

Regional Economic Report
October – December 2021

BANCO DE MÉXICO

Published-General Purpose

Information published by Banco de México

Outline

I. Regional Economic Report

II. Results October – December 2021

A. Economic Activity

B. Inflation

C. Economic outlook

(based on data collected between January 3 and January 27, 2022)

III. Final remarks

Information published by Banco de México

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' perspectives 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 Q4-2021, and the prospects of business agents surveyed between January 3 and January 27, 2022 on regional economic activity and inflation over the following twelve months are analyzed herein.

Information published by Banco de México

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I. Regional Economic Report

II. Results October – December 2021

A. Regional Economic Activity

B. Regional Inflation

C. Outlook for the Regional Economies

(based on data collected between January 3 and January 27, 2022)

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Regional Economic Activity

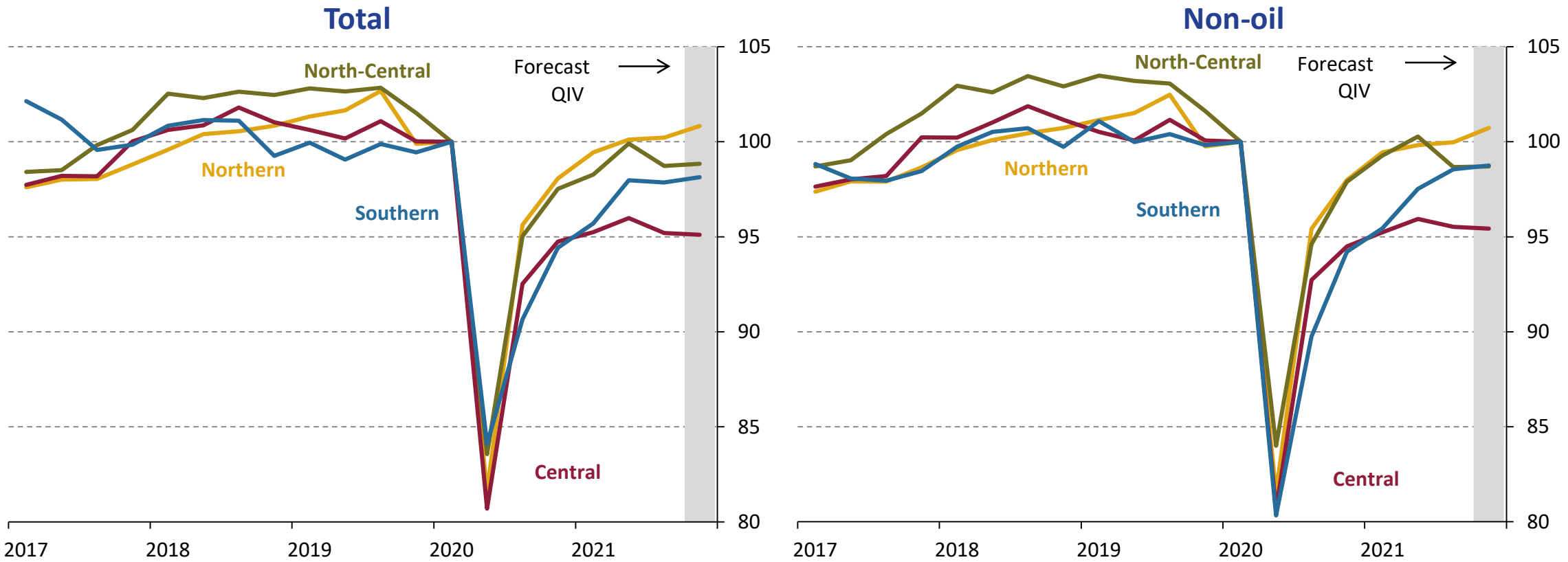
- During Q4-2021, **economic activity is estimated to have shown weakness in the Central regions.**
  - ✓A fall in construction, stagnation in mining production and low levels of some services, specifically business support services, are expected to have contributed to the weakness in the Central region.
  - ✓The lack of dynamism in the North-Central region is estimated to have resulted from the negative performance of manufacturing production and from a slight stagnation in certain tertiary activities, such as trade.
- Some expansion is anticipated **in the Northern and Southern regions.**
  - ✓Growth in the Northern region is anticipated to have continued to be largely supported by the positive performance of manufacturing other than that related to transport equipment.
  - ✓The Southern region's recovery is anticipated to have continued being supported by the favorable evolution of certain tertiary activities, such as trade and tourism, as well as an expansion of agricultural and livestock production and manufacturing.

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Economic activity levels in Q4-2021 in the Northern, Southern and, above all, in the Central region are expected to have remained below those observed in Q1-2020. In contrast, the Northern region is estimated to have remained above that reference level.

Quarterly Indicator of Regional Economic Activity

Index Q1-2020=100, s. a.



s. a. / Seasonally adjusted data.

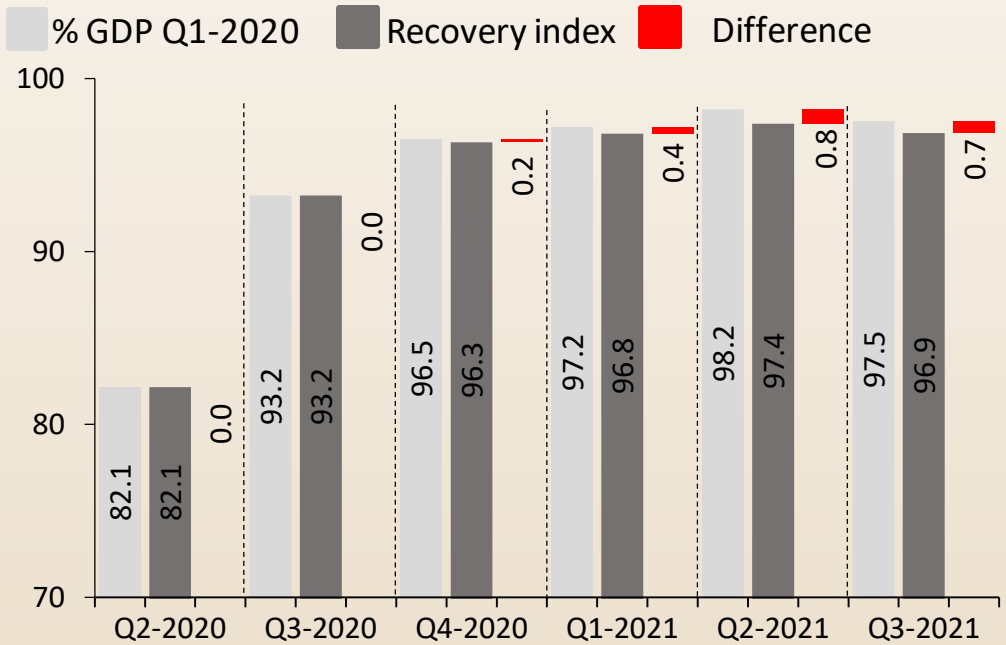
Source: Estimated by Banco de México with seasonally adjusted series of the Quarterly Indicator of State Economic Activity from INEGI.

Heterogeneity in Regional Recovery during the Pandemic

- Part of the recovery of national economic activity is explained by the performance of some federal entities, whose level of activity is already above that registered prior the pandemic, while others show a greater lag.

National GDP Recovery and Recovery Index by State vs. Q1-2020

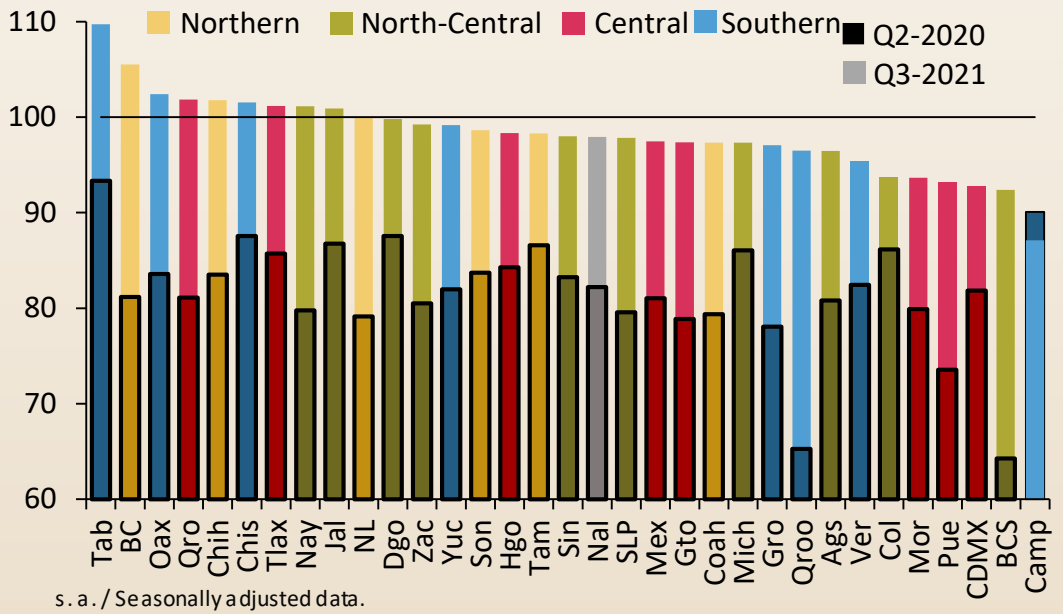
Data in percent, s. a.



Note: The recovery index shows the levels of economic activity as a percentage of the level observed in Q1-2020, setting activity levels at those of Q1-2020 for those states that have already surpassed that benchmark.
s. a. / Seasonally adjusted data.,
Source: Prepared by Banco de México based on INEGI data.

Quarterly Indicator of State Economic Activity (*ITAEE*, for its acronym in Spanish)

Index Q1-2020=100, s. a.



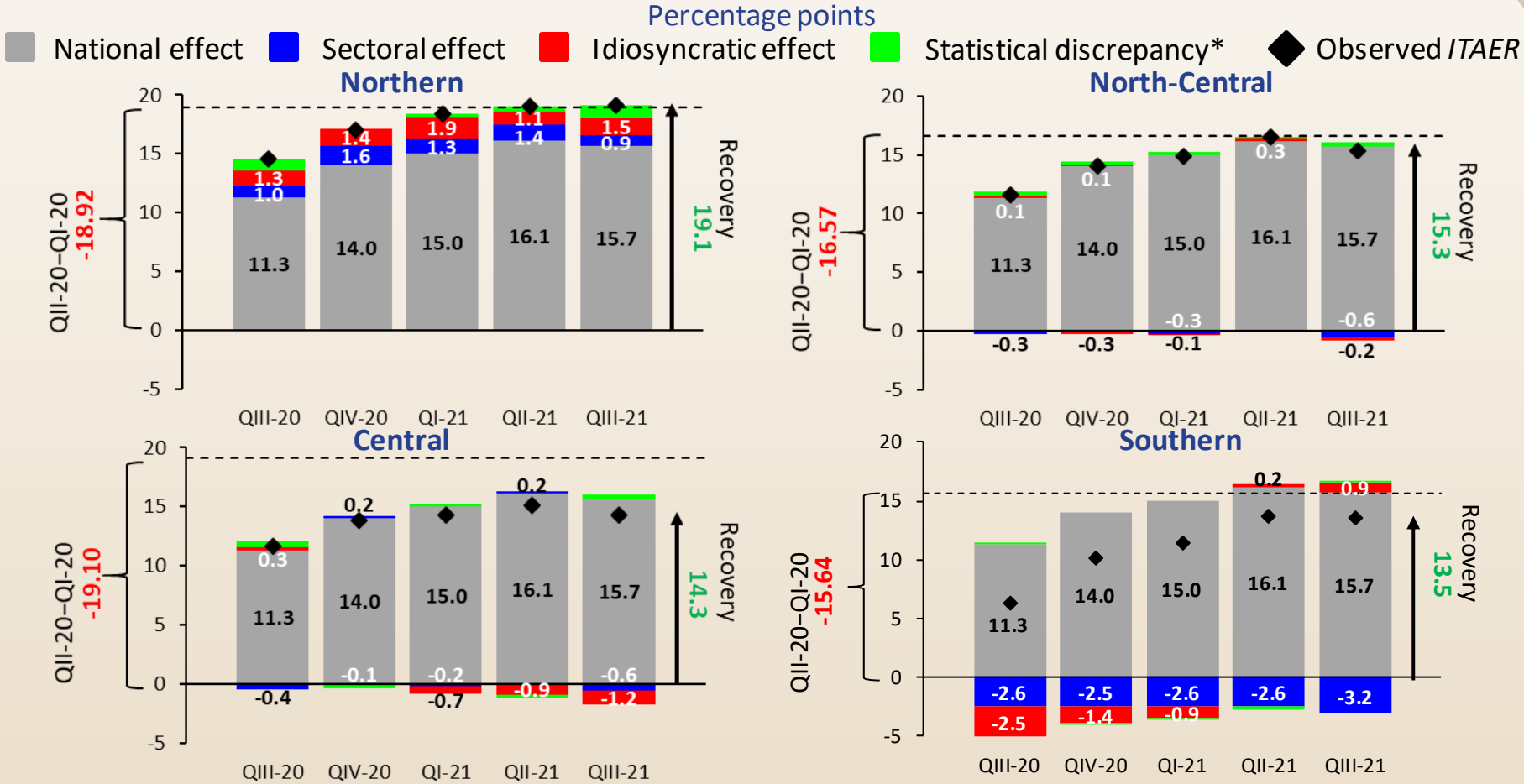
s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México based on seasonally adjusted series of the Quarterly Indicator of State Economic Activity from INEGI.

Heterogeneity in Regional Recovery during the Pandemic

- Differences across states possibly reflect the heterogeneity of sectoral structures or idiosyncratic factors such as the development of investment projects with a high regional impact, or a greater access to global markets, among others.

Decomposition of the Recovery of Regional Economic Activity from Q1-2020 Level

Percentage points



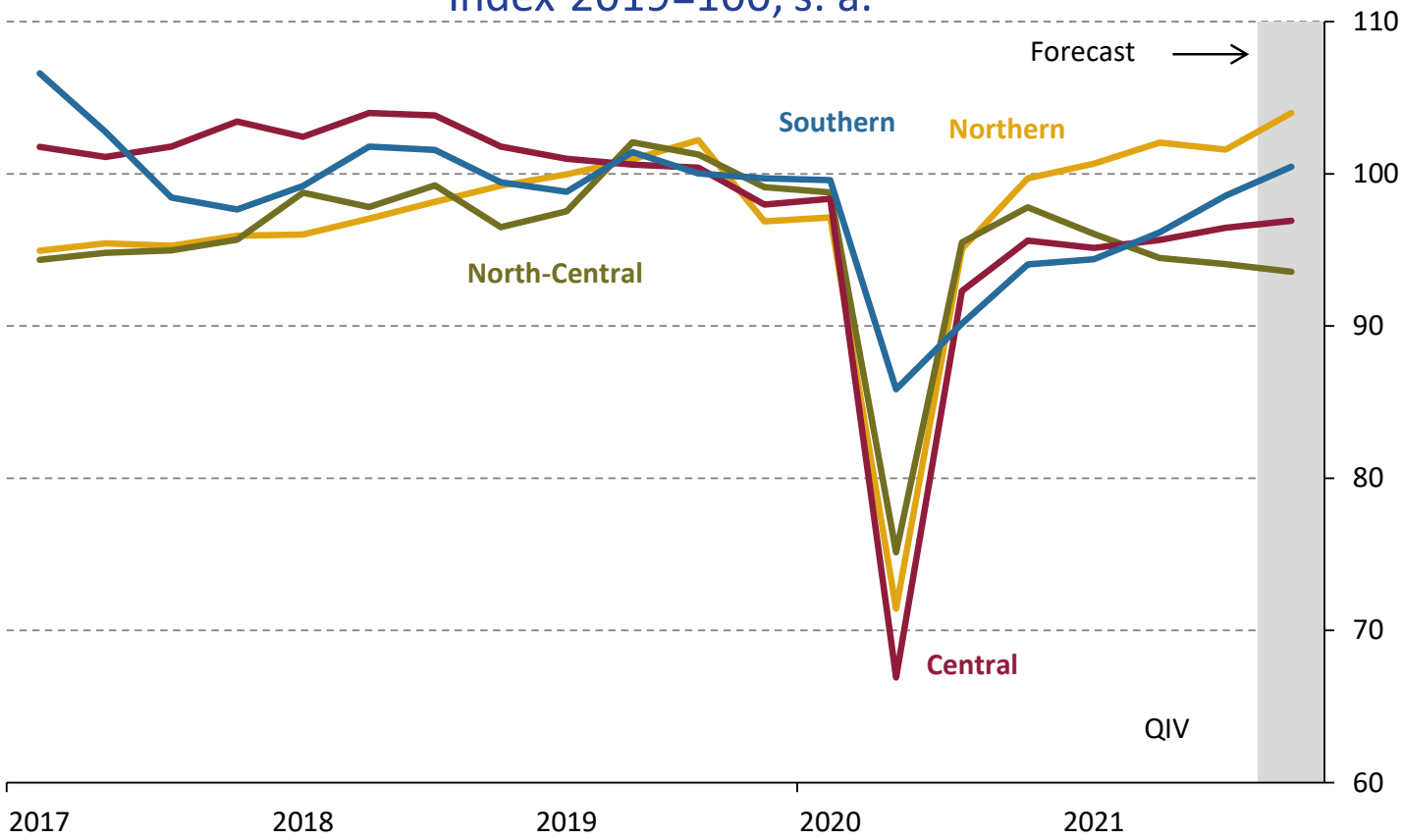
*/ The statistical discrepancy is the result of the difference between the sum of national, sectoral and idiosyncratic effects and the observed recovery, which in turn derives from the seasonal adjustment process independently from each series used in the breakdown.

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

Manufacturing activity is expected to have expanded in all regions in Q4-2021, except in the North-Central region. This expansion would have been of greater magnitude in the Northern region, followed by the Southern region, so that the former would have maintained activity levels above those observed in Q1-2020, while the latter would have reached them in Q4-2021.

Regional Manufacturing Indicator

Index 2019=100, s. a.



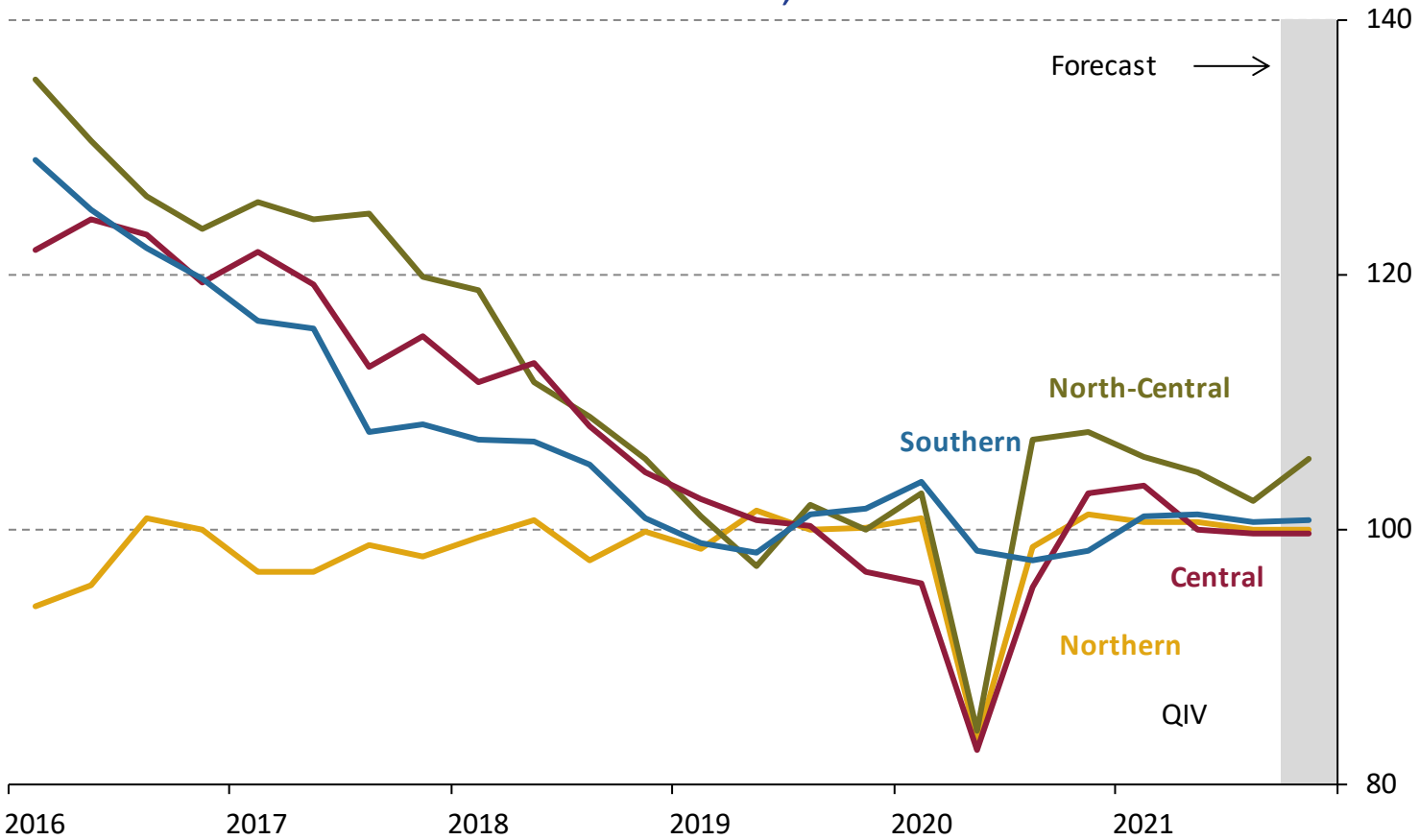
s. a. / Seasonally adjusted data.

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

During Q4-2021, mining is estimated to have remained sluggish in all regions, although in the North-Central one it might have slightly recovered.

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

Index 2019=100, s. a.

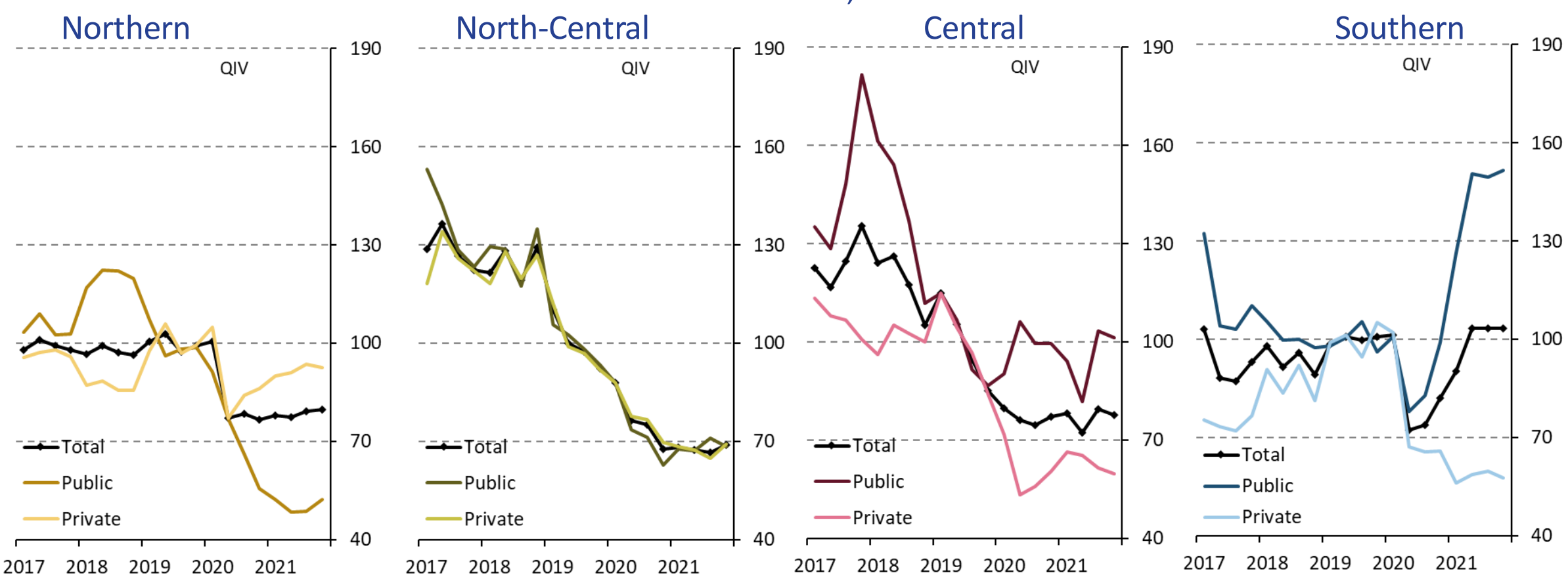


s. a. / Seasonally adjusted data.
Source: Estimated and seasonally adjusted by Banco de México with the series of the Monthly Indicator of Mining Activity by State from INEGI.

In Q4-2021, construction contracted in the Central region. In the Southern region, it decreased slightly, although its public component expanded and remained at relatively high levels. In the Northern and North-Central regions construction expanded.

Real Value of Production in the Construction Industry by Region

Index 2019=100, s. a.

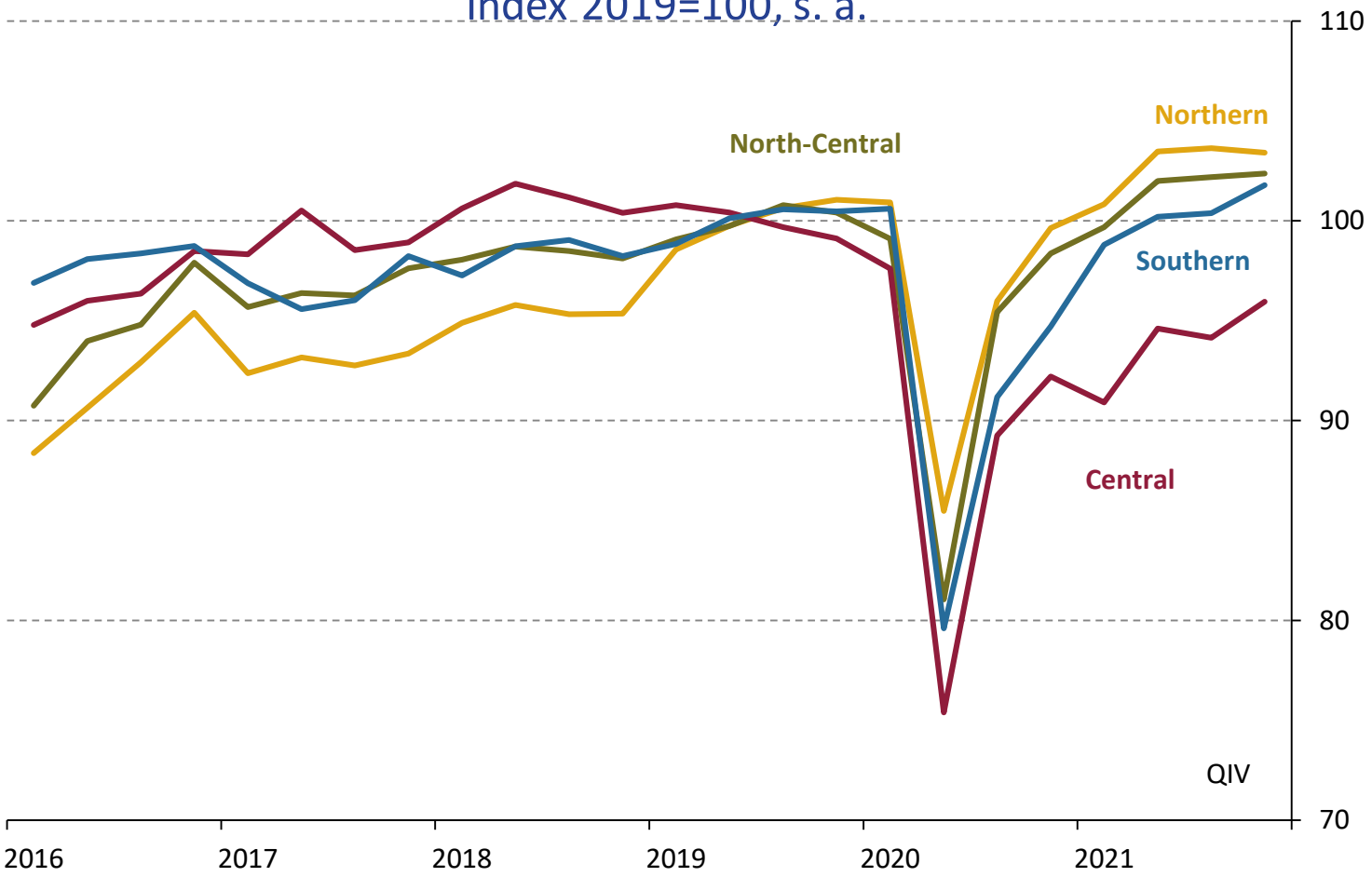


s. a. / Seasonally adjusted data.

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

During Q4-2021, commercial activity expanded in the Central and Southern regions, while in the Northern and North-Central regions it was sluggish. All regions, except for the Central one, exhibited higher levels of commercial activity than those registered in Q1-2020.

Index of Revenues from Retailers' Supply of Goods and Services



s. a. / Seasonally adjusted data.

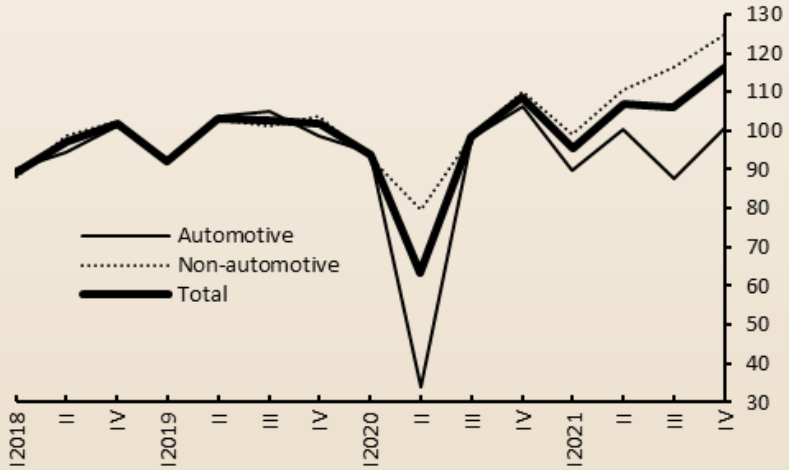
Source: Estimated and seasonally adjusted by Banco de México with the series of Revenues of Retailers' Supply of Goods and Services by State from INEGI.

Effects of External Demand on Regional Private Consumption in the Context of the COVID-19 Pandemic

- Manufacturing exports have slightly recovered since Q2-2020, which has enabled them to reach higher levels than those observed prior to the pandemic, although with heterogeneity across sectors.
- This export dynamism is estimated to have affected regional private consumption, as it depends both on the productive structures of the regions and on the aforementioned heterogeneous behavior across sectors.

Manufacturing Exports

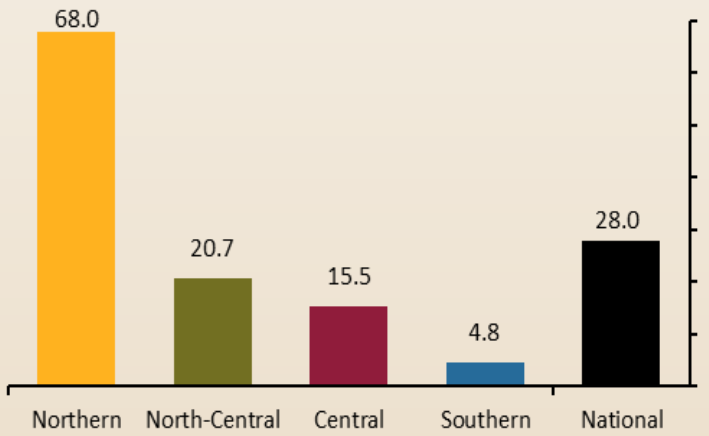
Index 2019 = 100, s. a.



s. a. / Seasonally adjusted data.
Source: Banco de México based on *PMI Comercio Internacionall, S.A. de C.V.*, *SAT*, *SE*, and INEGI. Mexican Merchandise Trade Balance. SNIEG. Information of National Interest.

Share of Manufacturing Exports in Regional GDP

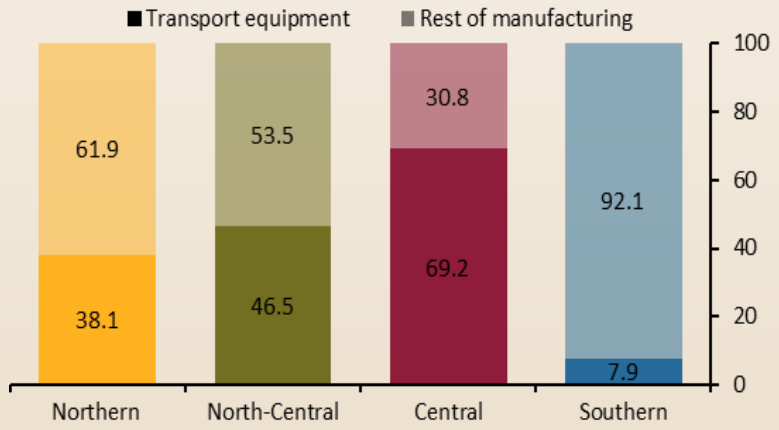
Percentage of exports to GDP in 2019



Source: Banco de México with information from INEGI.

Structure of Manufacturing Exports by Region

Figures in percent 2019



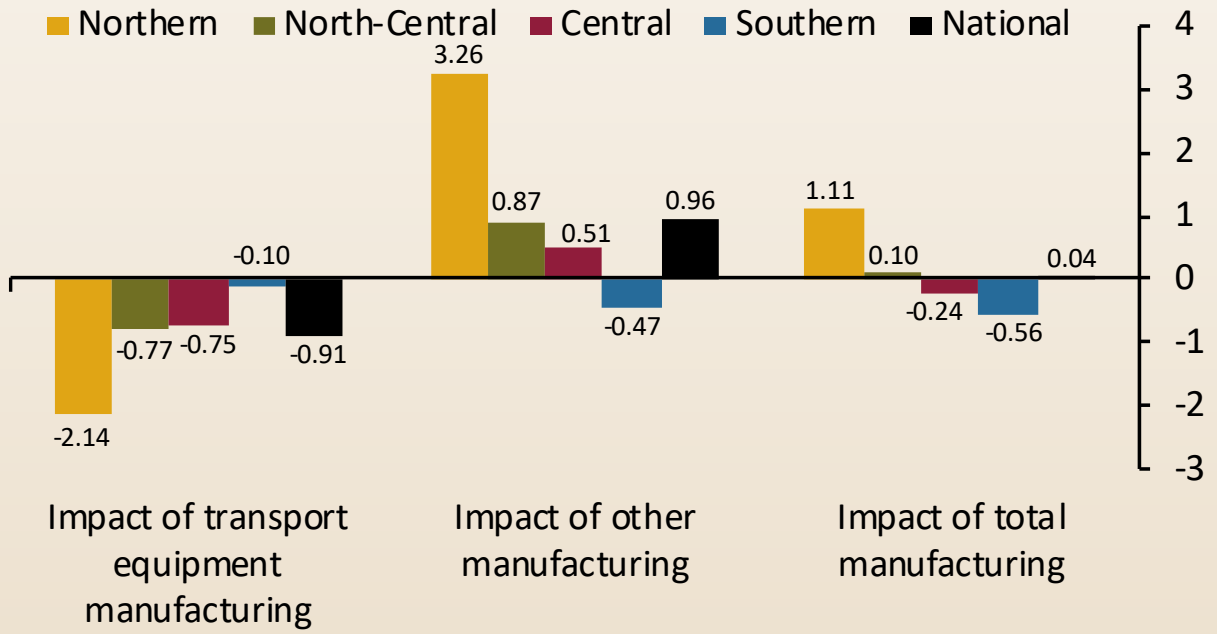
Source: Banco de México with information from INEGI.

Effects of External Demand on Regional Private Consumption in the Context of the COVID-19 Pandemic

- The effects on regional private consumption from external demand were estimated using Banco de México's Regional Social Accounting Matrices.
- The estimated effects on private consumption from the shock in regional manufacturing exports indicate that:
  - The Northern region would have registered the greatest effects on private consumption.
  - In contrast, in the Central and Southern regions, the effects on private consumption would have been negative.

Estimated Effect on Regional Consumption from External Demand during the Pandemic Recovery Period[1/]

Percentage of regional consumption with respect to a scenario in which exports remain constant



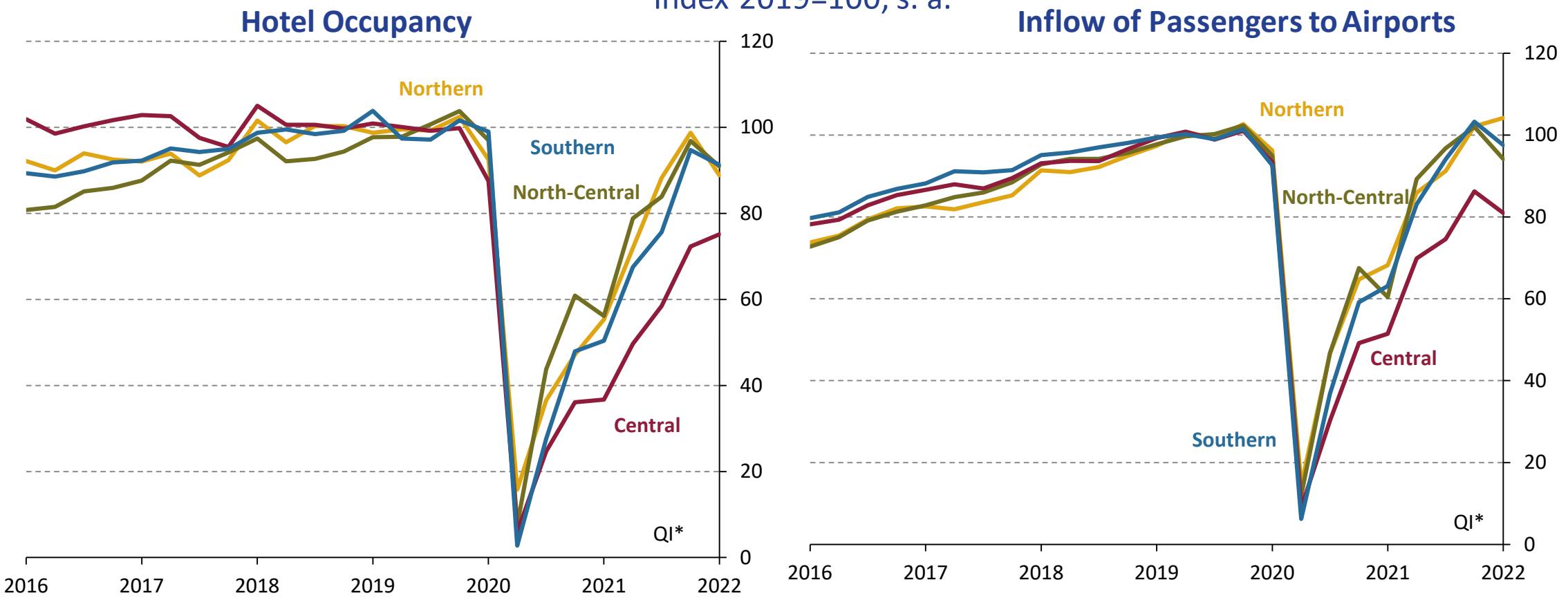
1/ The external demand shock is defined as the change in average manufacturing exports during the Q4-2020-Q3-2021 period relative to their average level in 2019.
Source: Prepared with data from Banco de México and INEGI.

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In Q4-2021, activity in the tourism sector continued recovering in all regions, although at the beginning of 2022 it was affected in most of them by the increase in the number of infections. The Central region continued to show a greater lag compared to the other regions.

Regional Indicators of Tourism

Index 2019=100, s. a.

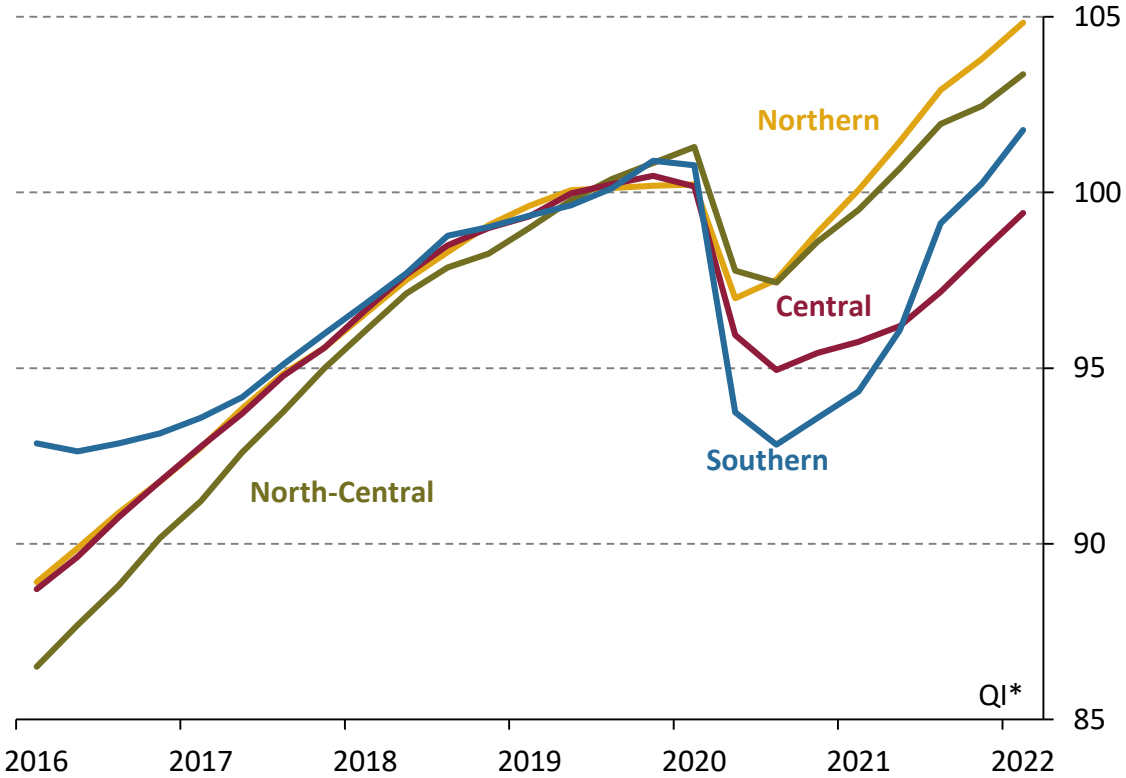


s. a. / Seasonally adjusted data.
*/ Data as of January 2022.
Source: Prepared and seasonally adjusted by Banco de México with data from the Mexican Secretariat of Tourism and the state-owned company Airport and Auxiliary Services (ASA, for its acronym in Spanish).

During Q4-2021 and in early 2022, the number of IMSS-insured jobs continued recovering in all regions. However, in the Central region this indicator remained below those observed prior to the onset of the pandemic.

Number of IMSS-insured Workers

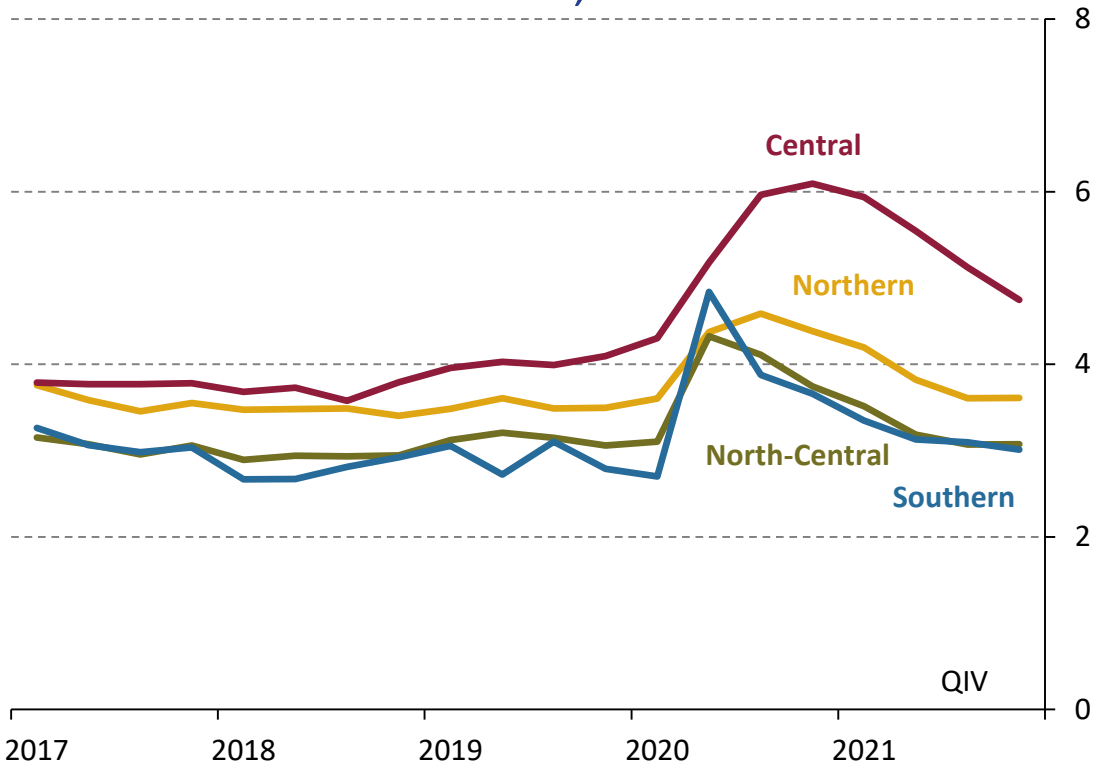
Index Q1 2020=100, s. a.[1/]



a. s. / Seasonally adjusted data.
*/ Data as of February 2022.
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



a. s. / Seasonally adjusted data.
Source: Prepared and seasonally adjusted by Banco de México with data from INEGI. Data as of Q2-2020 correspond to labor indicators for Mexican states with an estimate using INEGI statistical models and, starting from Q3-2020 correspond to the New Telephone Survey on Occupation and Employment (ENOEN). Mexican states' population figures were obtained from INEGI.

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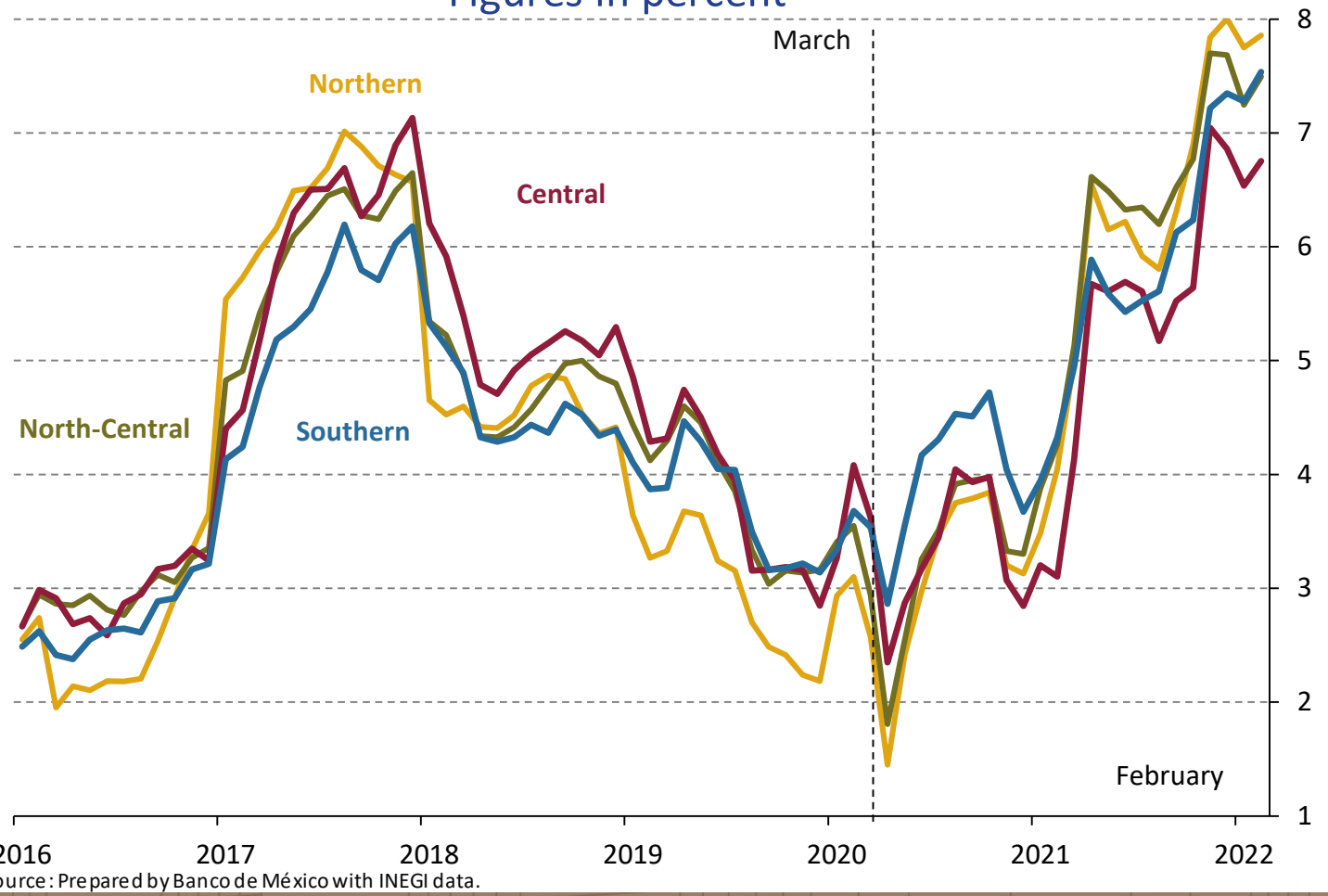
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Various shocks related to the COVID-19 pandemic, which have been deeper and lasted longer than expected, continued exerting pressure on inflation in all regions during Q4-2021 and at the beginning of 2022. By February 2022, annual headline inflation in all regions continued to exhibit elevated levels, especially in the Northern region.

Annual Headline Inflation by Region

Figures in percent



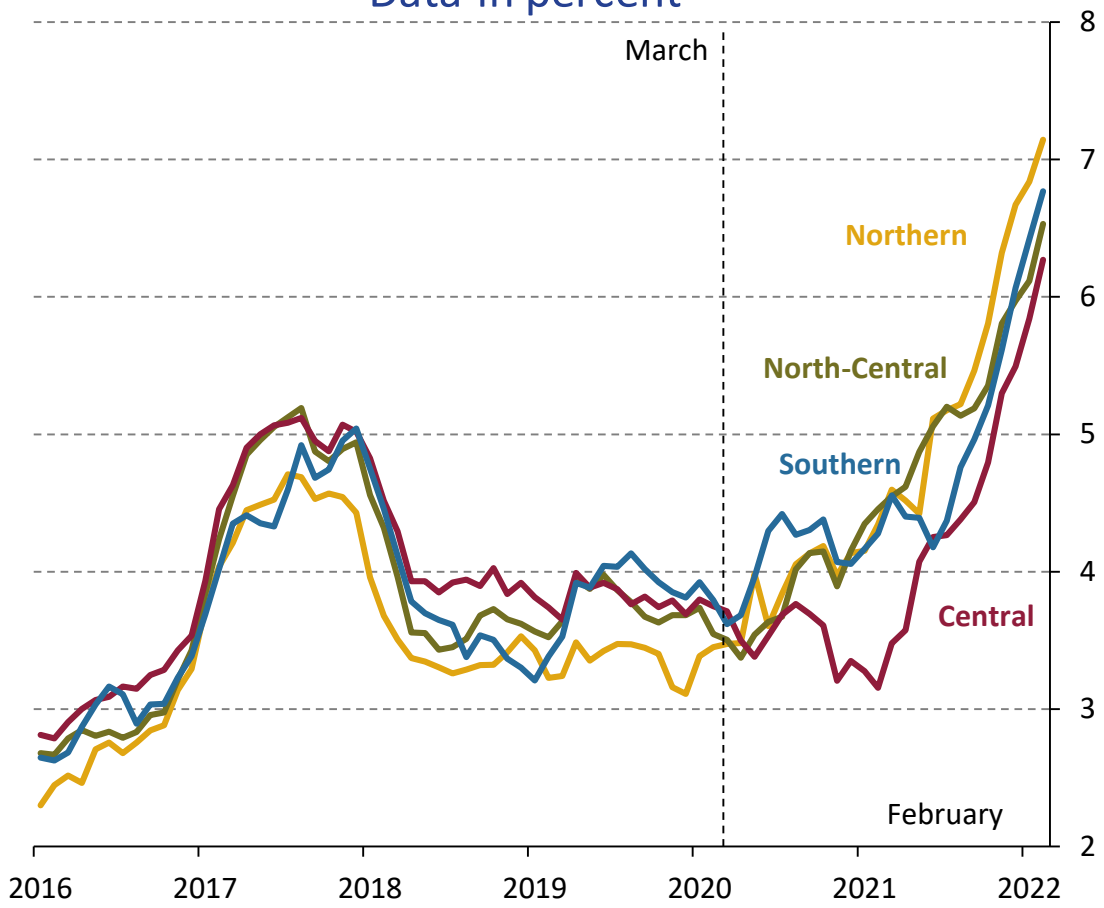
Source: Prepared by Banco de México with INEGI data.

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Core inflation in all regions continued rising in Q4-2021 and in 2022 so far, driven by increases in both merchandise and services inflation.

Annual Core Inflation by Region

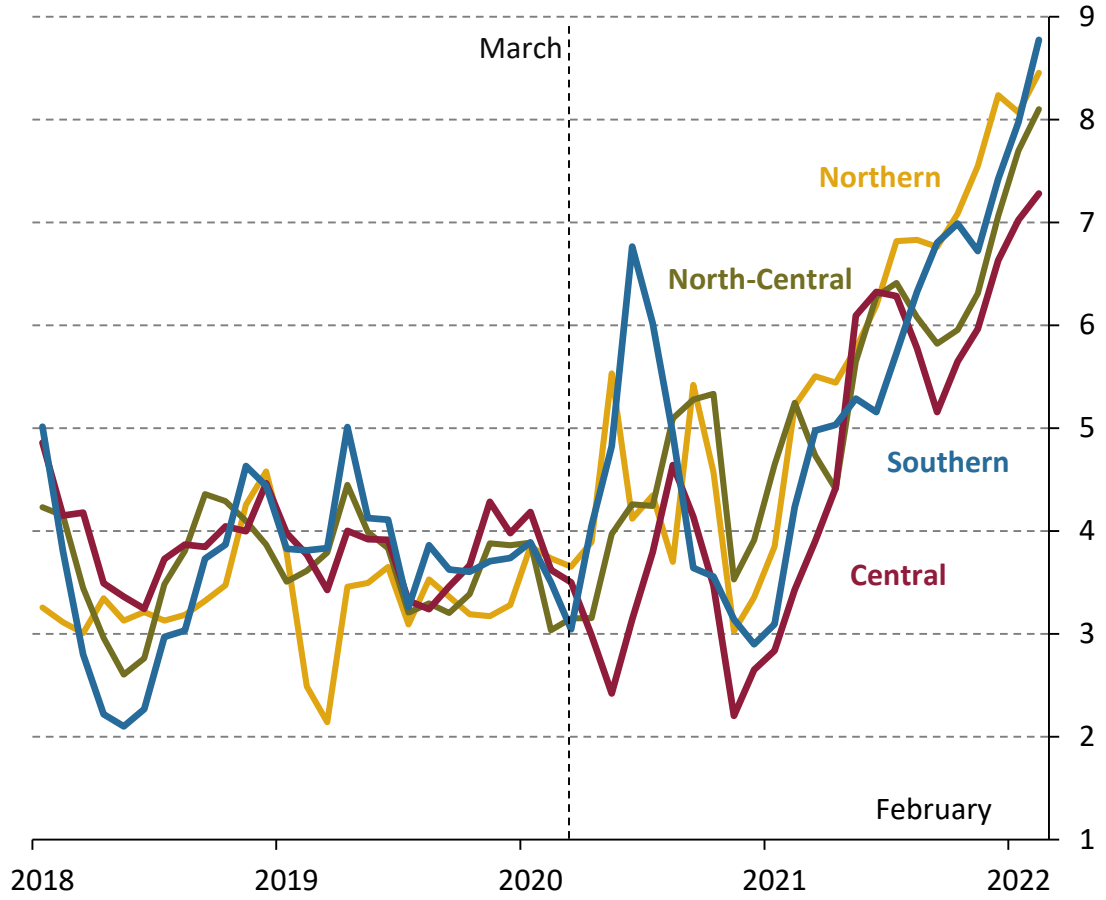
Data in percent



Source: Prepared by Banco de México with INEGI data.

Annualized Seasonally Adjusted Monthly Variation of the Core Inflation Index

3-month moving average of figures, in percent

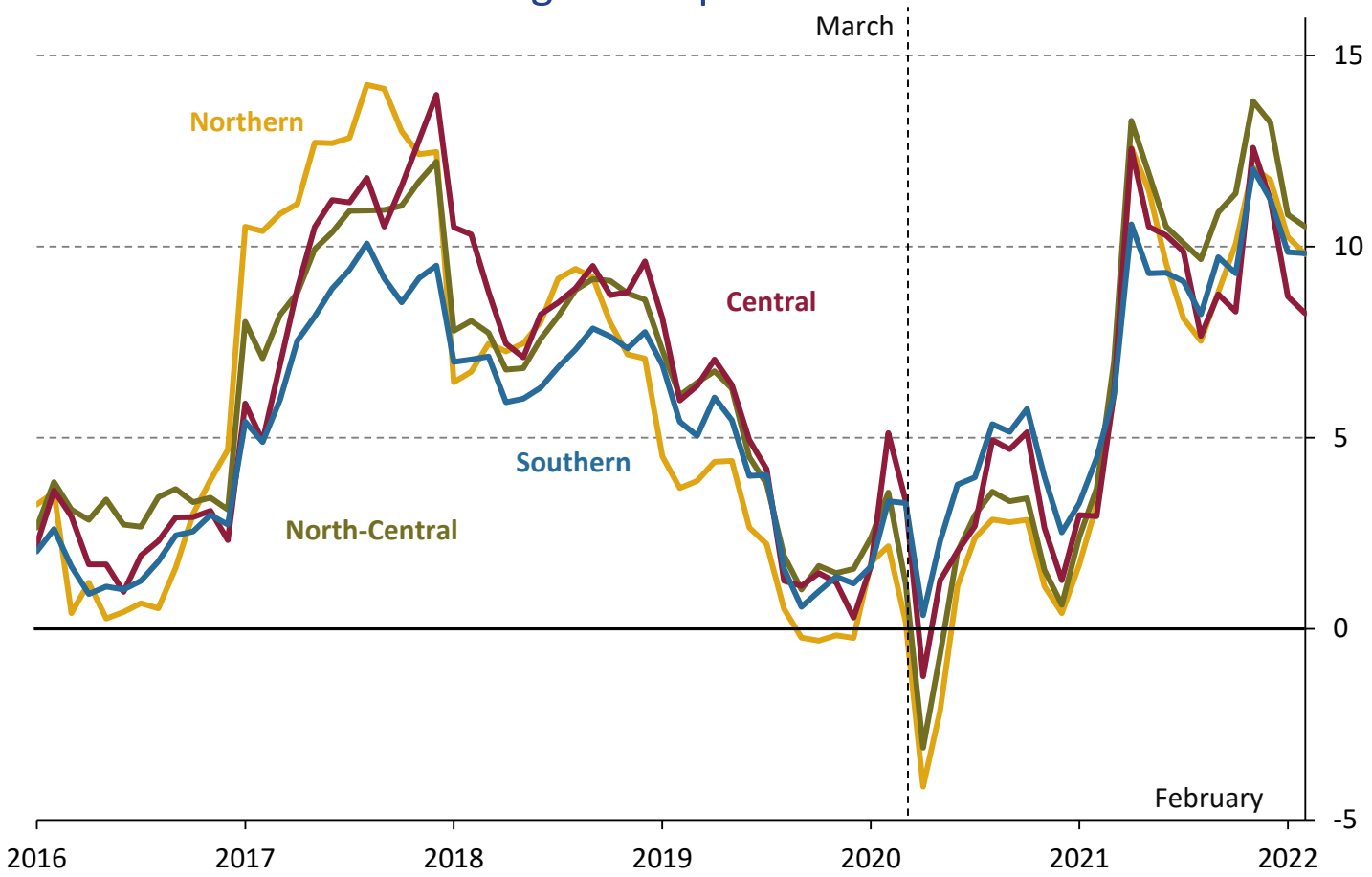


Information published by Banco de México

In all regions, non-core inflation increased between Q3-2021 and Q4-2021 due to a higher annual variation in agricultural and livestock products' and energy prices. In February 2022, annual non-core inflation in all regions was lower than that observed in Q4-2021, although it remains at high levels.

Annual Non-core Inflation by Region

Figures in percent



Source: Prepared by Banco de México with INEGI data.

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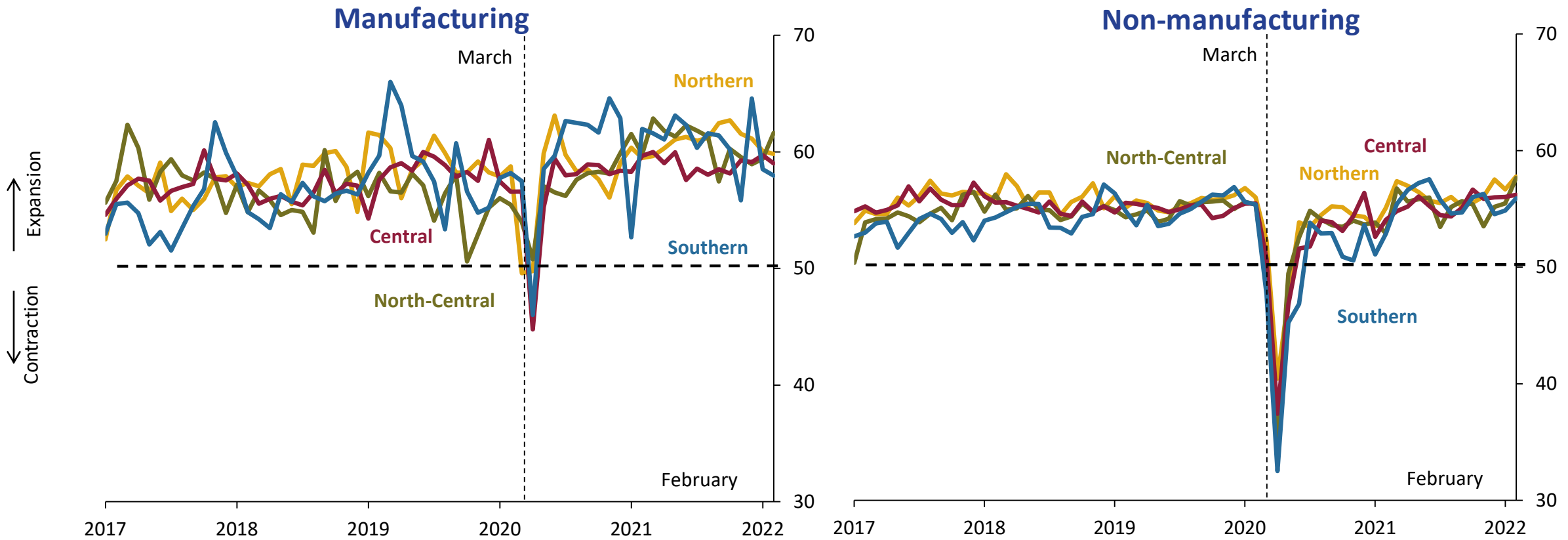
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Regional Manufacturing and Non-Manufacturing Orders Indices remain in expansionary territory.

Regional Manufacturing and Non-manufacturing Orders Index: Activity Outlook for the Next 3 Months

Diffusion indexes, s. a.

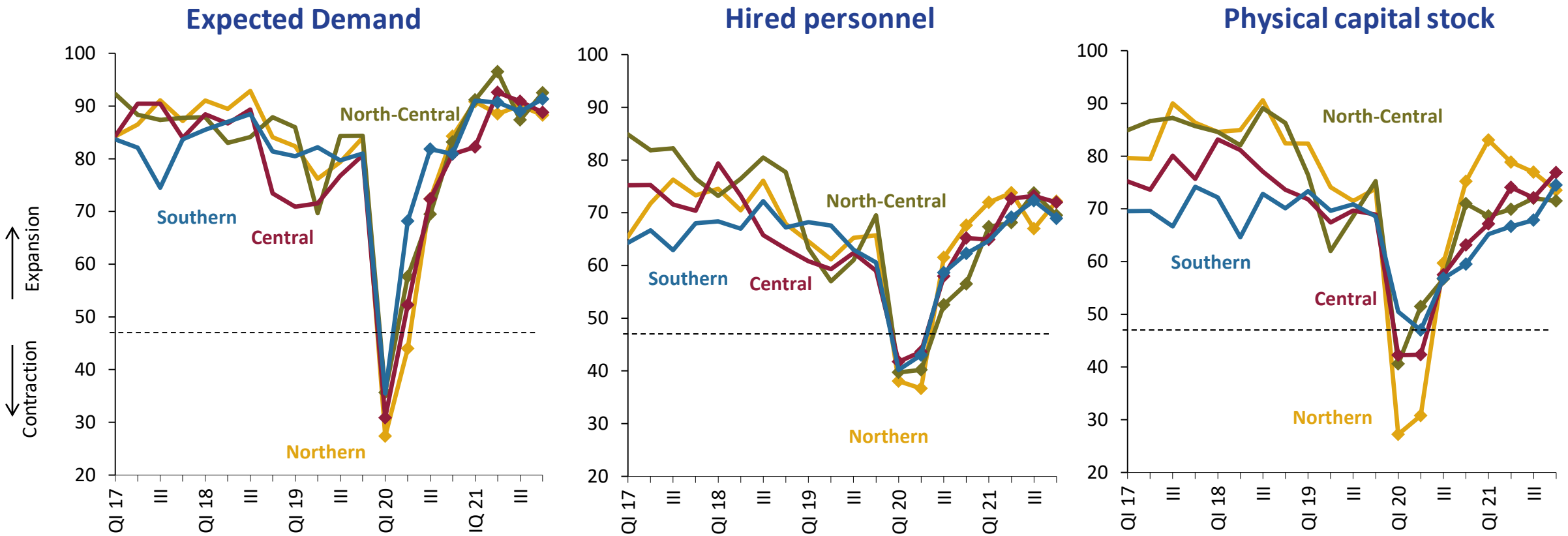


s. a. / Seasonally adjusted figures.
Source: Banco de México.

The diffusion indices of expectations on demand, number of workers and firms' fixed asset investment remained in the expansion zone in all regions during Q4-2021.

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

Percentage of responses



1/ Results obtained from the questions: "With respect to the previous 12 months, how do you expect your sales volume to change over the next 12 months, how do you expect the total number of workers in your company to change over the next 12 months," and "With respect to the investment in fixed assets made by your company during the previous 12 months, how do you expect the level of investment to change over the next 12 months?", conducted in the interviews conducted by Banco de México. Expectations corresponding to each Report were generally collected during the four weeks following the closure of the quarter being reported. In the case of the fourth quarter of 2021, they were obtained between January 3 and January 27, 2022.

Main Responses of Business Agents When Asked About the Top Three Factors that Could Hinder Growth of Economic Activity in Their Entities in the Next Six Months

Based on information collected between December 1 and December 30, 2021 [1/]

Northern		North-Central		Central		Southern	
Factor	Percentage of responses	Factor	Percentage of responses	Factor	Percentage of responses	Factor	Percentage of responses
Inflation	**31.0%**	Inflation	**27.9%**	Inflation	**29.6%**	Inflation	**31.0%**
External conditions	**20.2%**	Domestic economic conditions	**21.6%**	Domestic economic conditions	**20.5%**	Domestic economic conditions	**21.5%**
Domestic economic conditions	**18.9%**	Governance	**19.5%**	Governance	**17.7%**	Governance	**21.4%**

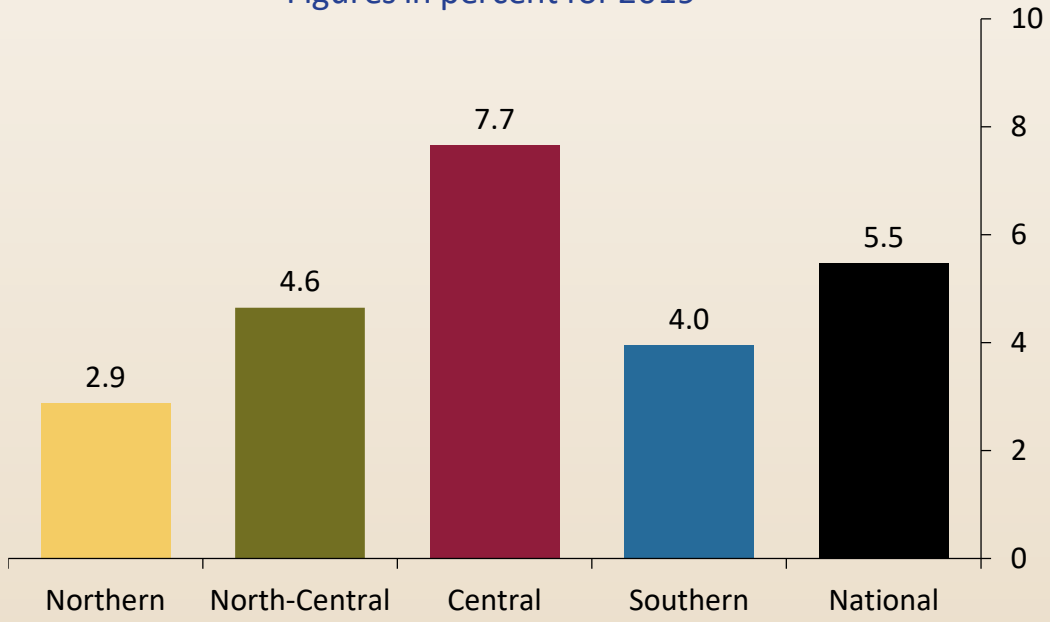
1/ Question: What do you consider to be the three main factors limiting the growth of economic activity in your state over the next six months? This question is similar to the one included in the questionnaire of the Survey on Expectations of Private Sector Economic Specialists. Figures for December 2021 were obtained based on information collected between December 1 and December 30, 2021.
Source: Banco de México.

Effects on Investment and Production in Economic Units in view of an Increase in Public Safety

- A general equilibrium model based on Ranasinghe (2017) is calibrated for Mexico's regions to estimate the effects of higher levels of public safety on firms.[1/] A counterfactual scenario is simulated, in which the average victimization of each region equals that of the Southern region.

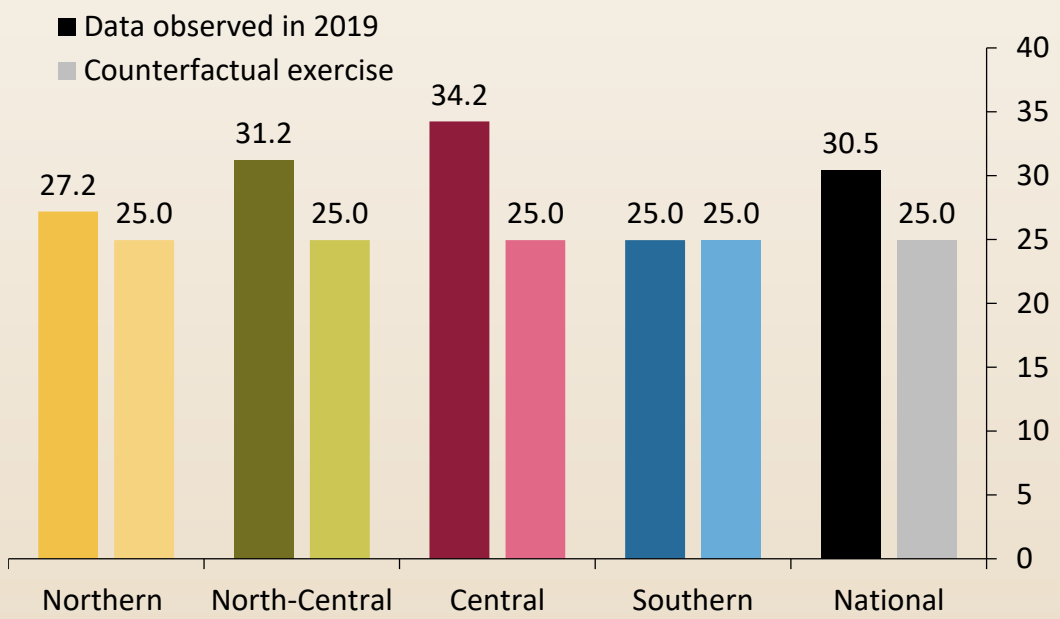
Percentage of Businesses that Canceled Investments as a Consequence of a Crime

Figures in percent for 2019



Counterfactual Scenario of Matching Average Victimization with that of the Southern Region

Victimization of economic units in percentage



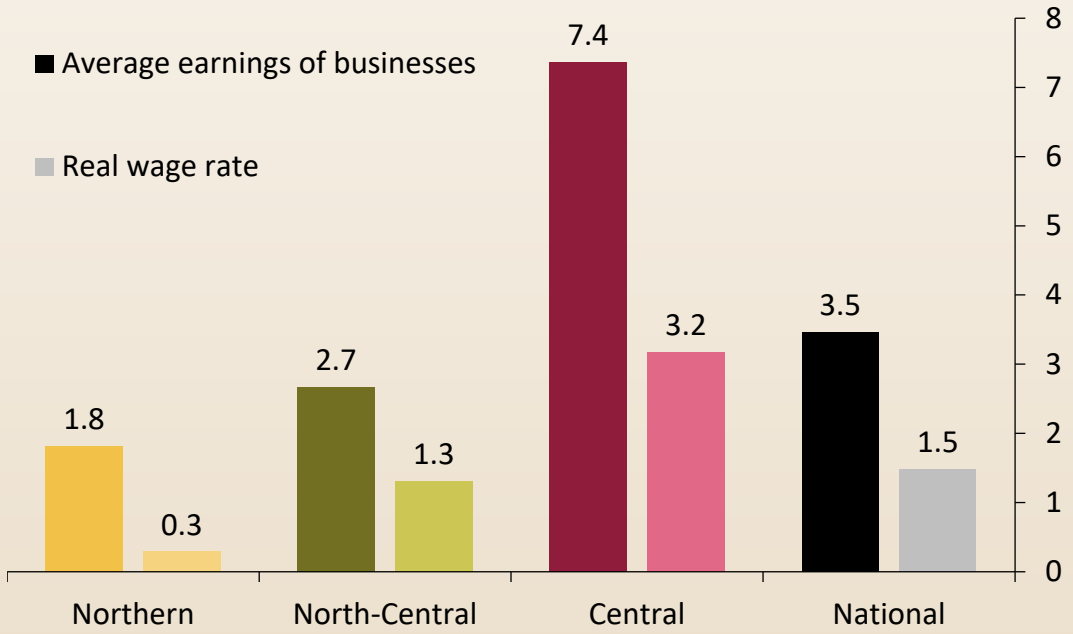
1/ Ranasinghe, A. (2017). Property rights, extortion and the misallocation of talent. European Economic Review, 98, 86-110.

Source: Prepared by Banco de México based on INEGI's National Business Victimization Survey (ENVE, for its acronym in Spanish) 2020.

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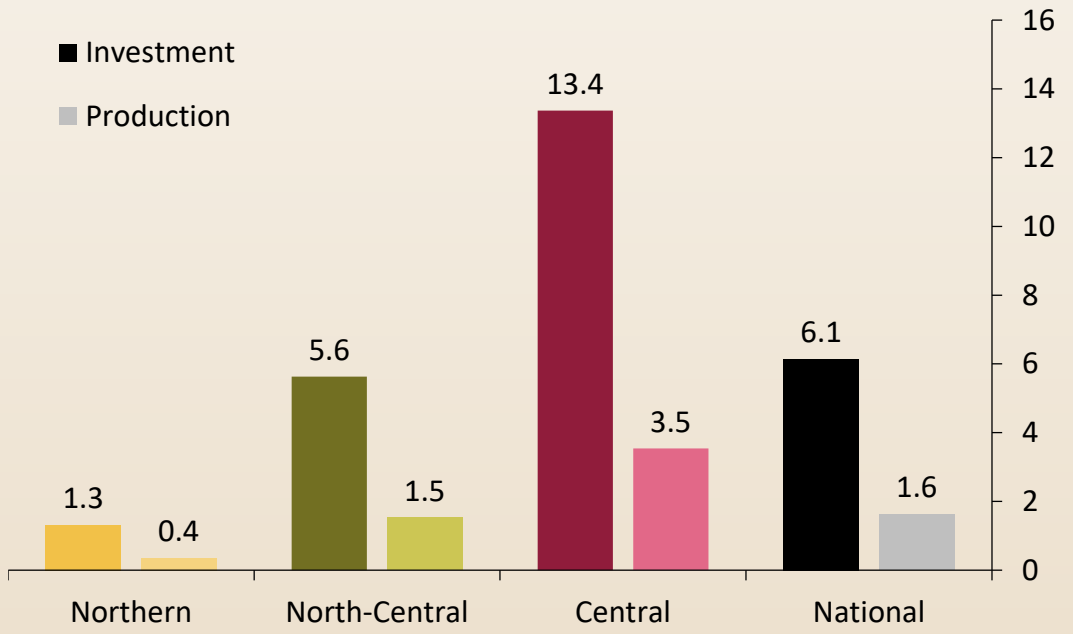
Changes in Earnings and Wages after Matching Average Victimization with that of the Southern Region

Percentage change in the counterfactual scenario relative to the baseline scenario



Changes in Investment and Production after Matching Average Victimization with that of the Southern Region

Percentage change in the counterfactual scenario relative to the baseline scenario



Source: Estimates based on Ranasinghe (2017) model.

Business Agents' Opinion on Risks to Regional Economic Activity (based on data collected between January 3 and January 27, 2022) 1/

Upward risks

- That private investment flows increase, particularly as a result of the effects of international and domestic stimuli.
- That a greater control of the pandemic due to progress in vaccination coverage enables a more robust recovery.
- That public spending, particularly investment in infrastructure, is higher than expected.

Downward risks

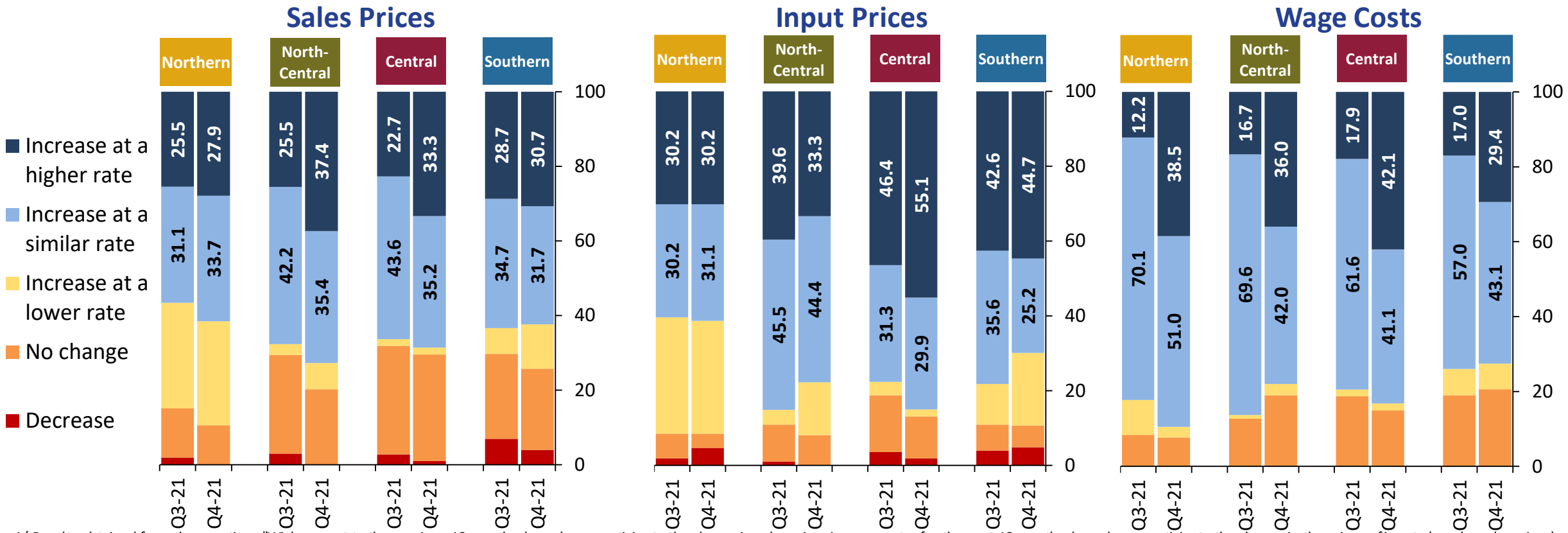
- That the persistence of the pandemic leads to a less robust economic recovery.
- That public safety indicators deteriorate.
- That domestic uncertainty persists and affects investment.

1/Results obtained from the questions: "What 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 "What 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?", asked in the interviews conducted by Banco de México between January 3 and 27, 2022.

In all regions, most interviewed business agents anticipate that sales prices of the goods and services they offer, input prices, and wage costs 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, Input Prices and Wage Costs, Next 12 Months with respect to Last 12 Months 1/

Percentage of responses



1/ Results obtained from the question: "With respect to the previous 12 months, how do you anticipate the change in sales prices in your sector for the next 12 months, how do you anticipate the change in the prices of inputs (goods and services) used in your sector for the next 12 months, and how do you anticipate the change in wages and salaries of workers in your sector for the next 12 months?" asked in the interviews conducted by Banco de México. Expectations corresponding to each Report were generally collected during the four weeks following the close of the quarter being reported. In the case of the fourth quarter of 2021, they were obtained between January 3 and 27, 2022.

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Final remarks

1 Looking ahead, regional economies are expected to continue recovering.

- ✓ **Progress in the vaccination process**, both nationally and globally, will continue to be key to achieve **a more robust recovery in economic activity and employment:**
  - This would help to strengthen regional economic activity, particularly in those states specializing in **tertiary activities**, especially in the Central and Southern regions.
  - It would also support the normalization of the functioning of global supply chains, benefiting, to a greater extent, those **regions more oriented to manufacturing exports**, particularly the Northern and Central regions.
- ✓ **Construction of large infrastructure projects** in some states of the Central and Southern regions is expected to continue generating economic benefits in those regions.

2 The Russia-Ukraine conflict involves risks for states' productive activity.

- ✓ Firms could face **higher production costs** in the event of increases in input prices, particularly in regions specializing in agro-industrial production, such as the North-Central region, or in view of **new disruptions in supply chains**, which would affect the Northern and Central regions to a larger extent. Activity in the south, on the other hand, could benefit from higher energy prices.

3 In order to face the challenges posed by the international context and boost regional economic growth, it is necessary to foster conditions that enable the recovery of private investment, particularly by strengthening the rule of law and public safety in all regions.

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BANCO DE MÉXICO

March 2022

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Published-General Purpose

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