Dear Readers,

Following the strong economic rebound witnessed in 2021, the World Bank’s latest Global Economic Prospects report (January 2022) estimates that global growth will decelerate considerably in 2022 and continue to decrease into 2023. It was expected that all advanced economies would report a full output recovery by 2023, but that the output in developing economies would remain 4 per cent below their pre-pandemic trend and potentially be even lower for many vulnerable economies. These projections were made prior to the outbreak of the armed conflict in Ukraine, which comes at a time when the world is still reeling from the social and economic impacts of the COVID-19 pandemic.

How the events in Ukraine will unfold in the coming weeks and months remains unclear. It is very likely, however—as was the case of the pandemic—that the effects and the intensity of this crisis will be uneven in different regions, countries, industries, firms and individuals. What the pandemic has also taught us is that a localized disruption in one region of the world can have major ripple effects and cause huge disruptions in faraway regions. The economic consequences of the pandemic, including surging inflation and commodities prices, strained supply chains and public debt spikes are now being further compounded by the crisis in Ukraine.

COVID-19 spurred digital adoption at both the industry and firm level, clearly emphasizing the key role of science, technology and innovation not only in the health industry but also for sustained economic competitiveness and the creation of new business areas. The conflict in Ukraine could further intensify the discussion on trade dependence in strategic goods, a process that was already initiated during the COVID-19 pandemic. Moreover, the debate about energy security, which implies a diversification of energy supplies, has now gained even more momentum alongside the urgency associated with climate change. The need to accelerate the transition to renewables and to search for alternative energy sources and new technologies is more crucial at this moment in time than ever.

Some of the contributions in this issue of the PRS newsletter address the pressing issues mentioned above, namely the significance of science, technology and innovation for
economic growth and for increasing resilience and the search for energy security and energy diversification.

I would furthermore like to take this opportunity to applaud the fact that the Statistics Department’s Data Portal is now openly available, at no charge. Data are crucial for guiding policy, informing national priorities and programmes and for monitoring progress. Providing governments, the private sector, academia and individuals access to these important data will significantly enhance the dissemination of industrial statistics worldwide.

I invite you to read on to learn more about PRS’s valuable contributions. I hope you enjoy reading our newsletter!

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

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.

PUBLICATIONS

Journal Articles

International organisations and the future of work: How new technologies and inequality shaped the narratives in 2019

By D. Grimshaw

This article, which was published in the Journal of Industrial Relations, Vol. 62(3) was not produced by PRS per se, but Grimshaw (former Director of the ILO’s Research Department) critically reviews prominent flagship reports of five international organizations, namely of UNIDO, the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the United Nations Development Programme (UNDP) and the World Bank. In this context, he reviews the Industrial Development (IDR) 2020 “Industrializing in the digital age”, which is highly acclaimed throughout the article. Grimshaw, for example, states: “By far the richest analytical account is presented in the UNIDO (2019) report, reflecting its deeper intellectual association with the literature on innovation, firm capabilities and uneven development” (p. 482) or “Valuable detail is presented in the UNIDO report, which devotes an explicit section (of around six pages) to investigating the gendered nature of new technologies on manufacturing employment in developing and emerging economies.” (p. 487). This article reiterates the relevance and the high quality of UNIDO’s IDR series and the hard work put into it. The article explores how the policy narratives set out during 2019 and early 2020 have characterized the main future of work challenges associated with new technologies and inequality.
The sustainability of multinational enterprises’ pandemic-induced social innovation approaches

By J. A. Peerally, C. De Fuentes, F. Santiago (UNIDO), S. Zhao

This article, which appeared in the journal Thunderbird International Business Review, Vol. 64(2), examines the impact of the COVID-19 pandemic on multinational enterprises (MNEs). Many MNEs adopted social innovation approaches to meet the needs of vulnerable societal groups by swiftly innovating their business models; drastically changing their product offerings and customer bases; and producing COVID-19 necessities. These approaches alleviated some key pandemic-induced societal challenges related to health. Secondary sources of information are used to exemplify these different types of MNE pandemic-induced social innovation approaches. The discussion is open whether these approaches are transitory in nature or whether they can and should be sustained in the long term. The article concludes by redefining MNEs’ social innovation and suggesting avenues for scholars, practitioners and policymakers to support this momentum in MNEs which, if sustainable, could be fruitful for addressing other pressing grand challenges such as climate change, food security, poverty, and inequality.

Does value chain participation facilitate the adoption of Industry 4.0 technologies in developing countries?

By M. Delera, C. Pietrobelli, E. Calza (UNIDO Consultant) and A. Lavopa (UNIDO)

This article, which appeared in the journal World Development, Vol. 152, provides novel evidence on the determinants of the adoption of new technologies at firm-level. The article first discusses how the process of transferring and adopting new technology is not seamless, particularly when the pace of technological change accelerates and more advanced capabilities are required for the effective operation of new technology, as in the case of advanced digital production technologies associated with Industry 4.0. The paper then proposes a framework for the firm-level analysis of the drivers of adoption of advanced digital production (ADP) technologies associated with Industry 4.0 in developing economies. Moreover, it investigates whether firms’ participation in global value chains (GVCs) can facilitate the adoption of Industry 4.0 technologies in the manufacturing sector. Using a novel UNIDO database on firms’ adoption of different generations of production technology in Ghana, Viet Nam, and Thailand, this study shows that firms’ participation in GVCs is positively associated with the adoption of Industry 4.0 technologies. The results furthermore suggest that the adoption of ADP technologies is positively associated with firm-level performance.

Working Papers

Short-term forecasting of economic growth in Russia amid uncertainty based on the opinions of entrepreneurs and consumers

By L. Kitrar, Lipkind, T., Gumenyuk, K. (UNIDO)

This paper analyses the short-term effects of aggregate economic sentiment on expected GDP growth in the Russian Federation based on the results of regular large-scale business and consumer surveys for 1998–2021. It investigates the predictive value of economic agents’ opinions and expectations in the context of crises and uncertainty. A composite economic sentiment indicator (ESI) combines 18 quarterly time series – the results of
surveys of around 24,000 organizations engaged in economic activities and 5,000 consumers in all regions of Russia. A vector autoregression (VAR) model with dummy variables is applied to measure the relationship between quarterly gross domestic product (GDP) growth and ESI time series as well as short-term GDP growth forecasting. Scenario forecasts until the end of 2022 are determined by GDP growth response to impulses in the ESI. Under all forecast scenarios, economic growth in Russia will move into a phase of sustainable recovery which will become more pronounced in the second half of 2022.

**Other Publications**

**Characterizing UNIDO’s approach to science, technology and innovation: A review of project evaluations 2010–2020**

By F. Santiago (UNIDO), C. Contreras (UNIDO Consultant)

The main objective of this study, which is an output of Project 190131 *Development of a strategic framework for UNIDO’s approach to science, technology and innovation for the achievement of Sustainable Development Goal 9*, is to understand how science, technology and innovation (STI) are promoted in the inputs, processes and outputs of UNIDO’s interventions, and to relate this practical understanding of STI to the long-term impact on inclusive and sustainable industrial development (ISID) that UNIDO aims to achieve. To this end, this report presents the findings from a qualitative analysis carried out on a set of UNIDO’s project evaluations from 2010 to 2020, to deconstruct the link between STI inputs and outputs, as expressed in project activities and their contributions to ISID and the sustainable development goals (SDGs).

**IDR Background Papers 2022**

All 13 Background Papers, which the *Industrial Development Report 2022* drew on, are now available for download [here](#).

**IAP Articles**

**Green Hydrogen: Fuelling industrial development for a clean and sustainable future**

By T. Altenburg, M. Albaladejo (UNIDO), S. Fokeer (UNIDO), N. Wenck (UNIDO) and P. Schwager (UNIDO)

Nearly all countries have committed to decarbonize their economies in the coming decades and many large corporations have announced plans to cut their carbon footprint to net-zero. This requires massive upscaling of renewable power to replace fossil fuel-based power plants to meet the increase in global demand for electricity. There are four main channels through which green hydrogen can either directly or indirectly spur industrial development. Firstly, huge investments in renewable power will be necessary to replace fossil fuels in the power sector. Secondly, the conversion of renewable power into green hydrogen requires investments in electrolysers. Thirdly, countries that can achieve abundant production of renewable power and green hydrogen at low cost will inevitably increase their attractiveness for a range of energy-intensive industries, including the steel and chemical industries. Fourthly, advanced innovation systems and Industry 4.0 technologies can help countries overcome the costs and inefficiencies associated with
green hydrogen production while exploiting the growing market for hydrogen-based technology exports.

**Industrialization challenges in the digital age**

*By J. Hauge*

There are growing fears that new automation technologies will start displacing jobs at a faster rate than they have in the past, and that manufacturing jobs in the Global South are particularly at risk. However, automation technology also has the potential of creating jobs; technological advancement is associated with productivity growth, which in turn is associated with job growth. Secondly, new technologies give rise to new industries and new jobs and third, the use of automation technologies can drive down the price of consumer goods. There is therefore good reason to be optimistic about its net impact on employment. The expansion of global value chains, in turn, has positive benefits for industrialization in the Global South, such as increased integration into the world economy through more trade and inflows of foreign direct investment. It also has negative impacts, namely the fact that a small number of large transnational corporations (mostly based in the Global North) have consolidated increasing shares of profits over a larger market.

**Land rezoning and structural transformation in rural India**

*By D. Blakeslee, R. Chaurey, R. Fishman and S. Malik*

Reducing regional inequality by moving jobs to people remains a primary policy objective all over the world. This has led to the increased use of place-based policies such as the Industrial Areas (IA) programme in the state of Karnataka, India, in which the local government acquires contiguous parcels of privately held agricultural land and rezones them for non-agricultural activities, thereby making them available to private firms for sale or lease at market rates, but not providing any other financial benefits. The study shows that the IA programme has been highly successful in promoting economic development within the IA zone (in terms of creation of new firms and jobs). There is also evidence of substantial economic spillovers to areas bordering the IA and beyond. While new firms within IAs are mostly large manufacturing firms, newly created firms outside IAs mainly engage in the agricultural and service sectors. Employment growth is higher in IAs located closer to major highways and cities, reflecting the importance of market access. Second, the impacts on firm growth and labour-force composition amongst the villages located in close proximity to IAs are lower where the baseline levels of agricultural productivity are higher, perhaps due to the higher opportunity cost of exiting agriculture in such locations.

**RECENT AND FUTURE EVENTS**

**Committee for Development Policy Plenary 2022, 20-24 February 2022**

RPA, together with UNIDO’s New York Office, participated in the Committee for Development Policy (CDP) Plenary 2022. CDP analyses and monitors the potential of least developed countries (LDCs) to graduate from this category, as well as the development of past “graduates”. This year’s CDP focused on industrial policy, in particular building back better. The discussion on industrial policy (IP) was a reminder of the many definitions
being used by different organizations and academics alike. Other issues discussed included the role of economic recovery post-COVID-19, the focus on capabilities rather than sectors, how effective IP can contribute to greater equality and that environmental innovation is an opportunity to break with traditional specialization patterns. However, IP needs supportive regional and global networks. Other important IP-related topics concerned the lack of capacity to implement policies, the need for sunset clauses and the problem of rent-seeking behaviour, all of which have a strong bearing on RPA’s policy work.

**Online course with the University of Saint Joseph, Second module on industrial policy**

UNIDO’s Policy Research and Statistics Department recently concluded the second module of the Master’s degree course offered jointly with the University of Saint Joseph in Beirut, Lebanon. Following the first course on circular economy and eco-design, which took place in autumn of 2021, the new module dealt with inclusive and sustainable industrial development and evidence-based industrial policymaking. It gave students an overview of industrial policy and its relationship with evidence before delving into specific issues such as, inter alia, industrial competitiveness, productivity, value chains and the circular economy.

**Competitiveness, growth and crisis, Joint Vienna Institute, 21 February – 4 March 2022**

The Statistics Division participated in the annual course ‘Competitiveness, Growth and Crisis’, organized by the Joint Vienna Institute. This course enables participants to understand the relevance of competitiveness of countries, industries and firms. The course also critically discusses and interprets various indicators related to competitiveness, covering aspects such as long-term growth potential, patterns of specialization and short-term imbalances, as well as aspects related to the current economic crisis. The participants were invited to provide short presentations on their countries’ competitiveness profiles and to derive policy implications. UNIDO Statistics introduced the UNIDO Competitive Industrial Performance (CIP) index, including the underlying methodology and the latest scores for countries and regions, as well as ongoing plans to expand the conceptual coverage of the index to all dimensions of industrial and sustainable industrial development.

**Innovation et Transformation digitale, pour un développement de l’industrie 4.0 en Afrique, 24 February**

This event was organized by the UR in Cameroon and focused on innovation and digital transformation for the development of Industry 4.0 in Africa, and was held as part of the Promote Cameroon 2022 fair. PRS’s Fernando Santiago made a virtual presentation entitled “Digital Readiness Diagnostic Tool – Stairway to Industry 4.0” which was a summary of this industrial digitalization tool which is part of EQUIP.
Public-sector capacity building for innovation and industrialization in developing countries, 22 March 2022

UNIDO, in collaboration with the Science and Technology Policy Institute (STEPI) and the Government of the Republic of Korea, is organizing an online event on the contribution of science, technology, and innovation (STI) for the achievement of the Sustainable Development Goals (SDGs), with an emphasis on SDG-9. The online event will present recent experiences of a selected number of East Asian countries to illustrate strategies to address gaps in technological capability accumulation and strengthen policy capacities for innovation and industrialization. The event will comprise two parts. First, the report “The Role of science, technology, and innovation policies in the industrialization of developing countries: Lessons from East Asian Countries”, which includes case studies of East Asian countries that have leveraged on STI and industrial policies to achieve rapid industrialization, will be launched. Building on this discussion, the second part will serve to examine what kind of policy capacities are required to implement STI and industrial policies in a post-pandemic world. The case of the Republic of Korea will be used to kick start the discussion.

PROGRAMMES AND PROJECTS

Policy and Research

Global Industrial Policy Advice Facility

The Global Industrial Policy Advice Facility (PAF) has been launched. It is funded by the German Development Cooperation (GIZ) and aims to facilitate policy-related processes in developing countries around the globe. Activities will be conducted at the national, regional and sub-regional levels, involving one or several countries simultaneously. The PAF provides direct short-term, demand-driven policy advisory services to support different moments in the policy-making process—from policy design to implementation—and indirectly by sharing knowledge products and best practices, including policy studies, reviews and briefs. Applications from eligible interested parties can be submitted here.

Project 210230 – Establishment of a multilateral industrial policy forum has been approved. The project provides seed funding to initiate the planning and organization of an annual Multilateral Industrial Policy Forum (MIPF), which will serve as a policy learning and knowledge-sharing event for UNIDO and its partners.

An output of Project 190131 Development of a strategic framework for UNIDO’s approach to science, technology and innovation for the achievement of Sustainable Development Goal 9 has been published Characterizing UNIDO’s approach to science, technology and innovation: A review of project evaluations 2010–2020 (see above under “Publications”). The project supports the creation of a policy and research and engagement programme
on how to leverage science, technology and innovation for the achievement of ISID and SDG-9.

**Statistics**

UNIDO Statistics is pleased to announce that starting in February 2022, the Data Portal has moved to an open data policy. This means that users no longer have to pay a fee to access the databases, nor do they have to register to use it. They may also redistribute the data free of charge, provided that UNIDO is referenced as the source. The change in policy was driven by the fundamental principle that data are crucial in guiding programmes and monitoring progress. UNIDO seeks to promote an evidence-based approach to industrial policy, and this is substantiated by a set of timely, comprehensive and robust indicators. UNIDO Statistics will also introduce a number of significant changes to the Data Portal in coming months. This will include an expanded set of indicators, new products, a newly designed user interface, technical improvements and the expansion of its communication channels. These changes aim to enhance the dissemination of industrial statistics worldwide, not only to serve a specialized audience, but also to inform broader user groups. More information is available at stat.unido.org.