



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



# PRS NEWSLETTER

Policy Research and Statistics Department

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Dear Readers,

During the month of May, the Statistics Division has published its flagship [International Yearbook of Industrial Statistics](#) for 2020, which provides economists, planners, policymakers and entrepreneurs with global statistics on the current level, structure and trends in the manufacturing sector.

The [Competitive Industrial Performance \(CIP\) Report 2020](#), which benchmarks countries' ability to produce and export manufactured goods competitively was also recently published. In addition, the newsletter presents the results of the *Inclusive and Sustainable Competitive Industrial Performance Index* (ISCIP), which expands the CIP index by not only including indicators on industrial competitiveness, but social and environmental indicators as well.

A [high-level expert consultation](#), which took place on 18 May, reflected on the role manufacturing will play in the post-pandemic recovery. The consultations will furthermore inform UNIDO's ongoing research work for the Industrial Development Report 2022, UNIDO's flagship publication ("*The Future of Industrialization in a Post-pandemic World*"). The event convened 12 eminent scholars such as Justin Yifu Lin, Jeffrey Sachs, Joseph E. Stiglitz, and Mariana Mazzucato, among others.

This newsletter contains a lot more valuable information on PRS's work and contributions, for example, in the field of inclusive and sustainable industrial development; science, technology and innovation; the Fourth Industrial Revolution, and the role of women entrepreneurs in the clean technology sector. I sincerely hope you will enjoy reading it.

## Hiroshi Kuniyoshi

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

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Our newsletter mailings are a convenient way to stay connected and keep readers up to date on PRS's latest news. Previous editions of the newsletter are available [here](#).

We welcome any feedback, comments and suggestions for further improvements at [prsnewsletter@unido.org](mailto:prsnewsletter@unido.org).

## PUBLICATIONS

### [International Yearbook of Industrial Statistics](#)

*By UNIDO Statistics*

UNIDO's International Yearbook of Industrial Statistics 2021 provides worldwide statistics on the current level, structure and trends in the manufacturing sector. It is designed to facilitate international comparisons of manufacturing activity and industrial development, including short- and long-term patterns of growth, structural change and industrial performance in individual industries as well as regional/development groups. This year's edition of the Yearbook finds that the various COVID-19 containment measures directly impacted manufacturing by disrupting global value chains and restricting the movement of people and goods, leading to a general slowdown in demand. Once the virus's first wave subsided and the restrictions were partially lifted, global economic activity inched back towards previous growth trends. However, new waves have continued to affect most countries. World MVA is estimated to fall by 8.4 per cent in 2020. The impact is not the same everywhere, however: while MVA in industrialized economies is expected to drop by 12.4 per cent, forecasts for China point to a decline of only 1.3 per cent. The MVA of other developing and emerging economies is expected to fall in line with the world average. To order the publication, visit [here](#).

### [Competitive Industrial Performance Report 2020](#)

*By N. Correa (UNIDO) and V. Todorov (UNIDO)*

The 2020 edition of the CIP report provides a global overview of the competitiveness of countries' industrial performance, ranking 152 countries using a composite index based on three dimensions: 1) the capacity to produce and export manufactured goods; 2) technological deepening and upgrading; and 3) world impact. This CIP report includes two particularities: it connects the COVID-19 pandemic with countries' industrial competitiveness during the pre-pandemic period, and includes an extensive analysis of Africa's industrial competitiveness. Industrialized economies continue to dominate in most dimensions of industrial competitiveness, but significant disparities exist in countries' capabilities—even among industrial leaders—to produce and export manufactured goods, in their levels of technological deepening and upgrading, as well as their impact on world manufacturing trade and world manufacturing value added. European countries have a particularly high capacity to produce and export manufactured goods, while Eastern Asian countries stand out in terms of their world impact and technological deepening and upgrading.

### [Nonstructural analysis of productivity growth for the industrialized countries: a jackknife model averaging approach](#)

*By A. Isaksson (UNIDO), C. Shang and R. C. Sickles*

This journal article, which appeared in [Econometric Reviews, Vol. 40\(4\)](#), argues that although all different approaches to productivity and efficiency measurements have their merits, they generate different results and it is nearly impossible to determine which of them produces "true" estimates. The authors therefore suggest averaging across the

results generated by those measurements. They describe the jackknife model averaging estimator developed by Hansen and Racine ([2012](#)) and illustrate how to apply it to a set of competing stochastic frontier estimators. The derived method is then used to analyse productivity and efficiency dynamics in 25 highly industrialized countries over the period 1990 to 2014. The results demonstrate that the model averaging method provides relatively stable estimates in comparison to standard model selection methods that simply select one model with the highest measure of goodness of fit.

### **[Modernizing products and services of industrial statistics in the context of the Sustainable Development Goals](#)**

*By UNIDO Statistics*

This report presents concrete examples of new practices in India, Angola, Kenya, the Republic of Korea and other countries to improve the compilation, processing and analysis of industrial statistics. Some of the areas covered include the use of administrative records, big data and composite indicators. Such practices allow for increased availability and improved quality of industrial statistics, and are an important asset for monitoring SDG progress and provide essential guidance for industrial policy.

### **[UNIDO ISID Working Paper Series](#)**

#### **[Energy prices and firms' economic performance in emerging countries](#)**

*By M. Cali, N. Cantore (UNIDO), G. Marin, M. Mazzanti and F. Nicolli*

The relationship between energy price dynamics and competitiveness is crucial in the transition to environmental and economic sustainability. On the one hand, rising energy prices might induce process innovations and increase mark ups, thereby intensifying competitiveness. On the other, higher prices are expected to reduce competitiveness, because firms bear short-run costs that can only partially be transferred to consumers. Sectors and firms in emerging economies are less mature and more vulnerable to external shocks, and require special attention in light of global development challenges. This paper evaluates the direct and indirect impact of energy prices on firms' economic performance for 11 developing countries over the period 2002–2013. The empirical analysis reveals that higher energy prices generally do not harm economic performance and may actually reinforce it in some cases. The scope and direction of this effect, however, depends on the individual firm's energy intensity.

### **[The inclusive and sustainable competitive industrial performance index \(ISCIP\)](#)**

*By N. Cantore (UNIDO) and C. F. C. Cheng (UNIDO Consultant)*

The Sustainable Development Goals (SDGs) induce countries to adopt appropriate diagnostics and monitoring and evaluation tools to design strategic policies for development. SDG-9 "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation" calls on developing countries to boost industrialization by increasing their competitiveness. The Competitiveness Industrial Performance Index (CIP) is a flagship index designed by UNIDO to measure the performance of countries' industrial competitiveness. The Inclusive and Sustainable

Competitive Industrial Performance Index (ISCIP) is a first attempt to expand the CIP index by including industrial competitiveness, social and environmental indicators. Our results indicate that compared to the traditional CIP index, countries' ISCIP rankings change, but that high income countries tend to remain at the top of the list. Using different methods of aggregation, the results are surprisingly consistent.

## IAP Articles

### [Why industrial development matters now more than ever before](#)

*By Director-General LI Yong*

There is clear evidence that a thriving manufacturing sector is key to increased productivity, and consequently, economic growth. Inclusive and sustainable industrialization provides the productive foundation for economic growth and the prosperity of nations, with multiple positive spillovers into other areas of life, such as social and environmental outcomes. It will play a crucial role in the economic recovery from the COVID-9 crisis and in initiatives to “build back better”. We need to therefore ramp up collaboration between all stakeholders, including governments, donors, international organizations, the private sector and civil society, to support the industrial sector in developing countries and economies in transition and prepare it for the challenges associated with the ongoing rapid digital transformation and the much-needed transition towards a more inclusive and sustainable future.

### [Women in cleantech are key levers for an inclusive recovery](#)

*By M. Dolun (UNIDO), S. Biegel, C. Rajan and V. Shaba*

The cleantech sector with its potential to create sustainable, resilient and inclusive employment is crucial for a green recovery from the COVID-19 crisis and for building back better. The challenges for women entrepreneurs in this sector are further compounded by the already well-known hurdles cleantech businesses generally face. In addition to discriminatory gender norms, women-led SMEs account for a disproportionate share of the SME finance gap, and their reduced access to knowledge and networks is reflected in unequal access to market and procurement opportunities. To foster the transition to a green economy, the business sector as a whole must shift its paradigm from focusing on quick revenue to providing sustainable medium- to long-term capital investment, combined with support networks that are inclusive of women, the sensitization of stakeholders on their gender-related biases and the creation of more mentoring opportunities for women in the cleantech sector.

### [Transforming production: how developing countries can digitalize](#)

*By A. Andreoni, H.-J. Chang and M. Labrunie*

The Fourth Industrial Revolution (4IR) is increasingly blurring the boundaries between physical and digital production systems. Developing countries face considerable challenges if they are to benefit from the transformations generated by the 4IR. They cannot simply leapfrog from Industry 1.0 or 2.0 to Industry 4.0; a gradual process of learning, developing and accumulating foundational capabilities rather than specific technological and production capabilities is necessary to truly take advantage of the

opportunities 4IR can unlock. This entails a mix of skills development, engaging in production, active industrial policies and the development of supporting institutions. Once these foundational capabilities are in place, several opportunities for leapfrogging open up across all sectors.

### **Building technological capabilities for the 4IR: a novel framework**

*By F. Santiago (UNIDO), J. A. Peerally, C. De Fuentes and S. Moghavvemi*

The authors' proposed 4IR technological capability building framework differentiates between four increasingly complex levels of 4IR technological capabilities across six clusters of firms' technological and organizational functions. Each of the six clusters consists of a set of refined human and organizational activities, skills, knowledge and resources required by firms to generate and manage digitalization and to join the 4IR. The four levels of increasing technological capability complexity that are necessary to move from 4IR readiness to the maturity level range from the *retrofitting and readiness capability* stage to the *smart – intelligent – capability* stage. The framework is a useful tool to inform firms' decisions on which efforts to focus on in order to upgrade and make the best possible use of 4IR technologies and processes.

### **How can organizations 'lay out the pipes' for automation success?**

*By T. Castagnino and J. Thomas*

The authors explore the impact of the introduction of Robotic Process Automation (RPA) on a typical workflow involving around 500 employees. Productivity metrics (e.g. how long it takes to resolve requests) were recorded one year before and one year after the introduction of RPA, and merged with data such as worker demographics, annual performance assessments, pay and time spent "on-the-job". The results show that the productivity gains were shared by all stakeholders, including the workers. Pay raises in the year following RPA rollout were up for those who remained in their initial business units compared to workers who were redeployed to other units. This implies that organizations must create opportunities for employees who do not gain from the benefits of automation to help them realize their full potential. Hence, understanding automation's potential consequences can help increase its overall benefits, while the optimal use of internal value levers—such as talent—can make all the difference in this regard.

## **RECENT EVENTS**

### **SDG Series of Webinars for the Arab Region: SDG 9.2.1, SDG 9.3.1, SDG 9.3.2, SDG 9.4.1, and SDG 9.b.1, 10 May**

UN ESCWA, in collaboration with custodian agencies, is organizing a series of SDG webinars for the Arab Region. The webinars are targeted at all producers of official statistics in the Arab Region. The main objectives are enhancing the understanding of metadata; improving statistical capacities to stimulate production and the use of comparable SDG indicators; strengthening inter-institutional coordination to foster the production of SDG indicators and data flow, and the sharing and discussion of country challenges in measuring SDG indicators. PRS's Fernando Cantu and Petra Kynclova

provided a training on the respective indicators in which they addressed the main data sources and computation methods for SDG-9 industry-related targets. In addition, participants learned about UNIDO tools to track countries' progress on SDG-9 industry-related targets and indicators, namely the SDG-9 statistical data platform and the IAP SDG-9 Industry Tracker.

### **Manufacturing responses to COVID-19: Lessons for governance and policy coordination in the face of global disasters – High-level Expert Consultation for IDR 2022, 18 May**

This high-level expert consultation convened renowned scholars on economic development, including [Justin Yifu Lin](#), [Célestin Monga](#), [José Antonio Ocampo](#), [Jeffrey Sachs](#) and [Joseph E. Stiglitz](#), to name a few, to reflect on the role manufacturing will play in the post-pandemic recovery and to inform UNIDO's ongoing research work for the Industrial Development Report 2022 ("The Future of Industrialization in a Post-pandemic World"). The consultation revolved around three key themes: 1) What role for multilateralism and international policy coordination in supporting industrial recovery? 2) How can global industrial production systems become more inclusive, sustainable and resilient? and 3) How to design and implement post-pandemic industrial policies?

The experts emphasized the need to leave no one behind, which calls for access to vaccines and medicines and enhancing the capacity to produce these in the South; access to financing to support recovery; and debt relief. Recovery efforts must also focus on environmental sustainability and ensure that developing countries can access the technologies they need to engage in green industrial transformation. The experts furthermore agreed that increasing and improving investment in digital infrastructure and capabilities is key for industrialization in developing countries. The need to nurture state capacities to anticipate and address emergencies was highlighted as well. Shifting the focus on the adoption of outcomes-oriented industrial strategies rather than sector-specific ones will also be crucial in the future.

## **PLANNED EVENTS**

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### **Fostering inclusive and sustainable global value chains: the role of the G20, 4 June**

A significant share of global production takes place in global value chains (GVCs). Participating in GVCs is widely associated with economic benefits, such as productivity and employment creation, and considered one of the driving forces of growth and development worldwide. However, the sustainability of production in GVCs is increasingly contested, and associated social and environmental costs can be hefty. This webinar, which is co-organized by UNIDO and the [International Affairs Institute](#) (IAI), and supported by the [Kiel Institute for the World Economy](#) (IfW Kiel) and the [German Institute for Global and Area Studies](#) (GIGA), will offer insights into what it takes for multilateral actors, such as the G20 and others, to address and mainstream sustainability into the global production and trading systems. Register to participate in the webinar [here](#).

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## PROGRAMMES AND PROJECTS

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### PCP Egypt

Director-General LI Yong and Prime Minister Mostafa Madbouly of the Arab Republic of Egypt signed the [Programme for Country Partnership \(PCP\)](#) to advance Egypt's inclusive and sustainable industrialization. In his speech at the signing ceremony, the DG explicitly mentioned the country diagnostic as a key contribution to the resultant PCP. During the 2019 PCP programming phase, UNIDO (supported by PRS) and national ministries conducted a country diagnostic, which revealed that Egypt's manufacturing sector has made notable achievements in manufacturing and trade over the last decade, but that there is room to upgrade the manufacturing sector, to promote renewable energy sources, the valorization of waste and enhance preparedness to reap the benefits of the Fourth Industrial Revolution. The PCP will focus on industrial policy and governance, investment promotion, green industry, smart cities and sustainable industrial parks, value chains, and mainstreaming Industry 4.0 in priority industrial sectors, including chemicals, electronics, food, textiles, leather, furniture, and handicrafts.

## Science, Technology and Innovation (STI)

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### Session 5: Emerging science and technology trends, challenges and the SDGs, 5 May

This session, which took place within the scope of the [6th Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals](#), explored the latest developments in science and technology and their current and potential future impacts on sustainable development and the SDGs. Updated elements of the "TFM findings on the impacts of rapid technology change on the SDGs" were introduced, bringing together views of experts from the UN system, the [10-Member Group](#), scientist and engineers active in the Technology Facilitation Mechanism ([TFM](#)). The session explored technology convergence and the multiple technology divides, including the gender digital divide, and other challenges associated with these trends related to clusters such as blockchain, biotechnology, nanotechnology, artificial intelligence and quantum technologies. PRS's Fernando Santiago and Hyunjoo Kim contributed to the [UN Interagency Task Team on STI for the SDGs](#) (IATT) Report for the Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals 2021 "[Emerging science, frontier technologies, and the SDGs Perspectives from the UN system and science and technology communities](#)".

### Training session for Latin America on policies and policy instruments in Science, Technology and Innovation for the SDGs, 10–12 May

Within the scope of the [UN Interagency Task Team on STI for the SDGs](#) (IATT) [Workstream 6](#) "Capacity building in science, technology and innovation (STI) for SDGs", two well-attended training sessions were organized in [April](#) (see April PRS newsletter) and in [May](#) in LAC (with 102 and 120 participants from different countries, respectively). The training session in May was targeted at provincial and local government officials unlike the April

session, which was primarily focused on central government officials. PRS's Fernando Santiago made a presentation in the Session on "Promotion of innovation and entrepreneurship", which discussed government support for start-ups, SMEs and innovators, as well as best practices and success stories of innovation in response to crises and global challenges and the direct impact of policies on innovation. Fernando's presentation is available [here](#) (in Spanish).

### **Virtual experts' validation meeting on draft SADC STI training framework, 26–28 May**

The [Workstream 6](#) (WS6) coordinators had a discussion with [SADC / DSI South Africa](#) about a WS6 partnership involving capacity development on STI policies for the SDGs. SADC suggested integrating WS6 training as part of a training framework that is currently being discussed with other partners, including the UNESCO regional office in Harare, the University of Sussex and South African universities. SADC invited WS6 to present an outline of PRS training on the 2nd day of the workshop (27 May). In this session, UNIDO will be the only WS6 member agency to join the co-leaders UNESCO and UNCTAD in delivering sample presentations of the joint training programme. This will be an introduction to a more structured online workshop like the one delivered in LAC in April and May (see above).

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