

# 1. SPECIAL FOCUS ON METROPOLITAN AREAS

## Patent activity in metropolitan areas

Innovation is highly concentrated in a few countries, and metropolitan areas are usually the places where most innovation activities take place. Agglomeration forces determine an environment with a large proportion of specialised workers, firms and capital, where ideas are easily exchanged and can lead to the creation of new goods and production processes. In 2008, 65% of all patent applications of the 16 OECD countries where data are available were granted in metropolitan areas (Figure 1.23). The concentration of patents in metropolitan areas is high in top patenting countries such as Japan and the United States but also in France, the Netherlands, Spain and Denmark. On the other side, Finland, Norway and Italy displayed a lower share of patents granted by metropolitan areas, signalling innovation activities outside the capital areas of Helsinki (e.g. in Pirkanmaa

### Definition

The metropolitan areas are defined as the functional urban areas with population above 500 000.

The functional urban areas are defined as densely populated municipalities (urban cores) and adjacent municipalities with high levels of commuting towards the densely populated urban cores (hinterland). Functional urban areas can extend across administrative boundaries, reflecting the economic geography of where people actually live and work.

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 to patent applications made under the Patent Co-operation Treaty (PCT).

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.

The patent intensity is the ratio between the number of patent applications and the metropolitan area’s population.

and Pohjois-Pohjanmaa) and Oslo (e.g. in Rogaland, Hodaland and Sor-Trondelag) as well in medium-sized cities in northeast Italy.

On aggregate, around 5% of OECD metropolitan areas accounted for around 45% of total metropolitan patent applications in 2008; the next 10% metropolitan areas contributed roughly to 25%; while the remaining 85% accounted for only 30% of the total metropolitan patents. San Francisco was the metropolitan area with the highest number of patents: 9 000 patent applications in one year; followed by Tokyo and Osaka, each with more than 4 000 patent applications (Figure 1.24).

Patent intensity – the number of patents per million inhabitants – is the highest in the metropolitan areas in Sweden, the Netherlands, Denmark and Finland (Figure 1.25).

Eindhoven in the Netherlands was the metropolitan area with the highest patent intensity in 2008, around 2 200 patents per million inhabitants, followed by San Diego and San Francisco (United States), each with more than 700 patents per million population (Figure 1.26).

### Source

OECD (2013), “Metropolitan areas”, *OECD Regional Statistics* (database), <http://dx.doi.org/10.1787/data-00531-en>.

See Annexes A and B for data sources and country-related metadata.

OECD Patent Statistics (database), <http://dx.doi.org/10.1787/patent-data-en>.

### Reference years and territorial level

2008; metropolitan areas.

The functional urban areas have not been identified in Australia, Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000 inhabitants.

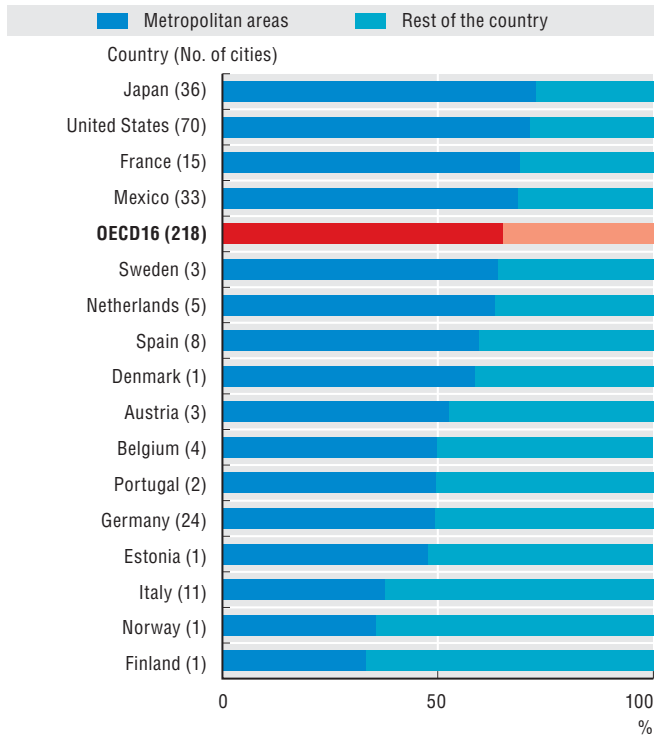
Data on patent activity in metropolitan areas are available only for 16 OECD countries.

### Further information

OECD (2012), *Redefining “Urban”: A New Way to Measure Metropolitan Areas*, OECD Publishing, <http://dx.doi.org/10.1787/9789264174108-en>.

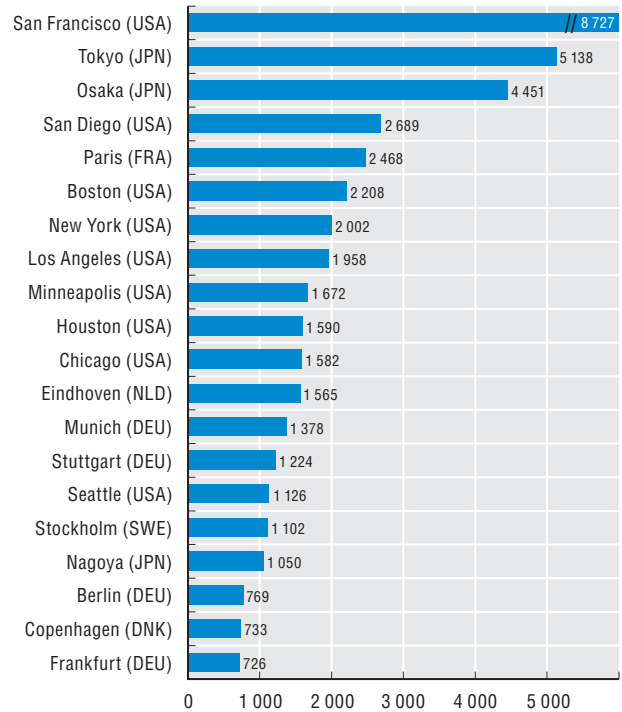
Interactive graphs and maps: <http://rag.oecd.org>.

**1.23. Per cent of patent applications in metropolitan areas and the rest of the country, 2008**



StatLink <http://dx.doi.org/10.1787/888932913038>

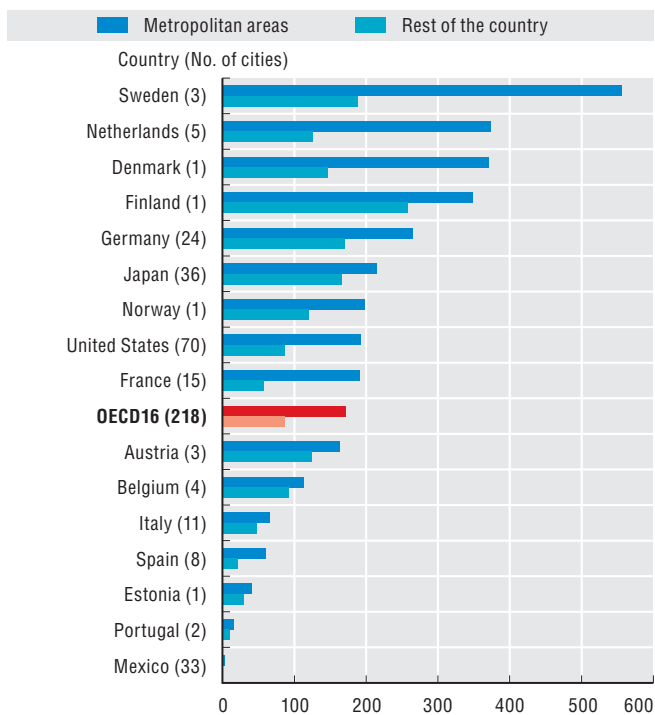
**1.24. Top 20 metropolitan areas by patent applications, 2008**



StatLink <http://dx.doi.org/10.1787/888932913057>

**1.25. Patent intensity in metropolitan areas and the rest of the country, 2008**

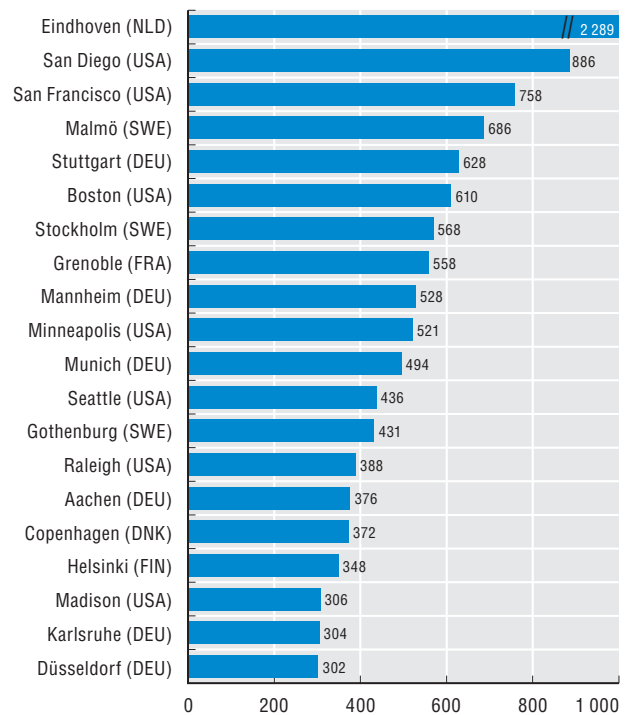
Patent applications per million inhabitants



StatLink <http://dx.doi.org/10.1787/888932913076>

**1.26. Top 20 metropolitan areas for patent intensity, 2008**

Patent applications per million inhabitants



StatLink <http://dx.doi.org/10.1787/888932913095>



**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), "Patent activity in metropolitan areas", in *OECD Regions at a Glance 2013*, OECD Publishing, Paris.

DOI: [https://doi.org/10.1787/reg\\_glance-2013-11-en](https://doi.org/10.1787/reg_glance-2013-11-en)

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