

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.

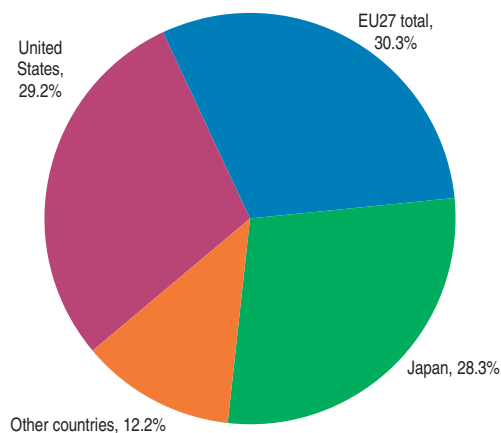
Comparability

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, 2009



StatLink  <http://dx.doi.org/10.1787/888932505944>

Overview

Growth in the number of triadic patent families during the second half of the 1990s was at a steady 4.5% a year. The beginning of the 21st century was marked by a slowdown, with patent families increasing by 0.5% a year on average. The United States, the European Union and Japan show a similar declining trend.

About 47 000 triadic patent families were filed in 2009, compared to nearly 45 000 registered in 1999. The United States accounts for 29.2% of patent families, a lower share compared to the one recorded in 1999 (32.6%). The share of triadic patent families originating from Europe has also tended to decrease, losing almost 2 percentage points between 1999 and 2009 (to 30.3% in 2009). The origin of patent families has shifted towards Asian countries. The most spectacular growth was observed by Korea, whose share of all triadic patent families increased from 1.3% in 1999 to 4.2% in 2009. Strong rises are also observed for China and India, with an average growth in the number of triadic patents of more than 15% a year between 1999 and 2009.

When triadic patent families are expressed relative to the total population, Switzerland, Japan, Sweden and Germany were the four most inventive countries in 2007, with the highest values recorded in Switzerland (113) and Japan (104). Ratios for Austria, Denmark, Finland, France, Germany, Israel, Korea, the Netherlands and the United States are also above the OECD average (37). Conversely, China has less than 0.5 patent families per million population.

Sources

- OECD Patent Statistics.

Further information

Analytical publications

- OECD (2010), *OECD Science, Technology and Industry Outlook 2010*, OECD Publishing.
- OECD (2011), *OECD Science, Technology and Industry Scoreboard 2011*, OECD Publishing.

Methodological publications

- Dernis, H. and M. Khan (2004), "Triadic Patent Families Methodology", *OECD Science, Technology and Industry Working Papers*, No. 2004/2.
- Maraut, S. et al. (2008), "The OECD REGPAT Database: A Presentation", *OECD Science, Technology and Industry Working Papers*, No. 2008/2.
- OECD (2009), *OECD Patent Statistics Manual*, OECD Publishing.

Websites

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



Triadic patent families

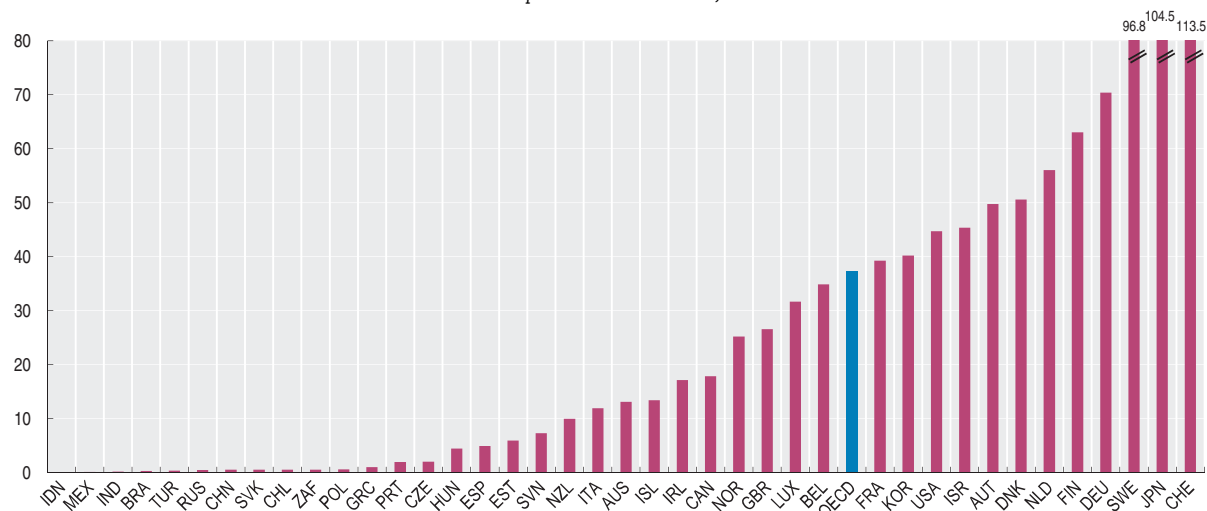
Number

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	236	279	300	292	364	321	343	336	359	357	348	310	290	288
Austria	214	259	270	258	273	256	320	337	381	426	443	424	413	416
Belgium	362	435	397	374	327	336	342	326	412	410	444	420	397	376
Canada	430	533	534	521	520	531	588	571	647	665	675	642	598	602
Chile	3	-	2	2	2	5	5	3	5	5	6	5	6	9
Czech Republic	12	11	16	10	9	11	14	15	14	14	19	21	21	21
Denmark	227	217	271	237	218	221	228	244	292	309	276	301	300	279
Estonia	4	2	2	1	1	2	1	4	-	1	6	7	6	8
Finland	357	449	452	446	343	347	273	300	337	341	348	355	347	336
France	2 159	2 216	2 286	2 341	2 118	2 179	2 205	2 255	2 394	2 384	2 491	2 471	2 453	2 456
Germany	5 529	5 692	6 157	6 004	5 763	5 632	5 486	5 427	5 615	5 757	6 076	6 047	5 859	5 764
Greece	13	9	12	6	5	6	8	13	9	15	14	14	13	11
Hungary	25	32	18	41	27	31	29	41	44	41	44	49	47	44
Iceland	7	4	6	7	11	4	8	4	2	4	4	3	3	4
Ireland	30	37	38	74	31	50	51	65	68	75	74	75	78	76
Israel	215	289	299	278	317	314	263	290	345	452	420	375	361	339
Italy	705	739	677	662	632	706	708	705	750	741	770	752	735	718
Japan	10 691	11 316	11 722	12 974	14 471	13 952	14 125	14 372	14 079	13 828	13 729	13 861	13 744	13 322
Korea	323	388	468	581	728	910	1 207	1 686	1 961	2 120	2 121	2 053	1 863	1 959
Luxembourg	16	16	22	22	20	26	13	20	23	20	24	17	19	16
Mexico	10	9	10	11	9	13	10	15	16	14	17	16	15	13
Netherlands	812	838	853	913	1 015	1 051	959	969	986	970	1 034	948	964	926
New Zealand	31	40	52	47	46	42	61	57	63	59	60	53	47	43
Norway	76	101	95	106	100	89	106	98	105	123	124	117	115	122
Poland	10	9	4	9	9	11	11	11	16	13	13	19	21	23
Portugal	4	8	5	5	3	6	6	7	6	12	16	24	21	21
Slovak Republic	1	5	3	3	2	2	3	5	1	2	2	3	3	3
Slovenia	5	5	12	4	8	6	14	14	12	17	12	18	18	15
Spain	92	108	127	124	144	157	161	155	216	219	213	221	225	226
Sweden	922	984	852	878	608	667	692	671	694	828	938	943	928	900
Switzerland	816	823	804	767	804	804	802	839	871	863	895	899	883	879
Turkey	4	4	7	3	4	9	8	8	13	12	20	22	22	24
United Kingdom	1 669	1 646	1 789	1 633	1 604	1 593	1 639	1 653	1 648	1 656	1 655	1 666	1 641	1 618
United States	13 050	13 933	14 499	14 548	13 720	13 567	14 423	14 760	15 136	15 311	15 166	14 505	13 923	13 715
EU27 total	13 174	13 723	14 266	14 055	13 168	13 301	13 172	13 261	13 936	14 271	14 933	14 808	14 530	14 269
OECD total	39 057	41 435	43 061	44 184	44 256	43 856	45 112	46 274	47 522	48 063	48 498	47 654	46 379	45 571
Brazil	20	29	29	26	29	45	42	42	48	52	62	64	61	58
China	22	44	48	59	71	103	153	216	223	308	421	484	503	667
India	15	24	32	39	53	86	122	130	113	126	143	145	146	161
Indonesia	1	2	3	1	4	2	2	2	2	2	2	1	1	1
Russian Federation	59	70	96	62	73	51	51	52	50	66	65	65	63	63
South Africa	31	33	37	27	37	23	27	32	29	35	33	31	29	27
World	39 385	41 799	43 503	44 622	44 758	44 424	45 838	47 080	48 362	49 063	49 670	48 915	47 658	47 022

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Triadic patent families

Number per million inhabitants, 2009

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