

Regional Economic Report
January – March 2021

BANCO DE MÉXICO

Outline

I. Regional Economic Report

II. Results January – March 2021

A. Economic activity

B. Inflation

C. Economic outlook

(based on data collected between April 5 and April 29, 2021)

III. Final remarks

Regional Economic Report

- The Regional Economic Report is a quarterly publication that includes Banco de México's indicators and analysis 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 as part of the information used to evaluate the economic situation and the forecast for the national economy.

- The economic performance and inflation in the regions during Q1 2021, and the prospects of business agents surveyed between April 5 and April 29, 2021 on regional economic activity and inflation over the following twelve months are analyzed herein.

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I. Regional Economic Report

II. **Results January – March 2021**

   A. **Economic activity**

   B. Inflation

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      (based on data collected between April 5 and April 29, 2021)

III. Final remarks

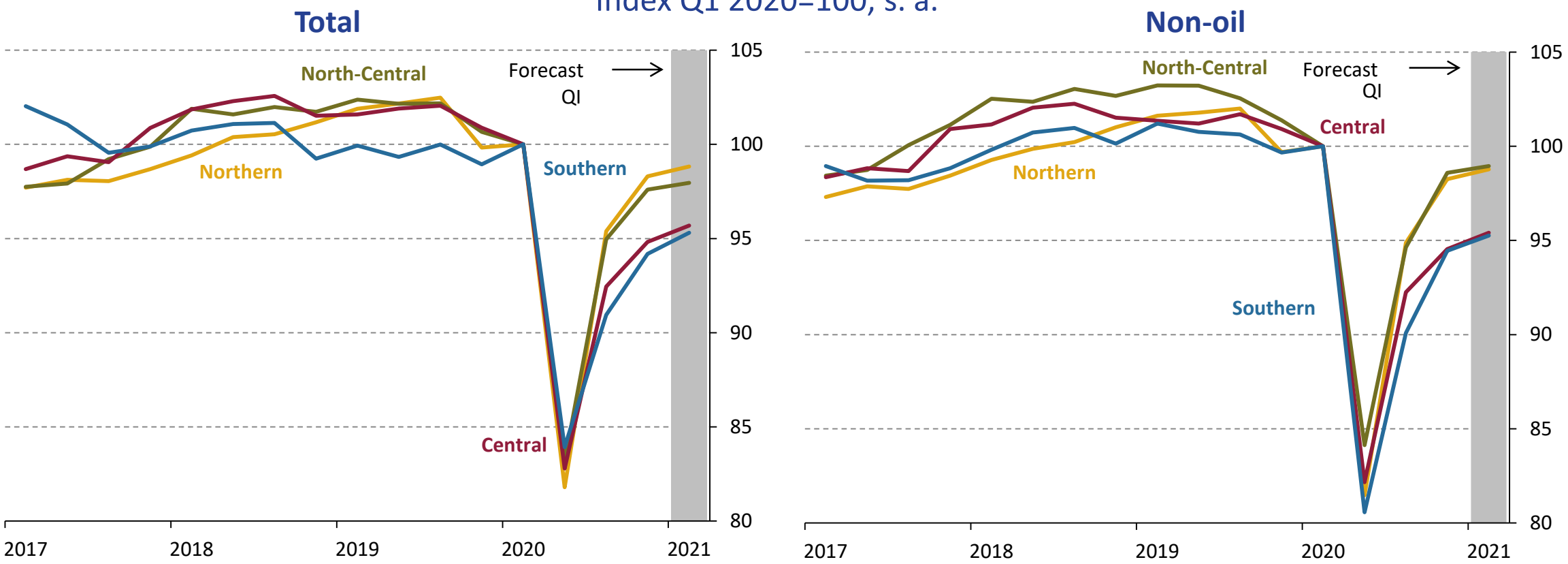
Economic activity

- **During Q1 2021, economic activity in all regions of Mexico continued to recover albeit at a slower pace.**
  - ✓ The regions were affected by the upsurge of the pandemic that took place at the beginning of the year.
  - ✓ In addition, there were problems in the supply of natural gas and electricity, as well as of other production inputs that affected more notably the Northern and Central regions.
  - ✓ The public infrastructure projects being developed and the better performance of oil mining supported the recovery of the Southern region.
- Thus, the Northern and Central regions are foreseen to have grown at a lower rate than the Southern region.
- **Despite the better relative performance estimated for the Southern region during Q1 2021, this region, together with the Central one, will continue to show a larger gap with respect to Q1 2020 activity levels than the Northern and North-Central regions.**

All regions are expected to have slowed their pace of recovery during Q1 2021. The Central and Southern regions would continue to show a larger gap with respect to Q1 2020 activity levels than the Northern and North-Central regions.

Quarterly Indicator of Regional Economic Activity [1/]

Index Q1 2020=100, s. a.



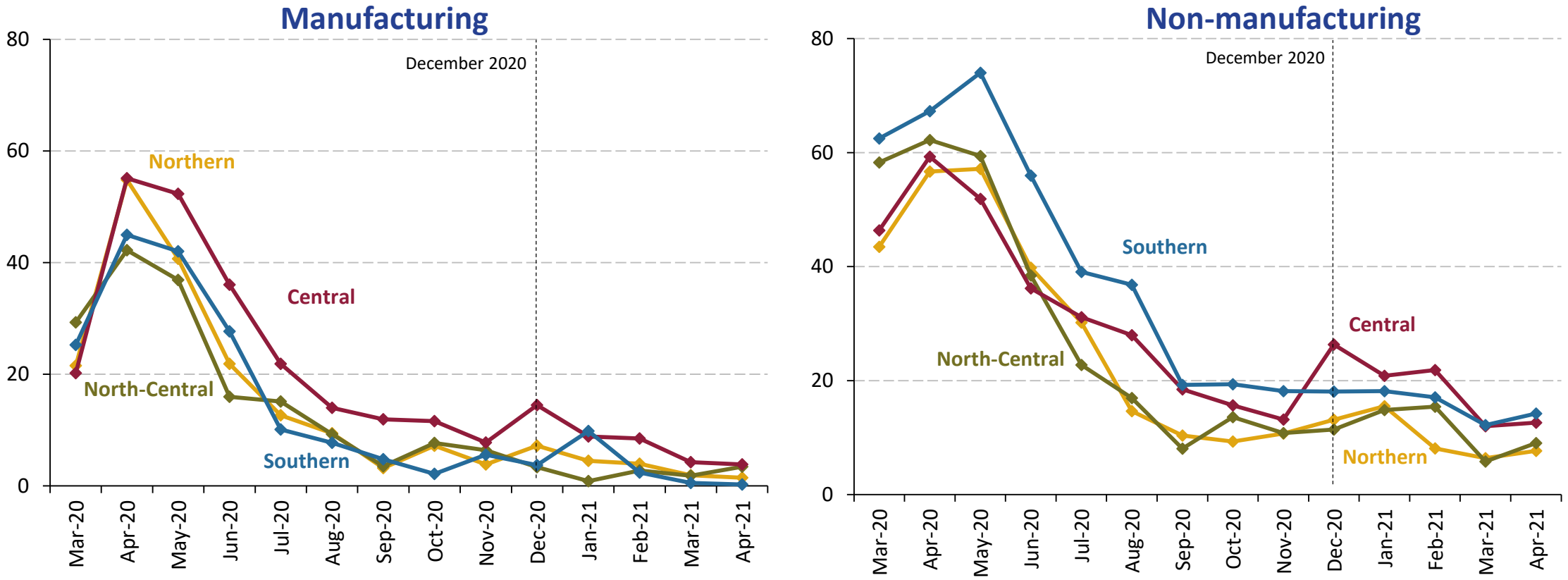
s. a. / Seasonally adjusted data.

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

As a result of the upsurge of new cases of infections in late 2020 and early 2021, there was some setback in the process of gradual resumption of business operations, especially in non-manufacturing firms of the Central region.

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

Data in percent

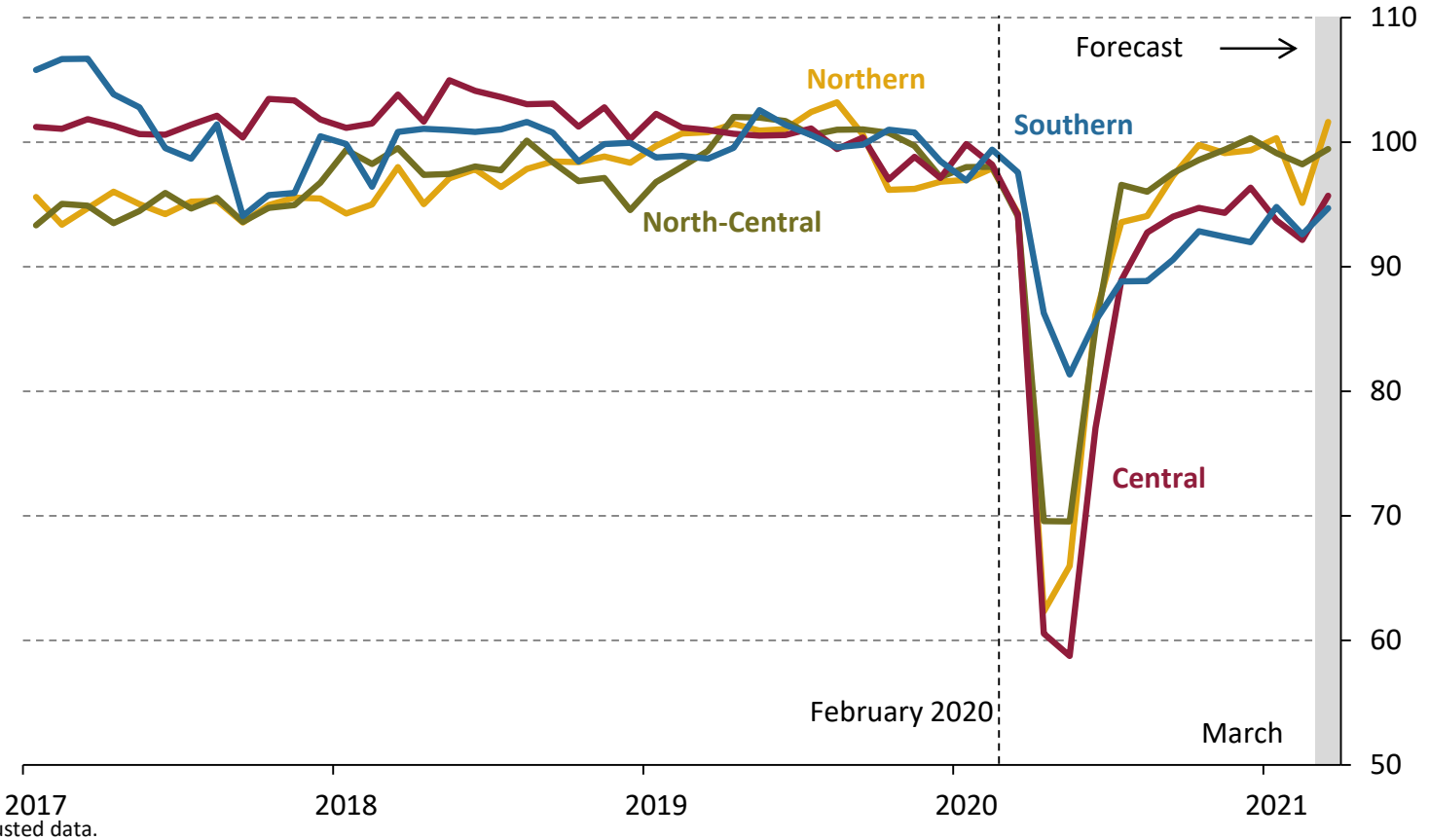


Source: Prepared by Banco de México with data from the Monthly Regional Economic Activity Survey. April data corresponds to the survey done May 3-28, 2021. The results are drawn from responses to the question: "Due to the contingency to stop the spread of COVID-19, please indicate if the productive process in your firm was suspended fully or partially, exclusively due to this factor".

Problems in the supply of natural gas and electricity, as well as of other inputs, affected more notably manufacturing production in the Northern and Central regions; nevertheless, in March, manufacturing production in all regions registered an increase.

Regional Manufacturing Indicator

Index 2019=100, a. e.



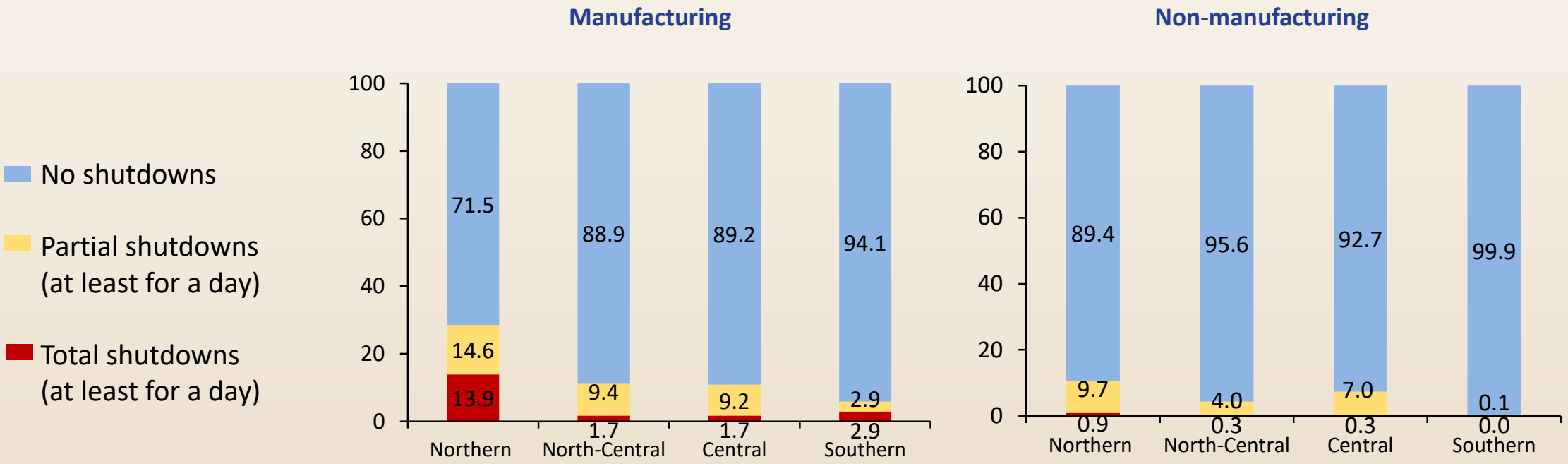
s. a. / Seasonally adjusted data.

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

Disruptions in the Supply of Natural Gas and Electricity in February and its Effects on Regional Economic Activity

Suspension of the Production Process due to the Shortage of Natural Gas or Electricity

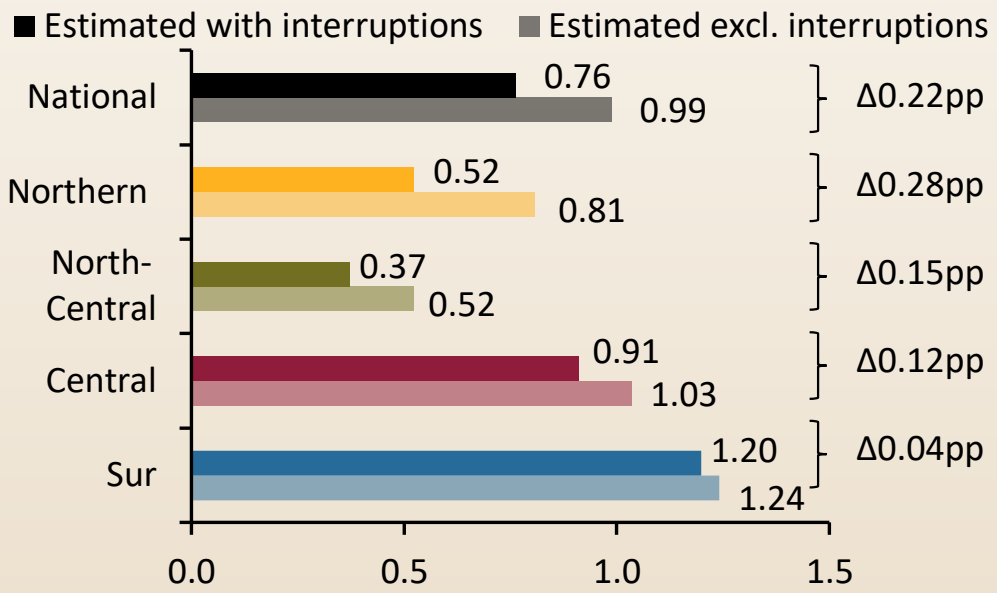
Percentage of firms



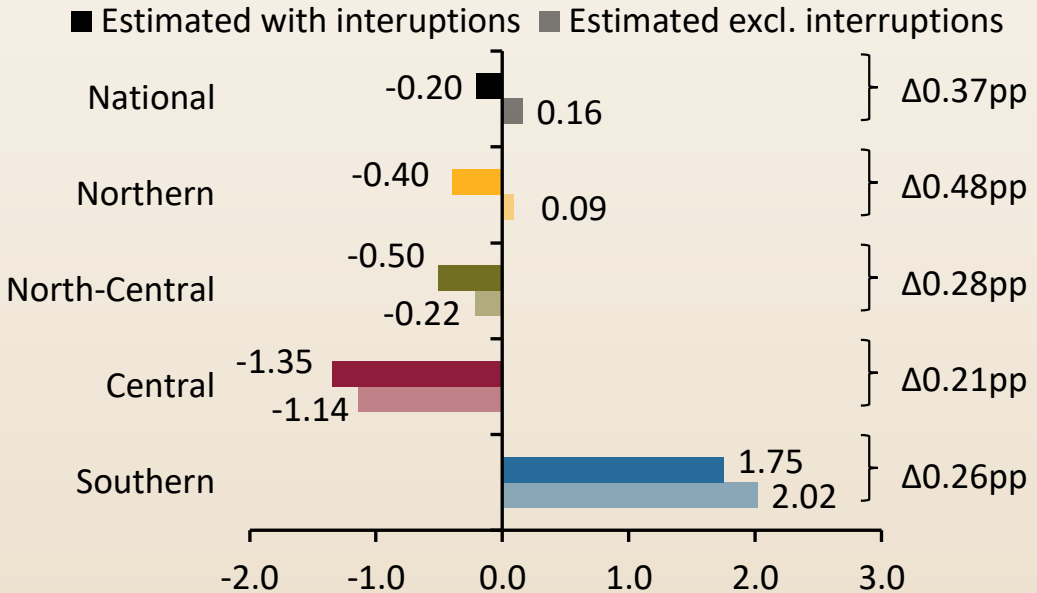
Source: Prepared by Banco de México with data from the Monthly Survey of Regional Economic Activity (EMAER, for its Spanish acronym), corresponding to the survey carried out in March 1-30, 2021. Results drawn from responses to the question: "For the month of February 2021, indicate whether the production process of your company underwent partial or total shutdowns and the number of days it remained in this condition due to the shortage of natural gas or electricity".

Disruptions in the Supply of Natural Gas and Electricity in February and its Effects on Regional Economic Activity

Total GDP Quarterly Variation
Q1 2021 vs. Q4 2020, s.a.



Manufacturing GDP Quarterly Variation
Q1 2021 vs. Q4 2020, s.a.

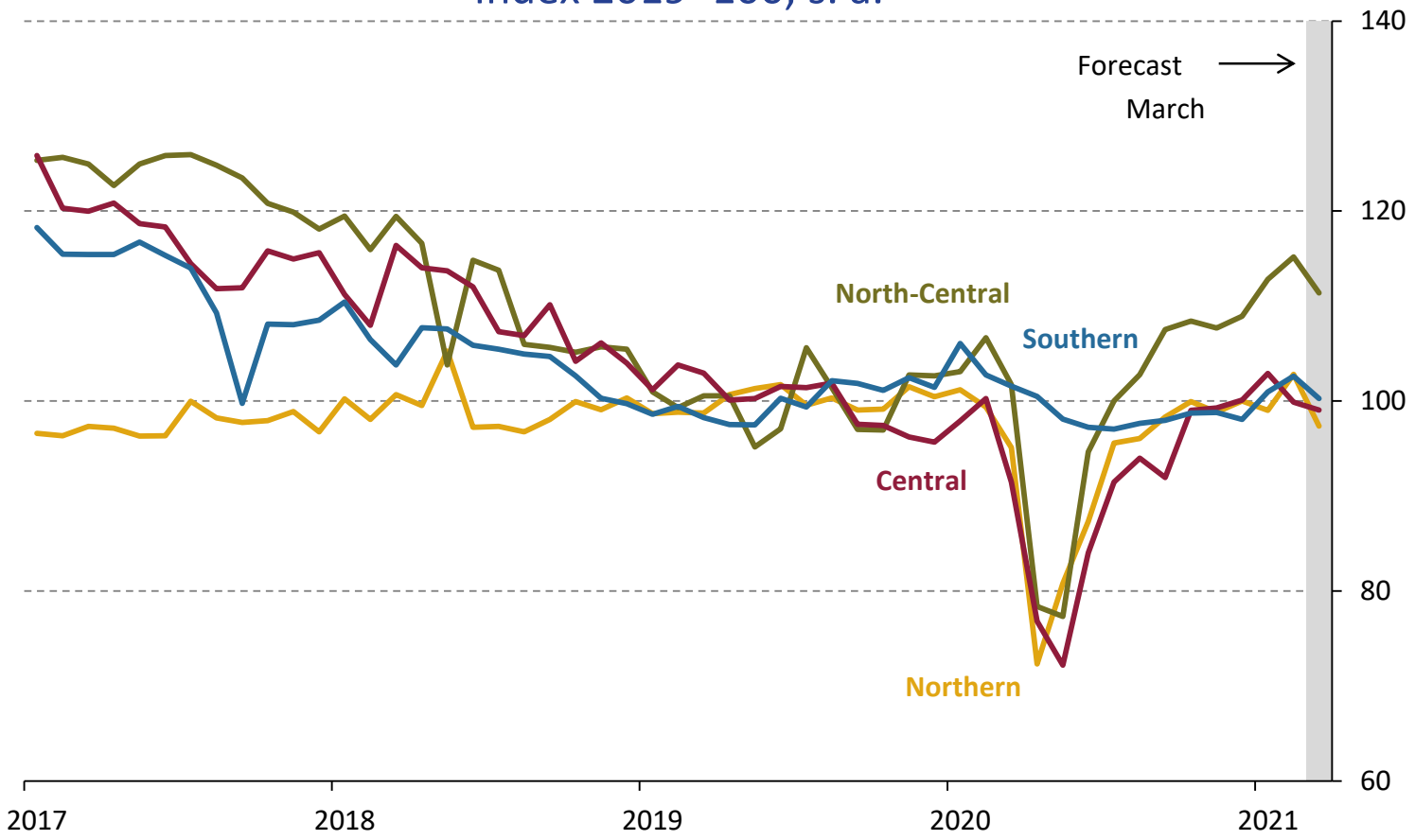


Source: Prepared with data from EMAER, Banco de México and INEGI.1/ The estimated figure of total regional GDP shutdowns corresponds to ITAER's forecast for Q1 2021, while the estimated figure for regional manufacturing GDP shutdowns refers to the forecast for the Q1 2021 from the Regional Manufacturing Activity Indicator. Total GDP growth and Manufacturing GDP growth are based on INEGI's GDP figures and on Manufacturing IGAE figures, respectively.

For the entire Q1 2021, mining is estimated to have continued to expand in the Central and Southern regions. In contrast, the Northern region is expected to have relatively stagnated, influenced by the subdued behavior of non-oil mining.

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

Index 2019=100, s. a.



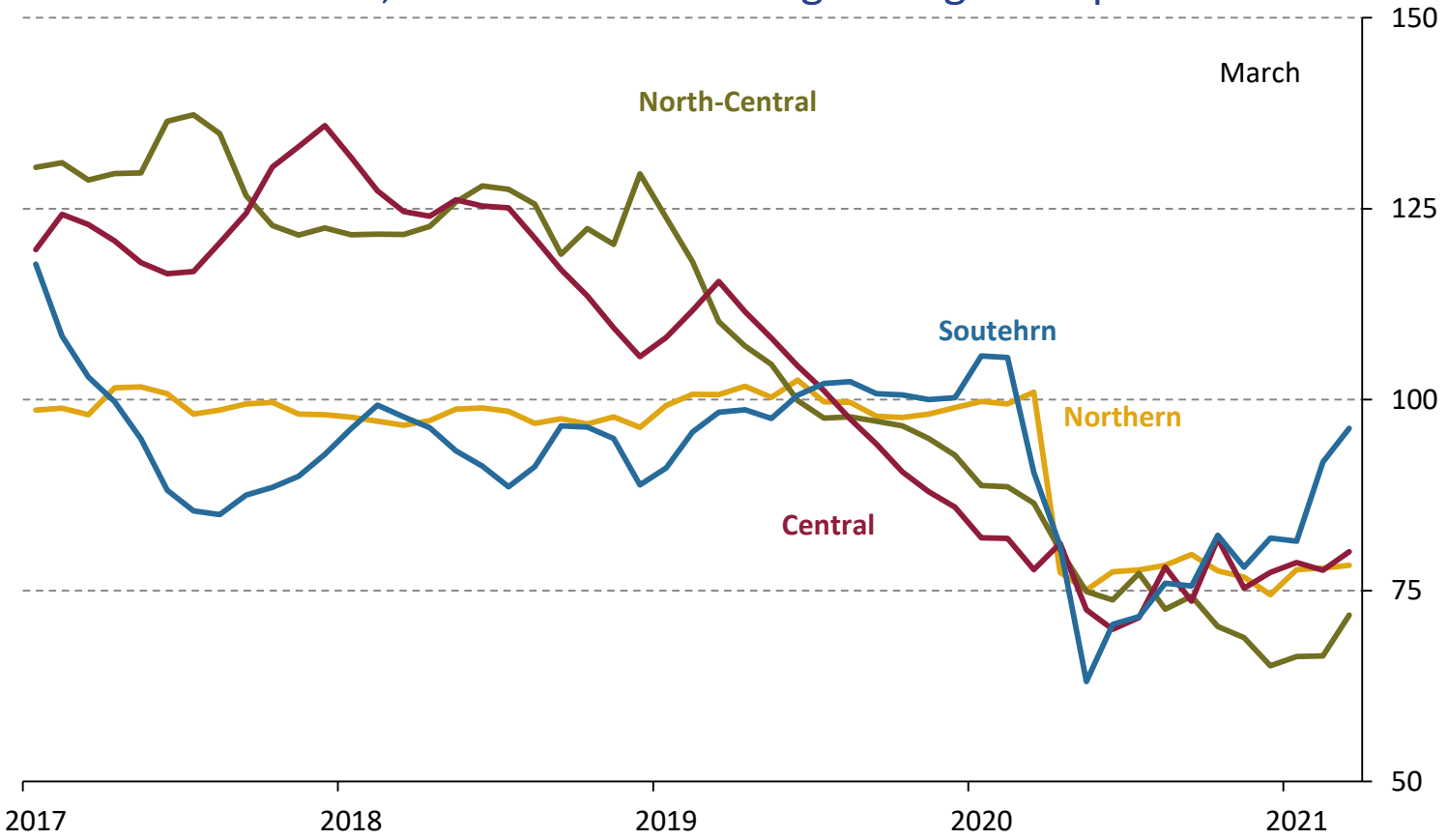
s. a. / Seasonally adjusted data.

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

During Q1 2021, the recovery of construction in the Southern region was notable, while the North-Central region registered an incipient reactivation, albeit from low levels. In contrast, in the Northern and Central regions the sector remained weak.

Real Value of Production in the Construction Industry by Region

Index 2019=100, s. a. 3-month moving average except for 2020 and 2021



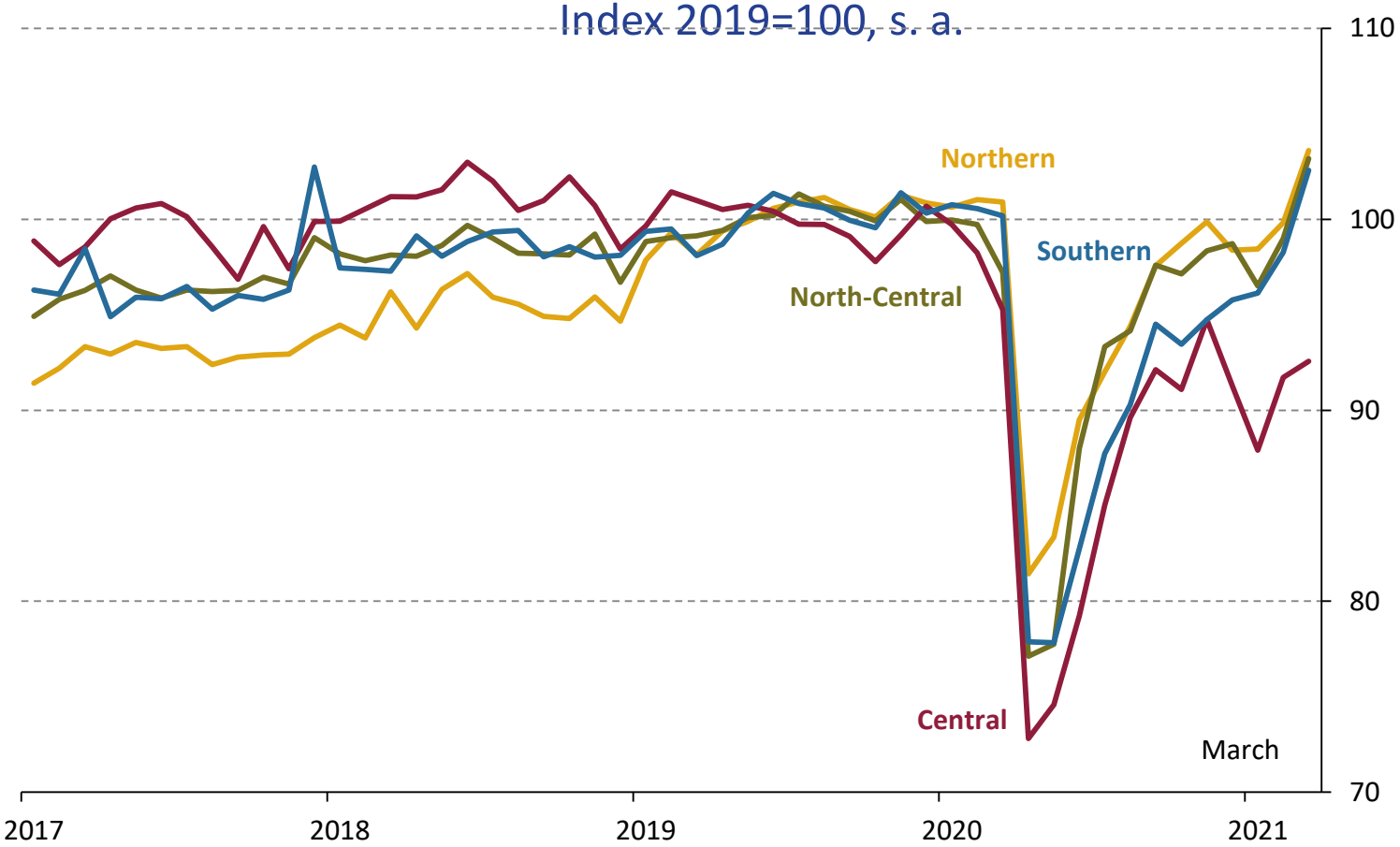
s. a. / Seasonally adjusted data.

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

Commercial activity continued recovering in the Northern, North-Central and Southern regions, registering in Q1 2021 levels even higher than those observed prior to the onset of the pandemic. The Central region showed a decline for the entire quarter, mainly as a result of the fall registered in January.

Index of Revenues from Retailers' Supply of Goods and Services

Index 2019=100, s. a.

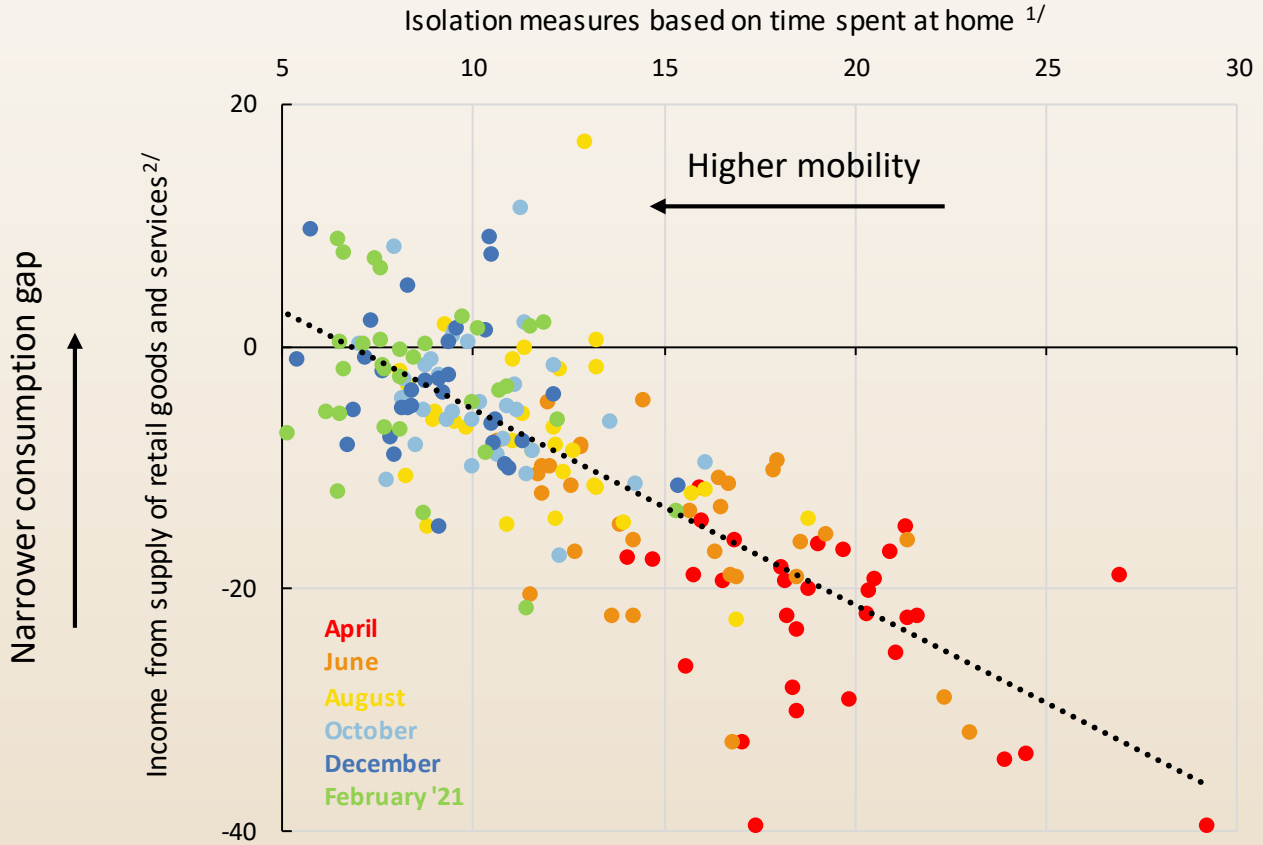


s. a. / Seasonally adjusted data.

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

Social Distancing and Regional Consumption during the COVID-19 Pandemic

Lockdown and Consumption in States during the Pandemic

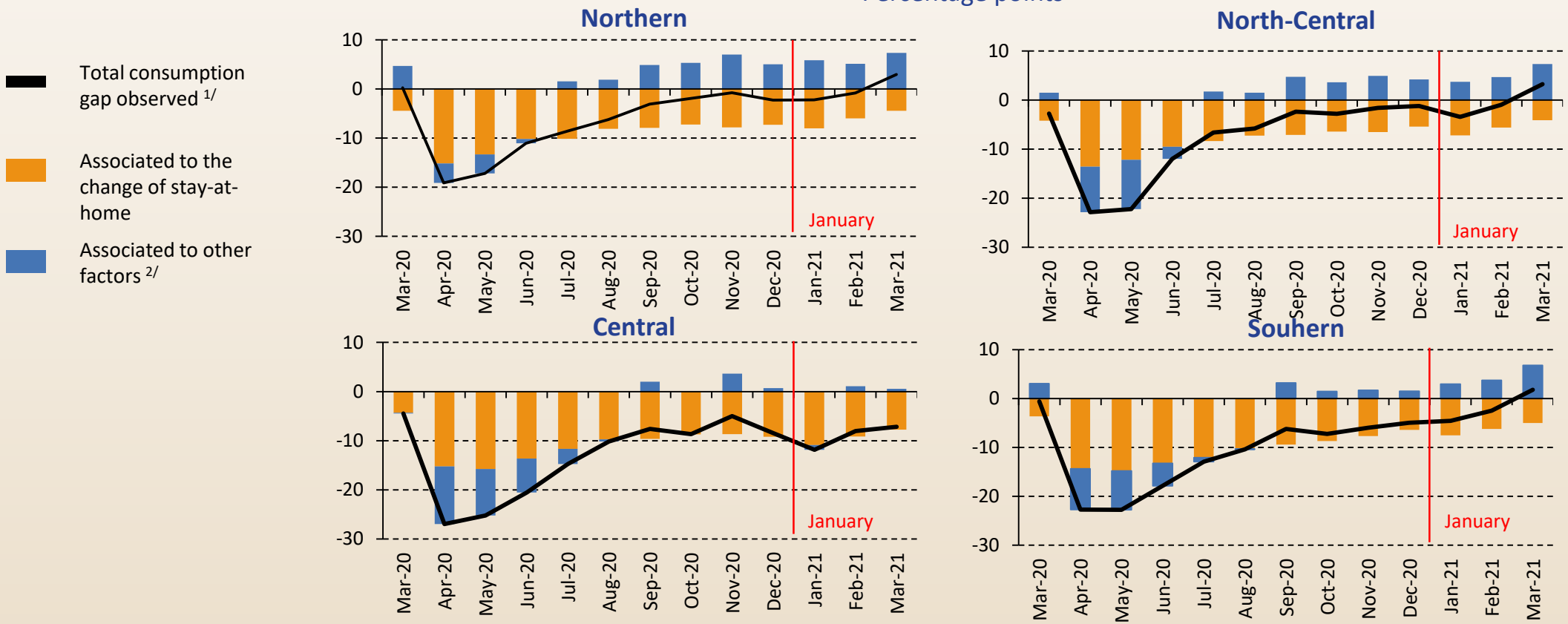


1/ Percentage deviation of the corresponding month with respect to the reference period from January 3 to February 6, 2020.
2/ Percentage deviation of the indicated month with respect to February 2020.
Note: Each point in the graph corresponds to a state in a given month.
Source: Prepared by Banco de México based on data from INEGI and Google's Global Mobility Report.

Social Distancing and Regional Consumption during the COVID-19 Pandemic

Estimated Share of Stay-at-Home to the Regional Consumption Gap using an Econometric Model

Percentage points

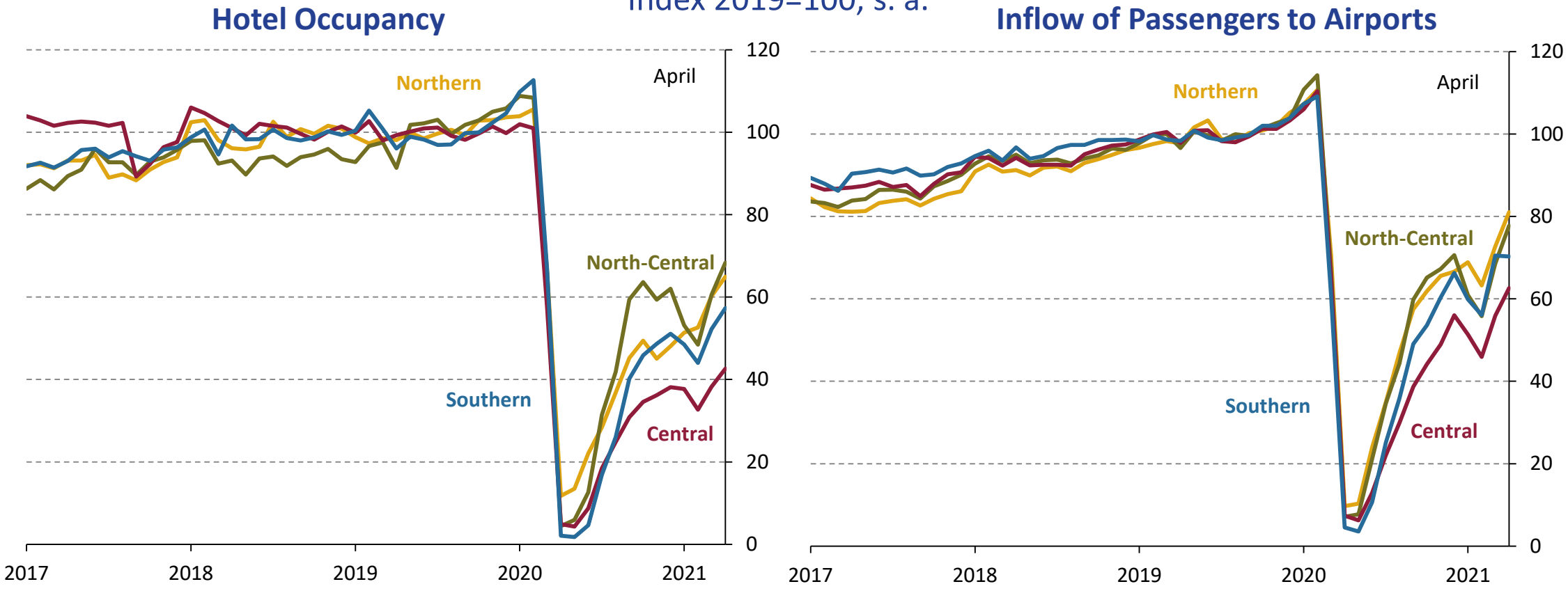


1/ The consumption gap represents the percentage deviation of the index of income from Retailer's Supply of Goods and Services in the corresponding month with respect to February 2020.
2/ Other factors include fixed effects per state, monthly fixed effects, and model adjustment error.
Source: Prepared by Banco de México based on data from INEGI and Google's Global Mobility Report.

Tourism activity levels improved during March and April in all regions of Mexico, after having registered negative variations during the first two months of the year in the Central and Southern regions, in a context in which the number of COVID-19 cases increased after the end of year.

Regional Indicators of Tourism

Index 2019=100, s. a.



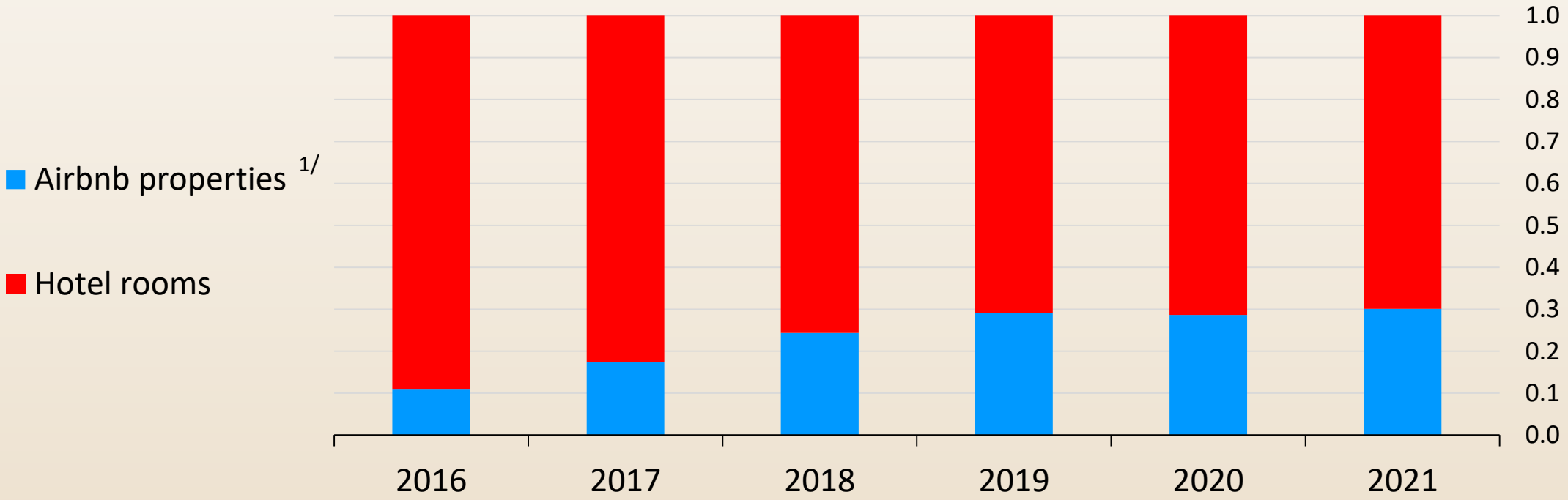
s. a. / Seasonally adjusted data.

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).

The Market of Short-term Rental Residential Properties in Mexico

Available Airbnb Properties and Hotel Rooms

Share

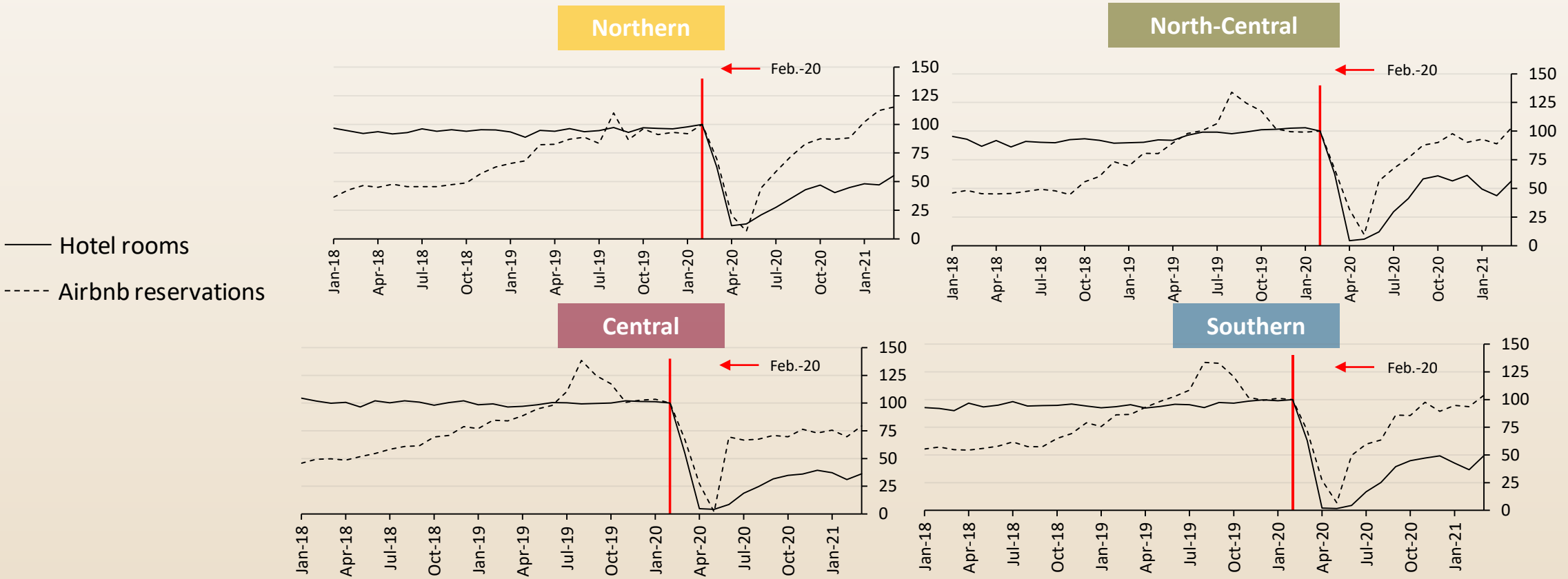


1/ Each Airbnb property is assumed to be equivalent to one hotel room regardless of its number of rooms.
Each year is calculated as the average of monthly data. For the 2016 calculation, the months from August to December are included, while for that of 2021 the months from January to March are included.
Source: Prepared by Banco de México with data from AirDNA and Mexico's Ministry of Tourism.

The Market of Short-term Rental Residential Properties in Mexico

Occupied Hotel Rooms and Airbnb Bookings

Index February 2020 = 100 , s.a.



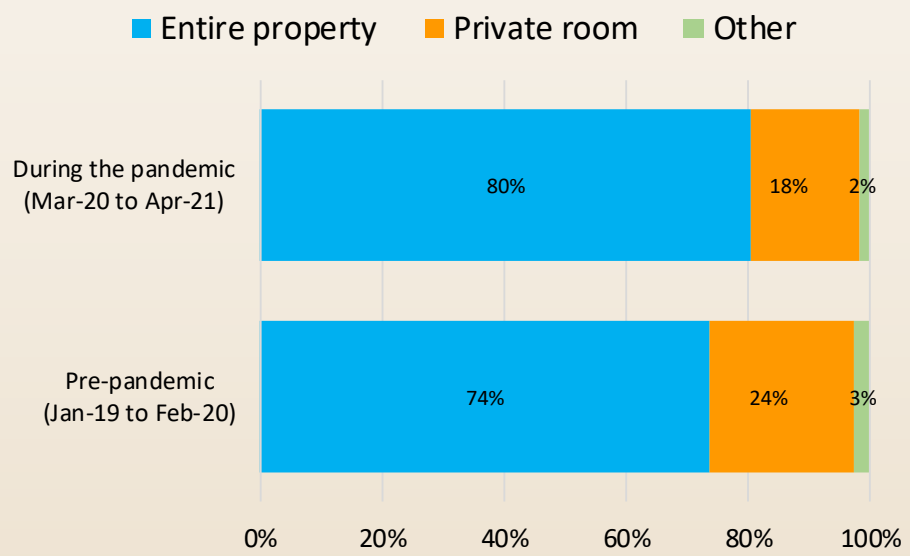
s.a./ Seasonally adjusted data. The vertical red line indicates the month of February 2020 corresponding to the month prior to the onset of the pandemic. Each Airbnb property is assumed to be equivalent to one hotel room regardless of its number of rooms.

Source: Prepared by Banco de México with data from AirDNA and Mexico's Ministry of Tourism.

The Market of Short-term Rental Residential Properties in Mexico

Share of Occupancy for Shared and Private Room Accommodations

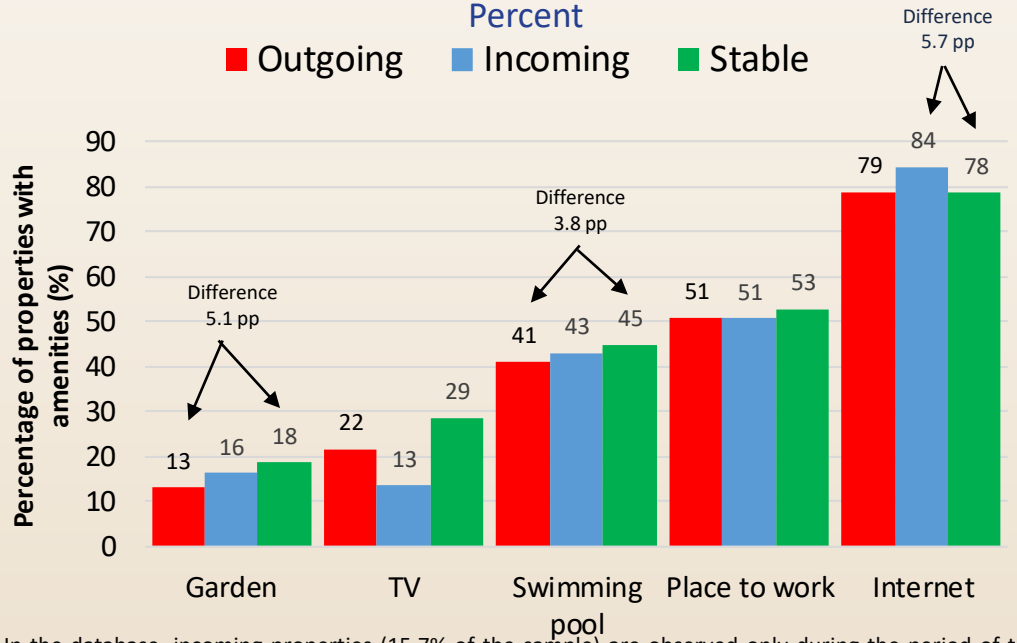
Percent



Note: The shares of each type of property are weighted by the occupancy rate of each property for the month. This occupancy rate is calculated as the ratio between occupied and available days in the month for each property.
Source: Prepared by Banco de México with AirDNA data.

Share of Airbnb Properties with Amenities for Incoming, Outgoing and Stable Properties in 2019-2020

Percent

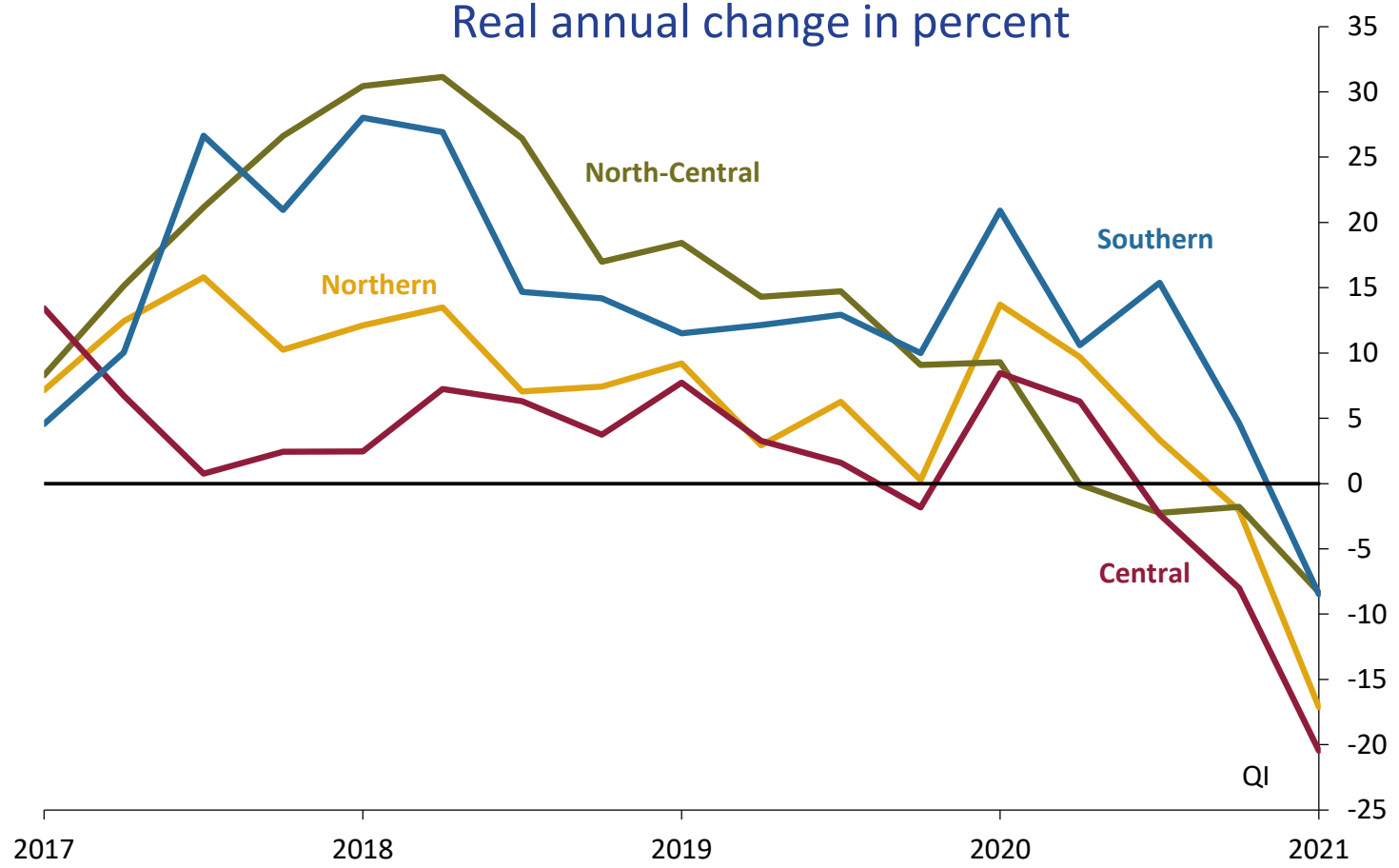


Note: In the database, incoming properties (15.7% of the sample) are observed only during the period of the pandemic (Q2-2020 to Q4-2020). Outgoing properties (35.8%) are observed only in the pre-pandemic period (Q1-2019 to Q1-2020). Stable properties (48.4%) are those observed during both pre-pandemic and pandemic periods.
Place to work refers to a space suitable for working with a computer, connecting to wireless internet, and making video calls.
Due to the rounding of percentages, differences may differ from those shown in the bars.
Source: Prepared by Banco de México with AirDNA data.

The annual growth rate of commercial banks' performing credit to non-financial private firms continued to decline in all regions.

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

Real annual change in percent

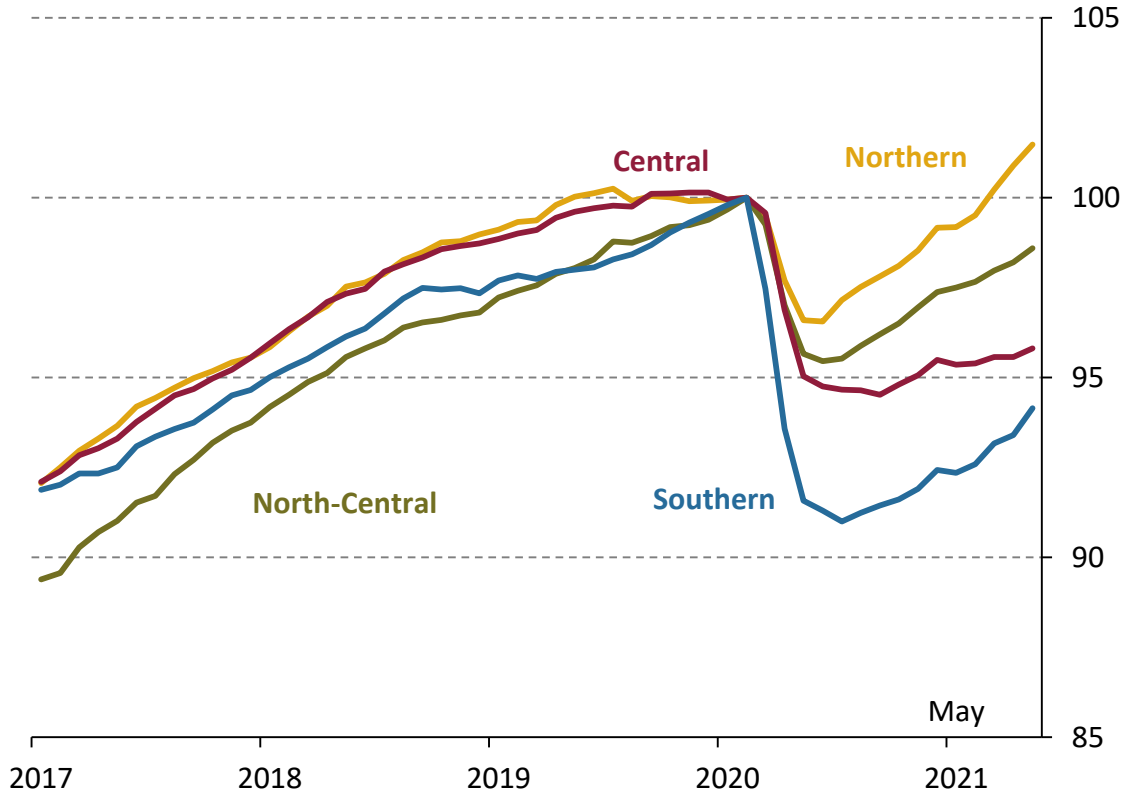


1/ Excludes regulated entities (sofomes E.R.) subsidiaries of banks and financial groups. The estimate of the real annual change excludes the effects from exchange rate fluctuations.
Source: Banco de México.

During Q1-2021, the number of IMSS-insured workers continued to show a moderate recovery in all regions of the country, albeit at a slower pace than in the previous quarter and with a significant heterogeneity as to the levels reached with respect to pre-pandemic levels.

Number of IMSS-insured Workers

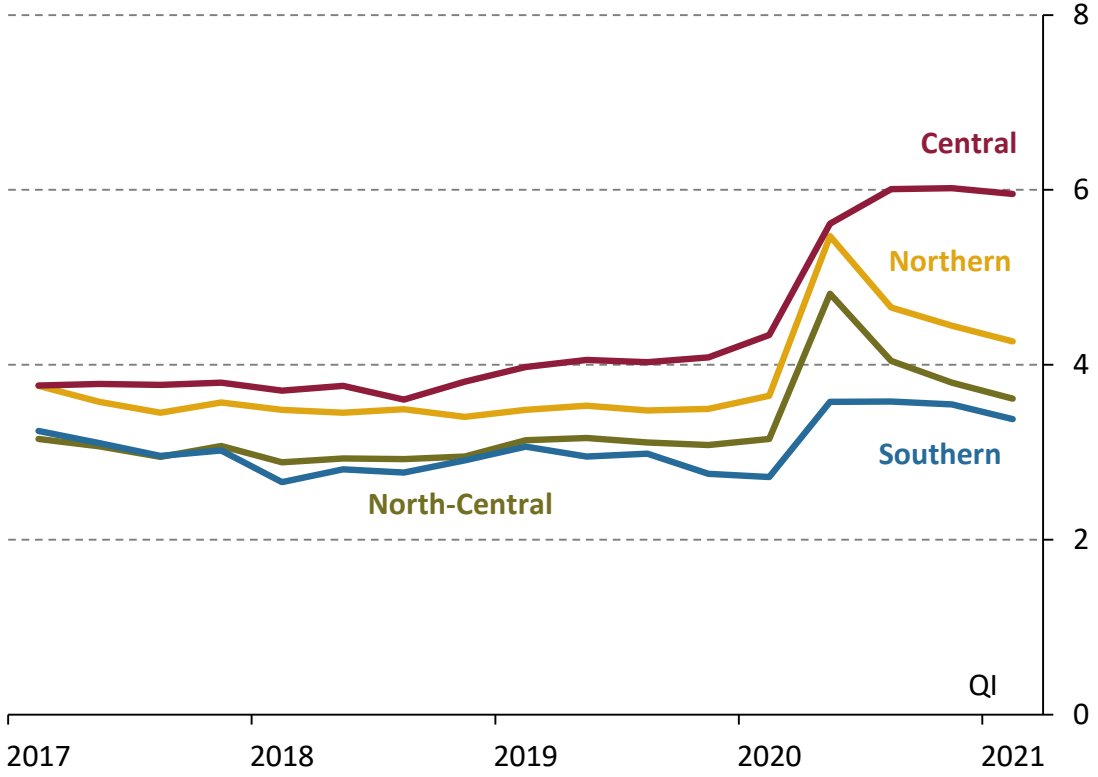
Index Q1-2020=100, s. a. [1/]



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 (ENOEN).

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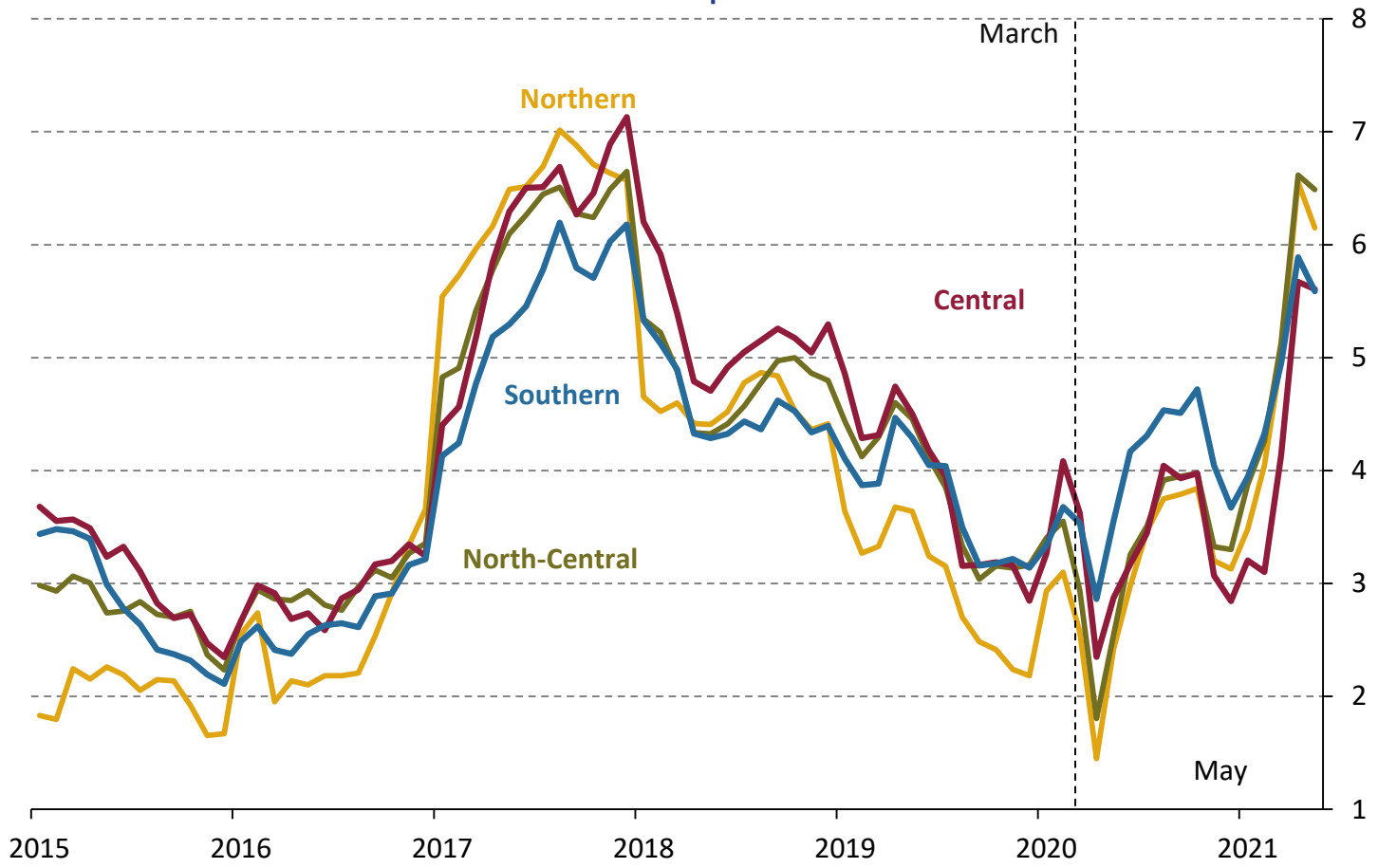
(based on data collected between April 5 and 29, 2021)

III. Final remarks

During Q1 2021 and in April 2021, annual headline inflation increased in all regions of Mexico with respect to the average level of Q4 2020, and by May it decreased in all regions.

Annual Headline Inflation by Region

Data in percent

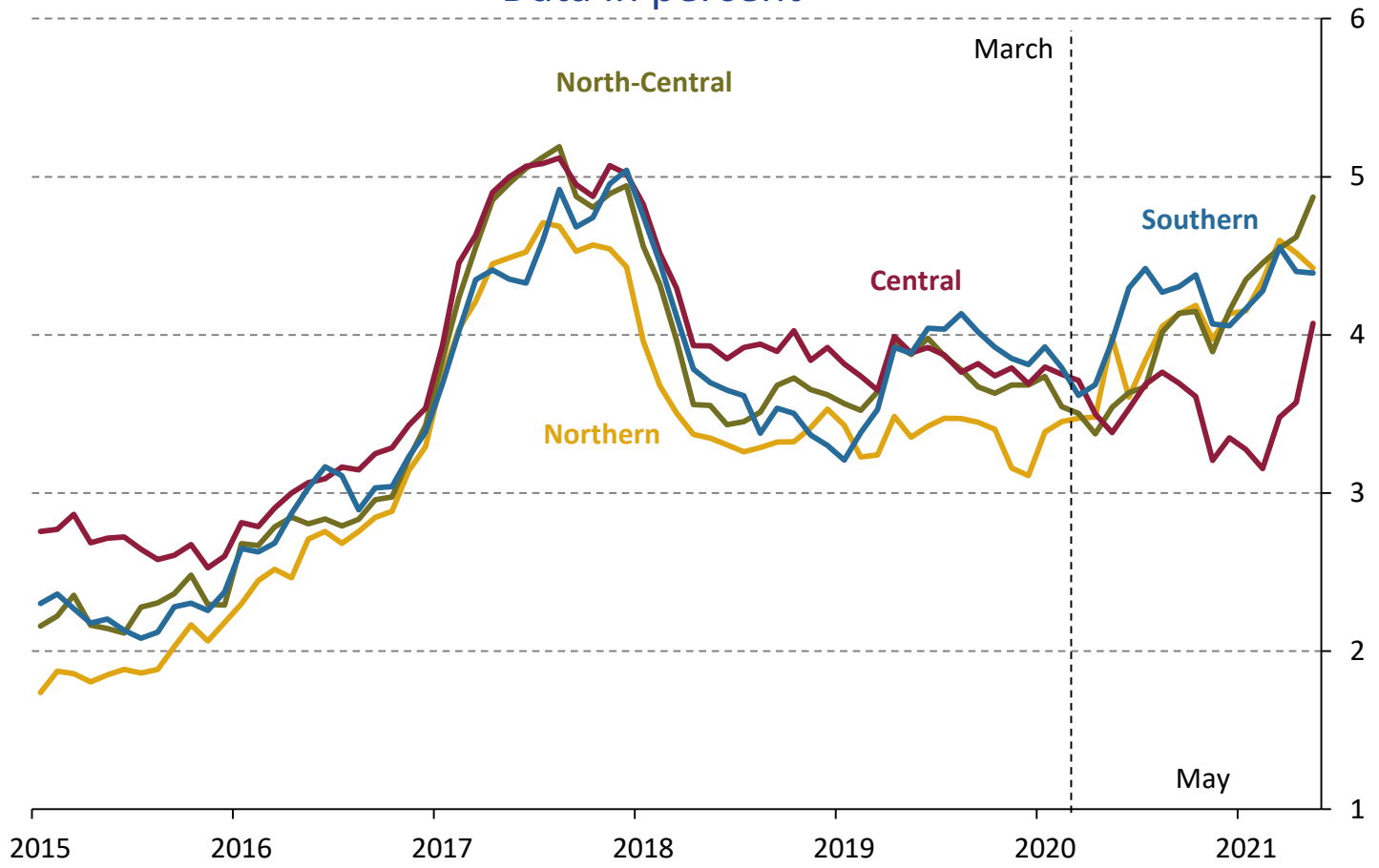


Source: Prepared by Banco de México with data from INEGI and Banco de México.

In April and May, a mixed behavior was observed, with core inflation decreasing in the Northern and Southern regions, while core inflation continued its upward trend in the North-Central and Central regions.

Annual Core Inflation by Region

Data in percent

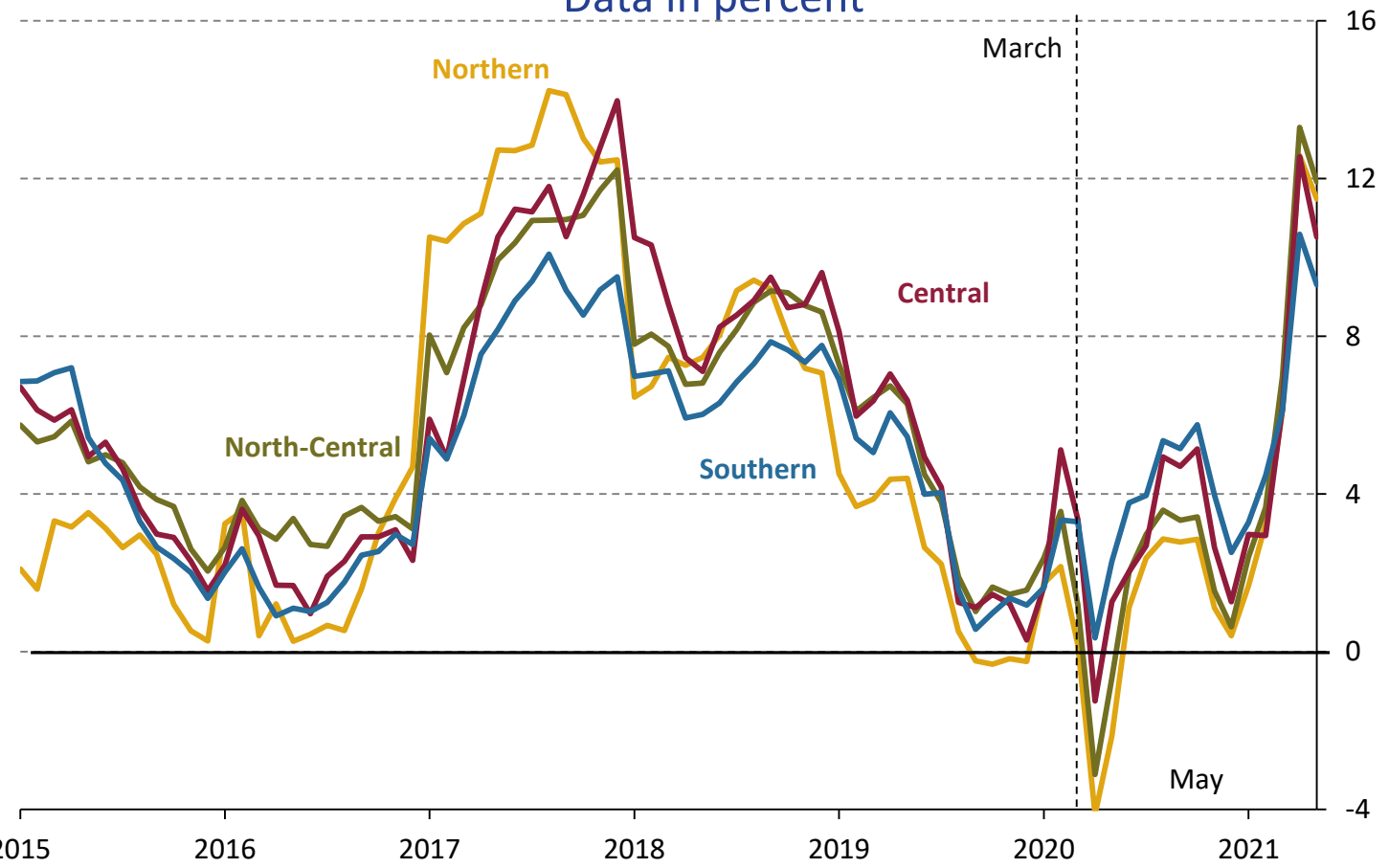


Source: Prepared by Banco de México with data from INEGI and Banco de México.

During Q1 2021 and in April 2021, non-core inflation in all regions registered an upward trajectory, influenced by the arithmetic effect of last year's significant reduction in gasoline prices. In May, it declined, as the arithmetic effect started to reverse.

Annual Non-core Inflation by Region

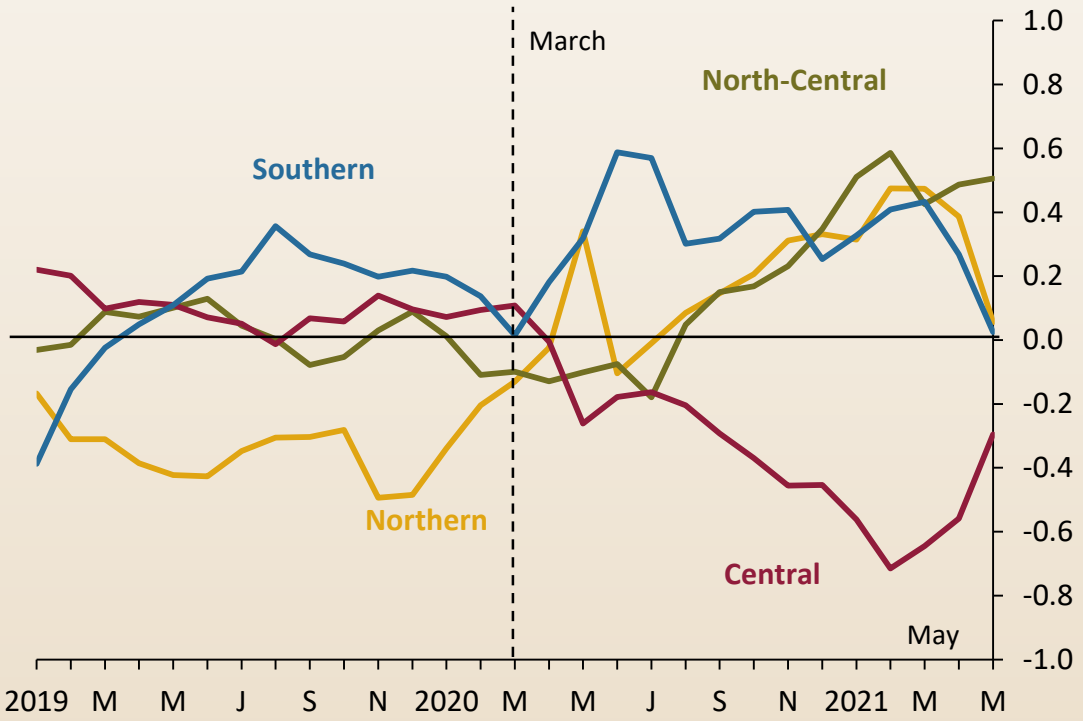
Data in percent



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

Divergence in the Behavior of Regional Core Inflation during the COVID-19 Pandemic

Spread between Regional Annual Core Inflation and National Inflation
Percentage points



Source: Banco de México estimation based on INEGI data.

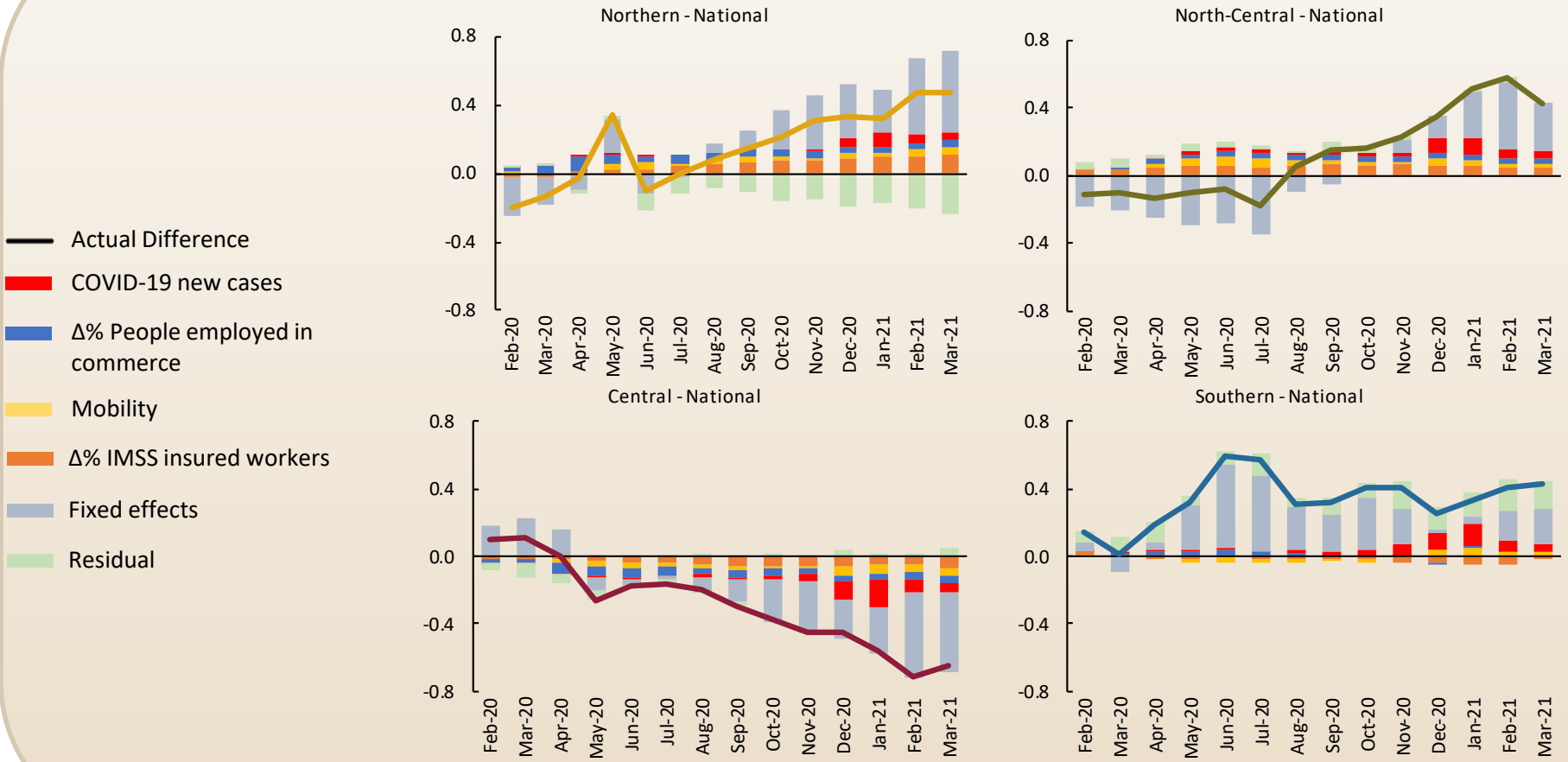
Model to Estimate

$$\pi_{it} = c + X_{it}\beta + \alpha_j + \gamma_t + \delta_{jt} + u_{it}$$

- π_{it} is the annual core inflation in state *i* in month *t*.
- X_{it} is a vector of variables that includes:
  - ✓ IMSS insured workers (growth rate)
  - ✓ Personnel employed in retail trade (growth rate).
  - ✓ New cases of COVID-19 (per 100,000 inhabitants).
  - ✓ Mobility to retail stores (Google Mobility Report).

Divergence in the Behavior of Regional Core Inflation during the COVID-19 Pandemic

Differences between Regional Annual Core Inflation and National Core Inflation



Source: Estimated by Banco de México with data from IMSS, INEGI, Google Mobility Report and Ministry of Health.

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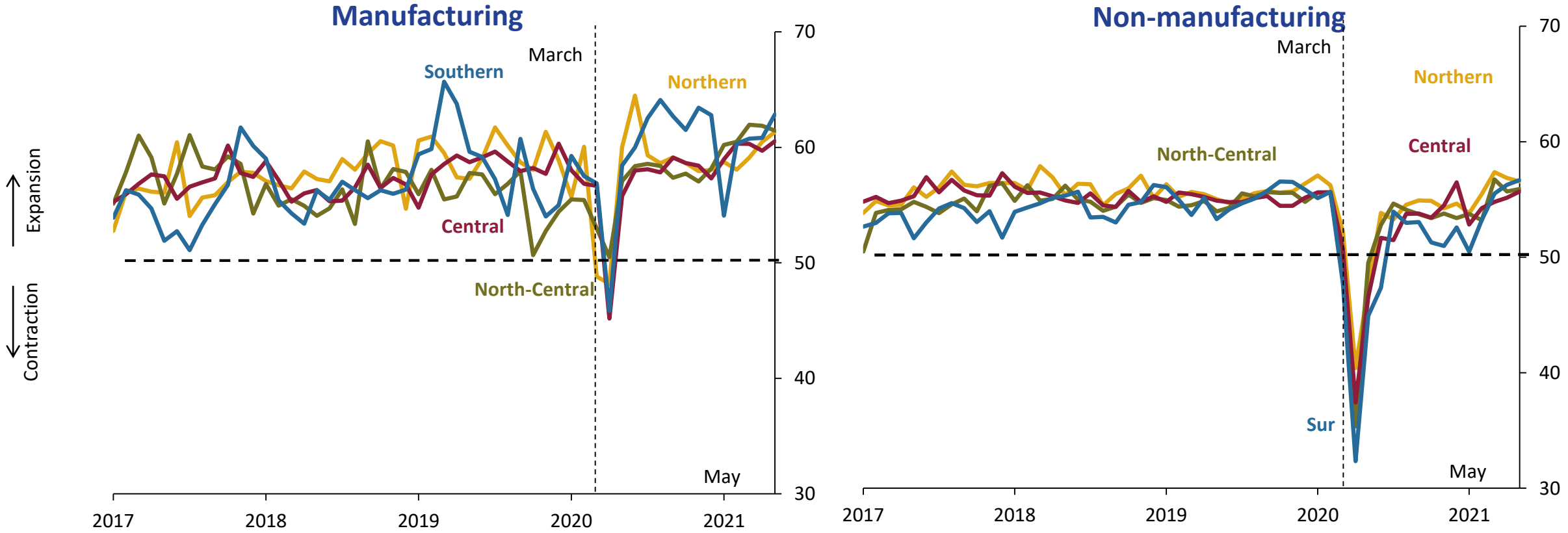
(based on data collected between April 5 and 29, 2021)

III. Final remarks

The evolution of Regional Indices of Manufacturing and Non-Manufacturing Orders during the reported quarter suggests an improvement in business expectations.

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

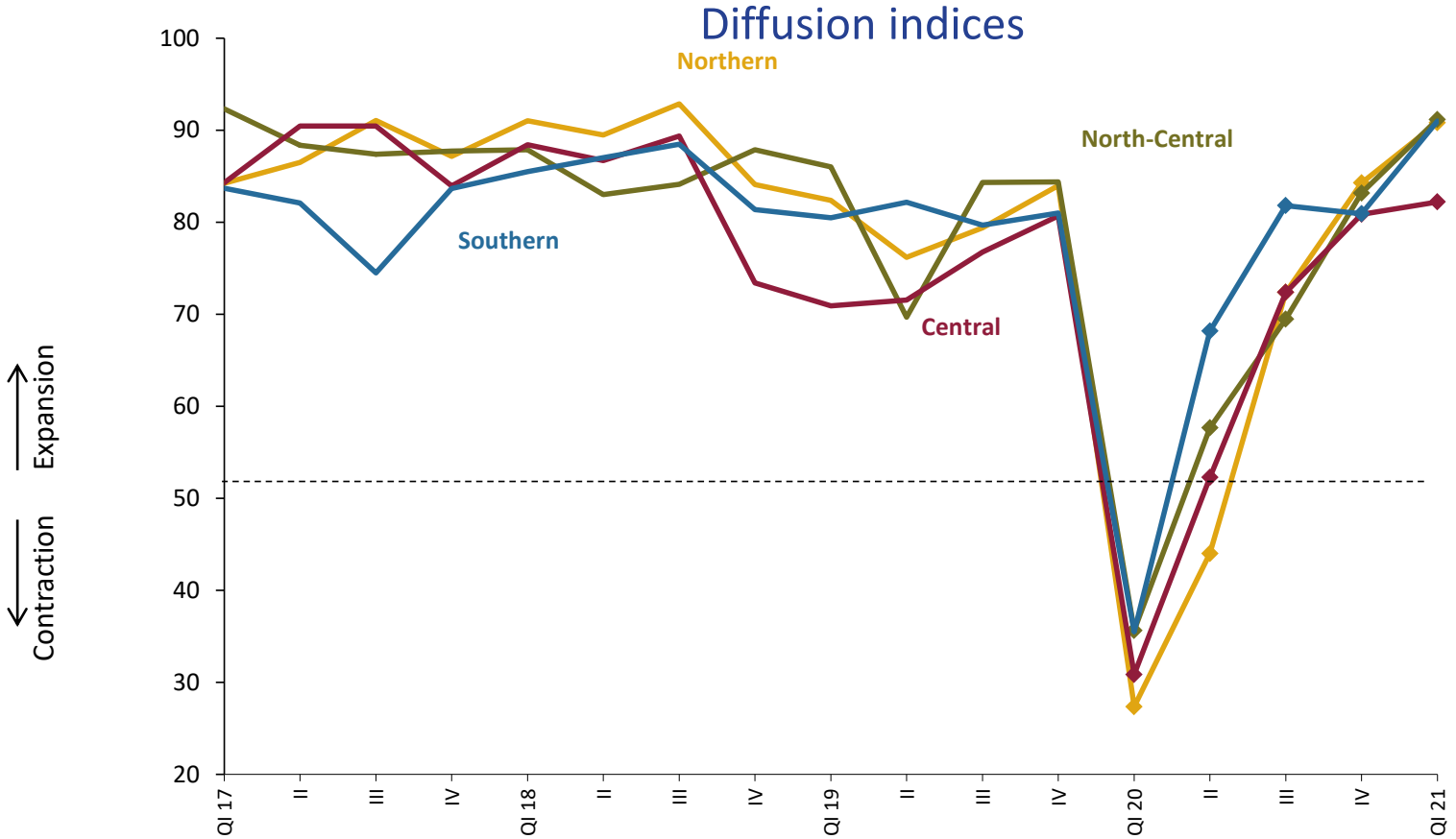
Diffusion indices, s. a.



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 Q1 2021, although this improvement was more moderate in the Central region. In all regions, the level of the diffusion index exceeded that reported in Q4 2019.

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

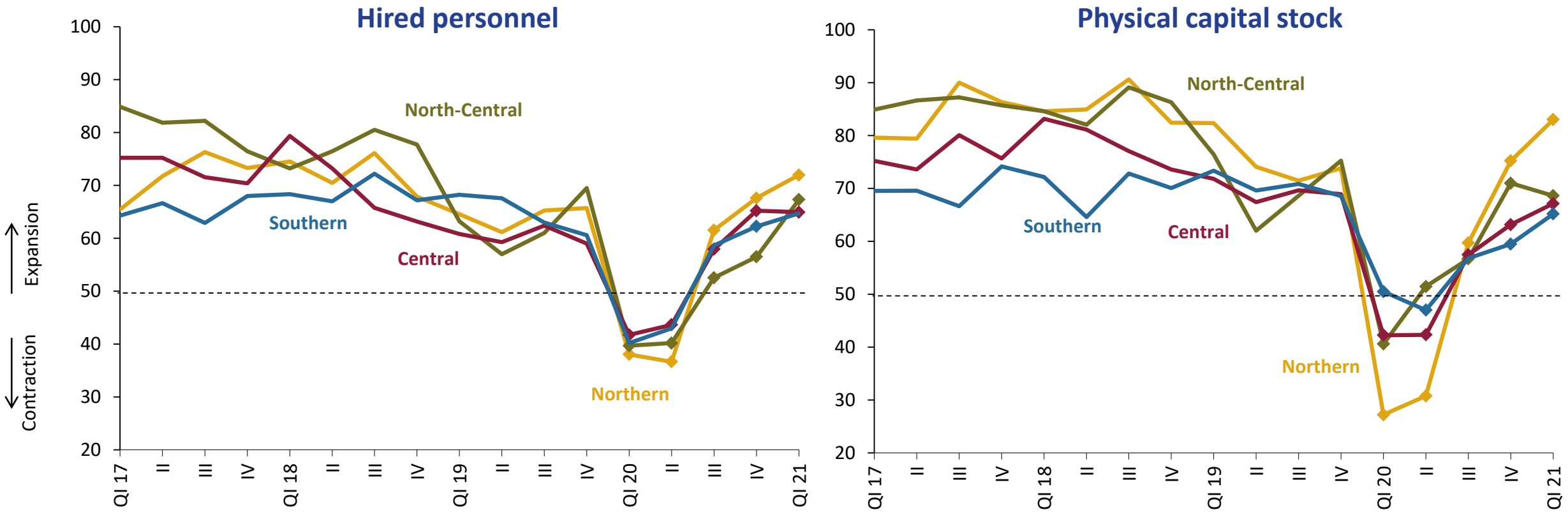


1/ Results obtained from responses to the question: "With respect to the volume of sales of your own goods and services in the previous 12 months, how do you expect your sales volume to change in the next 12 months?" from interviews conducted by Banco de México. Data corresponding to Q1, Q2, Q3 and Q4 2020, and Q1 2021 was obtained from data collected between March 23 and April 23, between June 22 and July 16, September 21 and October 15, 2020, between January 4 and 28, 2021, and between April 5 and 29, 2021, respectively.

As for the diffusion indexes corresponding to expectations regarding the number of workers employed in companies and expectations of investment in fixed assets, these continued to increase in all regions, except in the Central region for number of workers and in the North-Central one in the case of investment.

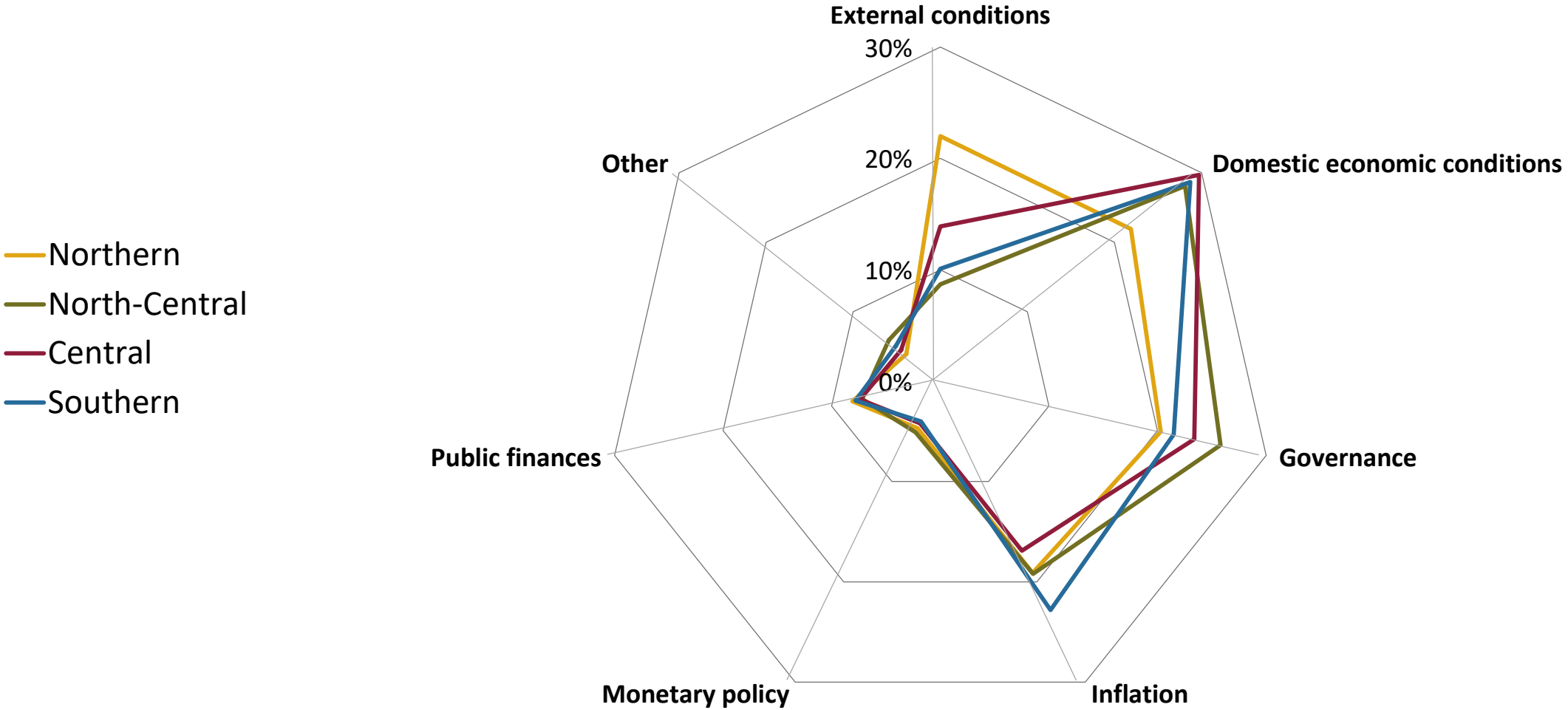
Business Agents' Expectations: Hired Personnel and Physical Capital Stock, Next 12 Months [1/]

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, Q4 2020 and Q1 2021 were obtained from data collected between March 23 and April 23, between June 22 and July 16, 2020, September 21 and October 15, 2020, between January 4 and 28, 2021, and between April 5 and 29, 2021, respectively.

Percentage Distribution of Business Representatives' Responses when Asked about the Top Three Factors that Could Hinder Economic Activity Growth in their States in the Next Six Months (based on data collected between March 1 and March 31, 2021) 1/



1/ Question: What do you consider to be the three main factors limiting the growth of economic activity in your state over the next six months? This question is similar to the one included in the questionnaire of the Survey on Private Sector Economic Analysts' Expectations. Figures corresponding to March 2021 were obtained from information collected between March 1 and March 31, 2021.
2/ The question includes several specific factors, as well as an open "other" option in which business contacts can indicate other factors they consider relevant. For the March, June, September, December 2020 and March 2021 survey in this item it is noteworthy that virtually the entire number of mentions refer to the COVID-19 pandemic. Source: Bank of Mexico.

Business Agents' Opinion on Risks to Regional Economic Activity (based on data collected between April 5 and 29, 2021) 1/

Upward risks

- That the pandemic recedes faster as a result of an effective vaccination process.
- That the growth of the United States and the stimulus programs implemented in that country result in a greater boost to regional economies.

Downward risks

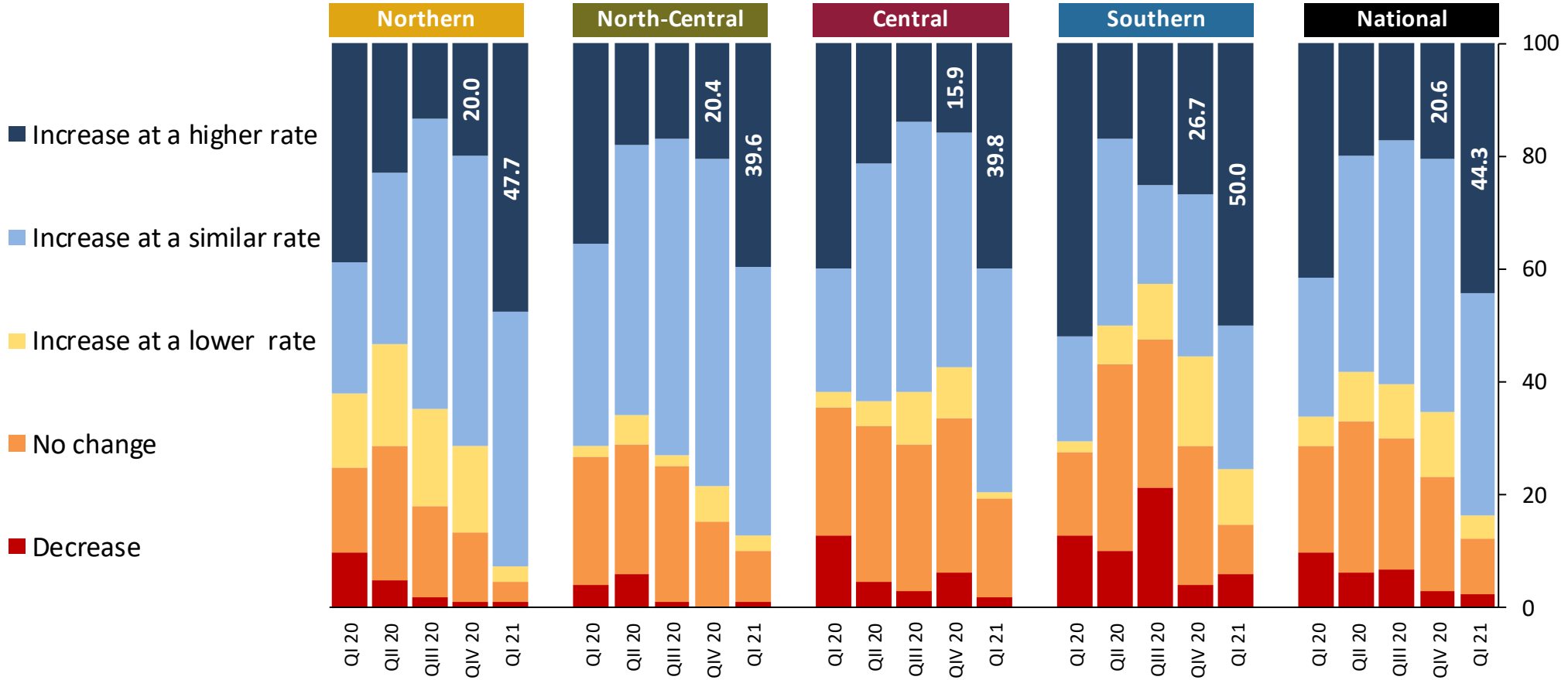
- Delays in the distribution or application of vaccines or a worsening of the pandemic situation, implying the adoption of new measures to contain it.
- That public security indicators continue to deteriorate.
- That domestic uncertainty persists, thus affecting investment.

1/ Results obtained from the questions: " Which are the 2 main events/situations/facts that if they were to occur would boost the economic performance of your state in the next 12 months?" and "Which are the 2 main events/situations/facts that if they were to occur would limit the economic performance of your state in the next 12 months?", from interviews conducted by Banco de México between April 5 and April 29, 2021.

The percentage of business' agents who expect their input prices to increase at a higher rate over the next twelve months than in the previous year increased significantly in all regions.

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

Percentage of responses

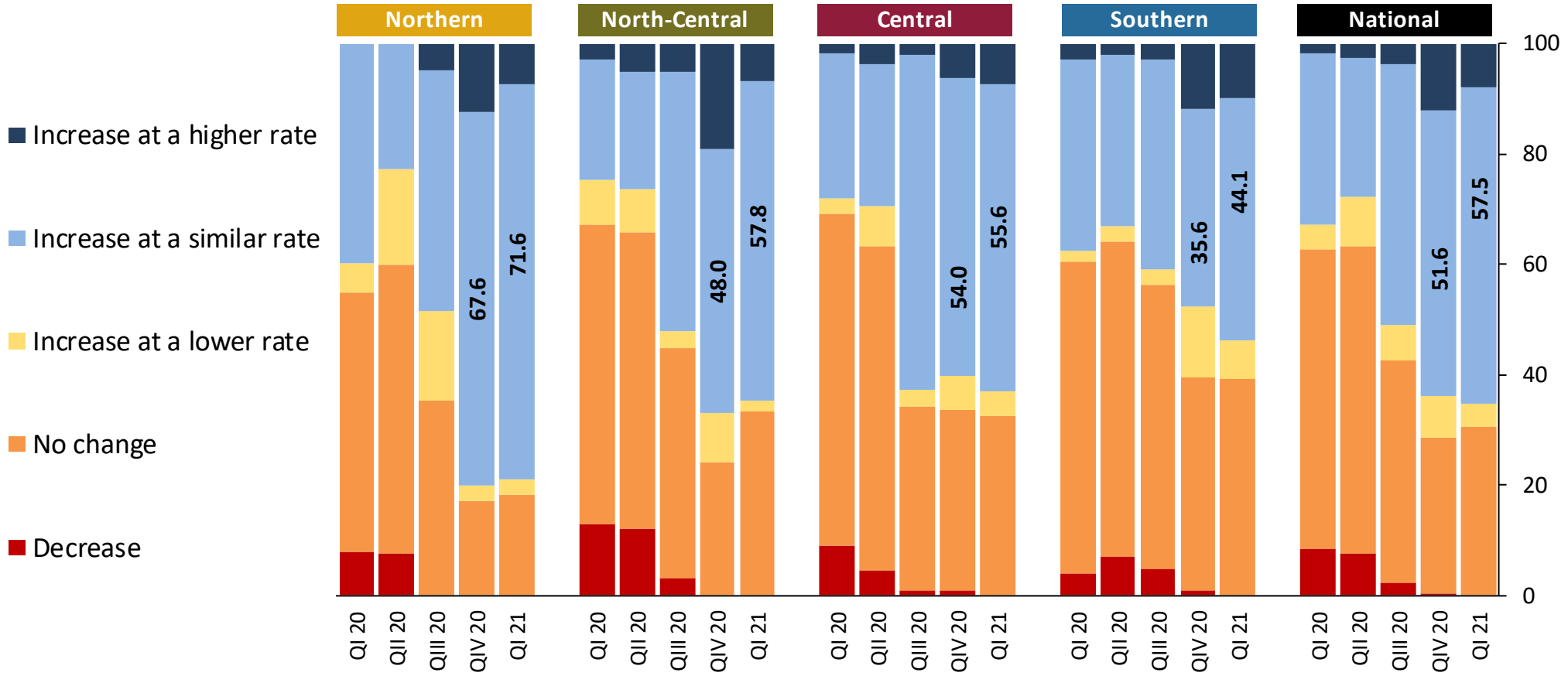


1/ Results obtained from responses to the question: "With respect to the previous 12 months, how do you expect input prices in your sector to change in the next 12 months?", from interviews conducted by Banco de México. Figures for Q1,Q2, Q3, Q4 2020 and Q1 2021 were obtained from data collected between March 23 and April 23, June 22 and July 16, September 23 and October 15, 2020, between January 4 and 28, 2021, and between April 5 and 29, 2021 respectively.

The percentage of business' agents who expect a similar variation in salary costs for the next twelve months as in the previous year increased in all regions.

Business Agents' Expectations: Wage Costs, Next 12 Months with respect to Last 12 Months 1/

Percentage of responses

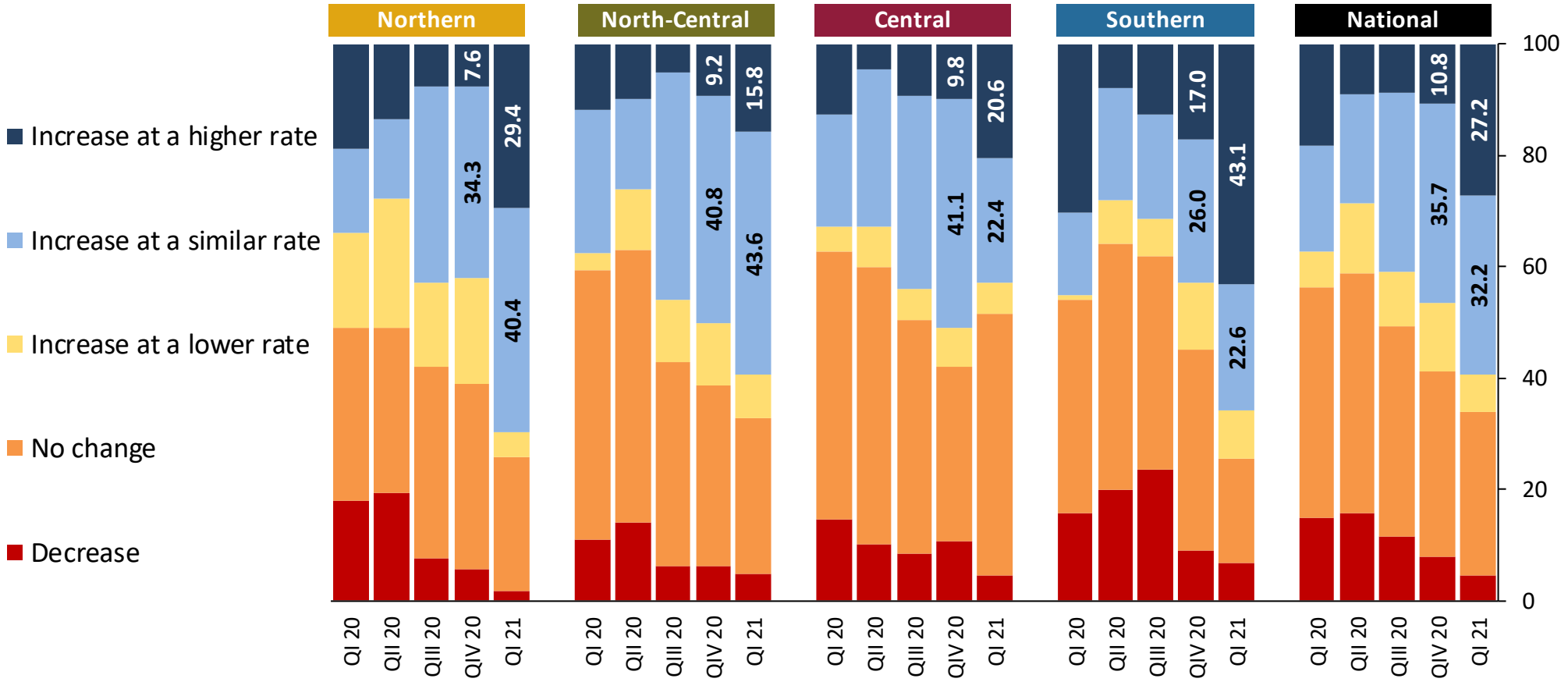


1/ Results obtained from responses to the question: "With respect to the previous 12 months, how do you expect wages and salaries of personnel working in your sector to change in the next 12 months?", from interviews conducted by Banco de México. Figures for Q1, Q2, Q3, Q4 2020 and Q1 2021 were obtained from data collected between March 23 and April 23, June 22 and July 16, September 23 and October 15, 2020, January 4 and 28, 2021, and between April 5 and 29, 2021, respectively.

Most interviewed business' agents anticipate that the selling prices of goods and services offered by them will increase at a similar or higher rate for the next twelve months as compared to the previous 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, Q4 2020 and Q1 2021 were obtained from data collected between March 23 and April 23, June 22 and July 16, September 23 and October 15, 2020, January 4 and 28, 2021 and between April 5 and 29, 2021, respectively.

Outline

I. Regional Economic Report

II. Results January – March 2021

A. Economic activity

B. Inflation

C. Economic outlook

(based on data collected between April 5 and 29, 2021)

III. Final remarks

Final remarks

1. In Q1 2021, the Northern and Central regions are estimated to have registered a lower pace of recovery than the Southern region due, to a large extent, to the differentiated impact of the shocks that took place in that quarter. However, the **Southern and Central regions would continue to present larger gaps in terms of activity and employment levels relative to those of Q1 2020 than the Northern and North-Central regions.**

2. **Looking ahead, the recovery of productive activity is expected to continue in all regions**, although the sources of growth could remain heterogeneous.

   - ✓ Those regions most closely linked to the US economy, such as the Northern and Central regions, will continue to benefit from the anticipated strong recovery in that country.
   - ✓ Infrastructure projects that are being developed in the Southern region could continue to support its recovery.
   - ✓ Progress in the vaccination program will contribute to reactivate the domestic market and tourism, which could favor a sounder recovery in the Central and Southern regions.

3. **The recovery process is not risk-free.**

   - ✓ Shortages of certain industrial inputs could continue to affect manufacturing production.
   - ✓ Also, the more permanent consequences of the pandemic on regional economies, particularly on their labor markets and human capital formation, are unknown.
   - ✓ It will be important for Mexican regions to maintain flexibility in resource allocation to allow the necessary adjustments and to strengthen their institutions.



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