

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 however influence the results, as simple counts of patents filed at a national patent office are affected by various kinds of limitations (such as weak international comparability) and highly heterogeneous patent values. To overcome these limits, the OECD has developed triadic patent families, which are designed to capture all important inventions and to be internationally comparable.

Definition

A patent family is defined as a set of patents registered in various countries (i.e. patent offices) to protect the same invention. Triadic patent families are a set of patents filed at 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.

Triadic patent families are expressed as numbers and per million inhabitants.

Overview

Growth in the number of triadic patent families during the second half of the 1990s was at a steady 5% a year. The beginning of the 21st century was marked by a slowdown, with patent families increasing by 1.6% a year on average. The United States, the European Union and Japan show a similar declining trend.

About 52 000 triadic patent families were filed in 2007, with a sharp increase from less than 41 000 registered in 1997. The United States accounts for 31% of patent families, a lower share compared to the one recorded in 1997 (33.4%). The share of triadic patent families originating from Europe has also tended to decrease, losing more than 3 percentage points between 1997 and 2007 (to 29% in 2007). Although the number of patent families from Japan remained stable since 2000, Japan's share in triadic patent families increased by 1 percentage point, reaching 28.2% of the total in 2007. The origin of patent families shifted towards Asian countries. The most spectacular growth was observed by Korea, whose share of all triadic patent families increased from less than 1% in 1997 to 4.4% in 2007. Strong rises are also observed for China and India, with an average growth in the number of triadic patents of more than 23% a year between 1997 and 2007.

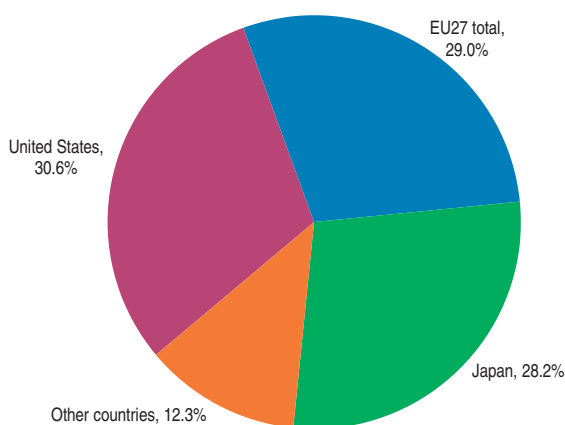
When triadic patent families are expressed relative to the total population, Switzerland, Japan, Sweden and Germany are the four most inventive countries in 2007, with the highest values recorded in Switzerland (118) and Japan (115). Ratios for Austria, Denmark, Finland, Israel, Korea and the Netherlands are also above the OECD average (42). Conversely, China has less than 0.5 patent families per million population.

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 registered 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 triadic family are typically of higher economic value: patentees only take on the additional costs and delays of extending the protection of their invention to other countries if they deem it worthwhile.

Share of countries in triadic patent families

Percentage, 2007



StatLink <http://dx.doi.org/10.1787/821012825718>

Sources

- OECD Patent Database.

Further information

Analytical publications

- OECD (2008), *OECD Science, Technology and Industry Outlook 2008*, OECD, Paris.
- OECD (2009), *OECD Science, Technology and Industry Scoreboard 2009*, OECD, Paris.

Methodological publications

- Dermis, H. and M. Khan (2004), *Triadic Patent Families Methodology*, OECD Science, Technology and Industry Working Papers, No. 2004/2, OECD, Paris.
- Maraut, S., H. Dermis, C. Webb, V. Spiezia and D. Guellec (2008), *The OECD REGPAT database: a Presentation*, OECD Science, Technology and Industry Working Papers, No. 2008/2, OECD, Paris.
- OECD (2009), *OECD Patent Statistics Manual*, OECD, Paris.

Web sites

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



Triadic patent families

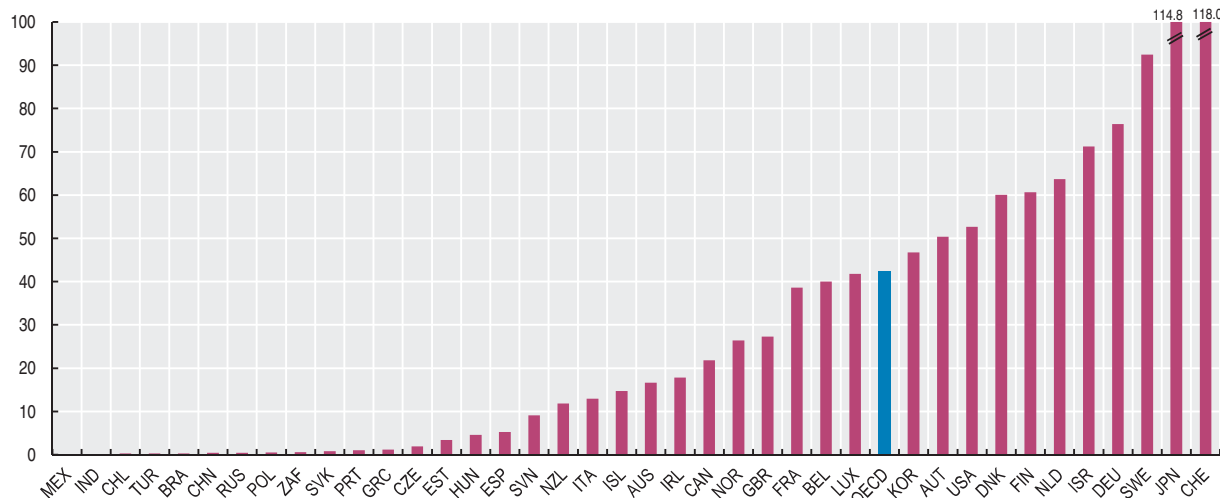
Number

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Australia	239	233	234	277	297	317	362	324	347	338	362	373	351	352
Austria	211	221	214	257	269	254	270	255	315	335	378	370	409	418
Belgium	354	373	362	432	396	397	361	336	343	327	415	415	414	425
Canada	370	386	426	531	531	544	535	535	589	576	652	761	740	719
Czech Republic	5	3	11	11	16	10	9	15	16	16	15	14	19	20
Denmark	185	188	227	217	270	233	239	227	233	249	301	314	300	328
Finland	354	317	357	449	443	454	372	348	274	300	338	329	330	321
France	1 924	1 970	2 155	2 209	2 269	2 309	2 278	2 198	2 224	2 276	2 421	2 437	2 460	2 462
Germany	4 424	4 873	5 511	5 680	6 133	5 948	6 079	5 683	5 533	5 747	6 069	6 270	6 224	6 283
Greece	5	2	13	10	12	10	7	6	8	13	9	15	14	13
Hungary	20	25	25	32	18	40	35	31	28	41	44	42	43	46
Iceland	3	6	7	4	6	7	11	4	8	4	2	5	6	5
Ireland	32	31	28	37	38	73	41	51	51	66	69	68	73	78
Italy	627	619	704	735	672	656	680	720	721	717	770	780	783	769
Japan	8 286	9 583	10 673	11 238	11 481	12 664	14 779	13 864	13 574	13 598	13 447	13 899	14 632	14 665
Korea	213	326	323	388	467	576	719	925	1 227	1 715	2 138	2 314	2 465	2 264
Luxembourg	8	14	16	16	22	22	20	24	13	20	24	20	25	20
Mexico	5	12	10	9	9	12	8	11	9	16	14	17	17	17
Netherlands	686	758	806	834	849	903	989	1 190	1 061	1 054	1 060	1 033	1 044	1 043
New Zealand	22	21	31	40	52	47	51	41	60	62	63	59	54	50
Norway	87	87	76	100	93	103	108	90	106	97	105	128	127	124
Poland	5	5	10	9	4	9	9	10	14	11	16	16	17	21
Portugal	2	3	4	8	5	5	4	6	6	7	7	12	11	11
Slovak Republic	1	2	1	5	3	2	2	2	3	5	3	4	5	4
Spain	88	82	92	108	126	124	151	160	163	167	218	201	227	236
Sweden	675	753	912	982	852	870	685	673	698	675	699	753	794	846
Switzerland	731	765	815	822	799	792	832	807	808	847	883	893	897	899
Turkey	2	2	4	3	7	3	4	9	7	8	12	12	20	24
United Kingdom	1 548	1 571	1 665	1 636	1 776	1 689	1 675	1 595	1 639	1 655	1 647	1 707	1 691	1 666
United States	11 260	12 241	13 012	13 919	14 458	14 686	14 348	13 592	14 446	15 239	15 941	16 002	16 047	15 883
EU27 total	11 163	11 820	13 128	13 680	14 191	14 023	13 921	13 548	13 366	13 725	14 531	14 842	14 928	15 062
OECD total	32 372	35 467	38 722	40 997	42 372	43 759	45 664	43 731	44 524	46 181	48 119	49 262	50 238	50 014
Brazil	15	16	19	29	29	29	32	46	43	48	48	51	56	65
Chile	2	2	3	-	2	2	2	5	4	2	5	5	5	6
China	19	21	22	44	47	58	66	103	152	216	244	373	489	587
Estonia	-	-	4	2	2	1	1	2	1	4	-	2	5	5
India	6	10	15	23	32	39	50	94	133	142	140	154	178	192
Indonesia	-	-	-	2	3	1	4	2	2	-	-	1
Israel	140	159	214	288	298	276	302	320	268	298	354	415	483	494
Russian Federation	53	62	57	70	95	61	69	55	50	52	60	71	67	66
Slovenia	4	7	5	5	12	4	7	6	14	14	12	17	17	18
South Africa	22	24	31	33	36	27	35	24	28	32	29	34	32	31
World	32 746	35 882	39 272	41 655	43 128	44 484	46 484	44 665	45 522	47 333	49 409	50 820	52 031	51 990

StatLink <http://dx.doi.org/10.1787/825682522218>

Triadic patent families

Number per million inhabitants, 2007

StatLink <http://dx.doi.org/10.1787/820878701421>



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