

OECD Business Innovation Indicators

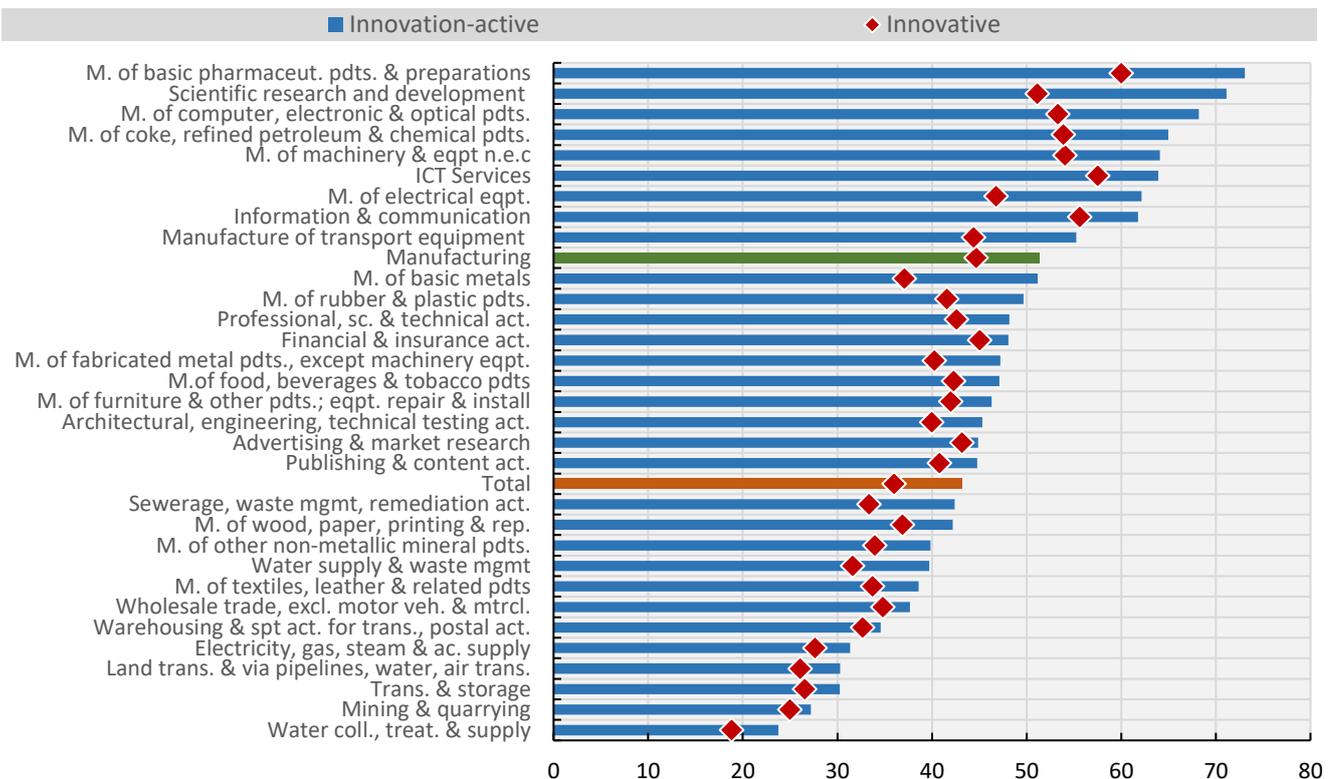
Highlights – April 2022

The **OECD Innovation Indicators** database is a compendium of statistics about the innovation activities of firms across OECD member countries and partner economies. Released every 2 years drawing on the latest data published by countries, the *Innovation Indicators* provide information on the extent to which firms have **implemented new or improved products (goods and services) and business processes**. They show how innovation correlates with business characteristics such as size and R&D status. They also describe the novelty of innovations; investment and collaboration activities with different actors as part of such efforts; linkages between innovation and markets as well as the role of government support. The April 2022 release reports on business innovation activities over the 2016 to 2018 period across 32 countries, as transmitted to OECD in late 2021/ early 2022.

This is the **first edition** of the *Innovation Indicators* that reports data collected under the guidelines of the *joint OECD/Eurostat Oslo Manual 2018*. This publication updated the previous 2005 version by providing more comprehensive and precise definitions as well as innovation taxonomies more attuned to business practices. The indicators adopt as reference the harmonised questionnaire items in Eurostat’s *Community Innovation Survey CIS2018*. Another main novelty in this edition is the release of a module of **core innovation indicators at the industry level**, describing how innovation varies not only across countries but also across industries.

Average innovation intensity by industry, OECD and partner economies, 2016-2018

Numbers of innovation active or innovative firms, as a percentage of total firms by industry



Note: *Innovative firms* are those reporting at least one product or business process innovation in the reference period (2016-2018). *Innovation active firms* comprise all companies engaged in innovation-oriented activities over the reference period, not only those who introduced an innovation. Un-weighted average across countries participating in the data collection. Personal services and primary industries fall outside the scope of innovation surveys.

Source: OECD, based on the 2021 OECD survey of Business Innovation Statistics and the Eurostat’s Community Innovation Survey (CIS-2018), <https://www.oecd.org/sti/inno-stats.htm>, April 2022.

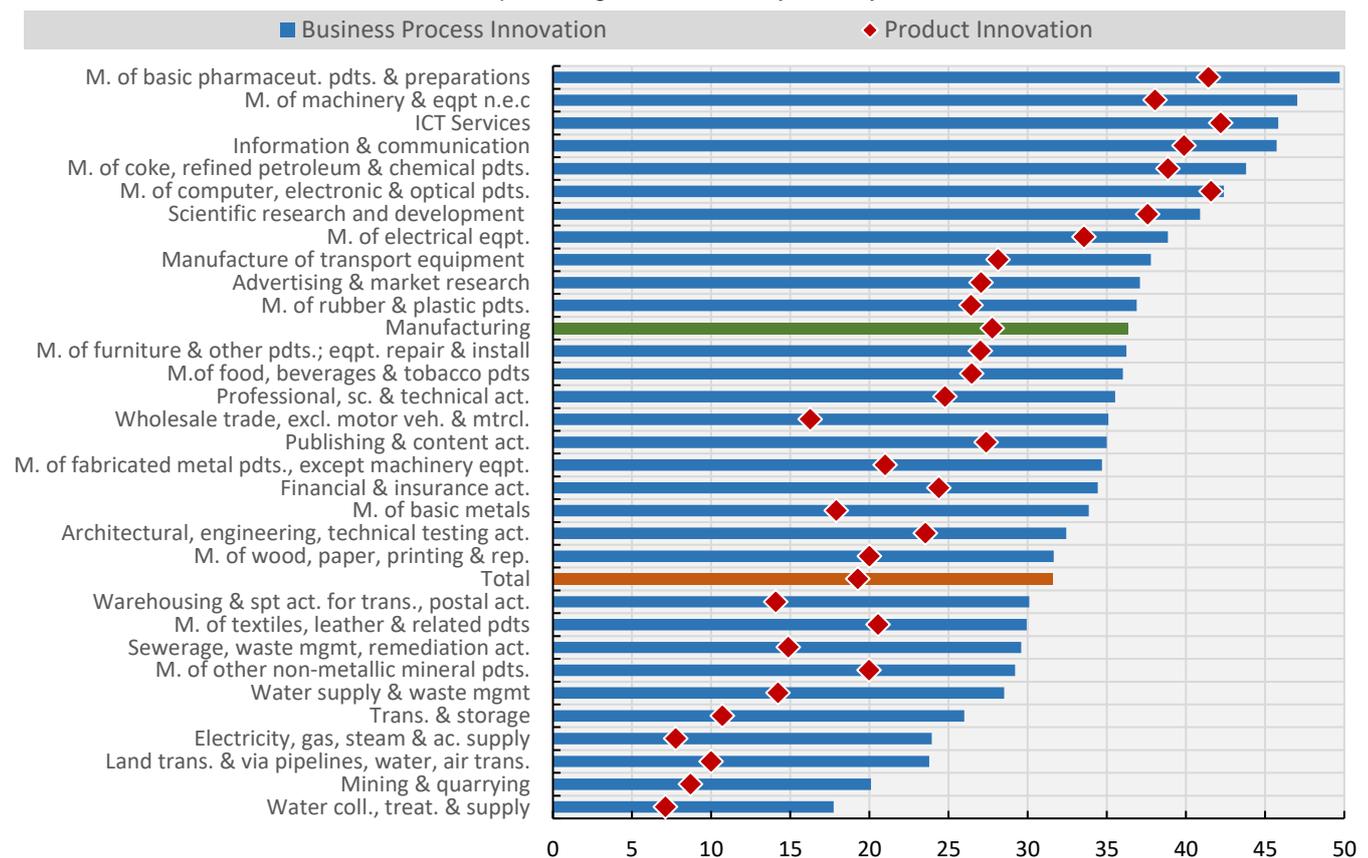
While pharma, specialised equipment manufacturing and ICT services are among the industries reporting the highest innovation rates, innovation is not exclusively concentrated in the manufacturing industry nor in those industries known for exhibiting higher levels of R&D intensity. Professional and financial services exhibit above average innovation rates. The R&D services industry is the second most innovation-active after pharma. It is very heterogeneous across countries as it serves different industries. The latter may implement and ultimately claim the resulting innovations.

Product and process innovations are complementary

Industries have also different innovation profiles, some relatively more focused on product innovations and others more focused on new or improved business processes. Overall, business process innovation is more widespread than product innovation, which refers to both goods and services. With some exceptions, the most innovative industries in terms of business process innovation are among those reporting the highest product innovation rates, indicating considerably synergies between different types of innovation. The wholesale trade industry has higher-than-average process innovation rates, broadly comparable to the overall manufacturing industry, but much lower rates of product (service) innovation. In relation to process innovation, product innovation rates can also be comparatively low for industries like transport equipment with long-lived products.

Average business process and product innovation intensity by industry, OECD and partner economies, 2016-2018

As a percentage of total firms by industry



Note: Unweighted average across countries participating in the data collection. The 2018 edition of the Oslo Manual, <https://www.oecd.org/science/oslo-manual>, defines *business process innovation* as “a new or improved business process for one or more business functions that differs significantly from the firm’s previous business processes and that has been brought into use in the firm”; and *product innovation* as “a new or improved good or service that differs significantly from the firm’s previous goods or services and that has been introduced on the market”.
Source: OECD, based on the 2021 OECD survey of Business Innovation Statistics and the Eurostat’s Community Innovation Survey (CIS-2018), <https://www.oecd.org/sti/inno-stats.htm>, April 2022.

How do firms innovate across the world?

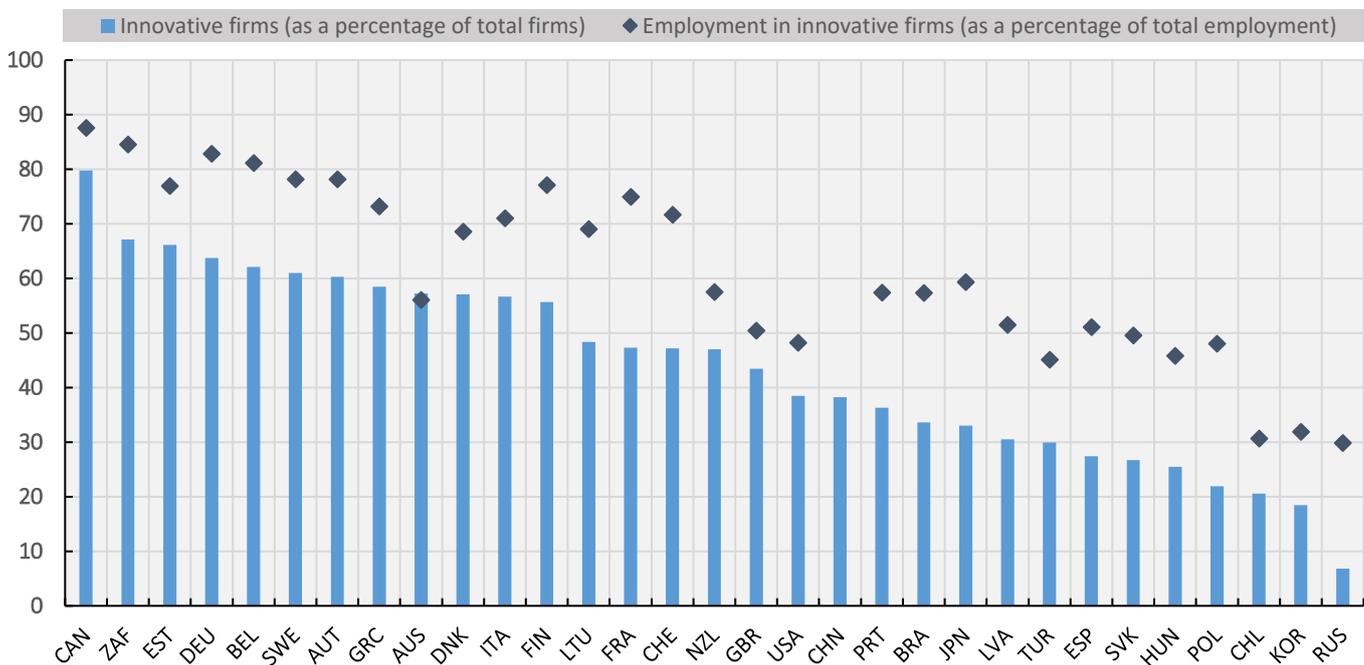
The country-level results provide a comprehensive picture of innovation performance internationally. As in the previous edition of the *Innovation Indicators*, the results show significant cross-country differences in the propensity of firms to engage in innovation activities. While results are in some instances highly correlated with other normalised STI indicators, there are several paradoxes. For instance, Korea is the second OECD country with the largest R&D intensity but less than 20% of its firms report having introduced an innovation. South Africa represents the other extreme. The United States and China report similar shares of innovative firms at close to 40%, well below the OECD's highest country, Canada, at nearly 80%.

The observed differences seem to be influenced by methodological and cultural differences, emphasizing the high sensitivity of international comparisons of innovation statistics to differences in survey design and implementation practices. Since respondents self-assess the significance of novelty and improvement to changes in their products and business processes, it is important for surveys to control for potential biases that may induce companies to under- or over-report innovation activity and outcomes.

The *Innovation Indicators* show that, within countries, innovation exhibits a high degree of concentration among large firms in terms of number of persons employed. The country level share of employment in innovative firms is indeed consistently higher than the share of innovative firms among total enterprises. In the median country, for instance, 47 % of firms introduced a new product or business process between 2016 and 2018. These innovative firms accounted for 58% of business sector employment.

Innovative firms and employment in innovative firms, OECD and partner economies, 2016-2018

As a percentage of total firms and total employment respectively



Note: *Innovative firms* are those reporting one or more innovations in the reference period (2016-2018).

Source: OECD, based on the 2021 OECD survey of Business Innovation Statistics and the Eurostat's Community Innovation Survey (CIS-2018), <https://www.oecd.org/sti/inno-stats.htm>, April 2022.

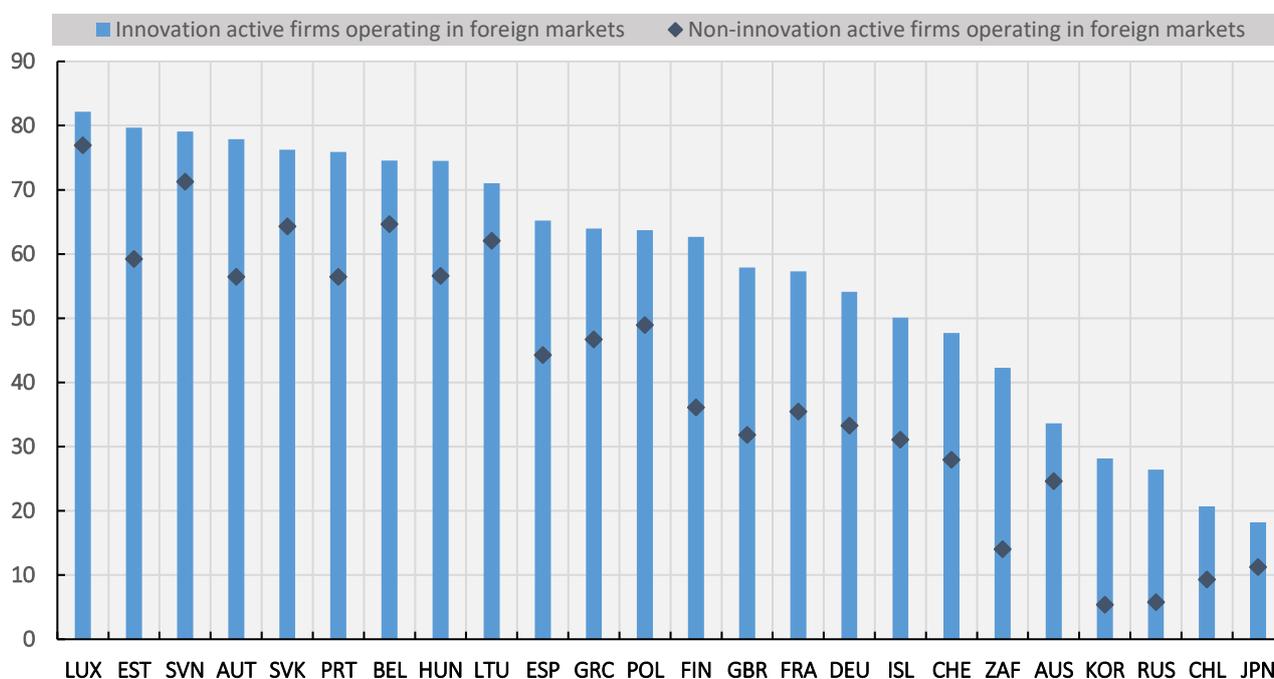
Not all innovation is based on R&D

The *Innovation Indicators* also show that a **high proportion of reported innovations do not require firms to perform R&D** themselves or get others to conduct R&D on their behalf. For instance, companies may rely on adopting and adapting existing technologies to make deep transformations to their business processes and offer to customers. Such changes may require intangible investments other than R&D. While in most countries a non-negligible share of innovative firms is not R&D active, countries differ significantly in the way innovation is driven by R&D. In some countries, innovation appears to be almost exclusively driven by R&D; whereas, in others, less than 40% of innovative firms are R&D active.

Innovation-active firms have greater access to international markets

While the propensity of firms in a given country to engage in international markets depends on several factors, the indicators also show that **innovation-active firms are more likely to operate in foreign markets** than their non-innovation active counterparts.

Firms operating in foreign markets by innovation active status, 2016-2018
As a percentage of innovation-active firms and non-innovation active firms respectively



Note: Innovation active firms comprise all companies engaged in innovation-oriented activities over the reference period (2016-2018), not only those who introduced an innovation (2018 edition of the Oslo Manual, <https://www.oecd.org/science/oslo-manual>).

Source: OECD, based on the 2021 OECD survey of Business Innovation Statistics and the Eurostat's Community Innovation Survey (CIS-2018), <https://www.oecd.org/sti/inno-stats.htm>, April 2022

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