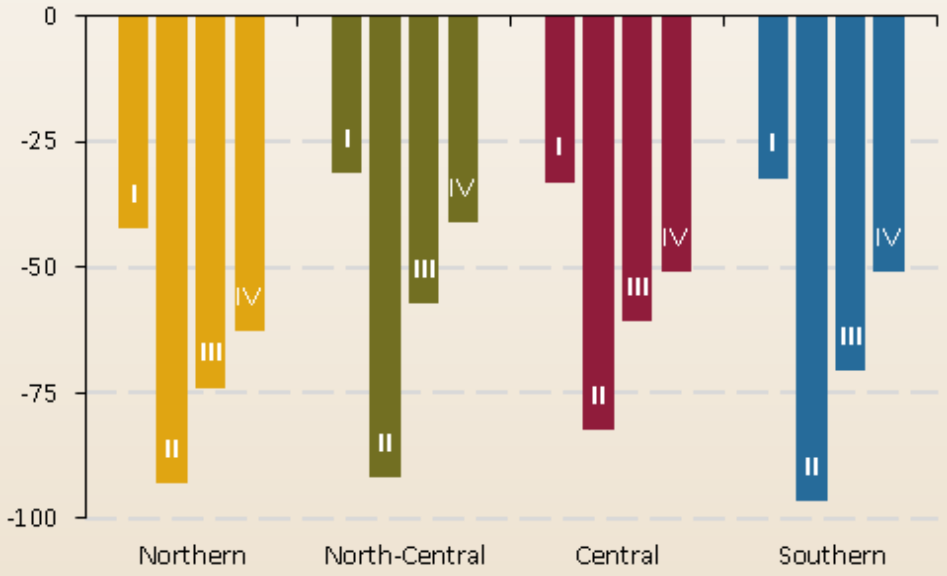
s. a. / Seasonally adjusted data.

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

Impact of the COVID-19 Pandemic on Tourism and its Implications for Regional Economic Activity

Simulated Shock on Income from Temporary Accommodation Services, 2020

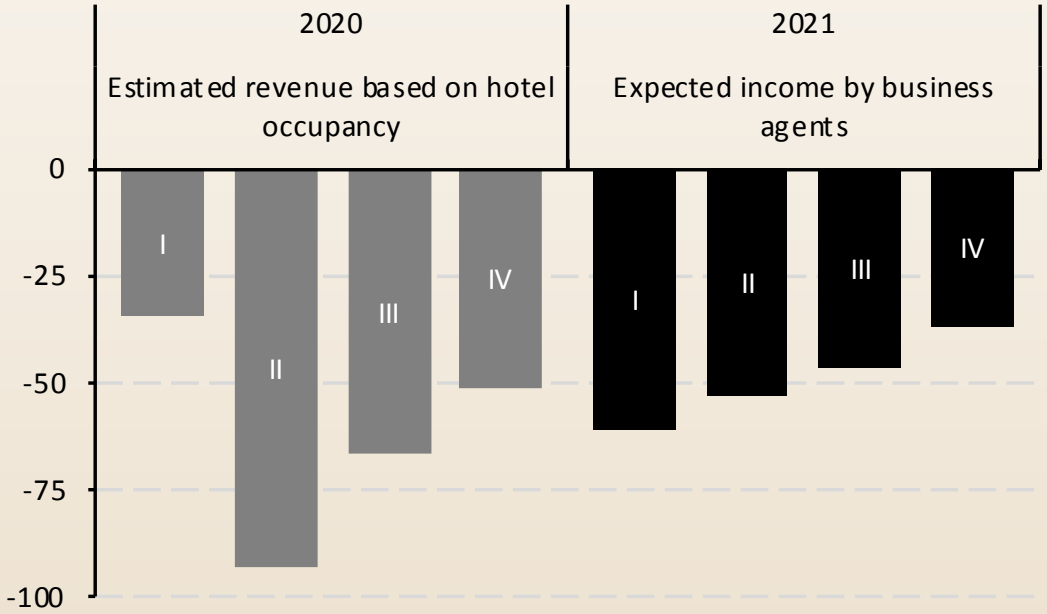
Change with respect to the same quarter of 2019



Note: Quarterly data are resented as an average of the previous months. The shock on hotel occupancy in Q1 2020 only considers the data corresponding to March.
Source: Estimated by Banco de México with data from SECTUR.

Shock on Temporary Accommodation Services

Income as a share of the same quarter of 2019



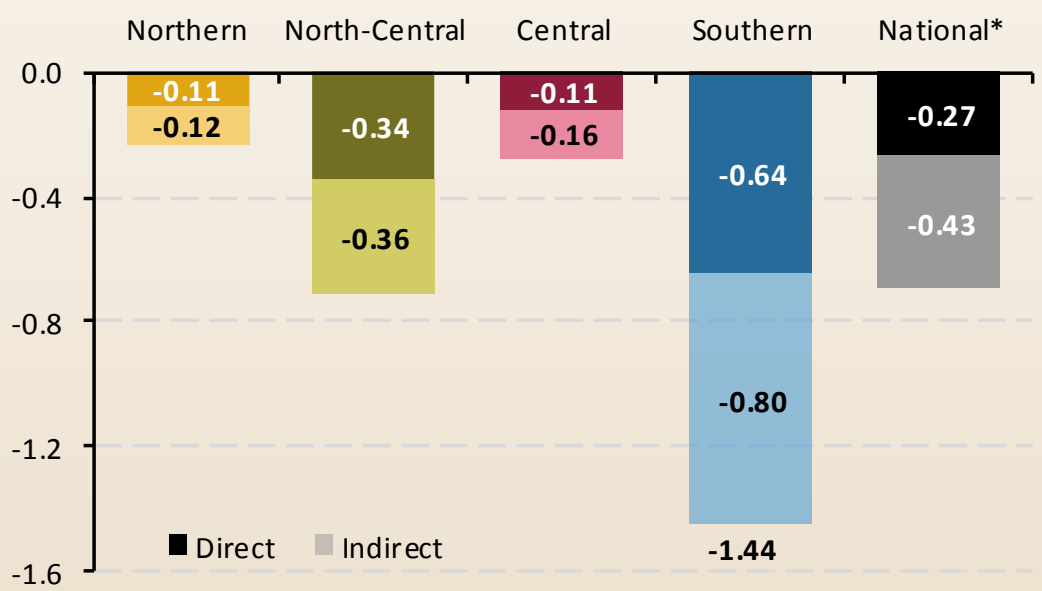
Note: Quarterly data for 2020 are presented as an average of the corresponding months.
Source: Estimated by Banco de México with data from SECTUR and the Program of Business Agents' Surveys by Banco de México.

Impact of the COVID-19 Pandemic on Tourism and its Implications for Regional Economic Activity

Estimated Impact on Added Value as a Share of GDP by Region, Caused by the Fall in Temporary Accommodation Services

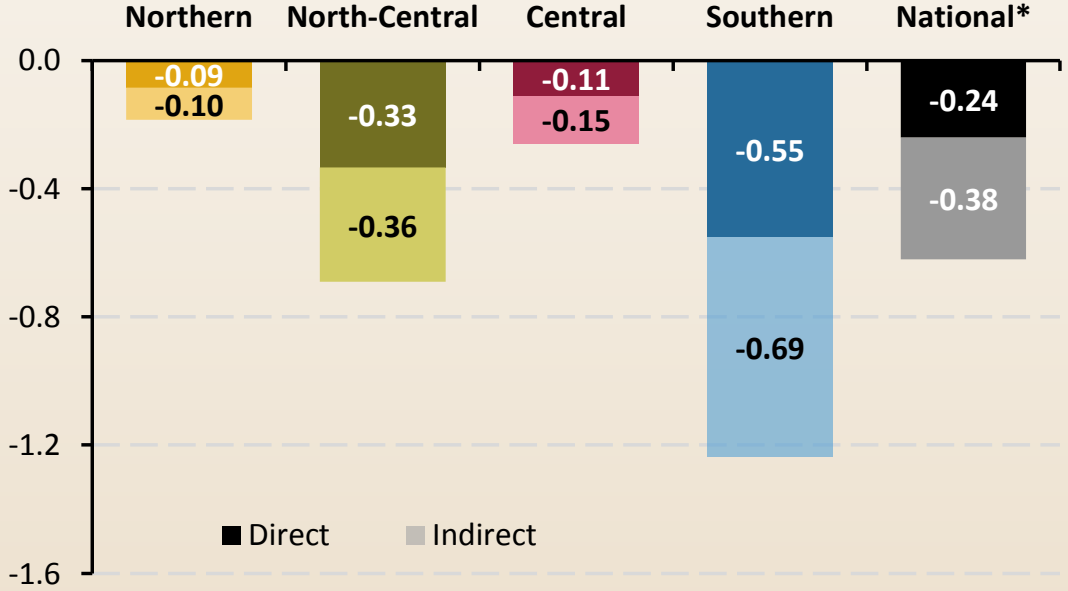
Percentage with respect to the level of economic activity in 2019

2020



Source: Estimated by Banco de México with data from Regional Social Accounting Matrices (SAMs) (2013).
* Estimation based on National SAM, which is compatible with regional SAMs.

2021

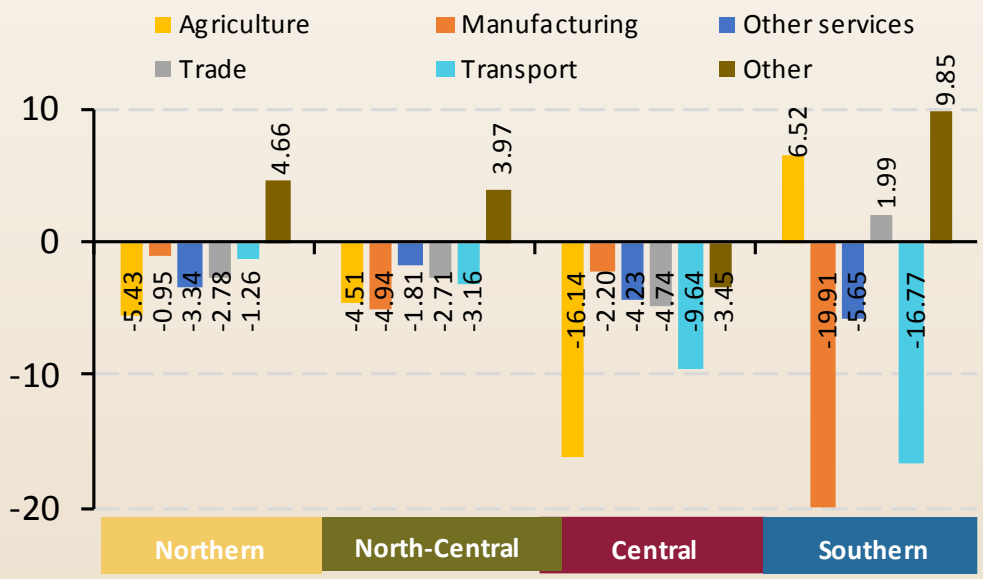


Source: Estimated by Banco de México with data from Regional SAMs (2013) and Business Agents Expectations.
* Estimation based on National SAM, which is compatible with regional SAMs.

Impact of the COVID-19 Pandemic on Tourism and its Implications for Regional Economic Activity

Annual Change in Employment by Sector and Region, with data from ENOE as of Q4 2020

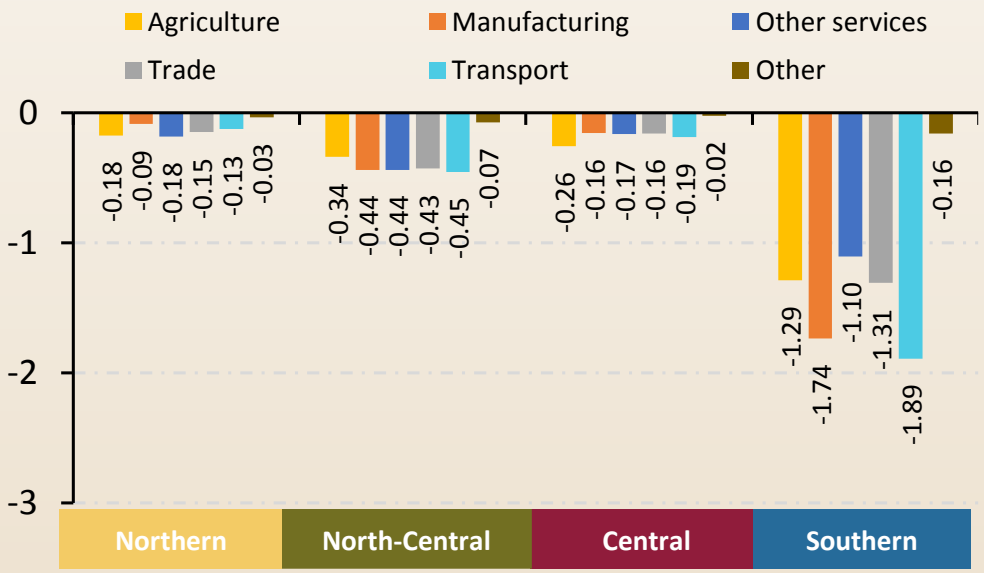
Percent



Source: Estimated by Banco de México with data from ENOE of Q4 2019 and 2020 (INEGI).

Annual Change in Indirect Employments Generated by the Estimated Shock on the Sector of Temporary Accommodation Services, as of Q4 2020

Percent

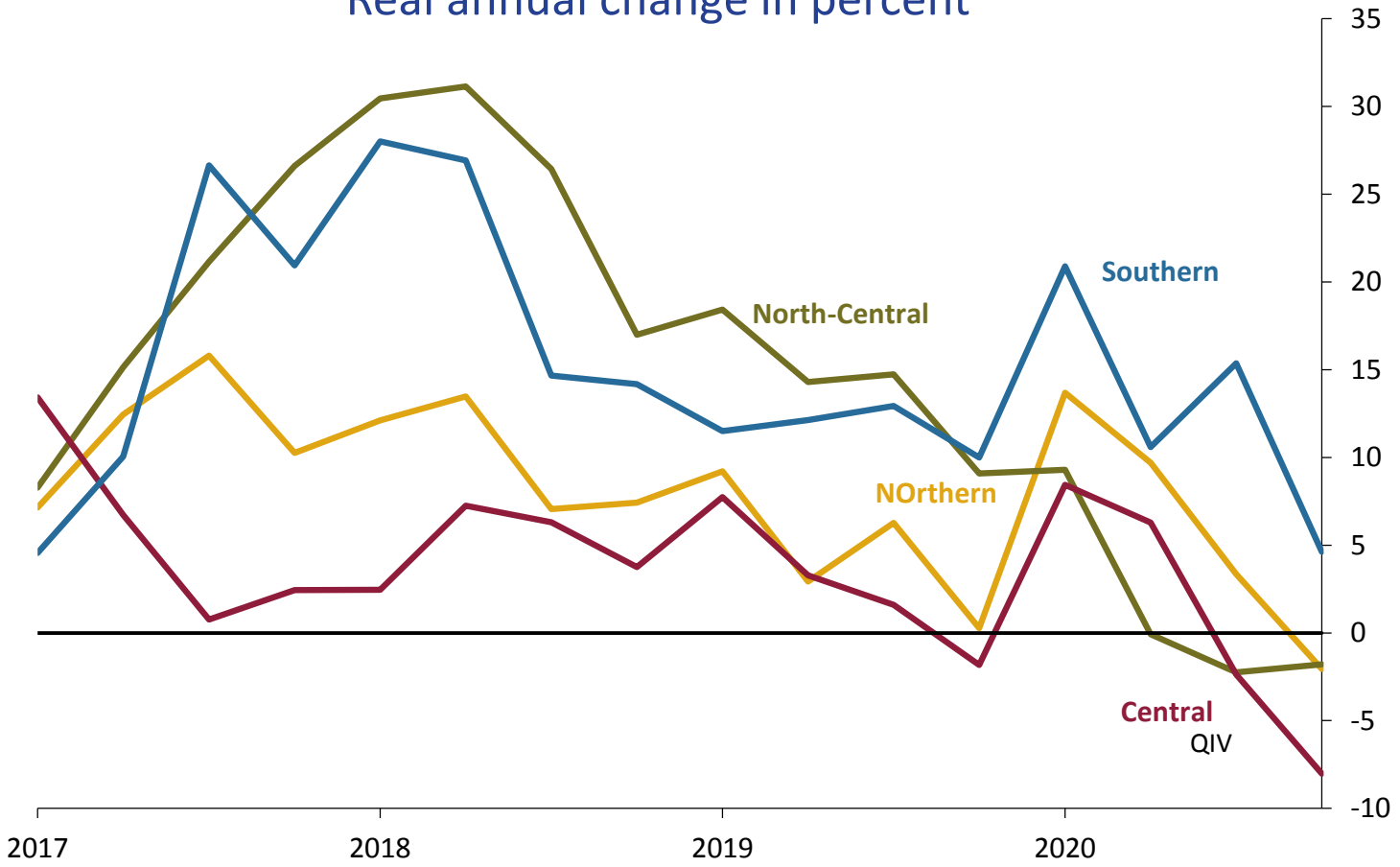


Source: Estimated by Banco de México with data from Regional SAMs (2013).

Commercial banks' performing credit to non-financial private firms exhibited a negative annual rate in all regions during Q4 2020, except for the Southern region, although in the latter its annual change declined.

Commercial Banks' Performing Credit to Non-financial Private Firms 1/

Real annual change in percent

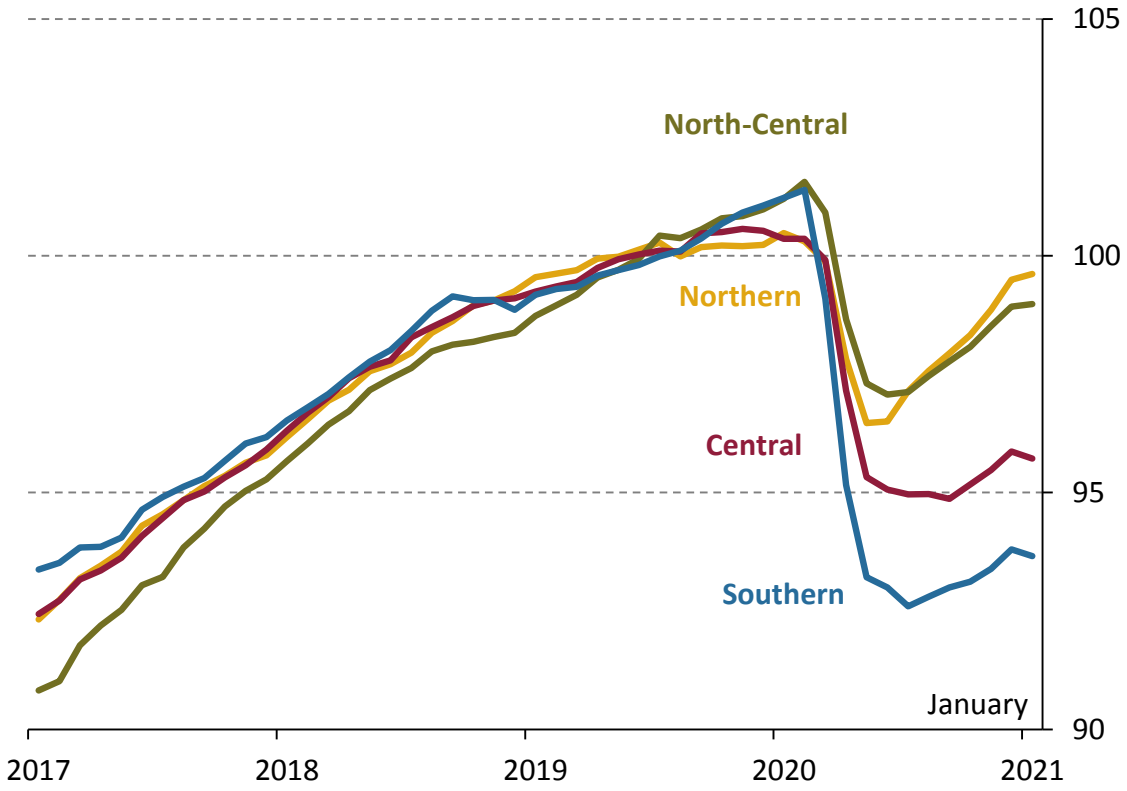


1/ Excludes regulated entities (sofomes E.R.) subsidiaries of banks and financial groups. The estimate of the real annual change excludes the effects of changes on the exchange rate.
Source: Banco de México.

During Q4 2020, the number of IMSS-insured workers continued to recover moderately in all Mexican regions. However, in January job creation in this type of formal employment weakened.

Number of IMSS-insured Workers

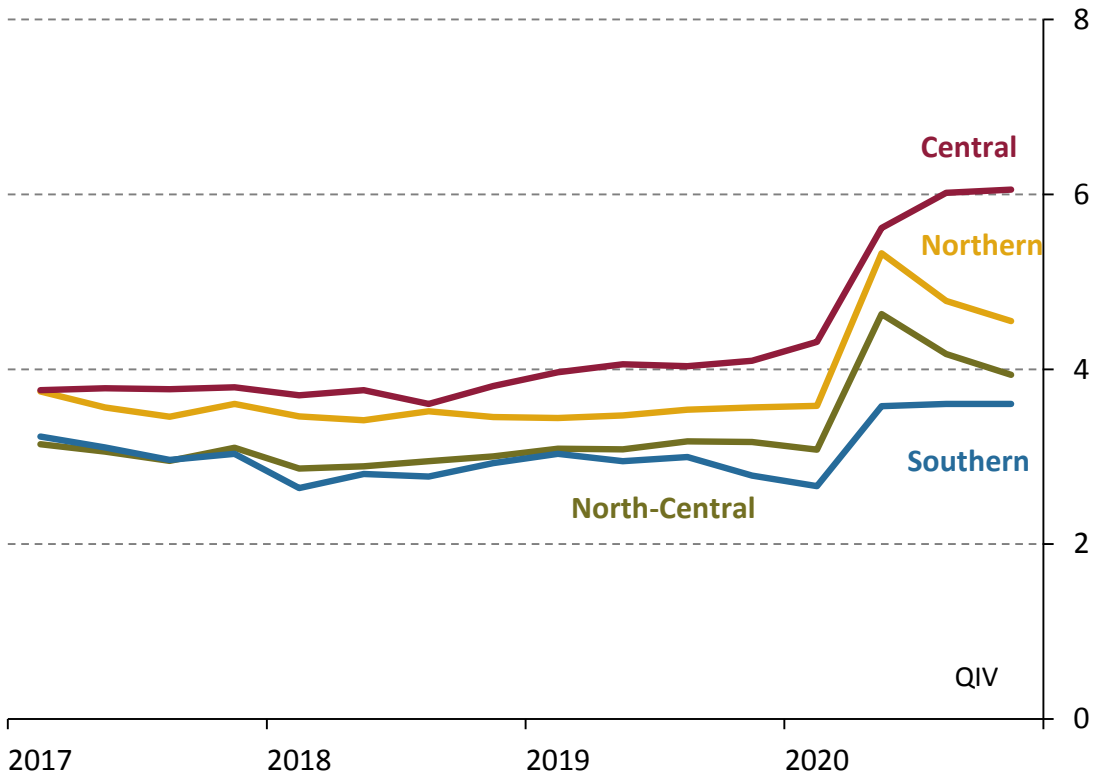
Index 2019=100, s. a. 1/



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

Unemployment Rate

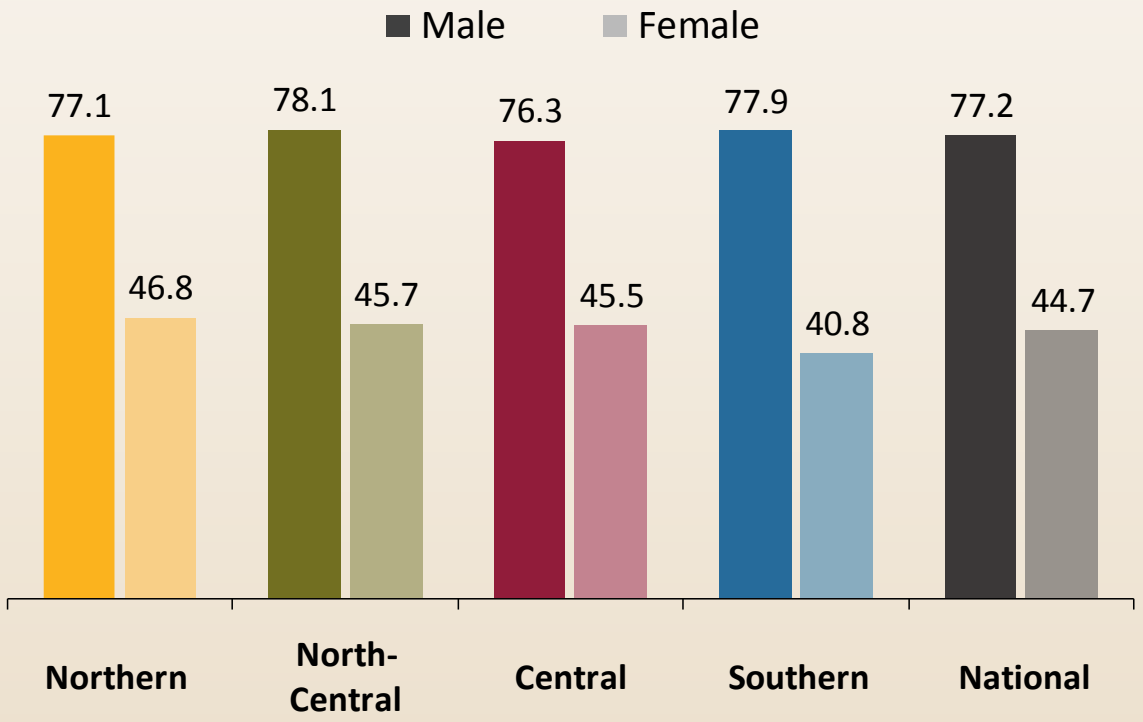
Percent, s. a.



s. a. / Seasonally adjusted data.
Source: Prepared and seasonally adjusted by Banco de México with data from INEGI. Data of Q2 2020 correspond to the Telephone Survey on Occupation and Employment (ETOE), and data from Q3 and Q4 correspond to the New Telephone Survey on Occupation and Employment (ENOE[N]).

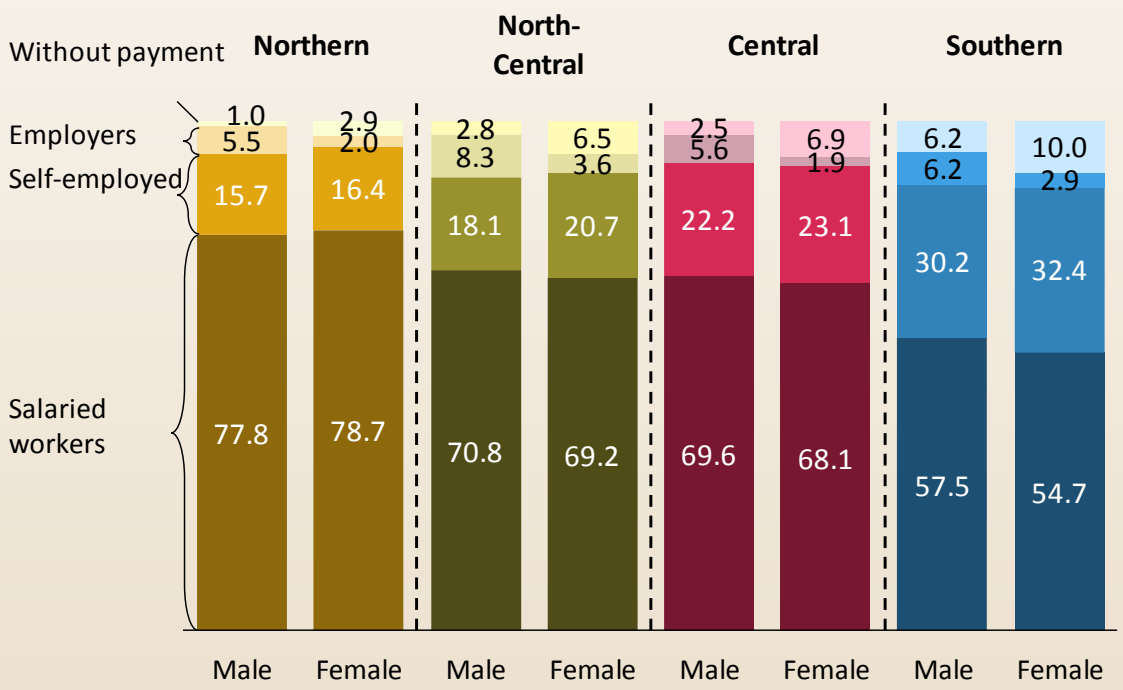
Aggregate Effect of Gender-related Differences in Labor Force Participation and Composition

Labor Force Participation by Region and Gender
Percentage in 2019



Source: Prepared by Banco de México with data from INEGI.
Note: The average of the four quarters 2019 is used from the National Survey on Occupation and Employment (ENOE).

Labor Force Composition by Region and Gender
Percent in Q4 2019



Source: Prepared by Banco de México based on data from INEGI. The National Survey on Occupation and Employment is used for Q4 2019.

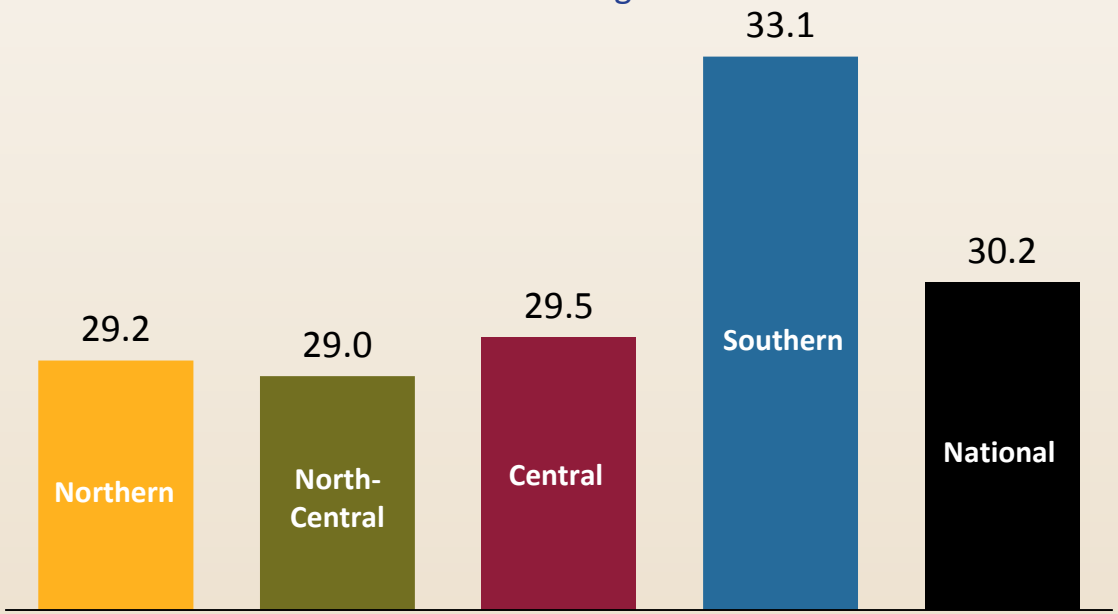
Aggregate Effect of Gender-related Differences in Labor Force Participation and Composition

Methodology

- The impact on GDP per capita from eliminating frictions that limit women's labor decisions and prevent gender parity in labor force participation and composition is estimated.
- A general equilibrium occupational choice model based on Cuberes and Teignier (2016) is used.[1/]

Increase in GDP per capita over the long run from eliminating frictions faced by women seeking to participate in the labor market

Percentage



1/ Cuberes, David, and Marc Teignier. "Aggregate effects of gender gaps in the labor market: A quantitative estimate." Journal of Human Capital 10.1 (2016): 1-32

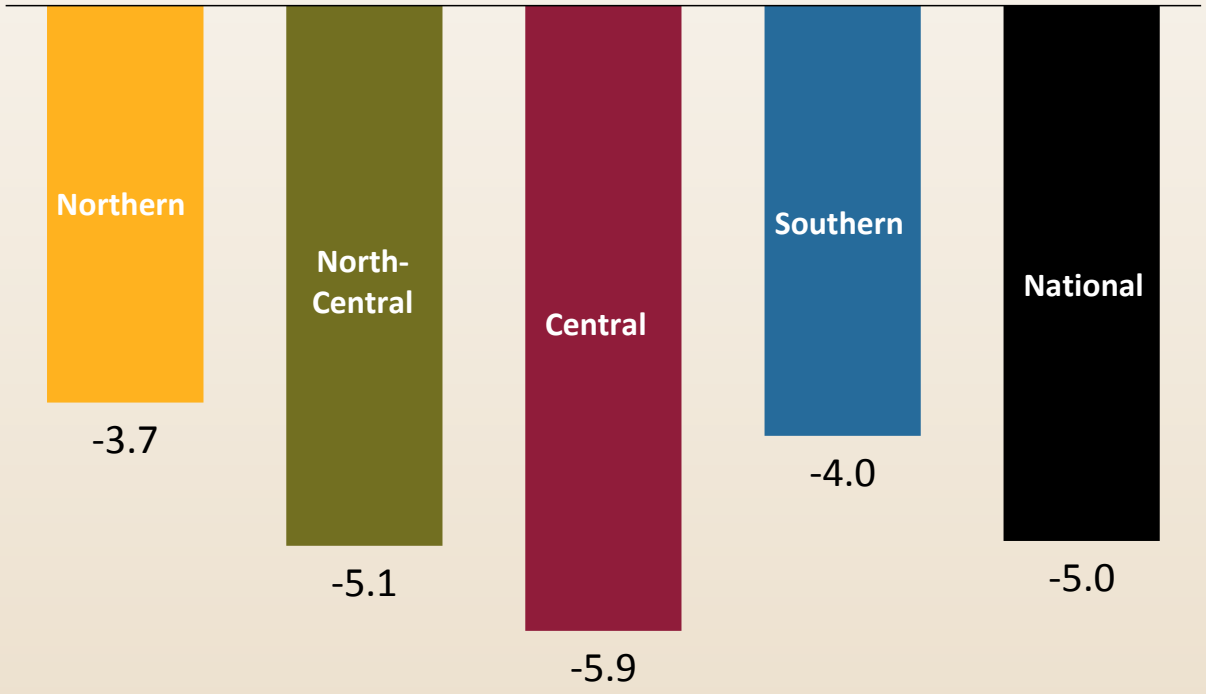
Source: Estimated by Banco de México using data as of Q4 2019 from the National Survey of Occupation and Employment (ENOE).

Aggregate Effect of Gender-related Differences in Labor Force Participation and Composition

Simulation in the context of the COVID-19 Pandemic

- Between Q4 2019 and Q4 2020 changes were detected in labor force participation and composition.
- Negative effects on GDP per capita are estimated assuming these changes were permanent.

Estimated percentage change in GDP per capita over the long run if the change in labor force participation and composition between Q4 2019 and Q4 2020 persists



Source: Prepared by Banco de México using a general equilibrium occupational choice model, using data from ENOE Q4-2019 and ENOE^{N} Q4-2020.

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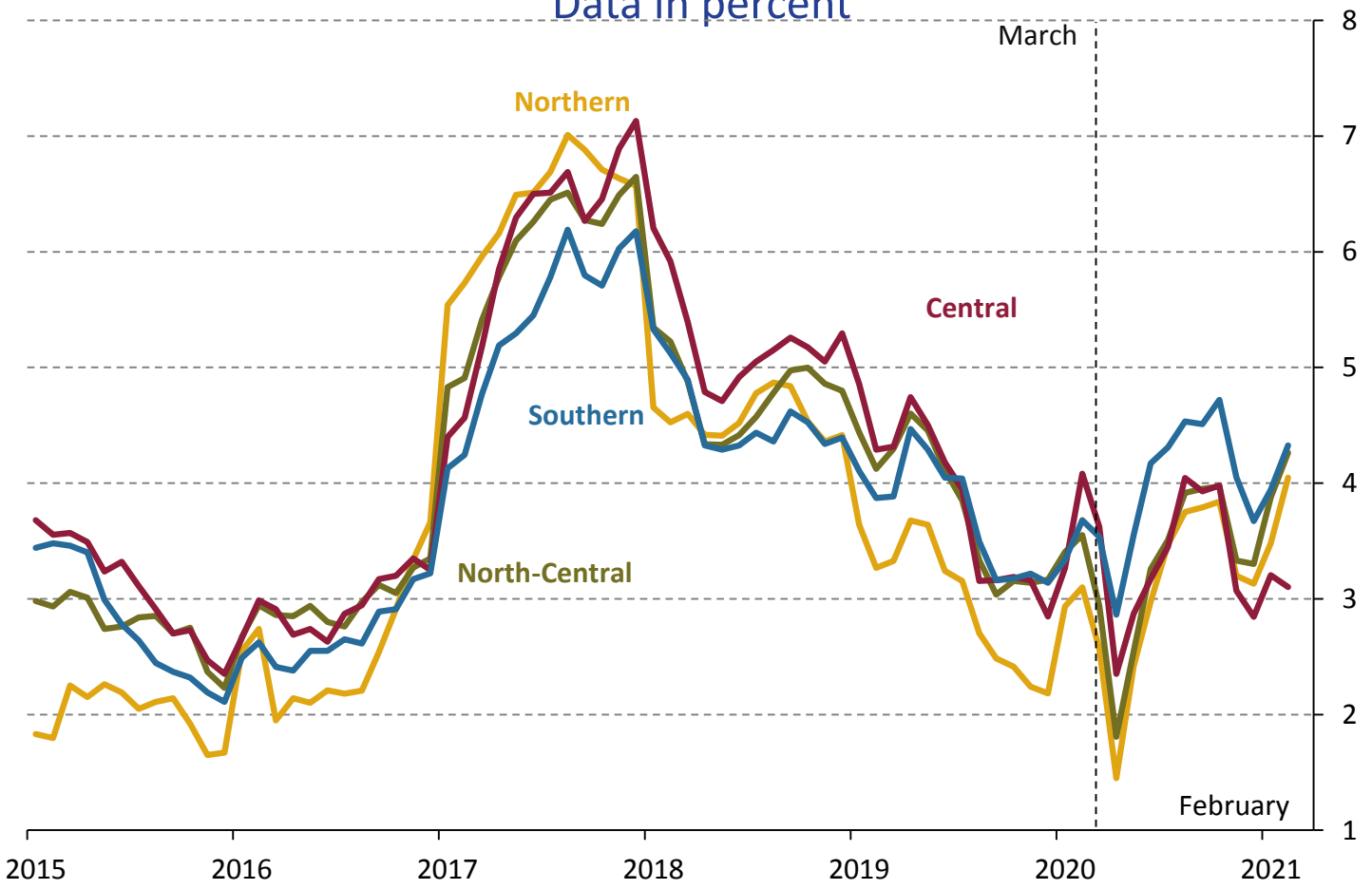
(based on data collected between January 4 and 28, 2021)

III. Final remarks

The evolution of annual headline inflation in different Mexican regions has continued to reflect the shocks generated by the pandemic.

Annual Headline Inflation by Region

Data in percent

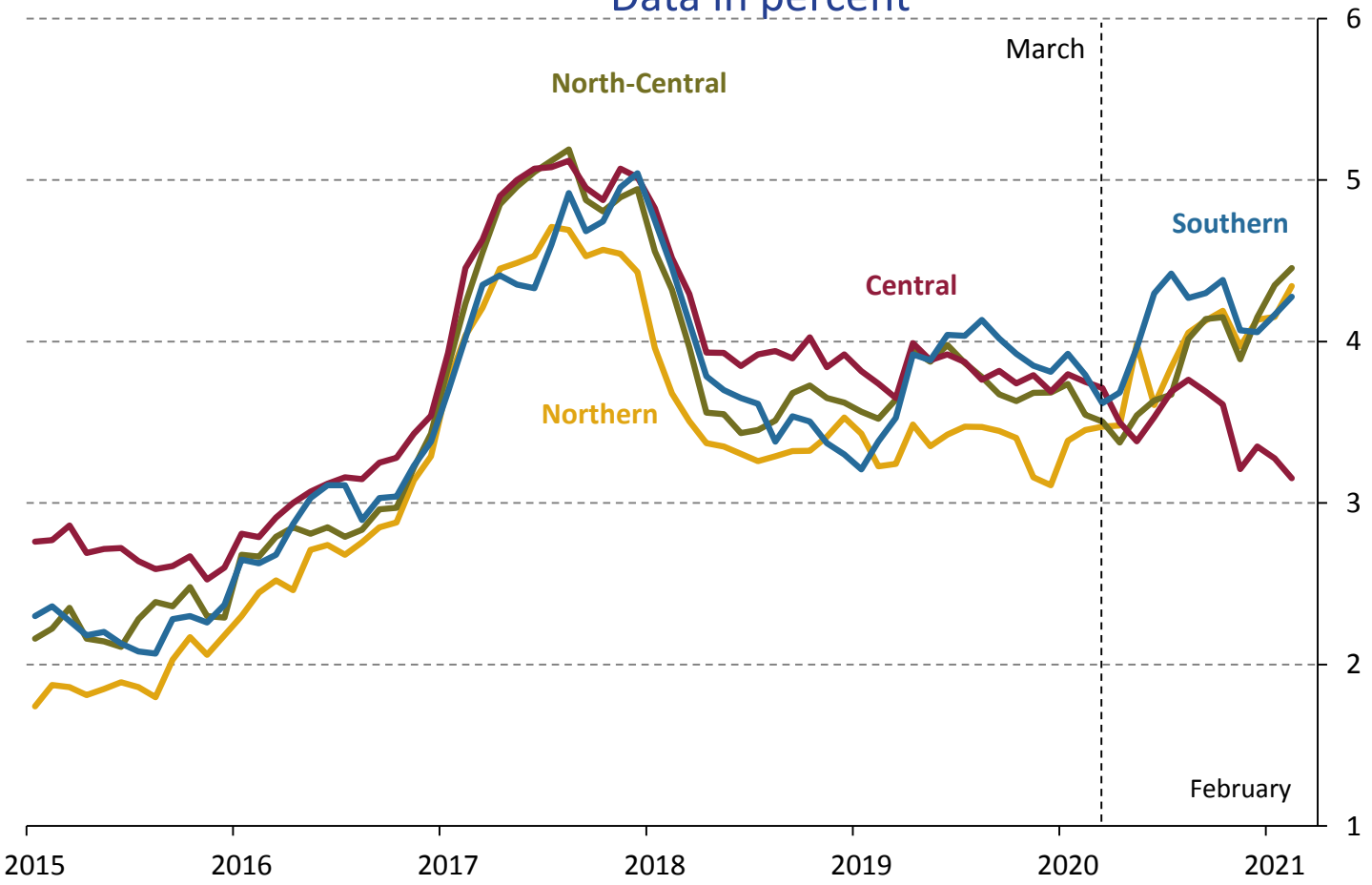


Source: Prepared by Banco de México with data from INEGI and Banco de México.

Between Q3 and Q4 2020, average annual core inflation in the Northern and North-Central regions increased, while in the Central and Southern regions it declined. By February 2021, it increased in the Northern, North-Central, and Southern regions, while it continued declining in the Central region.

Annual Core Inflation, by Region

Data in percent

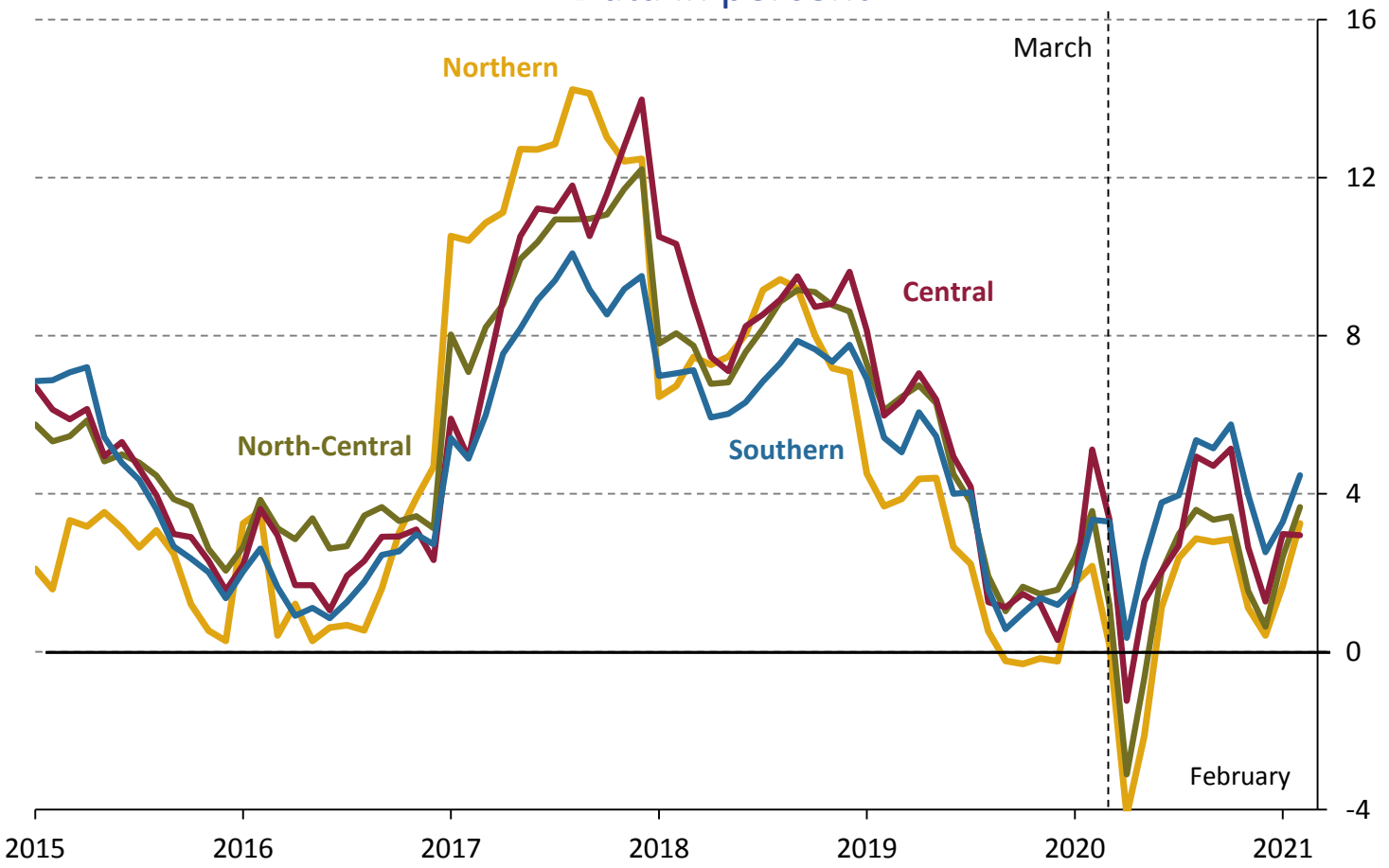


Source: Prepared by Banco de México with data from INEGI and Banco de México.

In all regions, annual non-core inflation decreased significantly in Q4 2020. However, during the first months of 2021 it increased, as a reflection of increments in energy price inflation.

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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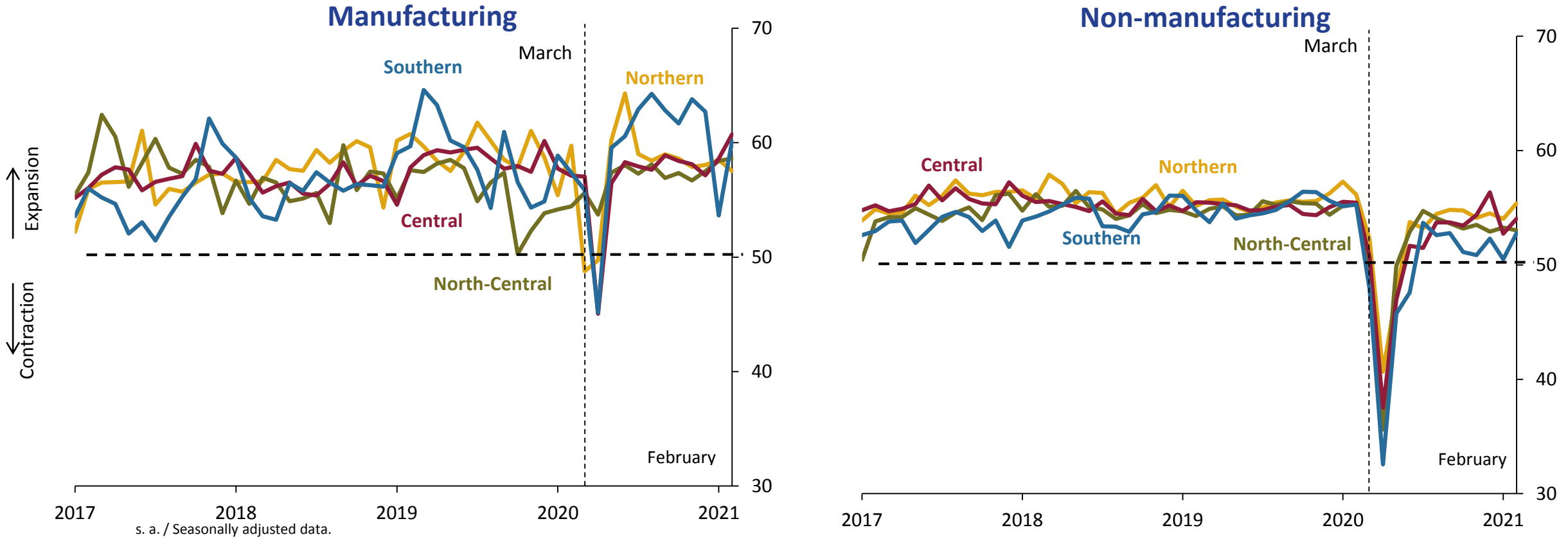
(based on data collected between January 4 and 28, 2021)

III. Final remarks

After the deterioration of business agents' expectations observed at the beginning of the pandemic in Mexico, the evolution of Regional Indices of Manufacturing and Non-manufacturing Orders suggests an improvement in said expectations.

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

Diffusion indices, s. a.

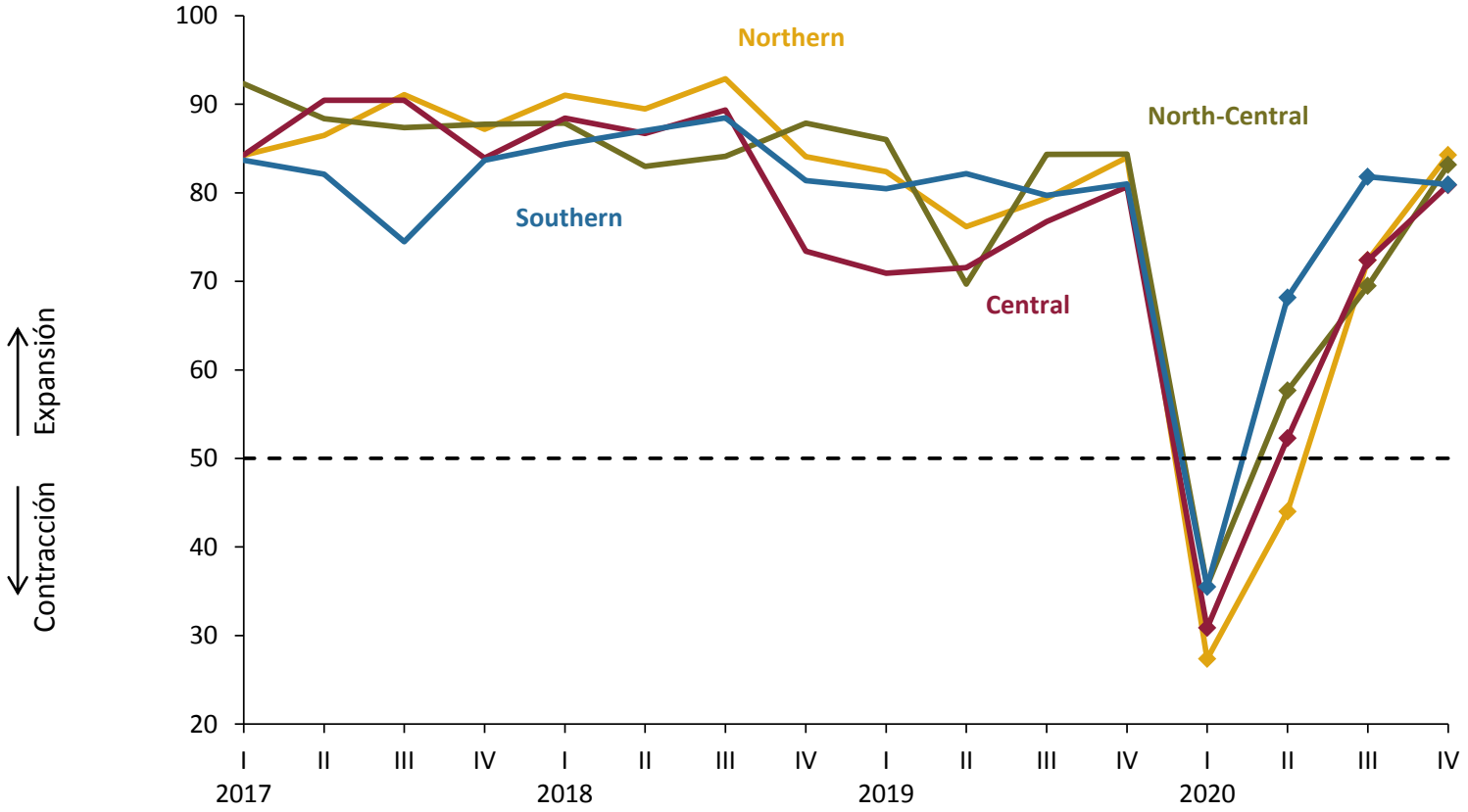


s. a. / Seasonally adjusted data.
Source: Banco de México.

The diffusion index that captures business agents' expectations regarding the demand for goods and services offered by them suggests that said expectations continued to improve during Q4 2020, except for the Southern region, whose index was already at levels higher than those of the rest of the regions.

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

Diffusion indices

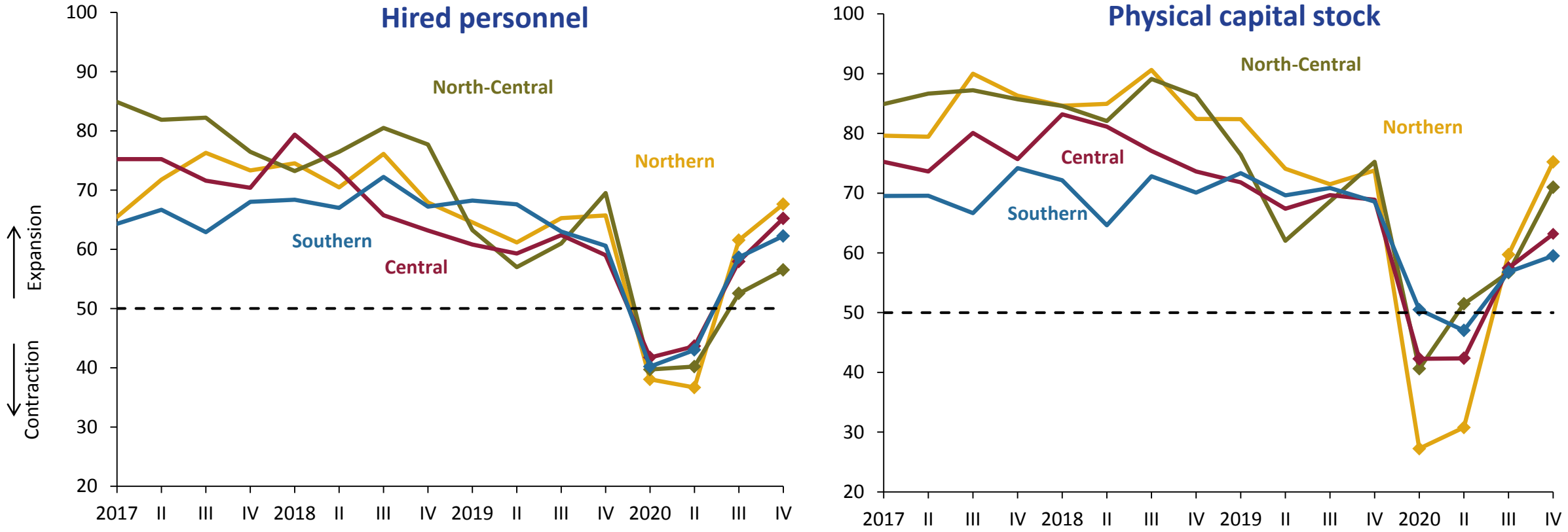


1/ Results obtained from responses to the question: "With respect to the volume of sales of your own goods and services in the previous 12 months, how do you expect your sales volume to change in the next 12 months?. Data corresponding to Q1, Q2, Q3 and Q4 2020 was obtained from data collected between March 23 and April 23, between June 22 and July 16, September 21 and October 15, 2020, and between January 4 and 28, 2021, respectively".Source: Banco de México.

As for the diffusion indexes corresponding to expectations regarding the number of workers employed in companies and expectations of investment in fixed assets for the following twelve months, these continued to increase in all regions of the country, thus confirming an expansion for the second consecutive quarter.

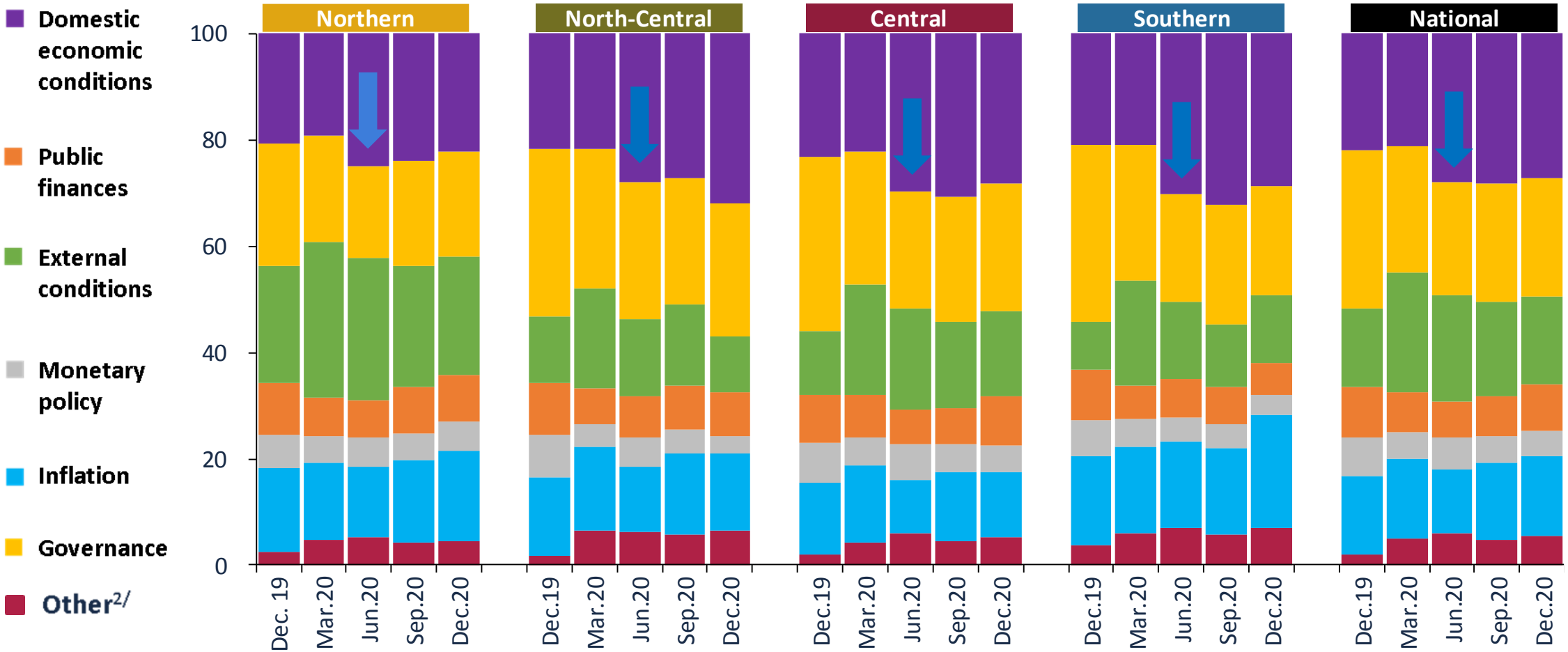
Business Agents' Expectations: Hired Personnel and Physical Capital Stock, Next 12 Months [1/]

Percentage of responses



1/ Results obtained from responses to the 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 firms' 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. Data corresponding to Q1, Q2, Q3 and Q4 2020 were obtained from data collected between March 23 and April 23, between June 22 and July 16, September 21 and October 15, 2020, and between January 4 and 28, 2021, respectively. Source: 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 6 Months (based on data collected between January 4 and 28, 2021) 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 6 months? This question is similar to that included in the questionnaire of the Survey among Private Sector Forecasters. Figures of December 2020 were obtained based on data collected between December 1 and 30, 2020.

2/ The question includes different specific factors as well as an open option "other", in which business agents can indicate other factors they consider relevant. In the case of data collected in March, June, September and December 2020, for this item it is noteworthy that practically all responses make a reference to the COVID-19 pandemic.

Source: Banco de México.

Business Agents' Opinion on Risks to Regional Economic Activity (based on data collected between January 4 and 28, 2021) 1/

Upward risks

- That the spread of the pandemic recedes in the short term, as a result of an effective vaccination process.
- That the stimuli granted in different realms contribute to the recovery of the regional economies.

Downward risks

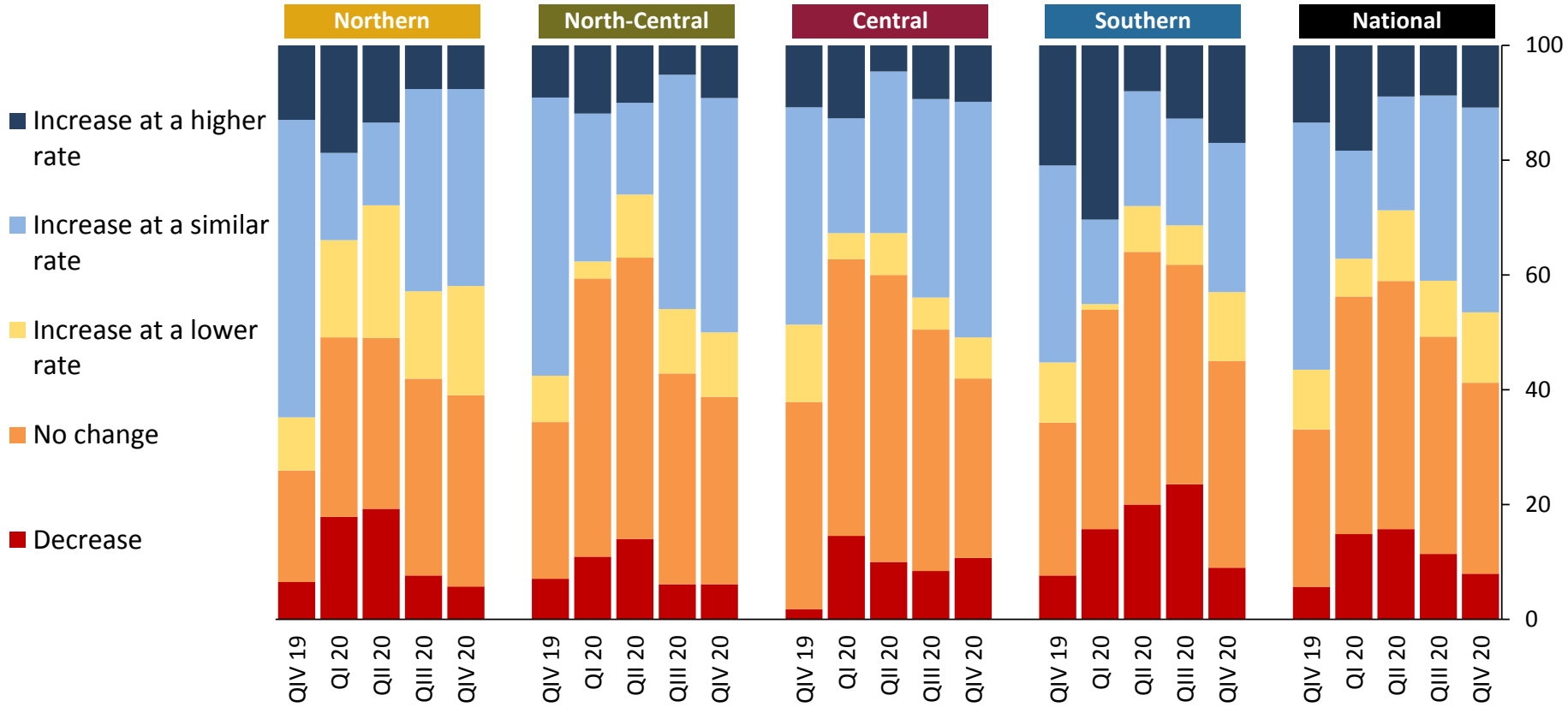
- That social distancing measures are extended or that stricter measures are resumed as a result of the pandemic; or else, that the vaccination process is less effective in driving the recovery due to setbacks in vaccine production, distribution or administration.
- That public security indicators continue to deteriorate.
- That the environment of domestic uncertainty that has affected investment continues to prevail.

1/ Results obtained from responses to the questions: "Which are the main 2 events/situation/facts that, if they occur, would boost economic performance in your state in the next 12 months?" and "Which are the main 2 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 January 4 and 28, 2021. Source: Banco de México.

Most interviewed business' agents continue to anticipate that sale prices of goods and services offered by them will increase at a lower rate, remain unchanged, or even decrease over the next twelve months.

Business Agents' Expectations: Sales Prices, Next 12 Months with respect to Last 12 Months 1/

Percentage of responses

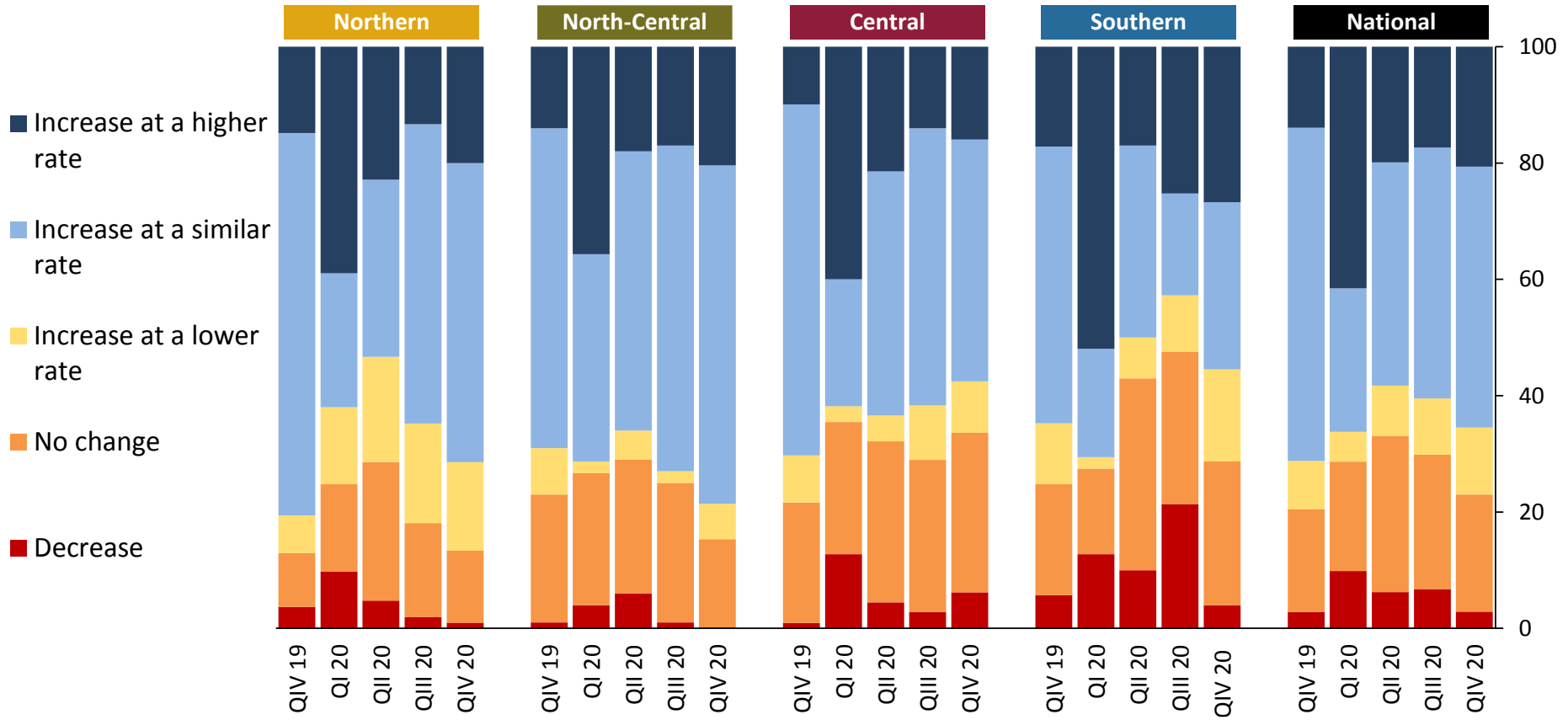


1/ Results obtained from responses to the question: "With respect to the previous 12 months, how do you expect sales prices in your sector to change in the next 12 months?", from interviews conducted by Banco de México. Figures for Q1, Q2, Q3 and Q4 2020 were obtained from data collected March 23 and April 23, June 22 and July 16, September 23, October 15, 2020 and between January 4 and 28, 2021, respectively. Source: Banco de México.

The percentage of business agents expecting their input prices to increase at a similar or higher rate during the next 12 months with respect to the previous year, rose in all regions except in the Central one.

Business Agents' Expectations: Input Prices, Next 12 Months with respect to Last 12 Months [1/]

Percentage of responses

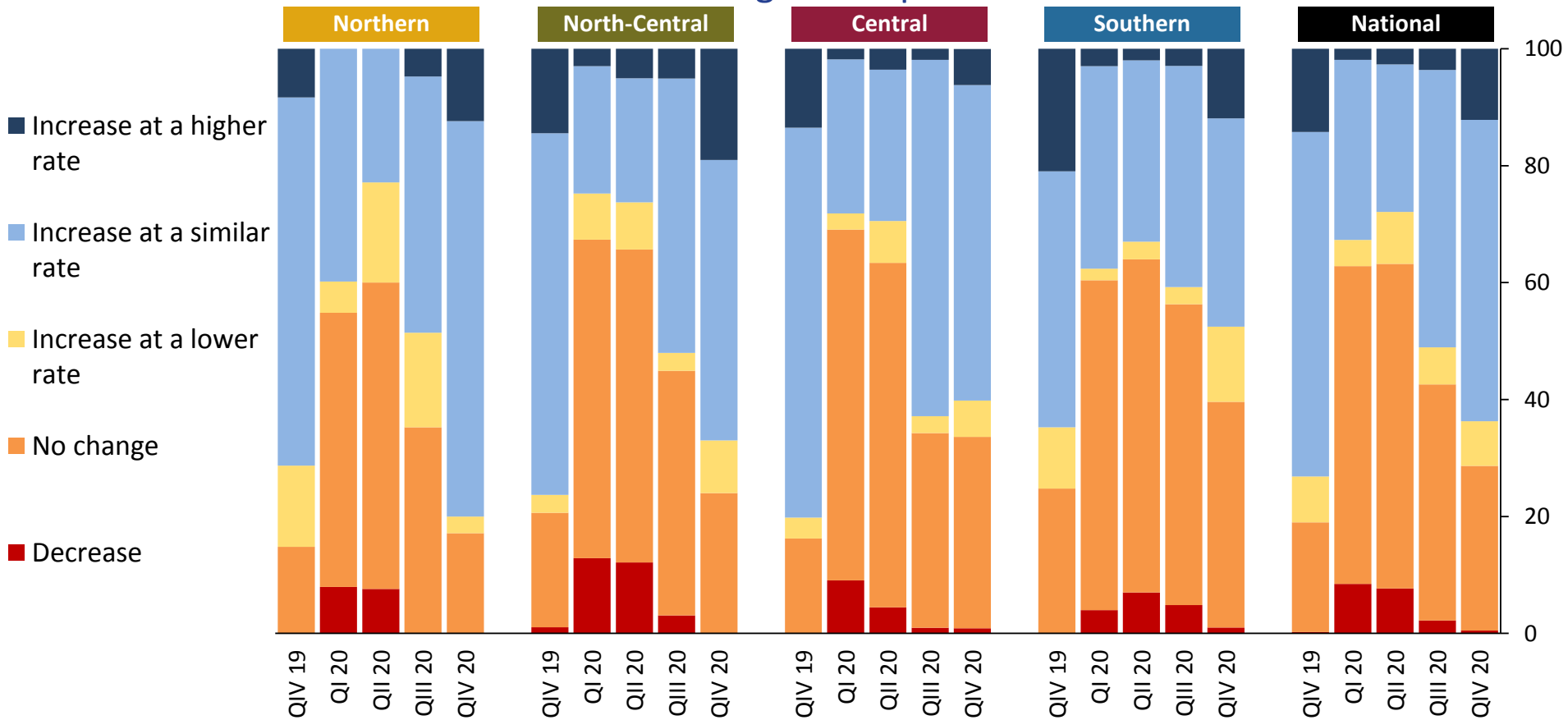


1/ Results obtained from responses to the question: "With respect to the previous 12 months, how do you expect input prices in your sector to change in the next 12 months?", from interviews conducted by Banco de México. Figures for Q1,Q2, Q3 and Q4 2020 were obtained from data collected between March 23 and April 23, June 22 and July 16, September 23 and October 15, 2020, and between January 4 and 28, 2021, respectively. Source: Banco de México.

The percentage of business agents expecting wage costs to increase at the same or higher rate over the next twelve months was higher than that observed in the previous quarter in the North-Central, Southern and Northern regions, especially the latter one.

Business Agents' Expectations: Wage Costs, Next 12 Months with respect to Last 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 wages and salaries of personnel working in your sector to change in the next 12 months?", from interviews conducted by Banco de México. Figures for Q1,Q2, Q3 and Q4 2020 were obtained from data collected between March 23 and April 23, June 22 and July 16, September 23 and October 15, 2020, and between January 4 and 28, 2021, respectively. Source: Banco de México.

Outline

I. Regional Economic Report

II. Results October – December 2020

A. Economic activity

B. Inflation

C. Economic outlook

(based on data collected between January 4 and 28, 2021)

III. Final remarks

Final remarks

1. **Economic activity in Mexico continued to recover in Q4 2020,** following the strong contraction in Q2 associated with the COVID-19 pandemic, although at a more moderate rate than in Q3.

   ✓ The recovery of productive activity and labor markets continued to be heterogeneous across the different regions.

   ✓ Indeed, **economic activity and labor markets in the Northern and North-Central regions have shown a higher level or recovery than the Central and Southern regions.**

2. **Economic activity will likely continue to recover heterogeneously across regions,** reflecting not only differences in the regions' productive specialization, but also in the speed and pattern of how the COVID-19 vaccines are being distributed and administered geographically.

   ✓ **This process is not risk-free** and represents a major logistical challenge due, on the one hand, to the difficulties in the large-scale production and distribution of vaccines, and, on the other, to the marked differences in the infrastructure for their provision in Mexico's regions.

3. Looking ahead, **the regions' performance will depend on their flexibility to allocate resources** to allow for the necessary adjustments to boost productive activity and employment not only in the context of the pandemic, but also from a long-term perspective.

   ✓ Specifically, **a more equal labor market between men and women** would also contribute to increase the level of potential income in all of the country's regions.



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