



INDUSTRIAL INNOVATION FOR COMPETITIVE SUSTAINABILITY: SCIENCE-FOR-POLICY INSIGHTS

HIGHLIGHTS

New scientific evidence points out key issues helpful to designing policies and understanding new challenges, such as for requirements of the **digital and green (twin) transition**.

More effort is needed from companies in **gender balance, which can also leverage the twin transition**.

Strengthen the **collaboration of companies with other research & innovation actors** and secure an easy access to state-of-the-art **technology infrastructure** at the local level.

Support young and innovative companies to foster the **growth potential of new ideas**, particularly in **strategic sectors**.

Increase collaboration and support programmes among developed and developing countries in environmental and socio-economic Sustainable Development Goals.

Continue to invest in people's **education and skills, re-skilling and re-training**, particularly in skills needed for hybrid (mix of remote and office-based) work.

Strengthen the Single Market, by reducing fragmentation, improving conditions for competition and better governance.

Industrial innovation policy needs to be transformative, including new directions in objectives and investments, co-creation, a "whole government" approach and anticipation of future change.

Introduction

The global industrial landscape currently faces several disruptions: 1) the COVID-19 pandemic which is inducing a shift in global value chains; 2) the environmental sustainability challenge and the associated social disruptions; and 3) new scientific and technical developments, such as new ways of automating tasks and the digitalisation of many work interactions. Consequentially, policy, and in particular innovation-policy making, is expected to come up with ideas that will help industry to provide solutions for the next decade.

In support of the EU industrial research and innovation policy agenda, on 22-25 November 2021, the European Commission's Joint Research Centre (EC-JRC) organised the 8th biennial European Conference on Corporate R&D and Innovation (CONCORDi)¹ - focused on 'Industrial innovation for competitive sustainability' - in association with the European Association for Research and Technology Organisations (EARTO), the Organisation for Economic Co-operation and

Development (OECD) and the United Nations Industrial Development Organization (UNIDO).

The present science for policy brief draws on the results of this conference. It reviews the core science-for-policy challenges, building upon the novel scientific evidence presented at the conference, and provides potential implications for industrial innovation and its role in sustainability and well-being in Europe and the rest of the world. [1] The issues presented reflect the wide variety of conference contributions for further discussions.

Industrial innovation for competitiveness, sustainability and well-being in times of transformation: a challenge for the EU?

There is a general consensus on the role of research and innovation (R&I) for future prosperity and for solving the challenges and difficulties of our time. If not tackled these will compromise future societal well-being and the health of the planet.

¹ *CONCORDi 2021- Industrial innovation for competitive sustainability* saw the virtual participation of more than 100 speakers and 600 participants. Besides the experience itself, the outputs of the conference are a background note, the present Brief, and the production of a special issue in a peer-reviewed scientific journal.

For further details, please refer to the following websites:
<https://iri.jrc.ec.europa.eu/concordi-2021> (CONCORDi 2021)
https://bit.ly/Digital_Green_Transitions (Special Issue)

Despite the COVID-19 pandemic, industrial R&D investment of the world's top innovators² continued to grow for the 11th consecutive year, in contrast to significant reductions in capital expenditure, net sales and operating profits. [16] Already before the pandemic, over the past 10 years, the rapid R&D growth in the ICT and Health industries has deepened the R&D sector specialisation especially in China and the US. Current R&D growth reflects business transformation for post-crisis opportunities in the EU, mostly in ICT and Health, but also challenges the EU automotive sector beyond the necessary green transformation. This indicates the strategic role of company innovation, and underlines the need for policies which effectively favour the growth of R&I in strategic sectors.

The conference topic "Industrial Innovation for Competitive Sustainability" considers that leadership in environmental protection and a strong, innovative industrial base must be seen as two sides of the same coin towards the longer-term green & digital (twin) transition. This is even more relevant now in the context of economic recovery from the pandemic. On top of this, a particular question is how to combine these transformations in the context of individual countries' recovery plans.

The following sections introduce the key takeaways from the scientific research presented and a summary of key policy insights arising from CONCORDi 2021. A final section briefly concludes.

Emerging scientific evidence

The parallel sessions are a key ingredient of CONCORDi 2021 conference, presenting and discussing 30 scientific papers. Hereafter, key findings from these papers are highlighted, with a reference to the scientific source shown in brackets at each point.

Digitalisation

- Governments can steer the direction of technological change related to Artificial Intelligence (AI). Direct involvement, through patent co-authorship for example, can exert the most influence. [5]
- The adoption of AI in firms does not necessarily lead to wage inequality and a gender wage gap. [7]

² These are 2500 top R&D firms worldwide investing an amount equivalent to 90% of the world's business-funded R&D. [16]

³ The results of the [joint European Commission's JRC – OECD analysis](#), released at CONCORDi 2021, provided evidence that the world's top R&D investors are key contributors to global climate-related innovation. They own 70% of global climate change mitigation or adaptation patents and over 10% of global climate-related trademarks.

Towards climate neutrality

- The world's top private R&D performers have an important role to play in achieving climate objectives, via the development of technologies and facilitating their diffusion.³ [6]
- New technologies to address climate change mitigation seem to come primarily from SMEs and start-ups⁴, which calls for the implementation of sound long-term financing instruments and cross-country data sharing/transfer tools. [11]
- Automotive firms leading or jumping ahead in green technologies exhibit a stronger relatedness⁵ to their non-green technological base than their competitors, highlighting the importance of past technology trajectories in future directions. [8]

Twin digital and green transformation

- There are positive complementarities between digital and environmental transformation, but policymakers should be careful because there is initial evidence that some digital technologies (e.g., robotics) hamper the environment. [9]
- While digitalisation seems to have progressed for climate change mitigation technologies in some areas (e.g., energy and buildings), it has lagged in other relevant domains (e.g., carbon capture, transportation and waste treatment). This "one-size does not fit all" pattern suggests that policy measures supporting digitalisation should be carefully selected among those with the most significant impact potential on climate mitigation. [10]

Gender-balanced transformation

- Firms with higher gender diversity and Corporate Social Responsibility (CSR) compliance innovate more [12], while more women in R&D teams are associated with more eco innovation. [13]
- EU27 companies have on average more gender-balanced boards than their US and Asian counterparts, with a female representation of at least 26% on their boards. [6]

EU cohesiveness and competitiveness

- The availability of R&I funds is *sometimes* proportional to the technological capacity of regions. This may

⁴ OECD (2021), No net zero without SMEs: Exploring the key issues for greening SMEs and green entrepreneurship, OECD SME and Entrepreneurship Papers No. 30. [Available here](#)

⁵ Relatedness refers to two or more technologies being based on similar underlying knowledge, skills or other inputs.

improve the prospect of leading regions further and thus could have negative effects on cohesion. [4]

- Securing Intellectual Property Rights (IPRs) in the destination country is associated with exports to that country and may therefore be a recommended strategy. [3]
- European structural funds help to achieve the double objective of higher productivity and sustainability for EU regions. [2]
- The COVID pandemic is enlarging the digital and employment gap between high growth enterprises and other companies. [14]

Policy insights

Digital transition

A systemic view and approach is needed for new digital technologies, particularly if they are expected to contribute substantially to firm productivity and innovation potential. Most policies in this area have focused on specific technologies (e.g., AI, blockchain, etc.). However, these technologies have much wider implications for other policy areas. Given the recent evidence on the increasing automation of non-routine tasks carried out at the workplace and the tendency for recent digital technologies to converge (for example under the umbrella of industry 4.0 technologies or digital platforms), there is a need to update and upgrade the policy toolbox available to policy makers. An example are the 9 December 2021 Commission proposals to improve the working conditions of people using digital labour platforms with respect to their social rights and the impact on them of algorithmic management.⁶

Green transition

Increasingly, reaching a climate-neutral economic development has been put at the centre of the policy agenda in many countries. Policies aimed at reaching this goal need relevant reforms and investments, as well as a clear understanding of the consequences for important sectors of the economy of the adopting states.

The scientific evidence presented at CONCORDi 2021 highlights that public policies have a critical role to play to stimulate the necessary investments in low-carbon energy sources and production processes across the economy. This requires a comprehensive set of policy instruments – a “green industrial and innovation strategy” – including ambitious technology support, infrastructure planning, pollution pricing, regulatory standards and public procurement.

⁶ See: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6605

Digital, green and/or twin?

The contribution of digital and environmental innovations to the growth of the EU and world economy (both in value added and productivity) will depend on how the digital and green transitions can be efficiently coupled together into a “twin” transition.

In order to ensure the success of the twin transition, changes in mindsets and behaviours will be needed. Policy makers and firms should continue to invest in people’s education and the skills required to innovate, particularly in the new mixed (remote and in presence) hybrid collaboration mode. Re-skilling and re-training of the workforce will also be needed to meet the challenge.

Social inclusion: gender balance

Industrial innovation is expected to contribute to a fair and just transformation by, for example, reducing cross- and within-country disparities i.e. in income and gender. Particularly after the COVID19 crisis, assuring a cohesive industrial recovery might be challenging, unless relevant policy aspects are taken into consideration. Interventions at the CONCORDi 2021 conference highlighted pathways through which gender balance could be tackled in the twin (digital and green) transition context. For example, gender balanced company boards could be favoured, as there is preliminary evidence on their contribution to innovation in general and environmental innovation in particular, with the goal of smoothing the transition to a climate-neutral economy at the industry level. Although the EU seems to be leading in female participation in management and research roles, still more effort should be put towards achieving a more gender-balanced industrial innovation environment given the policy targets.⁷

Industrial specialisation and the global vs local dimensions

The transformation of the EU into a greener, more digitally developed and competitive economy should necessarily be able to integrate both global and local industrial innovation perspectives. Differences among regions variability in the capacity to embrace and bring about successful change is a policy concern (EU, national and local). However, R&I investments tend to be geographically concentrated, raising the concerns of increasing inequality among regions (innovation divide) and how to improve multilevel governance and synergies. Thus, policy interventions aiming at reinforcing and improving the functioning of local innovation ecosystems, particularly in less developed regions, are particularly important. In this context, the interconnection of R&I investment hubs should constitute a policy imperative, in the attempt to link geographically distant areas and fragmented innovation systems.

⁷ For further details please refer to https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en

Technology infrastructures and the key role of stakeholder's cooperation

Technology Infrastructures (e.g., demonstrators, testbeds, incubators and accelerators) are the backbone of dynamic R&I ecosystems. The conference participants voiced the need to develop a European Strategy for Technology Infrastructures boosting technology co-creation, scale-up and diffusion across Europe, and strengthening Europe's technology sovereignty. [17]

In the area of R&I policy, there is a need for an infrastructure to make research more accessible to actors across all the EU territories. In this regard, Research and Technology Organisations (RTOs) can promote the links between actors and facilitate access to shared research capacities.

Finally, there is a need for clear mappings of technology development efforts across actors and places in the EU, to better coordinate efforts and accelerate diffusion of solutions. EU policy initiatives, such as ERA technology roadmaps⁸, contribute to this by developing key performance indicators to monitor and assess progress of innovation and industrial policies within the twin transition and adherence to UN's Sustainable Development Goals (SDGs).⁹

Firm growth for innovation and sustainability

Although large players such as top R&D investors [16] play a key role in R&I investment worldwide due to their size and centrality, radical and game-changing innovations historically came from young and innovative companies which were able to grow and scale-up quickly. The EU has an existing base of smaller firms in ICT and Health across its Member States and excellent technology capacities in key sectors, but it is still affected by the lack of successful scale-up capacity and commercialisation of R&I results [19].

One of the key objectives of EU policy in the medium-term should provide incentives to retain homegrown technologies and firms, and to facilitate their growth into emerging sectors, particularly those green and/or digital.¹⁰ These innovative firms are not only relevant from the perspective of EU innovation investment, but could contribute to sustainable development across a range of strategic sectors (e.g., renewable energy, recycling, advanced manufacturing, transport and bioscience). Policy makers should support the expansion of financial instruments that can ensure the growth of innovative companies.¹¹ The recent EU policies to support SMEs¹² and scale-ups represent a good example of such

policies, but could be still lacking. More policy initiatives are needed to address, e.g., the following [19]:

- Accelerating the process for the venture capital industry and the relevant financial markets to become more mature.
- Contributing to leveraging private capital, rather than being the sole financing vehicle.
- Building supportive entrepreneurial ecosystems and supporting framework conditions for start-ups and scale-ups.

Global partnership

CONCORDi also discussed innovation policy for developing countries. Compared to developed countries, developing countries were differently affected by the pandemic depending on their position in global value chains and the digital and production capabilities they possessed. A strong focus on alternative technology development paths may allow developing countries to leapfrog capability constraints.

There are many lessons about innovation policy that can be transferred from European experience to developing countries. The following points emerged from the policy discussion at CONCORDi 2021:

- The UN's SDGs provide a powerful framework for organising development efforts, which should be linked with local social challenges and made measurable to allow policy makers to monitor progress and take corrective action. Also, SDGs can help policy makers identify policy trade offs, as the SDG describe a system of goals and developmental interdependencies.
- As the development of production capabilities in developing countries depends on both country-level and firm-level determinants, policymakers should pay attention to both framework conditions and specific policies to support firms in their efforts to develop production capabilities.
- The cultural and institutional backgrounds in developing countries produce a different uptake of sustainability programmes by public and private organisations (e.g., universities, SMEs and multinational companies) compared to developed countries. To maximise their impact, policy should be directed to factors highlighted as impediments to the participation to EU and worldwide sustainability programmes, such as low regulatory quality and possible pressure to abandon as the result of private lobbying.

⁸ See https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/era-common-industrial-technologies-roadmaps_en

⁹ Progress in the development of new indicators has been made by Eurostat, and the renewed European Semester will put a particular emphasis on the use of such kind of indicators to track progress towards SDGs at EU, Member State and regional [20] levels.

¹⁰ According to a recent study, across all EU countries, young firms accounted for 36% of employment growth between 2013 and 2017.[5]

¹¹ In general, countries and regions in Europe need all three forms of finance – seed finance, start-up capital and growth capital – for the emergence of companies with growth potential. [15]

¹² E.g.: European Commission – COM(2020) 102 final. 'The 2020 Industrial Policy package' includes also a dedicated Strategy for small and medium-sized enterprises (SMEs; COM(2020) 103 final).

Market fragmentation, competition and governance

Institutional and economic fragmentation puts the EU at a structural disadvantage compared to its main competitors. Larger and more frictionless markets in the United States and China seem to enable quicker scale-up and create more favourable demand for new products and services.

To achieve EU competitive sustainability through industrial innovation, effort in deepening the Single Market into that direction is central. The EU-wide market plays a fundamental role in supporting companies' innovation efforts and the necessary risk-taking attitudes, reducing uncertainty and granting the access to a large market.

Furthermore, policy and, in particular, innovation-policy must aspire to be transformative, backed by principles such as the directionality of objectives and investments, co-creation, the "whole of government" approach and anticipation. [18] The cross-disciplinary nature of the economics of industrial innovation requires – besides a stronger Single Market – further policy integration and coordination between the European Commission and Member States and overall stakeholders. The EU needs to tackle fragmentation of existing support instruments and initiatives in the area of innovation policy to minimise inefficiencies and make it easier to understand and use efficiently all available instruments. New initiatives are being undertaken bringing EU industrial and innovation policies closer together and speeding-up support to specific sectors and technologies, e.g. the proposed Chips Act for semiconductors.¹³

Concluding remarks

In recent years the EU has provided strategic direction, support and important financial resources¹⁴ to face the challenges highlighted in this document. Evidently, such an epochal shift in times of recovery needs the effort of all stakeholders and a robust science-based policy support that could make this new era an opportunity of diffused prosperity.

Moreover, the industrial competitiveness focus of the EU's R&I programme Horizon Europe¹⁵, the renewed European Research Area and European Commission's Communication on industrial policy (2010 and the update of 2021) – all initiatives having a long-term horizon and commitment – are likely to stimulate investments in innovation.

Industrial innovation is expected to become one of the main elements for the competitive sustainability of the EU.¹⁶ Competitive firms have shown to be more resilient during crisis but at the same time this brings about increasing inefficiencies. [14] The much-demanded twin (digital and

green) transition also carries relevant risks related to increasing inequalities (e.g., intra- and inter-regional, economic, social). Therefore, policy will need to play a rebalancing role here by, for example, pushing for well calibrated cohesion policies as well as putting emphasis on cooperation and coordination, with the expanded consideration of nurturing and leveraging partnerships and collaboration to ensure sustainable and inclusive development in other regions. The final objectives are to have private players to explore new technological and business solutions to grant a durable economic recovery and to have policy makers assuring a high degree of sustainability in the overall process.

REFERENCES¹⁷

- [1] Diodato D., Moncada-Paternò-Castello P., Rentocchini F., Tübke A., (2021) 'Industrial innovation for competitive sustainability - Science-to-policy evidence from the 8th European Conference on Corporate R&D and Innovation (CONCORDi 2021)', EUR 30899 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-43376-7, doi:10.2760/143186, JRC127197 ([link](#)).
- [2] Santos A., Barbero J., Salotti S., and Pontikakis D. 'On the road to regional 'Competitive Sustainability': The role of the European structural funds. *Presented at CONCORDi 2021*.
- [3] Moschella D., de Rassenfosse G., Grazzi, M., Pellegrino, G. (2021) 'International Patent Protection and Trade: Transaction-Level Evidence.' *Presented at CONCORDi 2021*.
- [4] Archibugi D., Evangelista R., Vezzani A. 'Regional technological capabilities and the access to H2020 funds.' *Presented at CONCORDi 2021*.
- [5] Iori M., Mina A., Martinelli A. 'The direction of technical change in AI and the trajectory effects of government funding.' *Presented at CONCORDi 2021*.
- [6] Amoroso S., Aristodemou L., Criscuolo C., Dechezleprêtre A., Dernis H., Grassano N., Moussiégt L., Napolitano L., Nawa D. Squicciarini M., Tübke A. (2021) 'World Corporate Top R&D investors: Paving the way for climate neutrality'. A joint JRC and OECD report. EUR 30884 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-43373-6, doi:10.2760/49552, JRC126788 ([link](#))
- [7] Domini G., Grazzi M., Moschella D., Treibich T. 'For whom the bell tolls: the firm-level effects of automation on wage and gender inequality'. *Presented at CONCORDi 2021*.
- [8] Mazzei J., Rughi T., Virgillito M. E. 'Knowing brown and inventing green? Incremental and radical innovative activities in the automotive sector between persistency and transition'. *Presented at CONCORDi 2021*.

¹³ See the following [link](#)

¹⁴ The European Green Deal (2019 - [link](#)) Recovery Plan for Europe/ NextGenerationEU (2021 - [link](#))

¹⁵ The EU new funding programme for research & innovation, which will run from 2021 until 2027, leveraging on its predecessor programme.

¹⁶ See the EC 2021 Autumn Package ([link](#))

¹⁷ Visual aids of most of the papers presented and of the speeches delivered at CONCORDi 2021 are accessible from the hyperlinks in the following webpage: <https://iri.jrc.ec.europa.eu/concordi-2021/programme>

- [9] Bianchini S., Ghisetti C., Damioli G. 'Do the two make a pair? Digital and green transition in European regions and their impact on greenhouse gas emissions'. *Presented at CONCORDi 2021*.
- [10] Chandra K., Yarime M. 'A patent analysis of digitalization in climate change-related technologies: Innovation, corporate strategies, and policy implications'. *Presented at CONCORDi 2021*.
- [11] Bellucci A., Fatica S., Georgakaki A., Gucciardi G., Letout S., Pasimeni F. 'Venture Capital Financing and Green Patenting'. *Presented at CONCORDi 2021*
- [12] Sui S., Ruth D. 'Corporate Social Responsibility, Board Gender Diversity, and Firm Innovation'. *Presented at CONCORDi 2021*.
- [13] Vahter P., Becker B. 'Gender diversity in R&D teams and firms' environmental innovation strategies.' *Presented at CONCORDi 2021*.
- [14] Amaral S., Bauer P., Coad A., Domnick C., Harasztosi P., Pal R., Teruel Carrizosa M.. 'Productivity and HGEs: resilience and potential recovery from Covid-19 pandemic'. *Presented at CONCORDi 2021*.
- [15] Benedetti Fasil C., Domnick C., del Rio J-C., Fákó P., Flachenecker F., Gavigan J., Janiri M. L., Stamenov B., Testa, G. (2021) 'High Growth Enterprises in the COVID-19 Crisis Context demographics, environmental innovations, digitalization, finance and policy measures', EUR 30686 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-37269-1, doi:10.2760/63402, JRC124469 ([link](#)).
- [16] Grassano N., Hernandez Guevara H., Fako P., Tübke A., Amoroso S., Georgakaki A., Napolitano L., Pasimeni F., Rentocchini F., Compañó R., Fatica S., Panzica R. (2021) 'The 2021 EU Industrial R&D Investment Scoreboard', EUR 30902 EN, Publications Office of the European Union, Luxembourg, December 2021, ISBN 978-92-76-44455-8, doi:10.2760/248161, JRC127360 ([link](#)).
- [17] EARTO, 'EARTO paper: Setting-up a European Strategy for Technology Infrastructures', 31/7/2020. Available [here](#)
- [18] Arjona R., Ravet J. (2021) 'Ciencia e Innovación para transformar Europa'. Papeles de Economía Española n. 169. Funcas editor, Madrid (Spain) ([link](#)).
- [19] Quas A., Mason C., Compano R., Gavigan J., Testa G. (2022) 'Tackling the Scale-up Gap', EUR 30948 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-46208-8 (online), doi:10.2760/60455 (online), JRC127232 ([link](#)).
- [20] Fuster Martí E., Massucci F., Matusiak M., Quinquilla A., Bosch J., Duran Silva N., Amador R., Multari F., Iriarte Hermida M., (2021) 'Pilot methodology for mapping Sustainable Development Goals in the context of Smart Specialisation Strategies', Matusiak, M. and Fuster Martí, E. editor(s), EUR 30901 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-44397-1, doi:10.2760/940431, JRC126846 ([link](#)).

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AUTHORS OF THIS BRIEF

Dario Diodato, Pietro Moncada-Paternò-Castello, Francesco Rentocchini and Alexander Tübke (European Commission, Joint Research Centre – Directorate for Growth and Innovation).

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CONTACT INFORMATION

Pietro Moncada-Paternò-Castello
European Commission, Joint Research Centre
Directorate for Growth and Innovation
Knowledge for Finance, Innovation and Growth Unit
pietro.moncada-paterno-castello@ec.europa.eu
JRC-B7-secretariat@ec.europa.eu
<https://iri.jrc.ec.europa.eu/home/>
Edificio Expo - C/ Inca Garcilaso 3 - E-41092 Seville (Spain).
Tel.: +34 95 44 88388.

¹⁸ Román Arjona (European Commission, BEL), Alexandr Hobza (European Commission, BEL), Pietro Moncada-Paternò-Castello (European Commission, ESP), Chiara Criscuolo (OECD, FRA), Fernando Santiago (UNIDO, AUT), Sophie Viscido (EARTO, BEL), Pierre-Alex Balland (Utrecht University, NLD), Bronwyn H. Hall (University of California at Berkeley, USA), Elena Huergo (Universidad Complutense Madrid, ESP), Maria Savona (University of Sussex, GBR), Andreas Pyka (University of Hohenheim, DEU), Gaétan de Rassenfosse (École Polytechnique

Fédérale de Lausanne, CHE), Grazia Santangelo (Copenhagen Business School, DNK), Mariagrazia Squicciarini (UNESCO, FRA), Martin Srholec (CERGE-EI, Prague, CZE); Bram Timmermans (Norwegian School of Economics, NOR), Antonio Vezzani (Roma Tre University, ITA), Rainer Walz (Fraunhofer Institute for Systems and Innovation Research ISI, DEU).