PATENTS

Patent-based indicators provide a measure of the output of a country's R&D, *i.e.* its inventions. The methodology used for counting patents can influence the results. Simple counts of patents filed at a national patent office are affected by various kinds of limitations, such as weak international comparability (home advantage for patent applications) and highly heterogeneous patent values. The OECD has developed *triadic patent families*, which are designed to capture all important inventions only and to be internationally comparable.

Definition

A patent family is defined as a set of patents taken in various countries (*i.e.* patent offices) to protect the same invention. Triadic patent families are a set of patents taken at all three of these major patent offices – the European Patent Office (EPO), the Japan Patent Office (JPO) and the United States Patent and Trademark Office (USPTO).

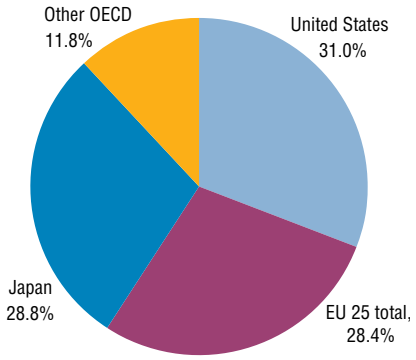
Triadic patent family counts are attributed to the country of residence of the inventor and to the date when the patent was first registered.

Comparability

The concept of triadic patent families has been developed in order to improve the international comparability and quality of patent-based indicators. Indeed, only patents applied in the same set of countries are included in the family: home advantage and influence of geographical location are therefore eliminated. Furthermore, 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.

Share of countries in triadic patent families

Percentage, Year 2005



StatLink http://dx.doi.org/10.1787/268866601751

Long-term trends

Growth during the second half of the 1990s was at a steady 7% a year on average until 2000. The beginning of the 21st century was marked by a slowdown, with patent families increasing by 2% a year on average. The United States, the European Union and Japan show a similar trend, with a stronger deceleration in Japan after 2000.

About 53 000 triadic patent families were filed worldwide in 2005, a sharp increase from less than 35 000 in 1995. The United States accounts for 31% of patent families, a loss of around 3 percentage points from its level in 1995 (34.4%); the relative proportion of patent families originating from Europe has also tended to decrease, losing more than 4 percentage points between 1995 and 2005 (to 28.4% in 2005). In contrast, Japan's share in triadic patent families gained almost 2 percentage points to reach nearly 29% in 2005.

When triadic patent families are normalised using total population, Japan, Switzerland, Germany, the Netherlands and Sweden appear as the five most innovative countries in 2005. Ratios for Finland, Israel, Korea, Luxembourg and the United States are above the OECD average (44). Japan has the highest number of patent families per million population (119), followed by Switzerland (107). One of the largest increases between 1995 and 2005, from 7 to 65 patent families per million inhabitants, occurred in Korea. By size, China has less than 0.4 patent families per million population.

Source

- OECD (2007), *Compendium of Patent Statistics 2007*, OECD, Paris.

Further information

Analytical publications

- Lichtenberg, F. and S. Virabhak (2002), *Using Patents Data to Map Technical Change in Health-Related Areas*, OECD Science, Technology and Industry Working Papers, No. 2002/16, OECD, Paris.
- OECD (2006), *OECD Reviews of Innovation Policy – Switzerland*, OECD, Paris.

Methodological publications

- Dernis, H. and M. Khan (2004), *Triadic Patent Families Methodology*, OECD Science, Technology and Industry Working Papers, No. 2004/2, OECD, Paris.

Online databases

- *OECD Patent Database*.

Websites

- OECD Intellectual Property Rights, *www.oecd.org/sti/ipr*.
- OECD Work on Patents, *www.oecd.org/sti/ipr-statistics*.

OECD FACTBOOK 2008 – ISBN 978-92-64-04054-0 – © OECD 2008

Triadic patent families

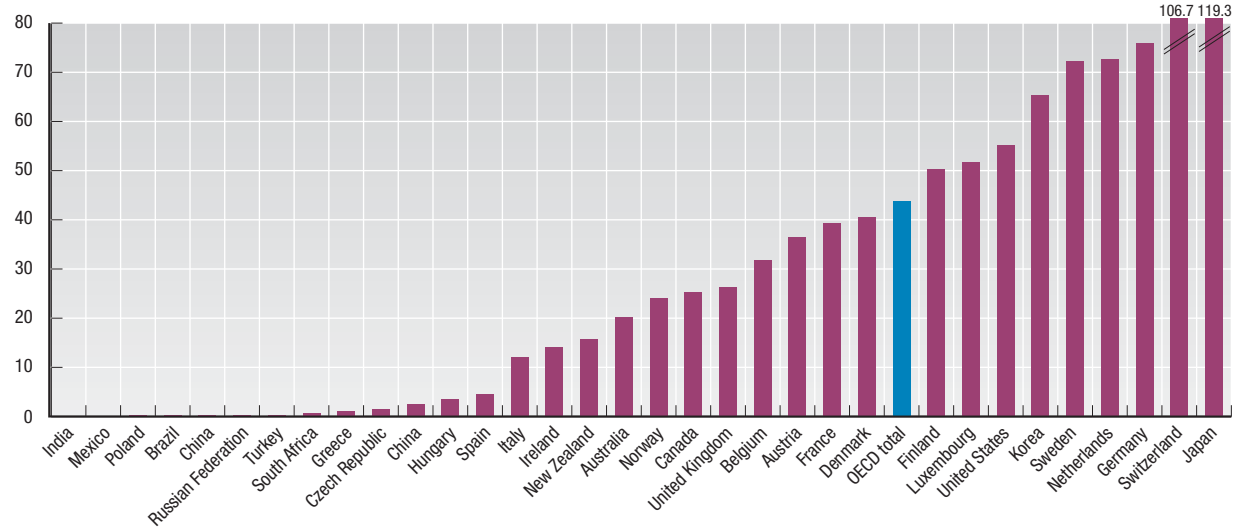
Number

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	180	192	227	221	220	261	309	324	398	389	397	409	425	414
Austria	145	171	209	215	210	250	264	241	259	270	274	281	288	301
Belgium	290	328	343	369	346	411	385	394	366	337	337	340	358	333
Canada	273	286	355	382	438	556	590	631	609	599	686	712	766	820
Czech Republic	7	8	5	3	11	11	14	11	8	13	14	15	15	15
Denmark	131	156	177	180	217	211	266	234	238	228	227	233	222	220
Finland	224	243	342	305	346	426	422	423	358	325	254	259	268	264
France	1 628	1 694	1 864	1 878	2 093	2 112	2 245	2 308	2 277	2 257	2 354	2 407	2 440	2 463
Germany	3 849	4 007	4 358	4 737	5 338	5 499	6 069	6 255	6 236	6 223	6 112	6 176	6 283	6 266
Greece	6	2	4	1	13	10	11	12	9	6	9	12	10	13
Hungary	18	22	19	25	23	32	17	36	34	31	27	37	39	37
Iceland	-	1	3	4	7	4	5	7	10	3	8	7	5	5
Ireland	24	18	31	27	26	36	40	63	42	50	46	48	51	59
Italy	572	627	619	601	679	712	636	637	662	693	663	703	706	716
Japan	8 154	8 454	8 234	9 429	10 379	10 649	11 232	12 740	14 709	13 642	13 922	14 428	15 347	15 239
Korea	120	161	213	324	324	416	487	663	820	1 027	1 383	2 018	2 583	3 158
Luxembourg	9	14	7	13	14	14	21	19	17	21	15	22	27	24
Mexico	6	6	5	13	10	13	9	12	10	13	14	17	17	20
Netherlands	613	594	670	710	792	794	899	1 028	1 169	1 409	1 220	1 203	1 215	1 184
New Zealand	26	12	21	20	32	39	45	51	58	45	60	73	67	64
Norway	71	71	83	86	73	89	92	110	111	92	107	102	109	111
Poland	5	11	4	5	9	9	4	9	9	8	12	10	10	11
Portugal	4	3	1	3	4	6	8	7	4	6	7	9	7	9
Slovak Republic	2	2	1	2	1	4	4	3	2	2	3	3	3	3
Spain	64	71	83	87	86	99	120	126	150	164	168	167	200	201
Sweden	513	501	628	669	773	835	743	730	605	593	662	596	606	652
Switzerland	705	699	707	724	770	763	763	752	796	782	773	794	802	801
Turkey	-	2	2	2	2	3	7	4	5	9	10	12	17	27
United Kingdom	1 297	1 366	1 468	1 499	1 600	1 547	1 671	1 678	1 650	1 640	1 681	1 637	1 601	1 588
United States	10 544	10 379	10 947	12 020	12 904	14 544	14 218	15 516	15 664	15 417	16 020	16 037	15 916	16 368
OECD total	29 478	30 103	31 630	34 554	37 740	40 354	41 598	45 020	47 287	46 296	47 467	48 766	50 402	51 386
Brazil	13	21	11	15	16	27	27	32	34	45	45	55	53	59
China	16	15	17	19	22	40	42	62	90	122	195	253	312	433
India	6	8	6	12	17	28	40	49	54	90	115	128	124	132
Russian Federation	40	29	48	51	46	53	70	55	53	53	48	50	50	49
South Africa	31	33	20	24	27	35	37	29	36	29	32	32	30	33
World	29 814	30 453	31 990	34 960	38 261	40 994	42 391	45 782	48 145	47 235	48 495	49 975	51 677	52 864

StatLink http://dx.doi.org/10.1787/274614371216

Triadic patent families

Number per million inhabitants, 2005



StatLink http://dx.doi.org/10.1787/268860884713