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INDUSTRIAL DEVELOPMENT ORGANIZATION



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NEWSLETTER

# Policy Research Statistics



June - July 2020 - Issue 6

# FOREWORD

Dear Readers,

As many countries around the globe slowly emerge from nationwide lockdowns imposed by their governments to contain the spread of COVID-19, UNIDO headquarters in Vienna has also seen the gradual return of its staff members. Despite the stringent measures in place that confined many of us to our homes for several months, PRS continued publishing its series of analytical studies and opinion pieces on the global impacts of COVID-19 on the industrial sector, evaluating the policy measures introduced in different countries and regions, and providing recommendations for policymakers and stakeholders to navigate the crisis, rebuild their economies and to forge ahead. The first section of the sixth issue of the PRS newsletter focusses on a number of important questions, such as the impact of the pandemic on industries and manufacturing in sub-Saharan Africa and Latin America; the negative effects of the current crisis on women, in particular, and how women's full potential can be harnessed in the post-COVID-19 world; and how investments in science, technology and innovation can foster a faster recovery, enhance economies' resilience and reduce societal inequalities. These and many other interesting issues are addressed in the opinion pieces and analytical articles, which are summarized here, with the full versions available on UNIDO's homepage.

This newsletter does not only cover the COVID-19 pandemic, however; it also provides an overview of the many and diverse Working Papers PRS has recently published in its Inclusive and Sustainable Industrial Development Working Paper Series. The topics covered range from value chain participation of developing countries and how this facilitates the adoption of digital technologies; the role of industrial policies in the BRICS' economic integration process to deindustrialization in developed countries, among others. The full versions of the Working Papers are available on our homepage.

We hope you find our newsletter both informative and enjoyable, and that you look forward to the next one.

If you have questions related to the newsletter, please contact us at [prsnewsletter@unido.org](mailto:prsnewsletter@unido.org).

## Hiroshi Kuniyoshi

Deputy to the Director General and Director ad interim of the Department of Policy Research and Statistics, EPR/PRS



COVID-19 testing  
April 2, 2020 - MADAGASCAR. Photo: World Bank / Henitsoa Rafalia

# SPECIAL SECTION ON COVID-19

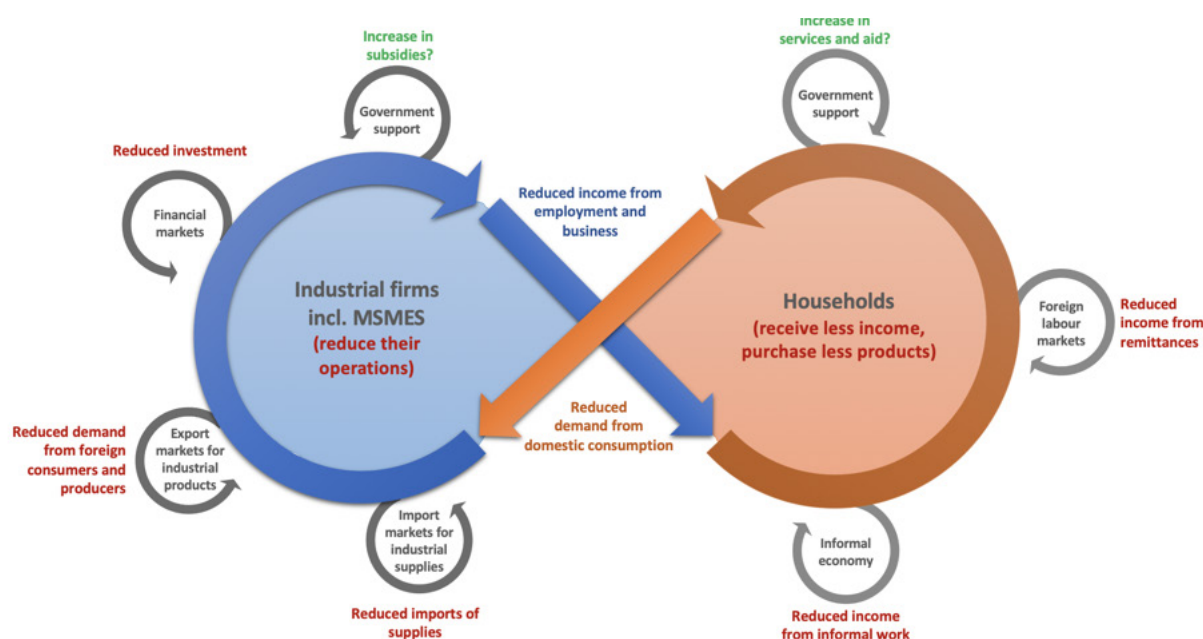
The **PRS Department** is publishing a series of policy briefs and analytical opinion pieces on the impacts of the COVID-19 outbreak, incorporating the most recent findings and analyses to provide up-to-date information on best practices and policy measures to address the disruption in economic activities and the implications for industries, firms and society as a whole. New articles are continuously being uploaded, so make sure to [check back regularly!](#)

## COVID-19 EFFECTS IN SUB-SAHARAN AFRICA AND WHAT LOCAL INDUSTRY AND GOVERNMENTS CAN DO

COVID-19 infection rates in sub-Saharan Africa (SSA) have remained modest so far. Though virtually all countries in SSA have introduced containment measures, they are unlikely to prove effective due to the high dependence of most households on daily income, insufficient government resources to compensate those affected by the containment measures, and the difficulty of implementing social distancing in societies where social interaction is a matter of daily survival. Governments in the region have introduced a mix of monetary and fiscal measures, but an analysis of their scope reveals the limits of these packages: while OECD countries had introduced macro-economic stimuli amounting to, on average, 10% of their GDP by 2 April, the rates in countries such as Rwanda, Kenya and Ghana only ranged from 0.6 – 1.1% of GDP. To mitigate the pandemic's effects in SSA, longer term measures must foster the reorientation and development of new business models with different product mixes; local and regional sourcing of inputs; infrastructure development, and greater collaboration and innovation among firms in partnership with regional development organizations. Recovery strategies will also need to tap into the continent's entrepreneurial capacities, with a focus on youth and women, and mobilize domestic and international support to boost innovation and investment.

## INDUSTRIES POST-COVID-19: A GENDER-RESPONSIVE APPROACH TO GLOBAL ECONOMIC RECOVERY

The socio-economic impacts of COVID-19 are more severe for women and girls globally, simply by virtue of their gender. As manufacturing is one of the hardest hit sectors, it leaves those in low-skill and low-income jobs—many of which are held by women—in even more financial distress. Deeply rooted structural gender inequalities result in unequal access to infrastructure, productive resources and procurement opportunities for women entrepreneurs. Such inequalities, coupled with the impact of COVID-19 and women's additional burden of unpaid care and domestic work—which has increased during the pandemic—implies that women's economic and productive lives are disproportionately affected compared to men's. Unless medium- and long-term post-COVID-19 policy responses and investments are appropriately targeted, both the accelerating technological trends and the deeply-rooted management practices in global value chains (GVCs) could further intensify the existing inequalities. Policymakers have a unique opportunity to institute bold measures for more resilient, inclusive and sustainable economies, and to harness women's full potential as leaders, innovators and agents of industrial and environmental change.



Effects of COVID19 on SSA industries and households

## **LESSONS FROM PAST DISRUPTIONS TO GLOBAL VALUE CHAINS**

The World Trade Organization forecasts a decline in world trade of between 13 – 32% as a consequence of COVID-19, with a high likelihood of surpassing the historic slump observed during the financial crisis of 2008-2009. Previous research on global trade disruptions indicates that policies that reduce time and uncertainties along global value chains (GVCs) are essential for rapid recovery. Pre-emptive measures can help mitigate the impact of supply chain disruptions. During the 2003 SARS crisis, many Asian companies along GVCs increased their production in response, built buffer levels and stocked up their inventories. Many firms developed business plans, established parallel sites or shifted operations, and invested in IT to enable remote working. Additional trade protectionism will only exacerbate the pandemic's impacts – keeping transport routes open and facilitating trade helps protect trade of essential goods and crucial inputs, and to maintain quality standards, and knowledge and technology exchange, including medical equipment and pharmaceuticals. Global disruptions in supply chains and trade call for worldwide collaboration in developing recovery-assisting policies. At the same time, national policies and firm-specific initiatives can support quick recovery and increase resilience to future shocks.

## **FOSTER RECOVERY FROM COVID-19 THROUGH SCIENCE, TECHNOLOGY AND INNOVATION**

Investment in science, technology and innovation (STI) activities is a key driver of economic growth. Not only does STI address the immediate challenges of the COVID-19 health crisis, it but can also foster economic recovery once the virus is contained. Multiple stakeholders have already joined forces globally to develop a vaccine and to ensure fair access to it for all, while others are seeking innovative solutions to address the economic challenges unleashed by the pandemic. The recession triggered by COVID-19 will likely affect firms' willingness to invest in R&D and their ability to launch new products and services on the market. Research and innovation policy should thus focus on helping to prevent firms from delaying or discontinuing their innovation activities. Direct and indirect financing and guarantees to compensate for expected liquidity constraints and restrictive bank lending should be introduced, alongside strategic public procurement for innovation and investment in large, modern infrastructure development projects to help companies deal with shortfalls

in demand. Dedicated funding for research to manage the post-COVID-19 recovery, taking societal inequalities into account and the need to enhance resilience to extreme events, seems to be a step in the right direction.

## **COVID-19 AND THE GLOBAL CONTRACTION IN FDI**

Global production networks are being disrupted on a scale never witnessed before. Global foreign direct investment (FDI) flows are expected to contract between 30 to 40% during 2020/21, with particularly severe consequences for developing countries. A significant influx of resources will be required to recover post-COVID-19. FDI inflows can bring in some of those resources, but governments will need to put conditions in place to help attract and retain productive investments and, more importantly, to maximize the inflows' development benefits. Governments must strengthen support mechanisms to help local firms overcome supply-side constraints by developing a system of quality certification, often a requisite to enter into foreign firms' supply chains. Digital infrastructure improvements will be necessary to allow firms to operate remotely along global value chains and to reach out to foreign markets. Export processing zones (EPZs) should be designed to support the establishment of local supplier relationships and supplier development programmes must be launched to promote match-making processes between foreign firms and local suppliers. Lastly, international action to support countries during and after the pandemic must pay particular attention to least developed countries, which simply do not have the necessary resources to offer their private sector firms substantive assistance.

## **WHY INNOVATIVE MANUFACTURING AND CIRCULARITY ARE KEY FOR A RESILIENT MANUFACTURING INDUSTRY POST-COVID-19**

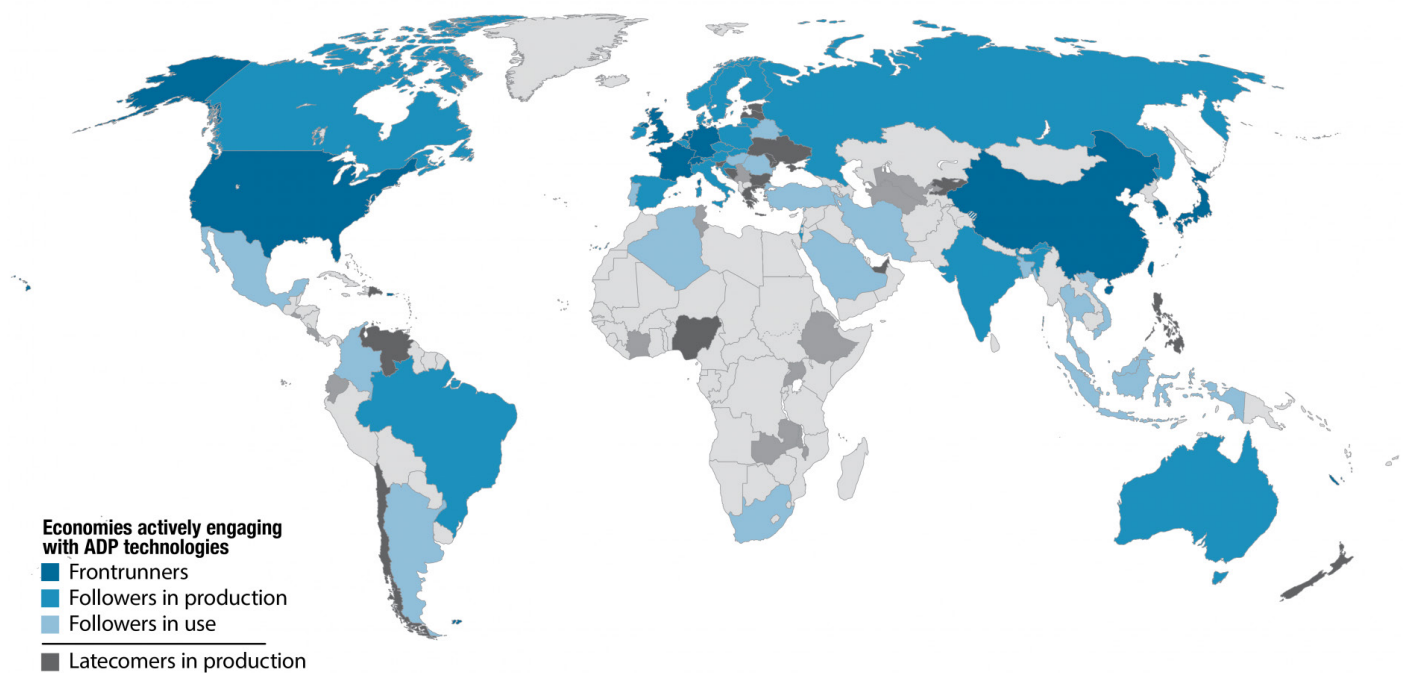
The COVID-19 crisis has demonstrated that where manufacturing is embedded in local and regional networks, economies have been able to respond faster and adapt to the new realities, particularly in regions with businesses that have been able to transfer skills to the production of different goods. The 'new normal' requires us to rethink the way we produce and consume, and to shed more light on manufacturing and its role in building resilient, diverse economies. We propose instituting a paradigm of co-evolution where research, design, development and manufacturing are closely knitted into innovative networks that understand local needs and are mindful of ecosystem

boundaries. This requires setting the conditions for business eco-systems to emerge and to allow for a sharing of resources, exchange of knowledge and materials, and the promotion of circular models where products, components and materials are recovered within productive cycles. Moving away from a linear manufacturing system to a circular one requires global policy commitments, but also enforcement, capacity-building both in the private and in the public sector, and encouraging technological and spatial transformation. More importantly, it requires new sets of policies, regulations and voluntary agreements that ensure that recovery packages are not simply used to return to ‘business as usual’, but actually transform and create conditions for the development of a new manufacturing sector.

**COVID-19: A WAKE UP CALL FOR RESEARCH AND INDUSTRIAL CAPACITY-BUILDING**

History has shown that coordination, cooperation and the mobilization of scientific and technological progress, combined with strong manufacturing capabilities, are crucial to address complex challenges. The COVID-19 crisis has taught us that we need to identify and invest in strategic sectors to safeguard sovereignty in times of temporary global value chain disruptions. Governments around the world have implemented measures to support industries in retooling their activities and repurposing their production line to manufacture masks, ventilators and other es-

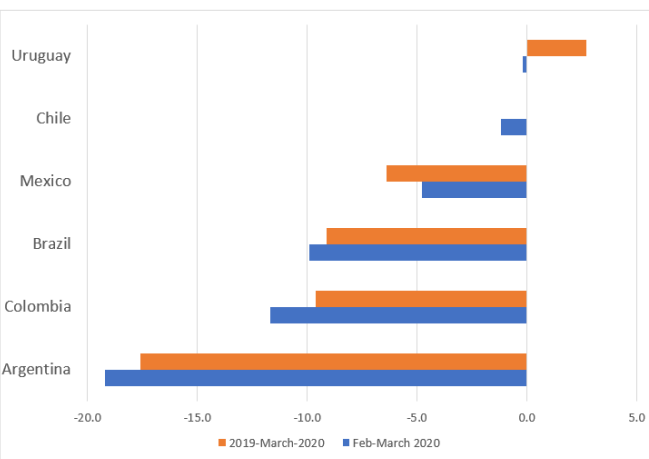
sential products. This, however, is only possible if firms possess a certain level of production and innovative capabilities, which in turn presupposes accumulated investments in the development of science, technology and innovation (STI) capacities at different levels. The pandemic underscores the need for strong coordination and collaboration across sectors, not only within but also between countries. While the ability to rapidly respond depends on the country’s STI capabilities—which are developed from within—governments must foster investment in youth skills. This can be achieved by creating a robust research infrastructure, providing sufficient funding and incentives, and by setting up frameworks within which STI can be carried out. Policies to enhance collaboration and partnerships between sectors should be part of any country’s core strategies to put knowledge into productive use in the post-COVID-19 world.



Economies engaged in ADP technologies

### LATIN AMERICA: KICKSTARTING MANUFACTURING IN THE TIME OF COVID-19

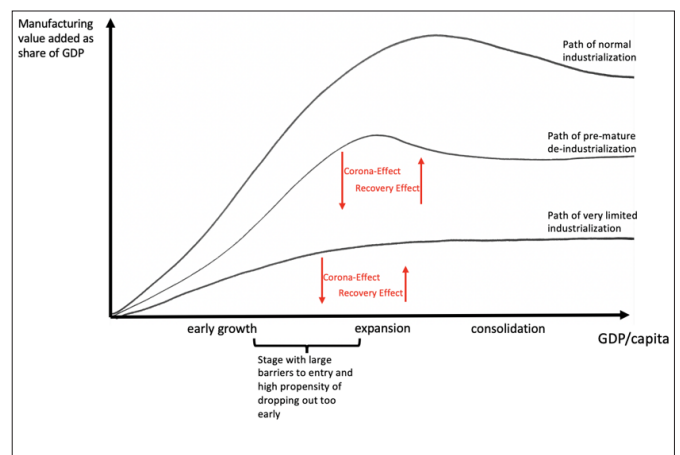
The continued spread of COVID-19 through Latin America and the Caribbean shows no signs of abating. At the end of May, the region became the global epicentre of the pandemic amid a growing number of infections and deaths related to COVID-19. In addition to a drop in manufacturing output, associated with a decrease in industrial productivity (i.e. the destruction of jobs and consequent dismantling of in-depth knowledge of productive methods developed over time) and a loss of productivity gains resulting from lower investments in innovation, competitiveness could also be affected due to a rise in operating costs to comply with strict worker health protection measures. On the supply side, governments should introduce countercyclical financing mechanisms for innovation to help firms develop new business models to better absorb shocks in the short term and guarantee viability in the long term. They should encourage digitalization so firms can improve their digital capacity, digitalize their production process and develop digital skills among the workforce. On the demand side, governments should stimulate domestic demand and revive industrial capacity on a more equitable basis. Expanding mechanisms for cooperation that allow countries in the region to present a united front against health and environmental emergencies that affect economies, exacerbate migration and hamper inter-regional security are worth considering as well.



Economies engaged in ADP technologies

### MANAGING COVID-19: WHY POORER COUNTRIES MAY DROP OUT OF INDUSTRIALIZATION

The pandemic’s aftermath could be disastrous for industries worldwide, especially for smaller enterprises and for industries in less developed regions of the world. Manufacturers in developed countries are likely to implement business strategies with the aim of reducing the risks of sourcing from distant and unreliable suppliers such as those located in developing countries. Reshoring as well as increased local and internal sourcing are likely scenarios, with the potential consequence that developing countries’ engagement in global value chains (GVCs) declines or that they drop out of GVCs altogether. Another likely scenario is that premature deindustrialization sets in. Developing countries should therefore avoid putting all their resources at the disposal of a few global buyers and leave room to reinvent their product mix, engage in south-south trade and invest in alternative GVCs, where higher revenues can be accrued. More diversified participation in more technologically advanced tiers of GVCs, where risks can be spread and higher value added can be captured, should be targeted. This calls for an active and involved state to assist firms in their recovery efforts post-COVID-19 and to support the reorientation of production towards markets with higher potentials and areas in which the net benefits of GVC participation are positive. This can only be achieved if medium- to long-term investments are made in new business processes and technological innovation.



Maturity of businesses in industrial development

# POLICY

**POLICY** provides strategic industrial policy advice to Member States in support of accelerating their industrial development. In close collaboration with the Research team, it identifies, designs, implements and evaluates policies aimed at expanding and diversifying Member States' productive capacity.

## PROGRAMME FOR COUNTRY PARTNERSHIP (PCP)

In the context of PRS's contribution to **PCP Peru**, PRS's Fernando Santiago discussed the future National Industrial Development Policy on 4 May with Peru's Ministry of Production (PRODUCE). He shared his views on strategic challenges related to Peru's new industrial policy, addressing both the short-term challenges posed by COVID-19, as well as the long-term challenges of diversification in terms of both productive activities and markets, e.g. tapping into free trade agreements. The integration of industrial activities with a view to regional development and opportunities to better exploit innovation infrastructure was discussed as well.



Within the scope of **PCP Morocco**, PRS's Frank Hartwich, in coordination with DTA/AGR/FSN, PFC/RFC/ARB/MOR, the Ministry of Industry, Investment, Trade and Digital Economy and the National Federation of Agrifoods (FENAGRI) designed and is currently conducting a study on the impact of COVID-19 on the country's agrifood industry and potential recovery strategies. Interviews with 12 industry associations have been conducted and a questionnaire has been answered by 50+ local companies. The study will also be linked to the PCP's support to the agricultural sector in the future.



In the context of PRS's contribution to **PCP Egypt**, PRS's Anders Isaksson, in coordination with PFC/RFC/ARB/EGY and DTA/DTI/QIS, organized an expert group meeting on disruptions to global value chains and industrial policy, attended by around 50 policymakers and analysts and representatives from associated development agencies. PRS's Frank Hartwich gave a presentation on the impact of COVID-19 on global and local value chains in Panel 1.

PRS's Frank Hartwich, in collaboration with PFC/RFC/AFR/MAD, participated in the review of a joint ILO-UNIDO study on the impact of COVID-19 on priority industries in the country.

## SUPPORT TO THE ROYAL GOVERNMENT OF CAMBODIA IN ITS EFFECTIVE IMPLEMENTATION OF MAJOR STRATEGY AND POLICY

UNIDO has developed the monitoring and evaluation (M&E) system for the Cambodian Industrial Development Policy (IDP) 2015-2025 jointly with the Council for the Development of Cambodia (CDC). Based on this new M&E system, UNIDO will support CDC in conducting the mid-term review (MTR) on the IDP. As part of this activity, a virtual workshop took place on 7-12 May, at which UNIDO transferred knowledge and skills on qualitative and quantitative methodologies to the IDP Secretariat of CDC so the Secretariat can conduct the review on its own. UNIDO will guide and support the IDP Secretariat for the remainder of the project period. The Third Project Committee meeting was also held virtually. The original plan of certain activities was amended to account for the effects of the COVID-19 pandemic. As part of these revised activities, two webinars on SME and STI will take place in the second half of 2020.

## THE ROLE OF INDUSTRIAL POLICIES IN THE BRICS ECONOMIC INTEGRATION PROCESS

Fernando Santiago's (PRS) Working Paper contributes to the literature on industrial policy in the BRICS in three ways: 1) it documents the gradual buy-in to the concept of BRICS by its members and their efforts to strengthen collaboration; 2) it corroborates that differences in individual development paths influence the contribution of each member in advancing a joint industrial development agenda, and 3) it explores the BRICS's response to the Fourth Industrial Revolution, which builds on their traditional proactive approach to industrial policy, while their collective collaboration with other countries, particularly in Africa, reflects cumulative interests at the individual country level.

## INDUSTRY AND ENERGY IN SPAIN AND EUROPE POST-COVID-19 (WEBINAR)

On 14 May, PRS's Fernando Santiago participated in the XV Webinar "[La Industria y la Energía en España y Europa tras el COVID-19](#)" (Industry and Energy in Spain and Europe post-COVID-19), organized by TECNIBERIA (Spanish Association of Engineering, Consultancy and Technological Services Companies). His presentation was entitled "Progress towards the achievement of the SDGs post-COVID-19. New scenarios and the contribution from industry" (available in Spanish). In his presentation, Santiago asserts that COVID-19 threatens to revert the progress made thus far to realize the SDGs, and that the decade ahead will be far more challenging. The pandemic has intensified the declining trends in global manufacturing and while future scenarios are difficult to predict, businesses should remain vigilant to challenges that are likely to emerge in areas such as energy, the environment, poverty and immigration. These challenges may, however, also offer business opportunities that industry can address in a more sustainable and equitable manner.

## SCIENCE, TECHNOLOGY AND INNOVATION (STI)

Fernando Santiago (PRS) participated as a discussant in Session 2 "Building a science-technology-policy system capable of rapid development and delivery of vaccines, drugs, and other critical technology solutions that are essential for addressing sustainability crises" of the "UN expert conversation on lessons learnt from the COVID-19 pandemic for better cooperation on science and technology advice", a virtual meeting organized by Technology Facilitation Mechanism on 20 May and 16 June 2020. As the STI Forum, initially scheduled to take place on 12-13 May at UN headquarters in New York, was postponed, ECOSOC's President had called for online consultations on science, technology and innovation (STI) as inputs to the High-level Political Forum on Sustainable Development (HLPF). The objective of the UN expert conversation was to consult experts from a wide range of backgrounds and experiences on the lessons they have learnt from the current COVID-19 responses for science and technology advisory systems. A detailed meeting report, as well as a draft UN paper on the topic will feed into the STI sessions at the HLPF 2020 (7 – 17 July 2020).

In consultation with UNIDO's STI Working Group, PRS coordinated UNIDO'S inputs to IATT's online consultation "IATT Survey Questions for Consolidated Inputs to the STI Components of the HLPF 2020".

PRS also submitted inputs to the 10-page background paper that will be submitted to inform discussions at HLPF's work stream on sharing economic benefits.





# RESEARCH

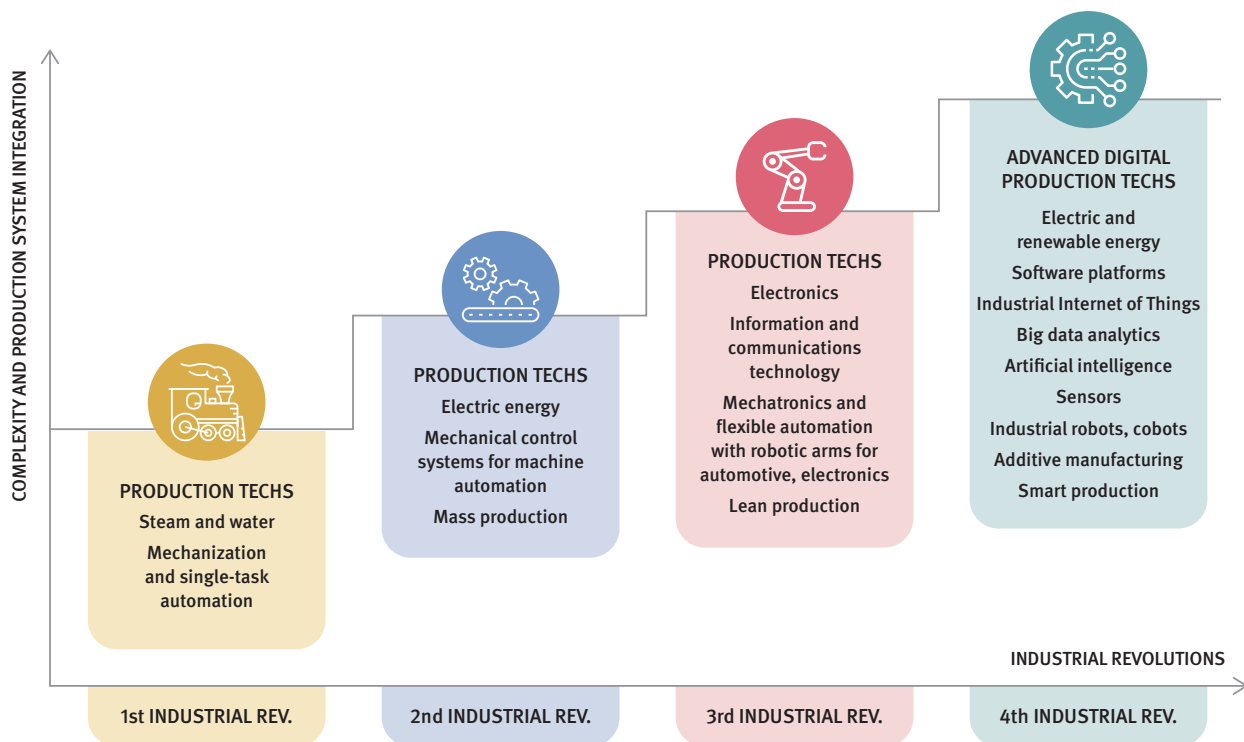
**RESEARCH** provides solid empirical analyses on themes and global trends related to UNIDO’s mandate to identify the sources and determinants of sustainable industrial development and economic growth, leading to improved industrial competitiveness in the context of the global economy.

## [A NEW TECHNOLOGICAL WAVE SHAPING INDUSTRIALIZATION: ADVANCED DIGITAL PRODUCTION \(ADP\) TECHNOLOGIES - INDUSTRIAL DEVELOPMENT REPORT BRIEF NO. 3](#)

ADP technologies—one of the main drivers behind the Fourth Industrial Revolution—are transforming manufacturing production. These technologies evolved from a process of evolutionary transition instead of being akin to a revolutionary disruption. They result from the combination of three main components: 1) hardware (e.g. complementary equipment to operate modern industrial robots and intelligent automated systems); 2) software, and 3) internet connectivity. The combination of these components enables the integration of production processes on multiple levels—both within a single firm and along the supply chain—leading to significant efficiency gains in the use of resources and in manufacturing production.

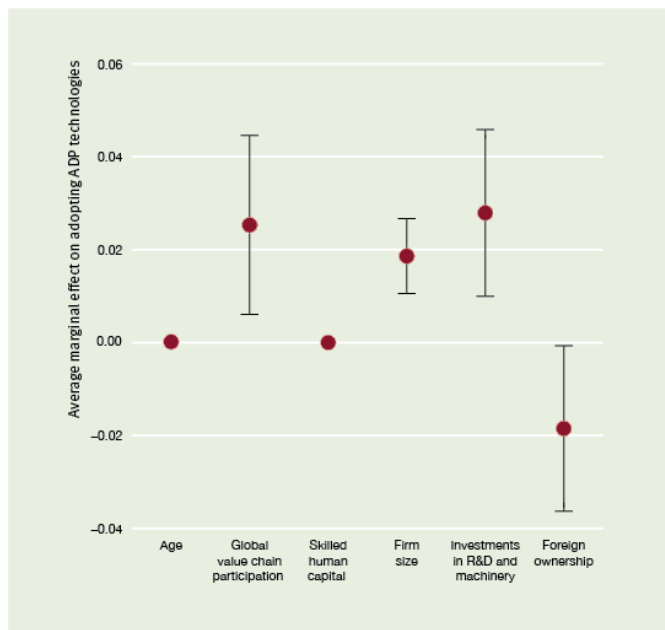
## [THE CONTRIBUTION OF ADVANCED DIGITAL PRODUCTION \(ADP\) TECHNOLOGIES TO INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT \(ISID\) - INDUSTRIAL DEVELOPMENT REPORT BRIEF NO. 4](#)

By their very nature, ADP technologies lead to major efficiency gains in production. The introduction of the internet of things, together with big data analytics, for instance, help firms plan a range of activities—from the use of industrial machinery to the consumption of electricity—to reduce idle time and ensure full use capacity. The diffusion of ADP technologies contributes to boosting industrial competitiveness, employment creation and environmental sustainability through two main channels: 1) they improve the efficiency of production and facilitate the diffusion of environmental standards, and 2) they unlock product innovations, leading to the emergence of both new business models inspired by circular economy principles, and of entirely new industries.



## THE DIFFUSION OF ADVANCED DIGITAL PRODUCTION (ADP) TECHNOLOGIES: A HETEROGENEOUS LANDSCAPE – IDR BRIEF NO. 5

As has been the case with past technological and industrial revolutions, the emergence of the 4IR has witnessed a division of the world economy into frontrunner and follower economies. This is because the scientific and industrial capabilities required to engage with ADP technologies are highly concentrated, and their diffusion remains limited, particularly in developing countries. Even in industrialized countries, ADP technologies remain the domain of a niche of firms in high-technology industries. The adoption of ADP technologies in developing and emerging economies is rising, primarily through the import of capital goods which embody new technologies.



## MEASURING THE CREATION AND ADOPTION OF NEW TECHNOLOGIES USING TRADE AND PATENT DATA

Emerging technologies are shaping the new industrial landscape, potentially creating opportunities for developing countries to industrialize. In this IDR Background Paper, Neil Foster-McGregor, Önder Nomaler and Bart Verspagen propose an original approach to identify the economies that are leading the technology race, those that are keeping up, and those that are lagging far behind. This is done by looking at trade (i.e. imports and exports) and inventions (patents) in 4IR technologies. The number of new technology inventions has risen sharply since the early 2000s, but involves only a handful of leading, well-established manufacturing powers. The current global dividing lines in terms of development are at risk of intensifying, if left without policy intervention.

## DOES VALUE CHAIN PARTICIPATION FACILITATE THE ADOPTION OF DIGITAL TECHNOLOGIES IN DEVELOPING COUNTRIES?

The adoption of technologies from abroad is an important driver of firm performance and industrial catching up in developing economies. Digital technologies lie at the core of the 4IR. In this IDR Background Paper, Carlo Pietrobelli, Michele Delera, Elisa Calza and Alejandro Lavopa explore the determinants of digital technology adoption in three countries: Ghana, Thailand and Viet Nam. The findings suggest that the adoption of ADP technologies in manufacturing remains extremely limited. Firms that adopt ADP technologies are characterized by a larger-than-average size and by an active involvement in global value chains. Firms that invest in their own technological capabilities—be it in the form of R&D, training or by purchasing new equipment—also appear to be likelier to adopt new technologies.

## THE ROLE OF INDUSTRIAL POLICIES IN THE BRICS ECONOMIC INTEGRATION PROCESS

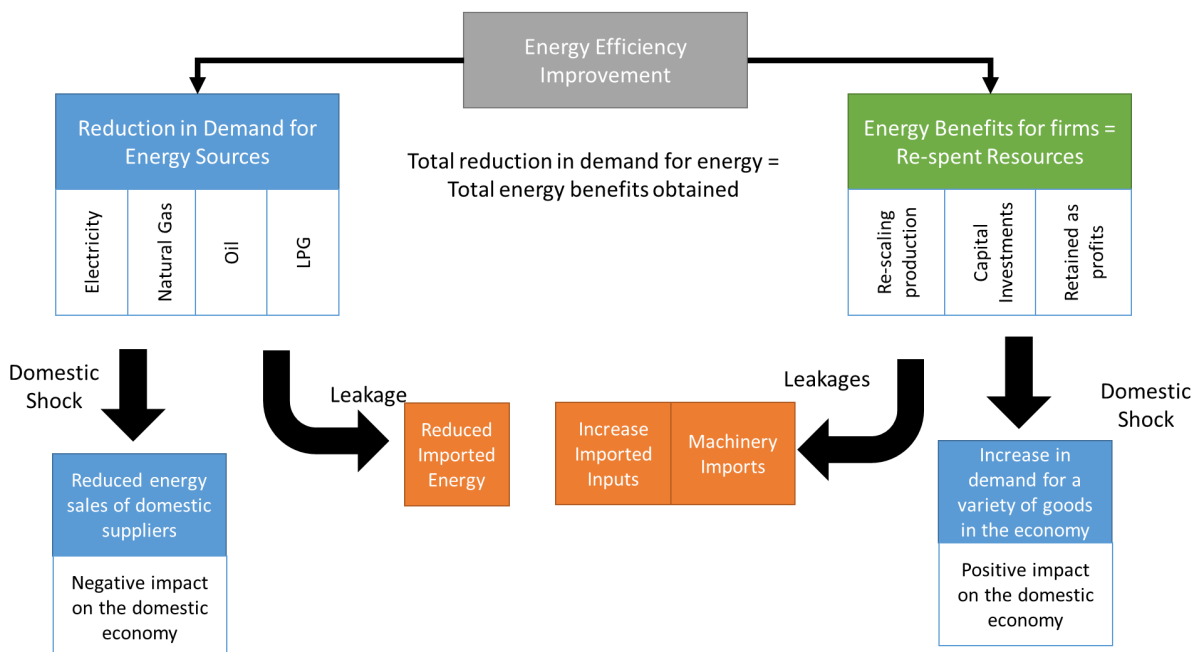
This Working Paper contributes to the literature on industrial policy in the BRICS in three ways: 1) it documents the gradual buy-in to the concept of BRICS by its members and their efforts to strengthen collaboration; 2) it corroborates that differences in individual development paths influence the contribution of each member in advancing a joint industrial development agenda, and 3) it explores the BRICS's response to the Fourth Industrial Revolution, which builds on their traditional proactive approach to industrial policy, while their collective collaboration with other countries, particularly in Africa, reflects cumulative interests at the individual country level.

**THE IMPACT OF INDUSTRIAL ENERGY EFFICIENCY ON ECONOMIC AND SOCIAL INDICATORS**

One of the most important options available to policy-makers to reduce CO<sub>2</sub> emissions is industrial energy efficiency. Despite this intuitive concept, the economics measurement toolkit still lacks a methodological framework to analyse the extent to which energy efficiency interventions can generate simultaneous economic, environmental and employment-related improvements to boost inclusive and sustainable industrial development. This Working Paper fills this gap by introducing a unique approach based on input-output tables to estimate the impact of improvements in industrial energy efficiency on value added, employment and energy savings among industries in the Republic of North Macedonia. Whereas a positive impact on employment is found in every scenario, a positive outcome in terms of value added essentially depends on the country's capacity to produce goods locally that accommodate firms' increasing demand due to their energy cost savings.

**DEINDUSTRIALIZATION IN DEVELOPED COUNTRIES AMID ACCELERATED GLOBALIZATION: PATTERNS, INFLUENCERS AND POLICY INSIGHTS**

This paper examines the changing dynamics of deindustrialization in developed countries amid the acceleration of globalization in the early 1990s. It analyses the patterns and factors that influenced employment growth in the manufacturing industries of 12 developed economies from 1970-2015. The study finds that first, deindustrialization trends display a structural break from the pre-1990 to the post-1990 period, with industries with higher levels of employment being more affected. This effect is particularly pronounced for high-tech industries. Second, restructuring efforts aimed at moving labour from lower to higher-productivity sectors in the post-1990 period appear significant, especially for low-tech industries. Third, countries with a large population and a deficit-prone trade balance display greater manufacturing employment shrinkage in the post-1990 era. This finding lends support to the conjecture that trade tensions between the U.S. and China will intensify, and that trade wars will likely be unavoidable.



Domestic impact and leakages of the reduction in the demand for energy and the re-spending of cost savings

# STATISTICS

**STATISTICS** compiles, stores, and disseminates reliable and internationally comparable data on inclusive and sustainable industrial development. It maintains an international industrial statistics database, and contributes to the improvement of statistical standards.

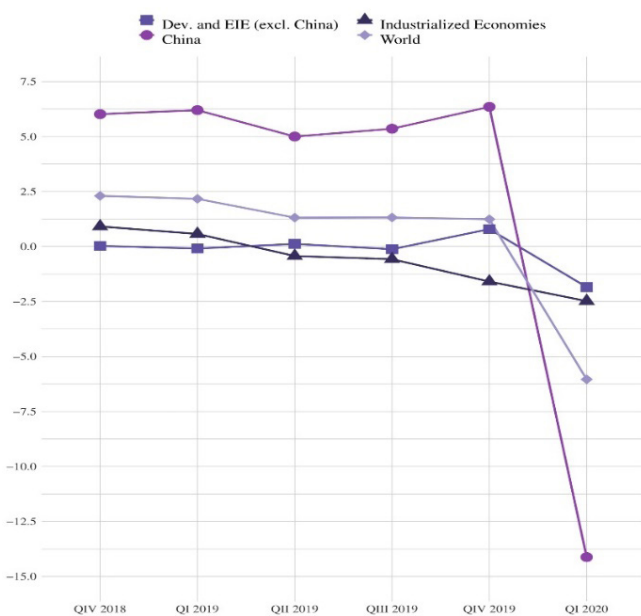
## OVERVIEW OF WORLD MANUFACTURING OUTPUT

Global manufacturing production has suffered an external shock triggered by the COVID-19 pandemic, bringing much of global economic activity to a halt from March 2020 onwards. Consequently, a massive decline of manufacturing output is expected in industrialized economies and in most developing countries in forthcoming periods. Manufacturing production in advanced economies dropped by 2.5 per cent in the first quarter of 2020 (following a decrease of 1.6 per cent in the previous quarter).

China, the world's largest manufacturer, was hit hard by COVID-19 in the first quarter of 2020, recording an unprecedented decline of manufacturing output by 14.1 per cent. Manufacturing output of developing and emerging industrial economies (excl. China) decreased by 1.8 per cent.

The three country groupings according to technological intensity saw negative growth rates of 5 per cent and higher in the first quarter of 2020. Such an overall decline was last registered during the financial crisis in 2008/2009 with similar reductions in manufacturing output.

Growth of world manufacturing output in % compared to the same quarter of the previous year

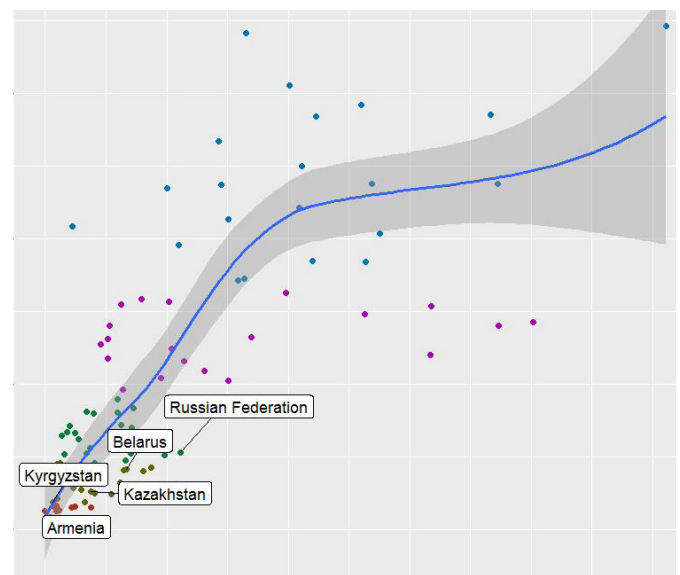


Global manufacturing output growth registered a sharp decline of 6.0 per cent in the first quarter of 2020 due to economic lockdown measures in response to the COVID-19 pandemic.

The indices are published in UNIDO's [Quarterly IIP database](#), available at UNIDO Statistics Data Portal. Beginning with the year 2020, UNIDO has also started publishing monthly and regularly updated data on world manufacturing production in the [Monthly IIP database](#). The most recent quarterly report on world manufacturing production is available here.

## INDUSTRIAL GROWTH AND THE DISTRIBUTION PATTERN OF MANUFACTURING OUTPUT IN THE EURASIAN ECONOMIC UNION (EAEU)

The Eurasian Economic Union (EAEU) promotes regional economic integration and the free movement of goods, services, capital and labour, and pursues coordinated, harmonized policies. This study analyses the EAEU members' SDG-9 performance in the process of industrialization and covers the three key dimensions of industrial performance: 1) productivity, 2) structural change, and 3) competitiveness based on a number of indicators. We find that Russia dominates the EAEU in economic terms, accounting for 85 per cent of the Union's GDP. As the largest market for their industrial goods, Russia is of particular interest for the other EAEU members. Yet this is where the contradiction lies – the EAEU member states continue to focus on Russia's large market instead of developing mutual industrial cooperation to expand their shares in global markets. They behave more like rivals, which stands in contradiction with the deepening of the integration process between the EAEU countries, especially in terms of industrial cooperation. Their national industrial policies should be coordinated with the objective of achieving synchronized policies in key sectors.



Correlation between GDP and CIP indexes of the EAEU

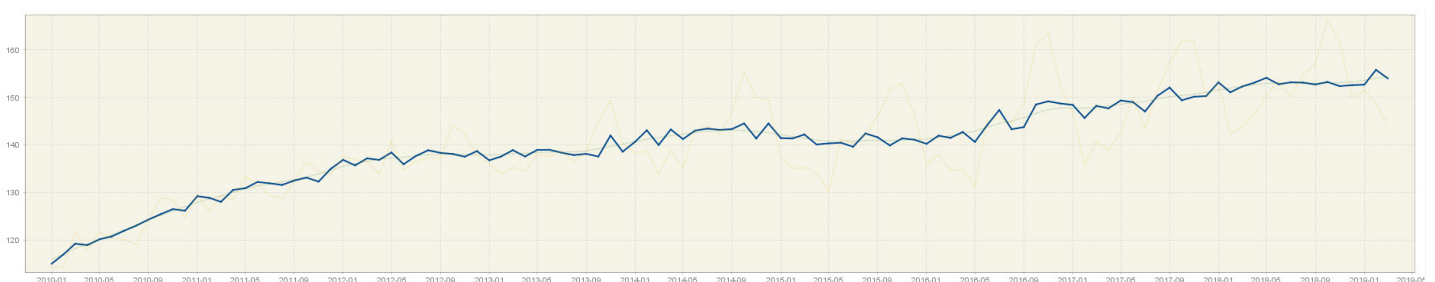
## THE INFLUENCE OF SEASONAL ADJUSTMENT AND CALENDAR EFFECTS ON THE TIME SERIES OF RUSSIA'S MANUFACTURING SECTOR AT THE 2-DIGIT LEVEL SINCE 2010

This study analyses the influence of seasonal adjustment and national calendar effects on the time series of Russia's manufacturing sector for the period 2010 – 2019. We find that seasonal adjustment has a significant impact on Russia's original time series. Seasonal adjustment provides a more nuanced picture of the data than year-over-year comparisons. It is an ideal measure for analysing the specificities of national manufacturing and to recognize trends in current manufacturing dynamics, to explore a country's economic situation in retrospect or to determine its current position. Applying the national calendar to the seasonally adjusted time series may, however, be ambiguous, i.e. the calendar effects vary from significant to virtually invisible. Calendar effects have a higher impact on the time series of those months with long holidays. On average, calendar effects account for a difference of 0 to 2 per cent from the seasonally adjusted series. However, even the slightest change in the results provides more accurate statistical data. That is why the significance of the national calendar should not be neglected or underestimated. The indices are published in UNIDO's Quarterly IIP database, available at UNIDO Statistics Data Portal. Beginning with the year 2020, UNIDO has also started publishing monthly and regularly updated data on world manufacturing production in the Monthly IIP database. The most

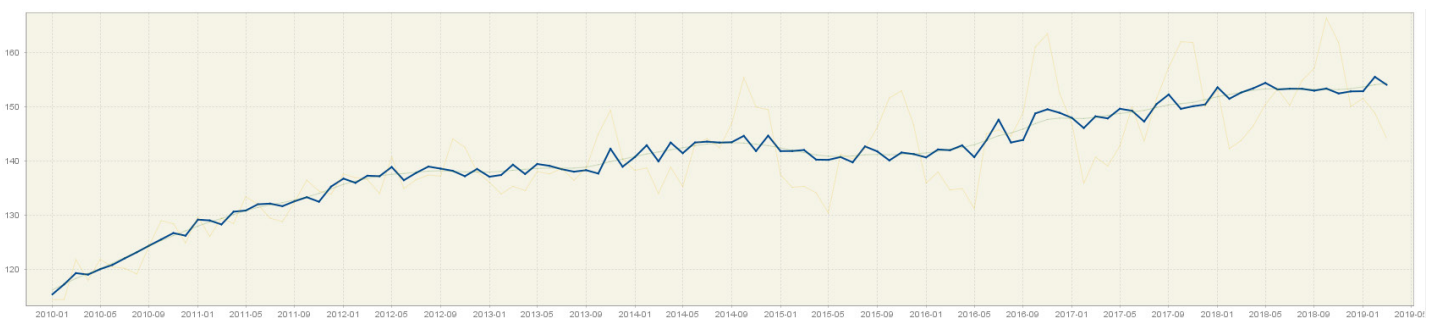
recent quarterly report on world manufacturing production is available here.

## BUSINESS AND CONSUMER SURVEYS IN RUSSIA: FOCUS ON ECONOMIC SENTIMENT AND GDP GROWTH

This study determines the effectiveness of using assessments and expectations of economic agents in the analysis of macroeconomic development. It tests the hypothesis of the cyclical interaction between economic growth and entrepreneurial behaviour. The composite economic sentiment indicator (ESI), which combines the confidence indicators of all sectoral business and consumer surveys of the Federal State Statistics Service and the Higher School of Economics, reflecting the aggregate sentiment and expectations of approximately 24,000 entrepreneurs and 5,000 consumers, was used in the analysis. A two-dimensional vector autoregression model was used to estimate GDP growth until the end of 2021. Forecasting considers the expected impact of new coronavirus-related shocks on the Russian economy and on the aggregate economic sentiment. The forecasting results show an expected sharp decline in GDP dynamics in mid-2020 due to the coronavirus containment measures, accompanied by a tremendous drop in oil prices, followed by a slow and unstable recovery in GDP growth by the end of 2021 to the level of Q4 2019.



Seasonally adjusted time series excluding calendar effects



Seasonally adjusted time series including calendar effects

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