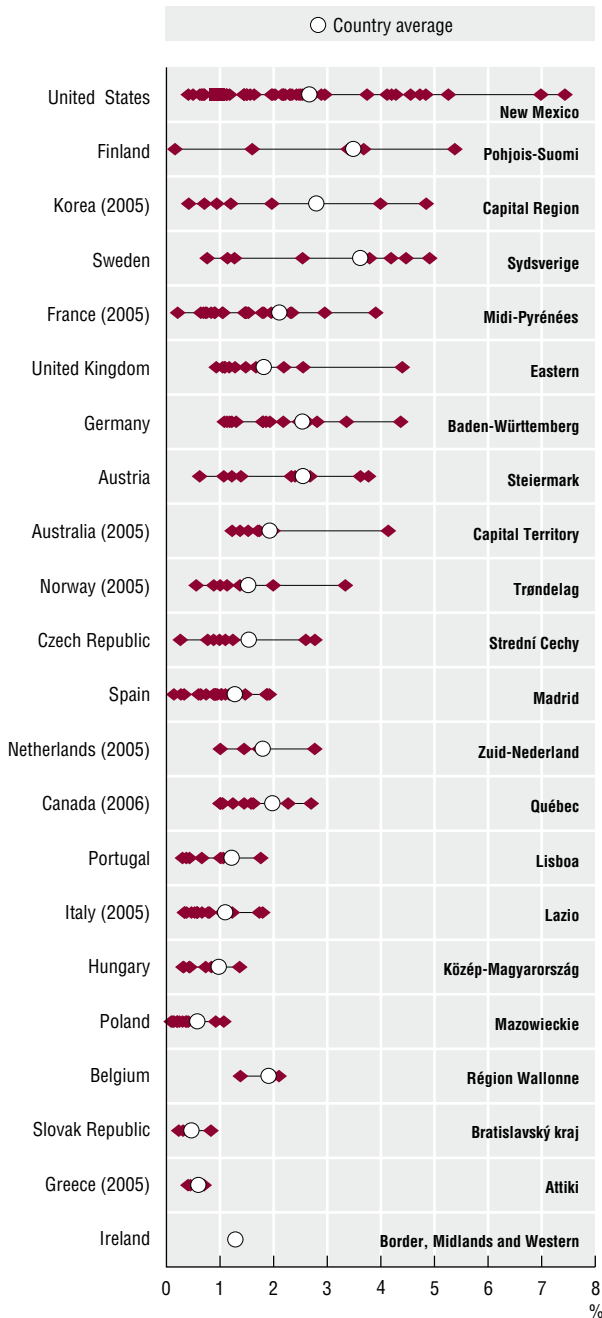


While different forms of innovation activity may occur in all regions, R&D-based innovation is geographically concentrated. Industrial structure, research capabilities and other territorial characteristics affect the capacity of actors to generate and absorb knowledge. Governments increasingly focus on regional clusters of innovation.

**R&D intensity, by region, 2007**  
Regional R&D expenditures as a percentage of regional GDP



**DID YOU KNOW?**

Half of OECD R&D investment is performed in less than 13% of OECD regions.

(OECD, Regional Database, 2009.)

OECD regions with high GDP per capita are generally also those with high R&D intensity. A key policy debate is whether it is better to concentrate resources in leading regions or to use innovation resources to trigger catch-up outside the leading regions.

Countries with high R&D intensity often display large regional disparities. They are greatest in Finland, Korea, Sweden and the United States. Moreover, in Australia, Norway, the United Kingdom and the United States the R&D intensity of the leading region is at least twice the national average. The intensity of investment in a given region is affected by regional sectoral specialisation, the presence of research hubs of multi-national firms, and the location of public research labs and leading research universities. It may be partly influenced by regional actions and policies as well as national policies and global trends.

Proximity is important for knowledge creation and technological progress. Domestic co-patenting is the most frequent mode of co-patenting in almost all countries. On average for OECD regions, it is slightly more frequent when the inventors are in the same region (39%), than when they are in different regions in the same country (35%) or in another country (19%).

**Definitions**

Gross domestic expenditures on R&D is the total intramural expenditure on R&D performed in the sub-national territory (region) during a given period. Patent Co-operation Treaty (PCT) applications are regionalised according to the inventor's residence. The same patent may be classified in more than one region if there are multiple co-inventors.

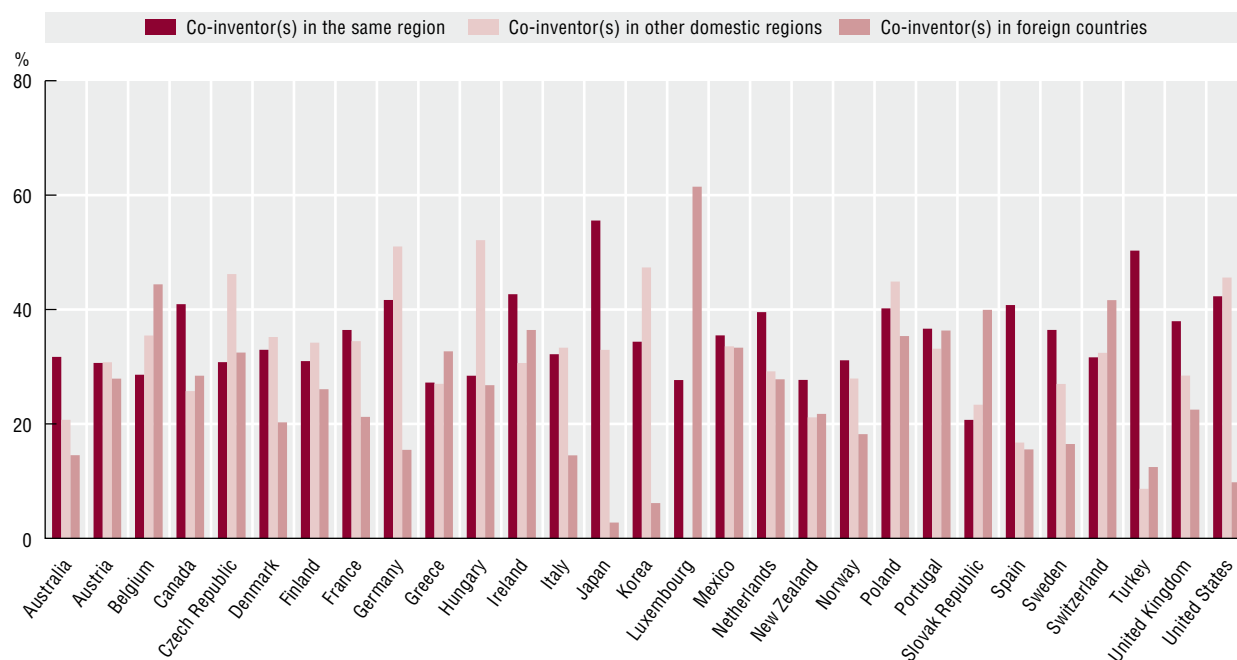
**How to read this figure**

The most R&D-intensive region in Finland is Pohjois-Suomi with R&D intensity of 5.4%, above the country average (3.5%).


Source: OECD, Regional Database, March 2010; OECD, Main Science and Technology Indicators Database, December 2009. See chapter notes. StatLink <http://dx.doi.org/10.1787/836148814748>

## Regional average of PCT patents with co-inventor(s), by location, 2005-07

As a percentage of all patents



Source: OECD, REGPAT Database, January 2010. See chapter notes.

 StatLink  <http://dx.doi.org/10.1787/836148814748>

### Measurability

Defining the territorial unit is of prime importance as the word “region” can mean very different things both within and across countries. To address this issue, the OECD has classified the regions of each member country into two territorial levels. The higher level (territorial level 2 – TL2) consists of 335 large regions and the lower level (territorial level 3 – TL3) is composed of 1 681 small regions. All the regions are defined within national borders and in most cases correspond to administrative regions. Each TL3 region is contained within a TL2 region except in Germany and the United States. This classification – which, for European countries, is largely consistent with the Eurostat classification – facilitates comparability of regions at the same territorial level. Indeed these two levels, which are officially established and relatively stable in all member countries, are used as a framework for implementing regional policies in most countries.

A limited number of indicators are available at regional level to characterise collaboration in the innovation process. Co-patents represent collaboration that leads to an invention which may or may not be commercialised. Patenting is more likely in certain sectors and focuses on technological innovation. Therefore sectors of activity with a low propensity to patent are under-represented, as are non-technological forms of innovation. More detailed analysis of networks is needed to better understand collaboration dynamics and determine whether it involves inventors in the same entity or across different types of actors (e.g. firms, research institutions), as well as the intensity of such interaction. Patterns of collaboration for knowledge generation by individuals within and across regions may also be explored through co-publications.