

### Patents in regions and by sectors

Patent application is an indicator of inventive activity and the analysis of regional patenting helps assess the spatial distribution of innovation. Patents are one of the mechanisms used to appropriate the results of investments in intangibles. They are a good proxy of innovation efforts; however, patenting activity is strongly associated with sectoral patterns, since some economic sectors (i.e. pharmaceuticals and electronics) tend to show higher patenting trends due to the type of innovative activity than other sectors (i.e. textiles or other low-tech sectors).

Patent applications are concentrated in few countries, with 60% of the worldwide patents located in the United States, Japan and Germany. This concentration is also observed at regional level. In 2010, almost 60% of all patent applications in OECD countries were recorded by 10% of regions (Figure 2.48). The geographic concentration of patents is related both to the different input needed for patent generation (e.g. investments, infrastructure, human capital) and to the sectoral concentration of industries.

Among the leading countries in patents per million inhabitants, regional disparities are the highest in the Netherlands, the United Kingdom and Korea because of a single top

#### Definition

A patent is an exclusive right granted for an invention, which is a product or a process with industrial applicability that provides, in general, a new way of doing something, or offers a new technical solution to a problem (“inventive step”). A patent provides protection for the invention to the owner of the patent. The protection is granted for a limited period, generally 20 years.

Data refer overall patent applications to Patent Cooperation Treaty (PCT) applications.

Patent documents report the inventors (where the invention takes place), as well as the applicants (owners), along with their addresses and country of residence. Patent counts are based on the inventor's region of residence and fractional counts. If on the patent document are registered two or more inventors, the patent is classified as a co-patent.

Patent intensity is defined as the number of patent applications per million population in a region.

Patents are coded according to classes of the International Patent Classification (IPC) system, and can be aggregated into technology fields such as information and communication technologies (ICT), health, biotechnology and environmental-related technologies.

performing region. Switzerland, Denmark, Sweden and Germany have relatively more regions patenting. Regional variation is generally low in the countries with a limited number of patents (Figure 2.49).

More than two-thirds of the patent applications are generated in a limited number of technologies: information and communications technology (ICT), health, biotechnology and environmental-related technologies. Some regions show a marked specialisation: Guangdong (China), Western Finland (Finland), the Capital Region of Korea and Southern-Kanto (Japan) produce more than 70% of their patents in the ICT sector. In the period 2008-10, California (United States) and Southern-Kanto represent, each, more than 10% of all patents recorded in ICT. The Northwestern region of Switzerland produces the majority of the patents in the health – pharmaceutical and medical – field, whereas for the environmental-related technologies, the most specialised regions are Baden-Württemberg (Germany) and Upper Austria with one-third of their patents classified in this field (Figure 2.50).

#### Source

OECD (2013), *OECD Regional Statistics* (database), <http://dx.doi.org/10.1787/region-data-en>.

OECD REGPAT Database: <http://dotstat/wbos/>.

See Annex B for data sources and country-related metadata.

#### Reference years and territorial level

2008-10 average;

TL3 regions; TL2 regions for Brazil, China, India, South Africa.

#### Further information

OECD (2009), *Patent Statistics Manual*, OECD Publishing, <http://dx.doi.org/10.1787/9789264056442-en>.

Interactive graphs and maps: <http://rag.oecd.org>.

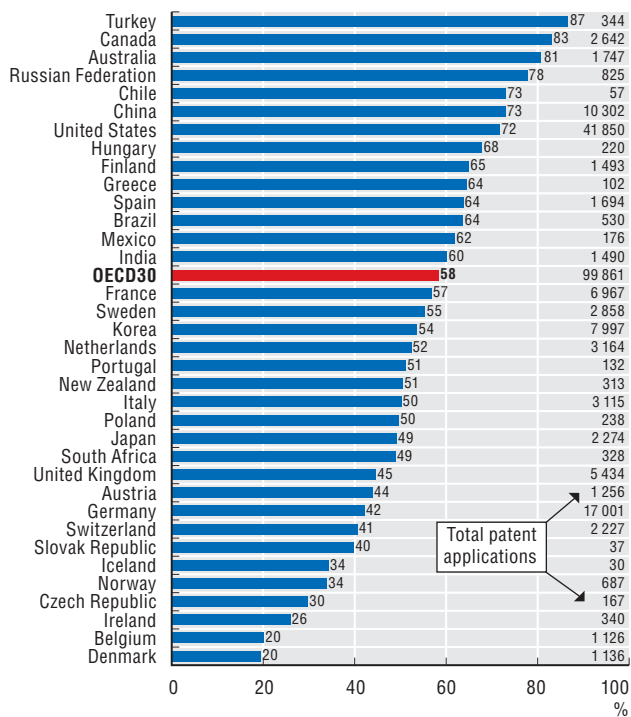
#### Figure notes

2.48-2.49: Data not regionalised for Estonia, Luxembourg, Israel and Slovenia. The total number of applications by country is the result of the sum of the data that has been successfully regionalised to TL3 regions.

2.50: TL2 regions.

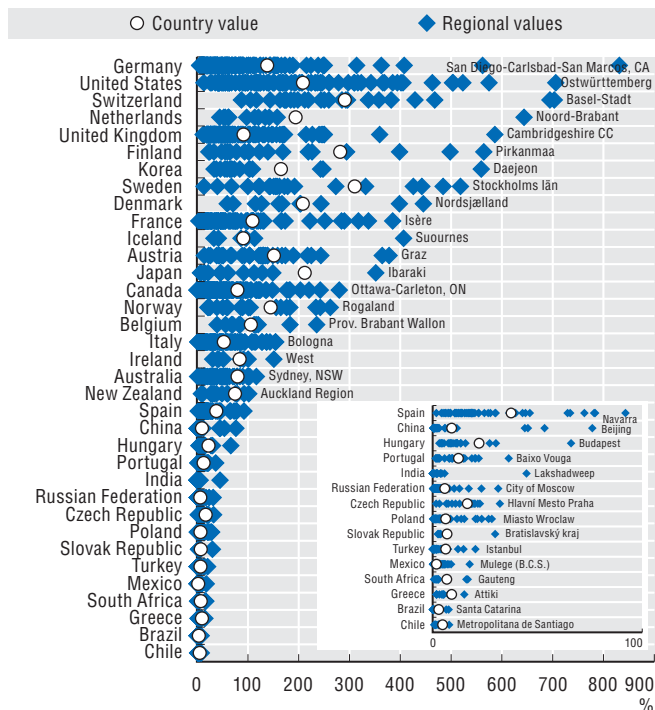
Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

**2.48. National patent concentration by top 10% of TL3 regions, ranked by number of patents, average 2008-10**



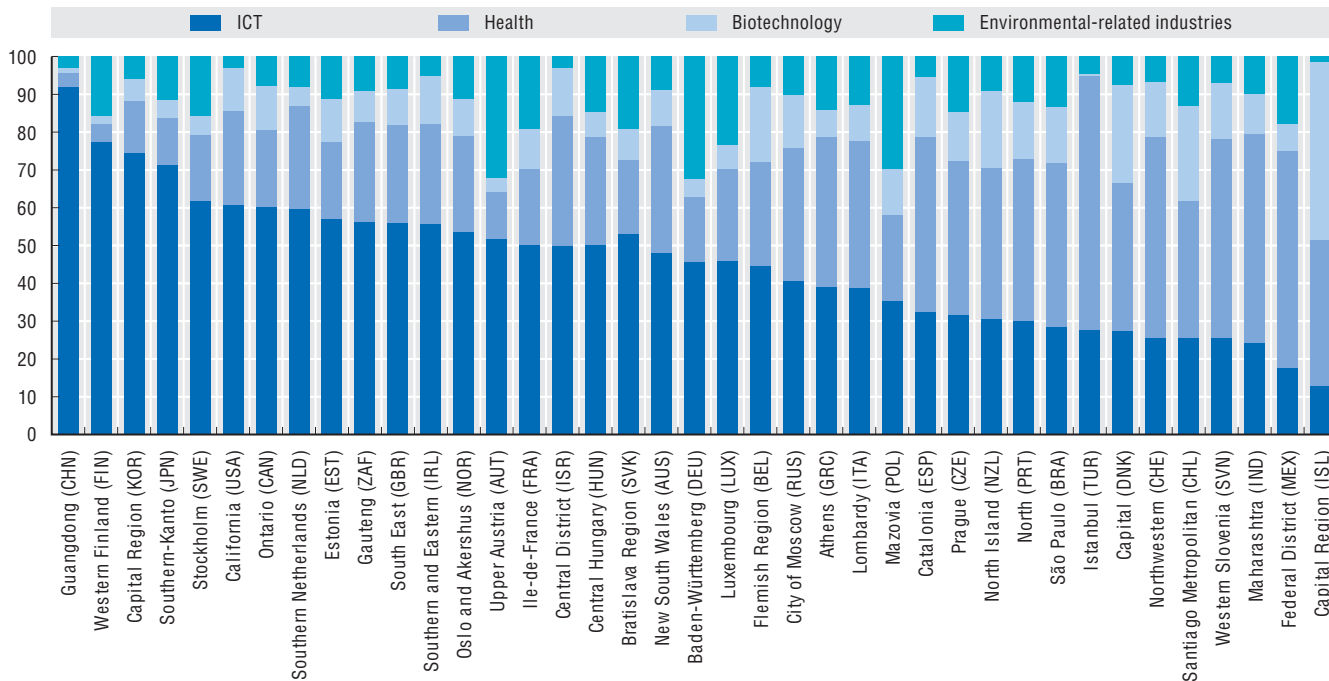
StatLink <http://dx.doi.org/10.1787/888932913836>

**2.49. Range in TL3 regional patent intensity, average 2008-10**



StatLink <http://dx.doi.org/10.1787/888932913855>

**2.50. Share of patent applications by selected technology in TL2 regions with highest concentration by country, 2008-10**



StatLink <http://dx.doi.org/10.1787/888932913874>



**From:**  
**OECD Regions at a Glance 2013**

**Access the complete publication at:**  
[https://doi.org/10.1787/reg\\_glance-2013-en](https://doi.org/10.1787/reg_glance-2013-en)

**Please cite this chapter as:**

OECD (2013), "Patents in regions and by sectors", in *OECD Regions at a Glance 2013*, OECD Publishing, Paris.

DOI: [https://doi.org/10.1787/reg\\_glance-2013-24-en](https://doi.org/10.1787/reg_glance-2013-24-en)

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).