

Statistics in focus

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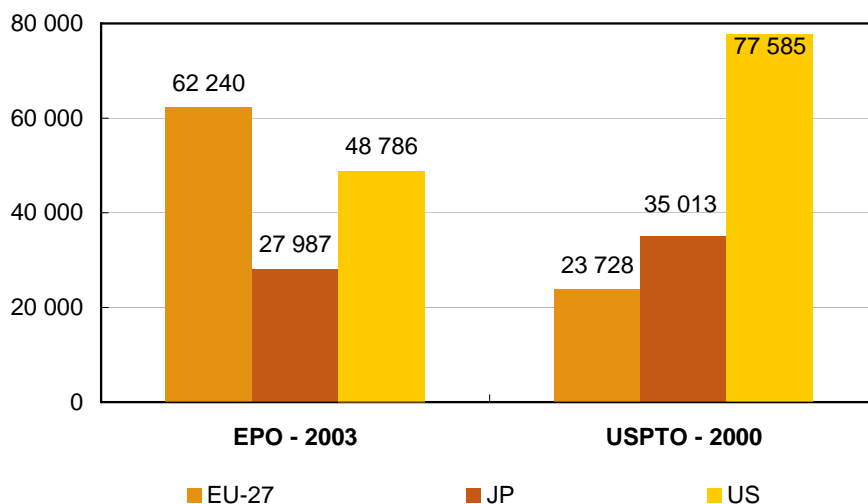
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National patent statistics

Germany leads amongst EU Member States

Figure 1: Total number of patent applications to the European Patent Office (EPO) in 2003 and total number of patents granted by the US Patent and Trademark Office (USPTO) in 2000



Source: Eurostat, patent statistics

Main findings

- In 2003 the EU-27 Member States reached the 60 000 mark for patent applications to the EPO. Amongst them Germany led by far with 25 728 applications to the EPO.
- Patent applications from the EU-27 to the EPO grew at an annual average growth rate (AAGR) of 4% between 1998 and 2003. Over the same period very high growth rates were observed in applications from Asian countries, ranging from 10% for Japan to 46% for India.
- In 2003 the EU-27 produced 128 patent applications to the EPO per million inhabitants. Worldwide, ratios of more than 200 patent applications per million inhabitants were reported by Switzerland (426), Israel (237) and Japan (217).
- In 2000 more than 75 000 patents were granted to Americans by the USPTO. More than 44% of the patents granted by the USPTO to EU countries went to Germany.
- In triadic patent families, the three main economies in the world continued to play the most important role. The United States led in 2000, but Japan took over second place from EU-25 which followed very close behind.



More than 60 000 patent applications from the EU to the EPO in 2003 with China and India catching up rapidly

Table 2: Patent applications to the EPO, total number, per million inhabitants, per million labour force and per million GDP in euro, EU-27 and selected countries, 1998, 2003 and AAGR

		Total number		AAGR	Per million	Per million labour	Per GDP in
		1998	2003	1998-2003	inhabitants	force	million euro
EU-27	EU-27	51 194	62 250	4.0	128	:	:
EU-25	EU-25	51 145	62 191	4.0	137	293	6.2
Belgium	BE	1 313	1 496	2.6	144	338	5.4
Bulgaria	BG	24	34	7.4	4	10	1.9
Czech Republic	CZ	101	163	10.0	16	32	2.0
Denmark	DK	944	1 270	6.1	236	444	6.7
Germany	DE	21 629	25 728	3.5	312	649	11.9
Estonia	EE	7	21	25.0	16	32	2.6
Ireland	IE	226	306	6.2	77	161	2.2
Greece	EL	80	123	9.1	11	26	0.8
Spain	ES	830	1 274	9.0	31	65	1.6
France	FR	7 433	9 202	4.4	154	343	5.8
Italy	IT	3 711	5 002	6.2	87	208	3.7
Cyprus	CY	7	12	11.4	16	34	1.0
Latvia	LV	10	14	6.1	6	12	1.4
Lithuania	LT	1	20	69.9	6	12	1.2
Luxembourg	LU	80	90	2.3	200	463	3.5
Hungary	HU	120	192	9.8	19	46	2.6
Malta	MT	5	4	-6.9	9	22	0.8
Netherlands	NL	2 941	3 956	6.1	244	469	8.3
Austria	AT	1 070	1 581	8.1	195	399	7.0
Poland	PL	61	160	21.5	4	9	0.8
Portugal	PT	32	78	19.6	7	14	0.6
Romania	RO	26	26	-0.2	1	3	0.5
Slovenia	SI	50	101	15.1	50	105	4.0
Slovakia	SK	23	44	13.3	8	17	1.5
Finland	FI	1 481	1 591	1.4	306	612	11.1
Sweden	SE	2 622	2 547	-0.6	285	557	9.5
United Kingdom	UK	6 368	7 217	2.5	121	247	4.5
Croatia	HR	31	81	21.2	18	45	3.1
Turkey	TR	53	133	20.3	2	6	0.6
Switzerland	CH	2 635	3 113	3.4	426	716	10.9
Iceland	IS	36	44	4.2	154	276	4.7
Liechtenstein	LI	43	25	-10.4	726	:	:
Norway	NO	511	533	0.9	117	226	2.7
Australia	AU	1 236	1 958	9.6	98	:	4.3
Canada	CA	1 931	2 736	7.2	86	:	3.6
China	CN	348	1 898	40.4	1	2	:
Israel	IL	1 088	1 587	7.8	237	:	:
India	IN	152	1 003	45.8	:	:	:
Japan	JP	17 243	27 987	10.2	219	420	7.5
South Korea	KR	1 227	5 400	34.5	113	:	:
Russian Federation	RU	534	641	3.7	4	9	:
Singapore	SG	172	416	19.4	99	:	:
Taiwan	TW	198	572	23.6	25	:	:
United States	US	38 345	48 786	4.9	168	331	5.0

Source: Eurostat, patent statistics

Table 2 gives an overview of patent applications to the EPO in 2003 from all EU Member States and several other countries. Among the EU-27 Member States Germany has always led in absolute terms. The same country also took the lead in relative terms. Finland and

Sweden were ranked high with 306 and 285 patent applications per million inhabitants respectively but seem to be losing ground due to low growth rates. Whereas in EU-27 the number of patent applications to the EPO

increased at an AAGR of 4.0% from 1998 to 2003, the AAGR was only 1.4% in Finland and -0.6% in Sweden.

Very high growth rates, ranging from 10% in Japan to 46% in India, were observed in all the Asian countries included in the table. Ratios of more than 200 patent applications per million inhabitants were reported by Switzerland (426), Israel (237) and Japan (217). For patents granted by the USPTO in 2000 the growth rates were generally lower. The AAGR for EU-27 was only 0.5%. In absolute terms Germany was the leader, but in

terms of the ratio per million inhabitants Sweden ranked first, Germany second and Finland third, the two Scandinavian countries having negative AAGRs. Even the United States, for which the USPTO is the home office, had an AAGR of only 1.4% between 1995 and 2000. The number of patents from Asian countries increased at higher rates: from 2% for South Korea up to 37% for China. The highest ratios of patents granted per million inhabitants were reported in Japan (276), the United States (275) and Taiwan (232).

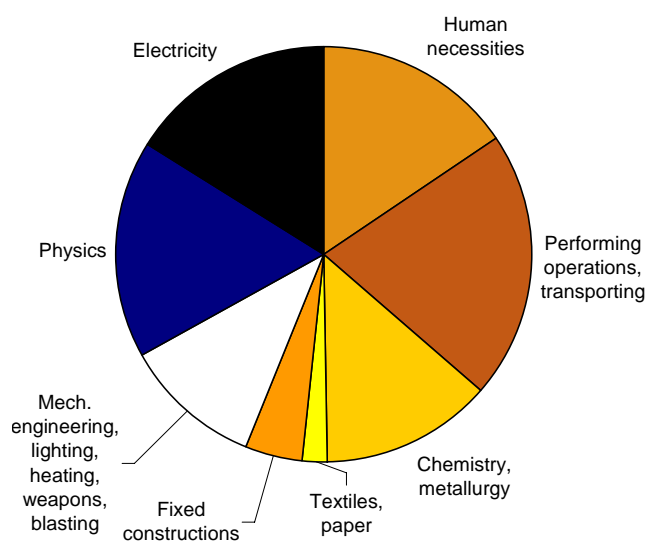
Table 3: Patents granted by the USPTO, total number, per million inhabitants, per million labour force and per million GDP in euro, EU-27 and selected countries, 1995, 2000 and AAGR

		Total number		AAGR	Per million	Per million labour	Per GDP in
		1995	2000	1995-2000	inhabitants	force	million euro
EU-27	EU-27	23 089	23 723	0.5	:	:	:
EU-25	EU-25	23 077	23 716	0.5	53	115	2.6
Belgium	BE	626	550	-2.6	54	125	2.2
Bulgaria	BG	6	4	-5.3	1	1	0.3
Czech Republic	CZ	26	28	1.4	3	6	0.5
Denmark	DK	372	382	0.5	72	135	2.2
Germany	DE	9 368	10 509	2.3	128	267	5.1
Estonia	EE	2	1	-12.9	1	2	0.2
Ireland	IE	91	145	9.8	39	82	1.4
Greece	EL	13	14	0.7	1	3	0.1
Spain	ES	230	288	4.6	7	16	0.5
France	FR	3 752	3 235	-2.9	55	126	2.2
Italy	IT	1 489	1 694	2.6	30	72	1.4
Cyprus	CY	0	1	43.1	2	4	0.1
Latvia	LV	2	6	20.9	2	5	0.7
Lithuania	LT	0	6	80.5	2	4	0.5
Luxembourg	LU	25	36	7.4	83	195	1.6
Hungary	HU	55	54	-0.3	5	13	1.1
Malta	MT	:	2	:	5	13	0.5
Netherlands	NL	1 235	1 307	1.1	82	161	3.2
Austria	AT	446	556	4.5	69	144	2.6
Poland	PL	8	20	19.8	1	1	0.1
Portugal	PT	10	14	8.1	1	3	0.1
Romania	RO	6	3	-17.0	0	:	0.1
Slovenia	SI	16	24	7.8	12	25	1.1
Slovakia	SK	6	7	3.2	1	3	0.3
Finland	FI	634	614	-0.6	119	237	4.7
Sweden	SE	1 291	1 172	-1.9	132	261	4.5
United Kingdom	UK	3 377	3 050	-2.0	52	106	1.9
Croatia	HR	13	14	1.5	3	0	0.7
Turkey	TR	7	12	11.5	:	1	0.1
Switzerland	CH	1 298	1 253	-0.7	175	299	4.7
Iceland	IS	10	20	14.3	70	:	2.1
Liechtenstein	LI	13	10	-4.1	314	:	:
Norway	NO	214	203	-1.1	45	87	1.1
Australia	AU	695	706	0.3	37	:	1.7
Canada	CA	2 739	3 216	3.3	105	:	4.1
China	CN	81	398	37.4	0	1	:
Israel	IL	681	884	5.4	141	:	:
India	IN	83	301	29.3	:	:	:
Japan	JP	29 641	35 013	3.4	276	517	7.0
South Korea	KR	3 456	3 837	2.1	82	:	:
Russian Federation	RU	164	226	6.7	2	3	:
Singapore	SG	103	458	34.7	114	:	:
Taiwan	TW	2 282	5 177	17.8	232	:	:
United States	US	72 420	77 585	1.4	275	539	7.3

Source: Eurostat, patent statistics

One out of every five patent applications from the EU involves an invention in mechanics

Figure 4: Patent applications to the EPO for EU-25 by IPC section, as a percentage of total patent applications, 2003 (priority year)



Source: Eurostat, patent statistics

Up to now the new Member States - Bulgaria and Romania - have not been among the most active EU countries in terms of patent applications to the EPO. Among the EU-27 countries Bulgaria ranked 20th and Romania 21st. All the lowest ranked countries (from 23rd downwards) were small economies (Estonia, Lithuania, Latvia, Cyprus and Malta).

There were often differences in the ranking, depending on whether absolute or relative figures were used. France ranked second in total number of patent applications (9 202) to the EPO but only 8th (154) per million inhabitants. The United Kingdom was a similar case: it ranked third in total number (7 217) but 10th (121) per million inhabitants.

More than 20% of the patent applications from the EU to the EPO in 2003 were classified in IPC section B "Performing operations, transporting" and can be considered inventions in mechanics. 17% of the patent applications from the EU involved "Physics" – IPC section G – and more than 16% "Electricity" – IPC section H.

Some countries were more specialised: more than 37% of the patent applications from Finland related to electricity and 32% from the Netherlands had to do with physics.

Table 5: Patent applications to the EPO by IPC section, total number and as a percentage of total patent applications, EU-27 and selected countries, 2003 (priority year)

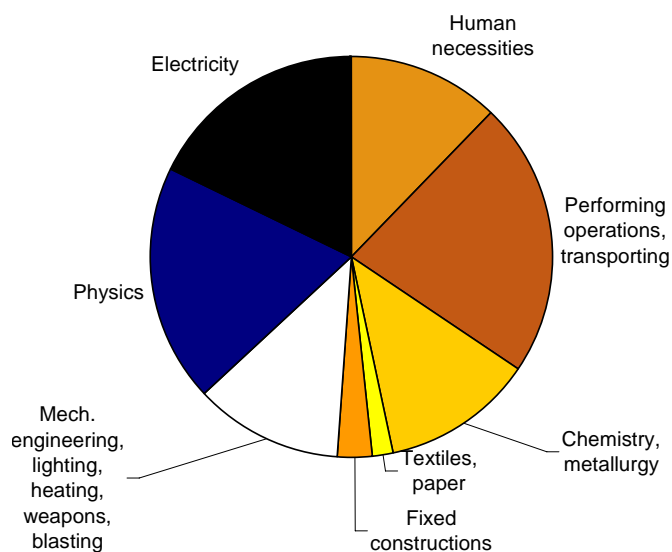
	Total number	in %	Human necessities	Performing operations, transporting	Chemistry, metallurgy	Textiles, paper	Fixed constructions	Mech. engineering, lighting, heating, weapons, blasting	Physics	Electricity
EU-27	62 250	100	:	:	:	:	:	:	:	:
EU-25	62 191	100	15.6	20.9	13.4	1.9	4.5	10.7	17.0	16.1
BE	1 496	100	16.9	17.8	27.2	2.8	5.3	6.4	12.3	11.4
BG	34	100	20.7	11.8	11.8	0.0	8.9	8.9	20.8	17.0
CZ	163	100	18.3	18.2	23.4	8.2	8.9	7.5	8.3	7.2
DK	1 270	100	26.8	13.5	18.0	0.6	6.5	8.5	11.2	14.9
DE	25 728	100	12.2	23.7	13.0	2.1	4.0	13.6	16.3	15.1
EE	21	100	20.6	0.0	30.0	0.0	0.0	4.7	27.5	17.1
IE	306	100	29.0	14.6	8.1	0.0	2.6	2.4	23.1	20.2
EL	123	100	21.4	16.7	8.4	0.8	6.9	12.6	18.0	15.2
ES	1 274	100	23.8	25.0	13.7	1.8	7.3	8.5	10.6	9.3
FR	9 202	100	17.0	19.0	13.2	1.2	3.9	10.2	16.8	18.7
IT	5 002	100	20.2	27.7	10.3	3.4	5.5	12.4	9.6	10.7
CY	12	100	19.2	28.5	8.5	0.0	8.5	17.1	4.3	13.8
LV	14	100	43.8	16.1	40.1	0.0	0.0	0.0	0.0	0.0
LT	20	100	5.0	5.0	18.3	0.0	0.0	5.0	65.6	1.2
LU	90	100	1.7	35.9	14.6	1.4	6.5	21.4	10.5	8.1
HU	192	100	28.6	14.3	20.7	0.5	3.7	7.0	10.4	14.9
MT	4	100	0.0	28.6	0.0	14.3	0.0	0.0	57.1	0.0
NL	3 956	100	13.0	13.9	12.4	1.1	4.3	4.2	32.1	19.0
AT	1 581	100	15.8	22.4	12.8	3.2	7.7	11.3	12.0	14.8
PL	160	100	18.1	18.9	14.6	1.2	7.8	13.2	13.0	13.1
PT	78	100	13.0	25.6	17.4	3.7	5.1	13.0	14.1	8.1
RO	26	100	21.5	4.4	7.8	0.0	19.6	9.1	14.7	22.8
SI	101	100	21.6	14.9	19.0	2.7	8.9	8.4	9.6	14.7
SK	44	100	22.2	11.6	18.4	1.5	9.1	12.6	11.9	12.6
FI	1 591	100	7.9	15.2	9.4	5.7	2.5	3.7	18.5	37.1
SE	2 547	100	17.0	20.4	9.3	1.9	4.3	10.1	14.7	22.4
UK	7 217	100	20.1	15.1	15.9	0.9	4.8	7.0	21.3	14.9
HR	81	100	35.3	12.8	19.4	0.0	11.1	7.4	8.2	5.7
TR	133	100	20.6	8.2	8.8	11.3	3.8	25.6	11.3	10.4
CH	3 113	100	21.2	20.8	13.9	3.0	4.3	7.1	18.5	11.1
JP	27 987	100	9.3	14.9	16.9	1.1	0.7	7.8	24.0	25.3
US	48 786	100	22.9	12.4	16.1	0.8	2.0	4.8	22.8	18.1

In 2000 most of the USPTO patents were granted to American inventors (77 585). The holders of 35 013 of the patents granted by the USPTO are Japanese residents and 23 723 patents went to residents of one of the EU-27 Member States.

Although, on average, the patents granted to the EU by the USPTO in 2000 specialised in “Performing operations; transporting” – section B – with 22.1% of the total patents, the distribution across IPC sections varied at Member State level: four countries specialised in “Human necessities” – section A –, one in “Chemistry, metallurgy” – section C –, one in “Physics” – section G – and four in “Electricity” – section H. Ireland specialised in two sections: “Physics” and “Electricity”. Countries granted fewer than ten patents by the USPTO were not taken into account.

One out of every four patents granted by the USPTO to Americans was classified as “Physics” – section G. The same was also true of one third of the patents granted by the USPTO to Japanese applicants. “Physics” was the second IPC section for the patents granted to the EU.

Figure 6: Patents granted by the USPTO for EU-25 by IPC section, as a percentage of total patents granted, 2000 (priority year)



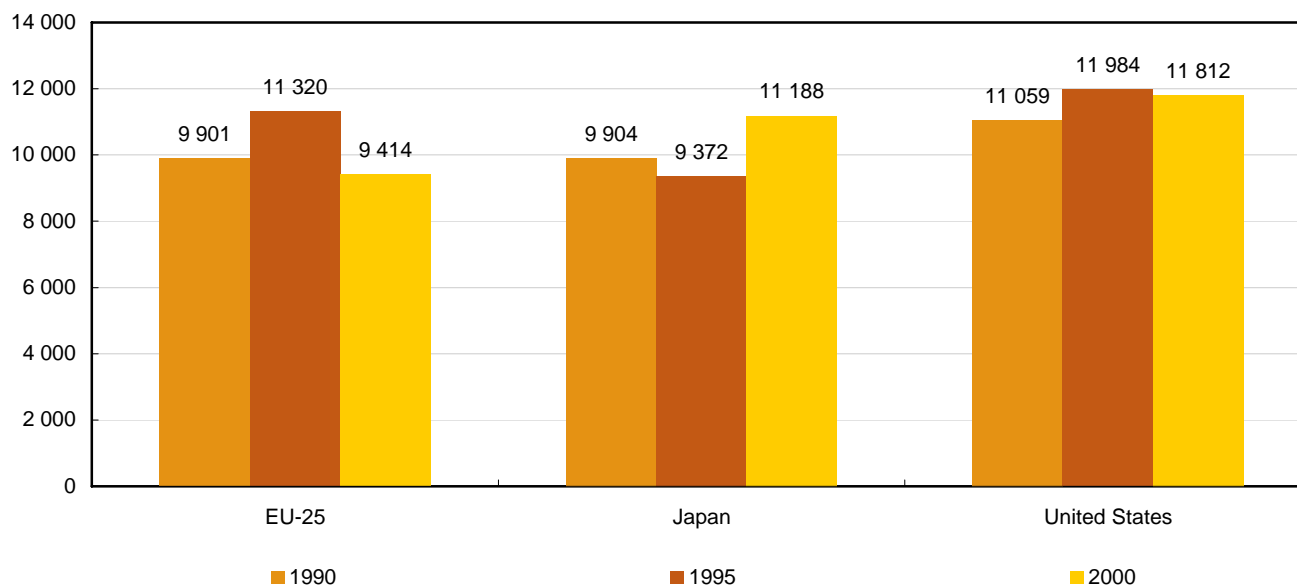
Source: Eurostat, patent statistics

Table 7: Patents granted by the USPTO by IPC section, as a percentage of total patents granted, EU-27 and selected countries, 2000 (priority year)

	Total number	in %	Human necessities	Performing operations, transporting	Chemistry, metallurgy	Textiles, paper	Fixed constructions	Mech. engineering, lighting, heating, weapons, blasting	Physics	Electricity	Unknown
EU-27	23 723	100	:	:	:	:	:	:	:	:	:
EU-25	23 716	100	12.1	22.1	12.4	1.6	2.7	12.0	19.1	17.8	0.2
BE	550	100	8.8	20.1	26.8	3.7	2.4	6.3	16.8	14.6	0.5
BG	4	100	47.7	0.0	2.6	0.0	0.0	41.8	7.9	0.0	0.0
CZ	28	100	6.4	8.8	16.4	7.0	0.0	10.6	22.3	28.3	0.1
DK	382	100	28.1	14.0	17.6	0.3	2.9	11.8	12.2	13.1	0.0
DE	10 509	100	8.8	24.9	13.2	1.6	1.7	15.7	18.0	15.7	0.2
EE	1	100	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	0.0
IE	145	100	13.4	15.8	7.3	0.0	2.7	2.6	29.1	29.1	0.0
EL	14	100	31.2	20.7	7.3	0.0	0.0	7.3	2.6	23.5	7.3
ES	288	100	19.9	28.6	11.5	2.1	5.9	11.1	9.4	11.3	0.3
FR	3 235	100	15.2	22.2	11.9	0.8	2.3	9.2	18.5	19.7	0.1
IT	1 694	100	15.5	25.7	10.6	2.4	2.7	11.1	16.5	15.5	0.1
CY	1	100	0.0	41.7	16.7	0.0	0.0	0.0	41.7	0.0	0.0
LV	6	100	69.4	0.0	9.2	0.0	0.0	0.0	21.3	0.0	0.0
LT	6	100	15.8	36.8	31.6	0.0	0.0	0.0	0.0	15.8	0.0
LU	36	100	2.8	48.1	24.9	0.0	2.8	8.5	2.8	8.3	1.9
HU	54	100	15.5	13.6	18.4	0.0	0.0	5.6	19.7	27.2	0.0
MT	2	100	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
NL	1 307	100	13.8	15.2	12.0	0.9	2.8	6.1	24.4	24.7	0.2
AT	556	100	12.1	24.2	12.2	1.9	5.4	13.1	14.6	16.2	0.2
PL	20	100	27.5	8.3	9.4	0.0	2.5	18.1	25.2	9.1	0.0
PT	14	100	20.2	27.6	7.9	0.0	0.0	16.1	12.6	8.6	7.0
RO	3	100	60.0	0.0	0.0	0.0	0.0	20.0	10.0	10.0	0.0
SI	24	100	50.5	14.7	8.8	0.0	4.2	8.4	4.2	9.0	0.0
SK	7	100	18.0	3.6	28.4	0.0	0.0	38.0	7.2	4.8	0.0
FI	614	100	9.2	19.4	7.0	6.3	2.4	6.2	17.3	31.9	0.2
SE	1 172	100	14.0	21.2	5.9	2.4	2.7	11.2	17.8	24.8	0.1
UK	3 050	100	14.8	15.2	11.6	1.1	5.5	8.3	26.3	17.1	0.0
HR	14	100	42.9	14.3	14.3	0.0	7.1	14.3	7.1	0.0	0.0
TR	12	100	51.5	0.8	9.0	16.3	0.0	16.3	4.1	2.0	0.1
CH	1 253	100	17.7	24.0	13.7	2.3	1.6	9.0	18.6	13.2	0.1
JP	35 013	100	5.0	16.2	8.2	0.6	0.6	7.9	33.0	28.4	0.2
US	77 585	100	17.9	17.3	8.6	0.6	3.1	7.7	25.4	19.2	0.2

Growing number of Japanese triadic patent families

Figure 8: Total number of triadic patent families, EU-25, Japan and United States, by priority years 1990, 1995 and 2000



Source: Eurostat, patent statistics

Triadic patent families

Patent indicators – Science, technology and innovation – are used to measure inventive performance, diffusion of knowledge and internationalisation of innovative activities – across countries, firms, industries, technology areas, etc. A common approach is to calculate patent indicators based on information coming (filings, grants, etc.) from a particular patent office. While the richness and strength of those indicators are broadly recognised, they are affected by “home” advantage bias – where proportionate to their inventive activity, domestic applicants tend to file more patents in their home country compared to foreign applicants.

Patents taken in various countries to protect inventions can be linked together to build triadic patent families: these are patents taken at the European Patent Office (EPO), the Japanese Patent Office (JPO), and the US Patent and Trademark Office (USPTO) that share one or more priorities. Patent families are derived from priority application (first filing to a patent office for a patent to protect an invention). A single priority may lead to several patents or a single patent may include several priorities...

Source: OECD

The latest year for which triadic patent family data are available is 2000. This is because it can take up to four years between the date of the priority application and the availability of information on patent applications to the EPO and JPO. As a triadic patent family is not counted until the USPTO has granted a patent, the time lag can be even longer due to the USPTO procedure.

The trend in the number of triadic patent families from 1990 to 1995 and 2000 in the EU, Japan and the United States is shown in Figure 8. In all three years the United States was always in the lead. In 1990 the EU (9 901) and Japan (9 904) were level and the United States (11 059) was the clear leader. But in 1995 the EU (11 320) was very close behind the United States (11 984). Five years later the EU had slipped back to 9 414 triadic patent families and Japan was close behind the United States on 11 188 and 11 812 respectively.

Table 9: Distribution of triadic patent families, EU-25, Japan and United States, by priority years 1990, 1995 and 2000, as % of total

	1990	1995	2000
European Union (EU-25)	30.5	32.5	27.1
Japan	30.5	26.9	32.2
United States	34.0	34.4	34.0

The figures in Table 9 show that America's share of triadic patent families was stable over the whole observation period and that Japan's share grew over the last few years whereas EU-25 lost ground.

➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Production of patent statistics at Eurostat was reorganised in 2005. This means that the data shown in this issue of Statistics in Focus and on the Eurostat webpage are no longer entirely comparable with the data published previously.

In 2005 only a single raw database – compiled mainly from input from the European Patent Office (EPO), the US Patent and Trademark Office (USPTO) and the Japanese Patent Office (JPO) – was used to produce an extended set of tables and indicators on the Eurostat webpage. The same will also be done in the years ahead. The aggregated patent statistics are produced from a raw data set delivered by the OECD. This raw data set will be replaced by PATSTAT for future data production.

Eurostat is continuing to produce the patent statistics it started some years ago (source: Eurostat/EPO). However, these are now produced using the priority year of the application, and not the year of filing as previously. The values are, however, similar. These data are generally less extensive than the data released by Eurostat. This is because all PCT applications filed with the EPO (i.e. applications lodged in accordance with the procedure under the Patent Cooperation Treaty) are taken into consideration by Eurostat whereas the OECD datasets cover only some of them. Eurostat has implemented the changes described above and now only a single data source is used (as described above) and the data produced provide a better reflection of the innovation and R&D performance of the economy.

For all further details, see the Eurostat metadata on patent statistics posted on the webpage.

Counting patents with multiple inventors

Where a patent lists several inventors from different countries, the individual contributions from each country are taken into account. This is done in order to eliminate multiple counting of such patents. For example, a patent that lists the inventors as one French, one American and two German residents will be counted as 1/4 of a patent for France, 1/4 for the US and 1/2 for Germany.

International patent classification

On 1 January 2006 the eighth edition of the International Patent Classification (IPC) entered into force. The World Intellectual Property Organization (WIPO), a specialised agency of the United Nations, is responsible for updating the IPC. The IPC is a comprehensive subject classification system applied to all patents by the patent-issuing authorities. The IPC is a hierarchical system divided into sections, classes, subclasses and groups. Each IPC code is a combination of letters and numbers referring to the different categories of the system. A patent can have only one IPC code or more. The IPC codes are very useful in patent searches to know the state of the art.

The data and indicators published on the webpage are structured as follows:

Patents at national level

- Patent applications to the EPO by priority year;
- Patents granted by the USPTO by priority year;
- Triadic patent families by earliest priority year.

EPO patent applications by priority year

The data produced provide users with figures on patent applications to the *European Patent Office* (EPO). Data are given at national level and cover the period from 1977 to 2003. EPO data refer to all patent applications by priority year, as opposed to patents granted by priority year, which is the case with USPTO data.

USPTO patents granted by priority year

The data produced provide users with figures on patents granted by the *US Patent and Trademark Office* (USPTO) by priority year. The time series covers the period from 1977 to 2000. Due to data availability, USPTO data refer to patents granted, as opposed to applications, which is the case with EPO data.

Triadic patent families by earliest priority year

The patent families available in NewCronos refer to “triadic families”. A patent is a member of these patent families if and only if it has been applied for and filed at the *European Patent Office* (EPO) and at the *Japanese Patent Office* (JPO) and if it has been granted by the *US Patent and Trademark Office* (USPTO). Patent families, as opposed to patents, are provided with the intention of improving international comparability (home advantage is suppressed and the values of the patents are more homogeneous).

International Patent Classification (IPC)

Section A	Human necessities;
Section B	Performing operations; transporting;
Section C	Chemistry; metallurgy;
Section D	Textiles; paper;
Section E	Fixed constructions;
Section F	Mechanical engineering; lighting; heating; weapons; blasting;
Section G	Physics;
Section H	Electricity;
Section UNK	IPC section unknown.

If the IPC section of a patent is unknown, the patent is not classified. Therefore in some cases the sum of IPC sections A to H for a country does not add up to 100%.

Statistical abbreviations and symbols

:	Not available
AAGR	Annual average growth rate
EU-27	EU-25 plus Bulgaria and Romania

This issue of Statistics in Focus shows the data available in Eurostat's reference database at the 27 October 2006.

Further information:

Data: [EUROSTAT Website/Home page/Science and technology/Data](#)

-  **Science and technology**
 -  Research and development
 -  Community innovation survey
 -  High-tech industry and knowledge-intensive services
 -  **Patent statistics**

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