

F.4. Triadic patent families

- The internationalisation of knowledge and technology is also reflected in the increasing number of triadic patent families. In 2007, about 52 000 were filed worldwide compared to something less than 42 000 ten years earlier.
- The United States accounted for 31% of triadic patent families, with nearly 16 000. Japan and the European Union were the other two regions responsible for the majority of triadic patent families.
- The surge in innovative activities in Asia is clearly reflected in growing country shares, although in absolute numbers the distance from the leaders remains considerable. Korea and China were among the top 12 countries in 2007, and India has also climbed up in the rankings. In absolute number, emerging countries like the Russian Federation and Brazil also have a considerable number of triadic patent families.
- Relative to total population, however, the importance of emerging countries is less clear. China for example has less than 0.5 patent families per million population.
- Switzerland, Japan, Sweden, Germany and Israel appear as the five most innovative countries in 2007, with the highest values recorded in Switzerland (118) and Japan (115). Ratios for the Netherlands, Finland, Denmark, the United States, Austria and Korea are also above the OECD average (42).

Source

- OECD, *Patent Database*, December 2009, www.oecd.org/sti/ipr-statistics.

For further reading

- Dernis, H. and M. Khan (2004), "Triadic Patent Families Methodology", *STI Working Paper 2004/2*, OECD, Paris.
- OECD (2009), *OECD Patent Statistics Manual*, OECD, Paris.

Triadic patent families

The globalisation of technological activities can be quantified with patent data. Patents have a distinctive feature which makes them very attractive as an indicator of global S&T activities.

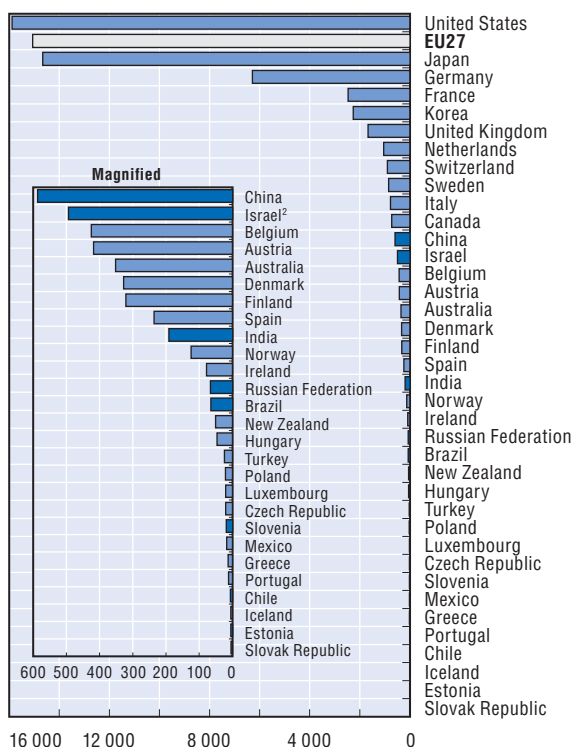
Patent statistics are commonly constructed on the basis of information from a single patent office. While patents filed at a given patent office represent a rich source of data, these data have certain weaknesses. The "home" advantage bias is one of them, since, proportionate to their inventive activity, domestic applicants tend to file more patents in their home country than non-resident applicants. Furthermore, indicators based on a single patent office are influenced by factors other than technology, such as patenting procedures, trade flows, proximity, etc. In addition, the value distribution of patents within a single patent office is skewed: many patents are of low value and few are of extremely high value. Simple patent counts would therefore give equal weight to all patent applications.

The OECD has developed the concept of triadic patent families in order to reduce the major weaknesses of the traditional patent indicators described above. Triadic patent families are defined at the OECD as a set of patents taken at the European Patent Office (EPO), the Japan Patent Office (JPO) and US Patent and Trademark Office (USPTO) that protect a same invention. In terms of statistical analysis, they improve the international comparability of patent-based indicators, as only patents applied for in the same set of countries are included in the family: home advantage and influence of geographical location are therefore eliminated. Second, patents included in the family are typically of higher value: patentees only take on the additional costs and delays of extending protection to other countries if they deem it worthwhile.

The criteria for counting triadic patent families are the earliest priority date (first application of the patent worldwide), the inventor's country of residence, and fractional counts. Owing to time lag between the priority date and the availability of information, 1999 is the latest year for which triadic patent family data are almost completely available. Data from 1999 onwards are OECD estimates based on more recent patent series ("nowcasting").

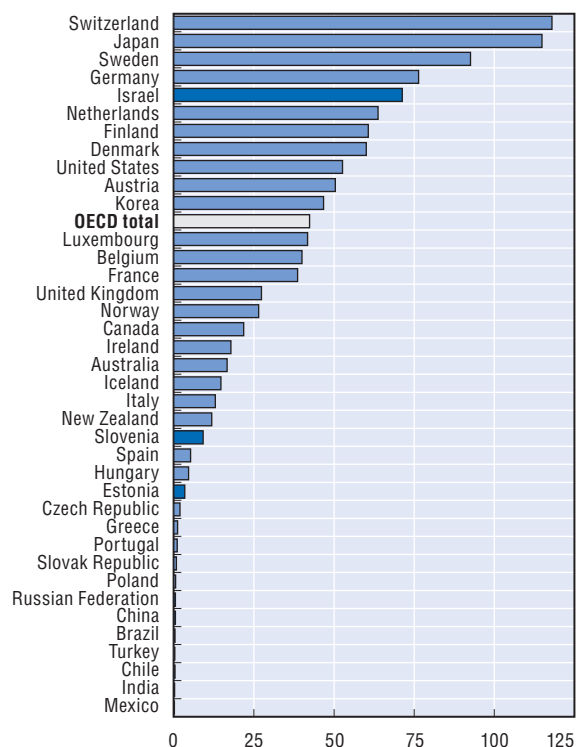
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Figure F.4.1. Triadic patents families,¹ absolute numbers, 2007



StatLink <http://dx.doi.org/10.1787/843033848386>

Figure F.4.2. Triadic patents, families,¹ per million population, 2007

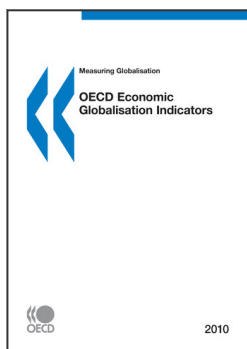


StatLink <http://dx.doi.org/10.1787/843074661108>

Note: Patent counts are based on the earliest priority date, the inventor's country of residence and fractional counts. The data mainly derive from the European Patent Office (EPO) *Worldwide Statistical Patent Database* (September 2009).

1. Patents filed at the EPO, the US Patent and Trademark Office (USPTO) and the Japan Patent Office (JPO) which protect the same invention. Data from 1999 onwards are OECD estimates.

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



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