

Chapter 3

WORLDWIDE PATENTING ACTIVITY

Patent activity is recognized throughout the world as an indicator of innovation. This chapter examines worldwide patent activities in terms of patent applications and grants. The statistics mostly cover the five-year period from 2009 to 2013. The effects of the worldwide recession in 2009 are therefore still visible in this chapter. After a decrease in patent applications in 2009, generally attributed to the worldwide recession, the number of patent applications rebounded in 2010 and has grown further since. This suggests that the effects of the recession on the patenting activities have been limited. Detailed statistics on the usage of the PCT system appear in Chapter 5.

Hereafter the counts of applications and filings are by the calendar year of filing and grants by the calendar year of grant. Statistics are derived primarily from the WIPO Statistics Database²², as collected from offices all over the world. Patent statistics are sometimes retroactively updated, and where necessary, possible missing counts have been supplemented using other sources, but otherwise no estimated counts have been included to compensate for missing data. Considering that not all the offices report their filing statistics regularly enough, some of these data should be interpreted with care, especially when referring to countries outside the IP5 Blocs.

It should be noted that the number of inventions that lead to patent applications is less than the total number of applications filed. This is because the first filing with respect to an invention is usually made in one office, and is then often followed by applications made to several other offices within one year, each such application claiming the priority of the earlier first filing. First filings can be seen as an indicator of innovation and inventive activity, while foreign filings are an indicator of an intention for international trade and of globalization.

While demand for patent protection is considered principally by counting each national, regional or international application only once, alternative representations are also given in this chapter in terms of the demand for rights, after cumulating the number of designated countries over applications within regional procedures.

In this chapter, applications are counted in terms of patent filings; first filings; patent applications entering a grant procedure; and demand for national patent rights. These counting methods are associated with separate sections within the chapter.

- "*Patent filings*" include direct national, direct regional, and international PCT applications;
- "*First filings*" include initial patent applications filed prior to any later subsequent filings to extend the protection to other countries;

²² See footnote 7.

- "*Patent applications entering a grant procedures*" include direct national, direct regional, national stage PCT, and regional stage PCT applications;
- "*Demand for national patent rights*" includes direct national, designated regional, national stage PCT, and designated regional stage PCT applications.

The counts of patent grants in this chapter are based on extractions from the WIPO Statistics Database. They are counted in the year that the grants are issued or published. As with the applications, alternative presentations are also given in this chapter for grants in terms of the demands for rights, after cumulating the number of designated countries over applications within regional procedures.

The last part of this chapter discusses inter-bloc patent activity in terms of application flows between blocs and in terms of patent families. A patent family is a group of patent filings that claim the priority of a single filing, including the original priority forming filing itself and any subsequent filings made throughout the world. The set of distinct priority forming filings (that indexes the set of patent families) in principle constitutes a better measure for first filings than aggregated domestic national filings. IP5 Patent families are a filtered subset of patent families for which there is evidence of patenting activity in all IP5 Blocs.

GUIDE TO FIGURES IN CHAPTER 3

Due to the complexity of the patent system, different representations of the patent filing process are made to illustrate complementary parts of the process. The following scheme can guide the reader to graphs that correspond to the different representations. This aims also at describing the terminology used throughout the Chapter 3.

- **Figs. 3.1, 3.2, 3.3, and 3.4** show the numbers of *patent filings* in terms of application forms filled out. All of the following are counted only once: Direct national, direct regional filings (filed with the EPO, EAPO, ARIPO, GCCPO, OAPI²³), and PCT international filings.
- **Figs. 3.5, 3.6, and 3.12** show the numbers of requests for patents as *patent applications that entered a grant procedure*. Direct applications to the offices are counted at the date of filing. PCT applications are counted at the moment they enter the national or regional phase. Direct national and direct regional filings are counted only once. PCT filings are replicated over the numbers of national/regional procedures that are started.
- **Figs. 3.7, 3.8, and 3.9** show the equivalent numbers of *demands for national patent rights*. Direct national filings are counted only once. The counts for PCT applications entering national procedures are replicated over the number of countries where they enter this phase. The counts for direct regional filings and PCT regional phase filings are replicated over the number of countries designated in the applications at the time that they enter the regional procedure. This gives a representation in terms of national patenting.
- **Figs. 3.13, 3.14, 3.15 and Table 3** show the numbers of *patent families* that are generated as the set of first filings, counted only once each, and also show the flows between blocs in terms of the first filings for which claims to priority rights were made with subsequent filings in other countries.
- Regarding grants, **Fig. 3.10** shows the numbers of *granted patents*. All grants are counted only once (in an analogous way to Figs. 3.5, 3.6, and 3.12 for applications).
- **Fig. 3.11** shows the numbers of *validated national patent grant registrations*. Direct national grants are counted only once, but the counts for regional office grants are replicated over the numbers of countries for which the grant provides valid registrations. This gives a representation in terms of national patent rights (comparable to Figs. 3.7, 3.8, and 3.9 for applications).

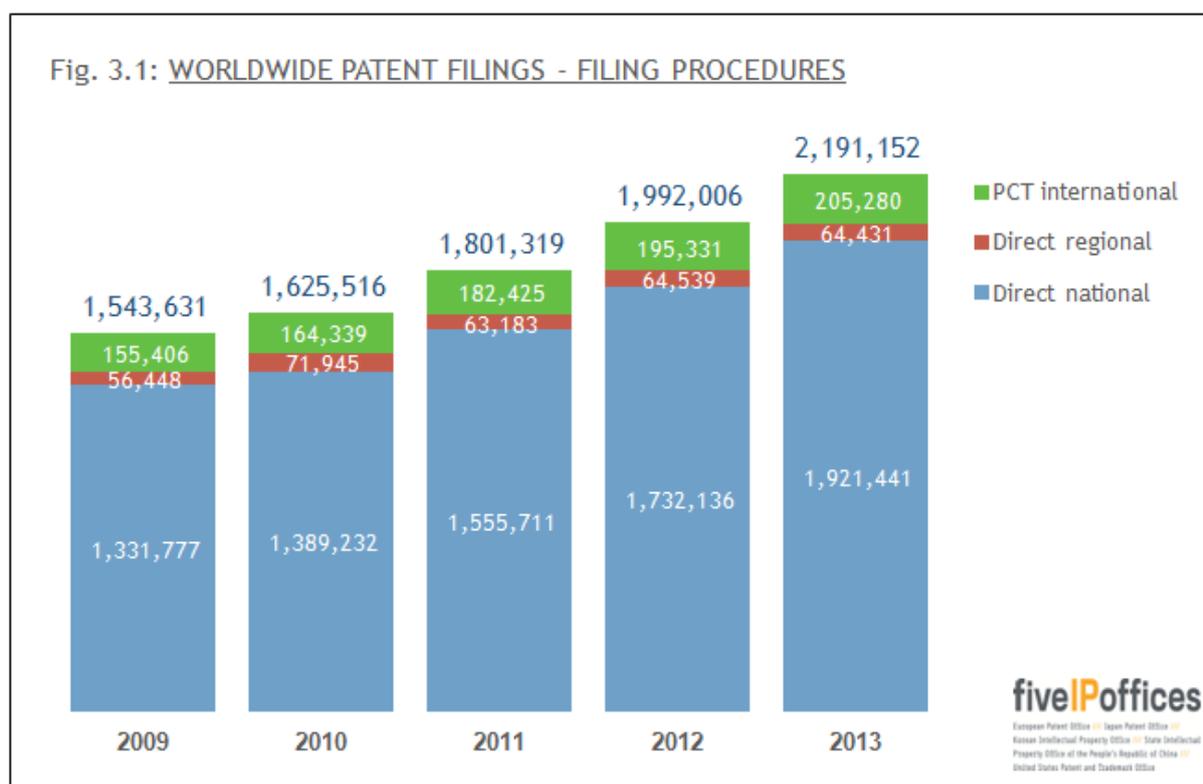
²³ The EAPO is the Eurasian Patent Office. The ARIPO is the African Regional Intellectual Property Office. The GCCPO is the Gulf Cooperation Council Patent Office. The OAPI is the African Intellectual Property Organization.

PATENT FILINGS

The patent filings that are counted in this section include direct national, direct regional, and initial PCT applications.

This section (with Figs. 3.1, 3.2, and 3.3) shows the numbers of patent applications that were filed throughout the world. These can be filed according to the direct national, direct regional, or PCT international procedures. Here, the applications are counted only once, which means that the number of countries designated by regional filings and the number of countries associated with the PCT filings are not used in determining these counts. The number of applications filed represents a measure of the overall numbers of actions taken to assert IP rights around the world, although some inventions lead to filings in more than one office.

Fig. 3.1 shows the breakdown of applications filed by the three types of filing procedures.

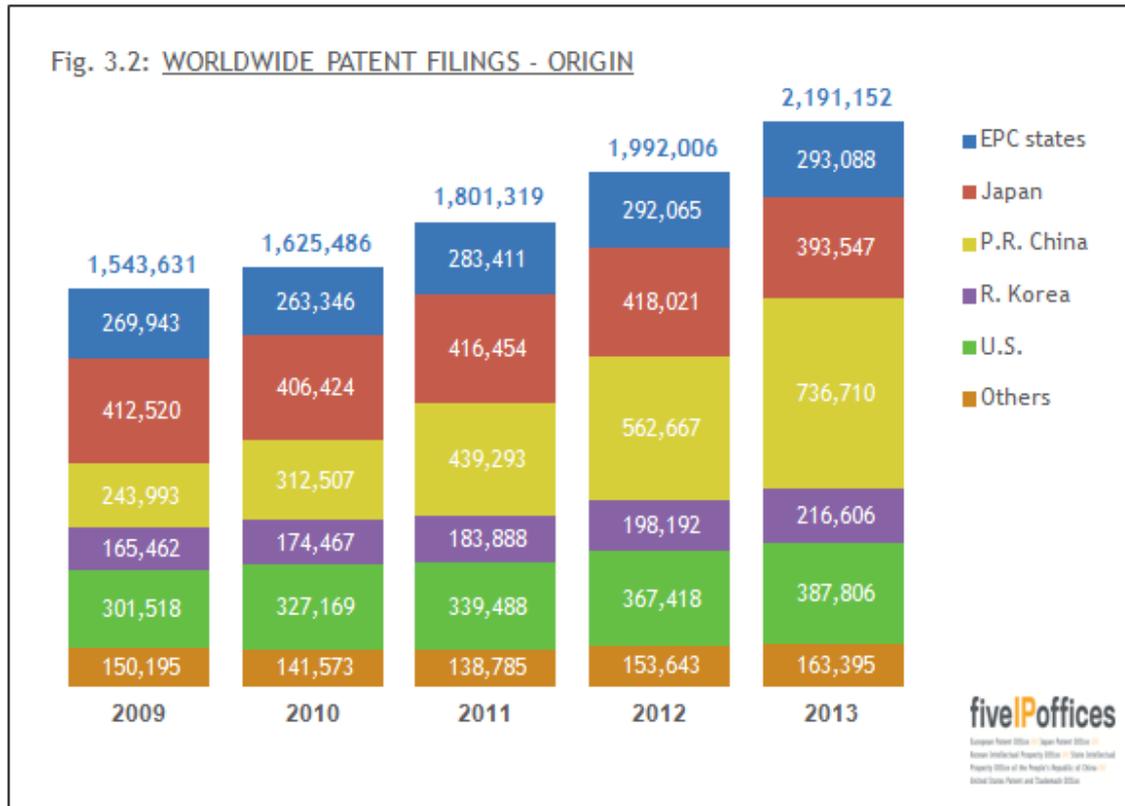


The number of patent filings in 2013 increased by 10 percent, to nearly 2.2 million.

In 2013, the numbers of direct national and PCT international applications increased by 11 percent and 5 percent respectively, while the number of direct regional applications decreased marginally. In 2013, 88 percent of the applications were filed according to direct national procedures.

Relatively speaking, the PCT system continues to make an important contribution that will be discussed later.

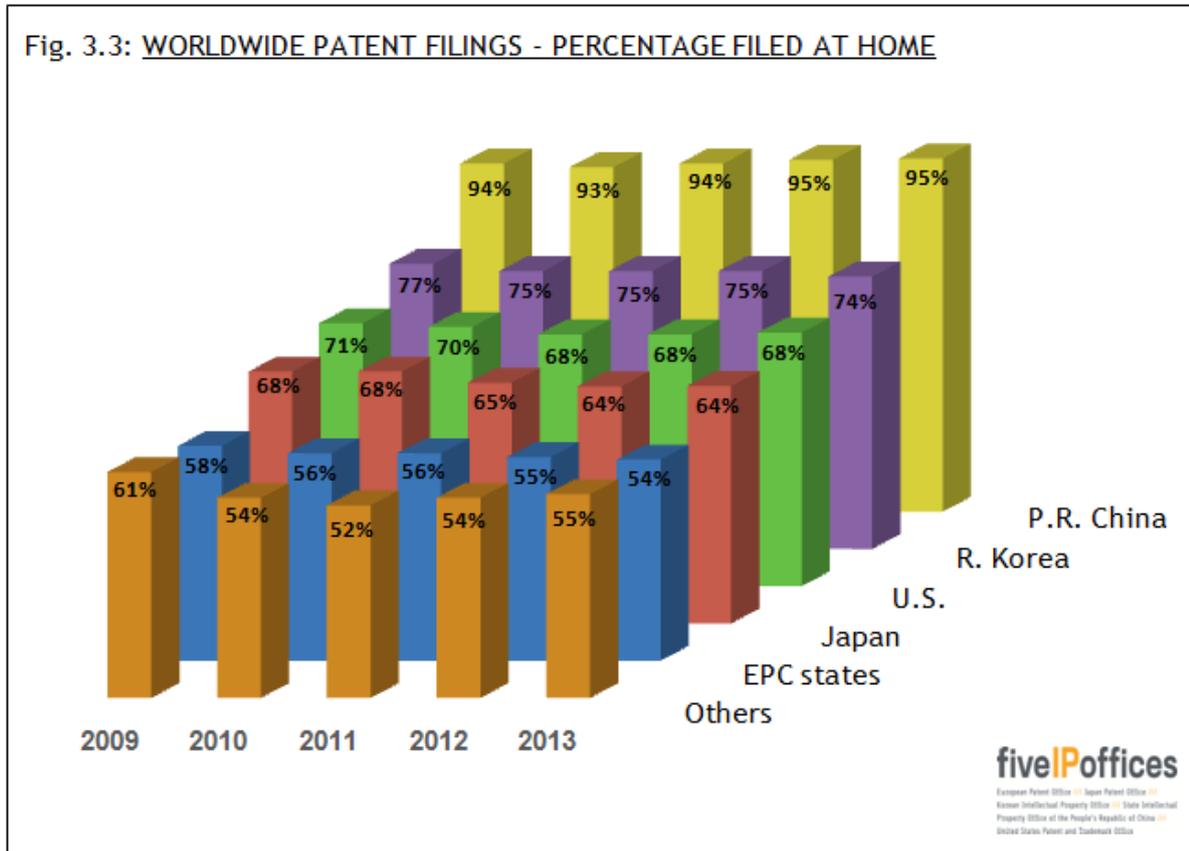
Fig. 3.2 shows the breakdown of the worldwide patent filings of Fig. 3.1 by bloc of origin (residence of first-named applicants or inventors).



The IP5 Blocs were the origin of 92 percent of overall patent filings from 2009 to 2013. The annual share increased from 90 percent in 2009 to 93 percent in 2013. In 2013, the numbers of patent filings originating from P.R. China, R. Korea and the U.S. increased by 31 percent, 9 percent and 6 percent respectively while the number of patent filings originating from Japan decreased by 6 percent.

Most national applications are made by residents of the countries concerned. To a large extent, applications abroad are made using regional or international procedures.

Fig. 3.3 shows the proportion of patent filings throughout the world that are filed within the home bloc of origin (residence of first-named applicants or inventors).



The proportion of patent filings made at home remains stable, although there was some decline for the EPC states and R. Korea in 2013 compared to 2012. For the IP5 Blocs, P.R. China had the largest proportion of filings made at home in 2013 with 95 percent. The EPC states²⁴ had the lowest proportion with 54 percent in 2013.

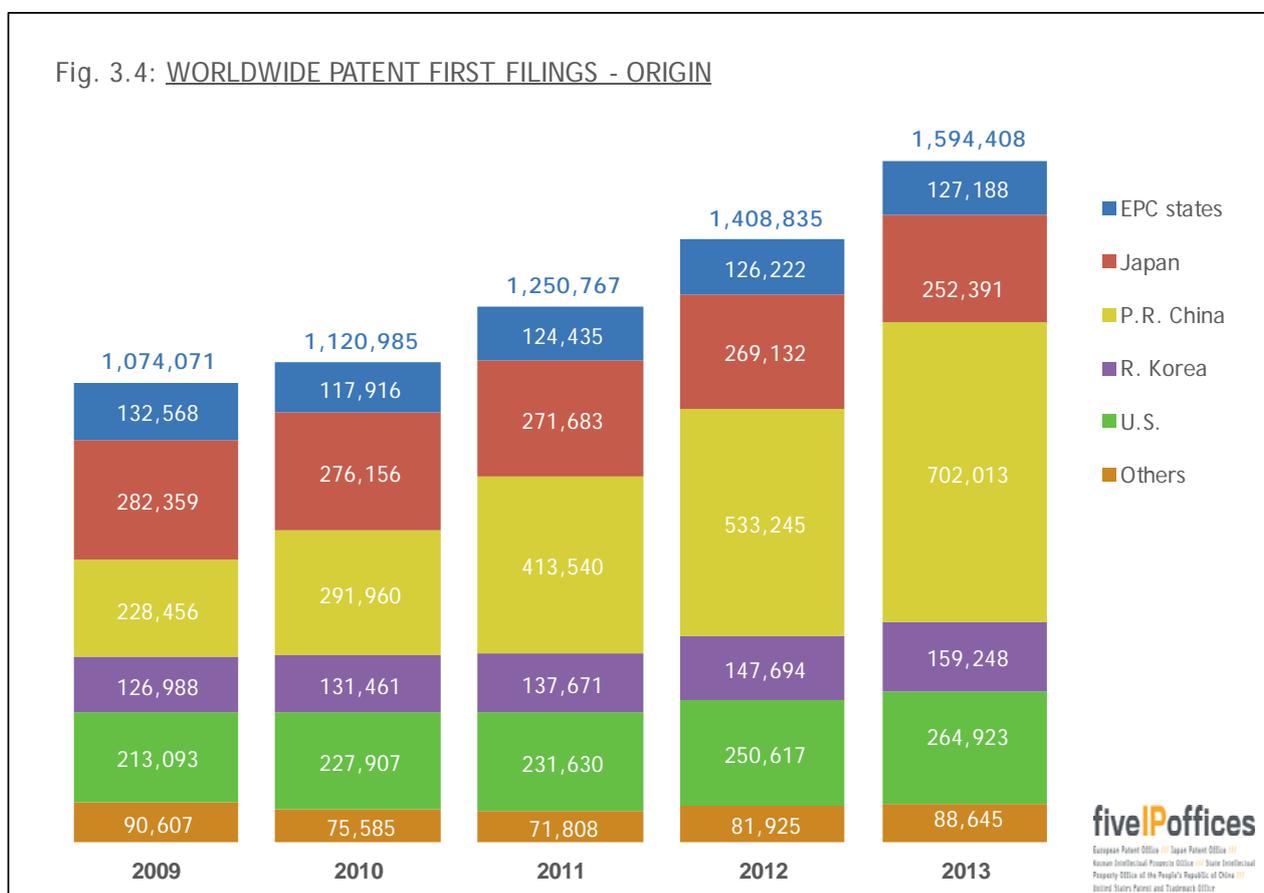
²⁴ For the purpose of reporting statistics for the EPC states considered as a bloc, an application by a resident in an EPC state to another EPC state or to the EPO is considered to be filed within the bloc of origin. See the EPO section of Chapter 2 for a listing of the EPC states.

FIRST FILINGS

All of the following are counted once only: Direct national, direct regional filings, and PCT international filings.

The process of obtaining patent protection starts with the first filing, an initial patent application made to protect an invention or an innovation prior to any later subsequent filings to extend the protection to other countries.

Fig. 3.4 shows the development of first filings in the major filing blocs of origin (residence of first-named applicants or inventors).



P.R. China recorded 702,013 first filings in 2013, the highest number of first filings by any bloc within the IP5 area. This was an increase of 32 percent compared to 2012 number. There were also increases in first filings from R. Korea, the U.S. and the EPC states of 8 percent, 6 percent and 1 percent respectively in 2013, while Japan had a decrease of 6 percent. Overall, first filings increased by 13 percent between 2012 and 2013.

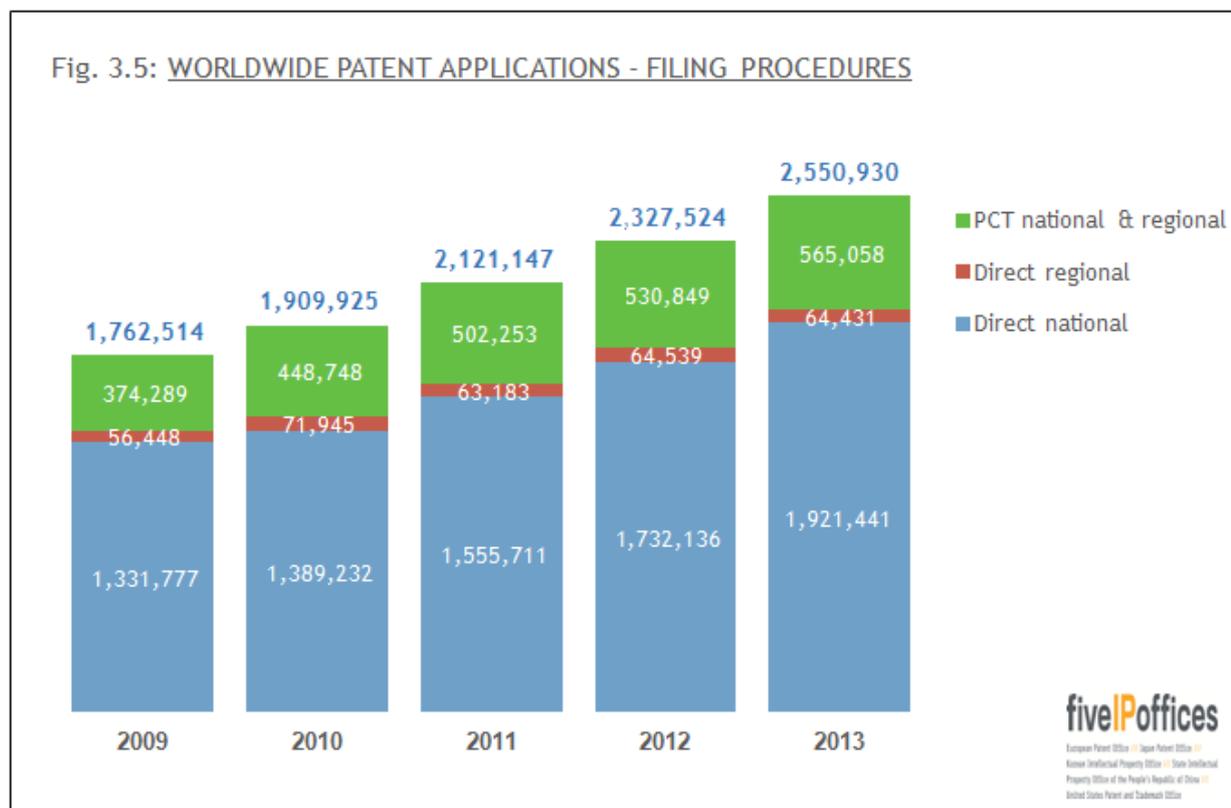
Comparison of Figs. 3.2 and 3.4 demonstrates that there are considerable numbers of subsequent filings, where the first filing for an invention at one office leads on to further filings.

PATENT APPLICATIONS ENTERING GRANT PROCEDURES

Patent applications counted in this section include direct national, direct regional, national stage PCT and regional stage PCT applications.

This section (with Figs. 3.5 and 3.6) describes the development of the number of requests for patents that entered a grant procedure. Note that direct national and direct regional applications enter a grant procedure when filed, while in the case of PCT applications, the grant procedure is delayed to the end of the international phase²⁵. In the following figures, the number of PCT applications consists of a count of the applications that entered a national/regional stage in the corresponding year. This leads to higher numbers than in the previous section, because one PCT international filing usually enters into several national or regional procedures. For example, one PCT application (as reported in Fig. 3.1) may result in an EPO PCT regional phase entry, a U.S. PCT national phase entry, and an Australian PCT national phase entry, thus producing three PCT national/regional entry phase applications.

Fig. 3.5 shows the development of worldwide patent applications by filing procedures.

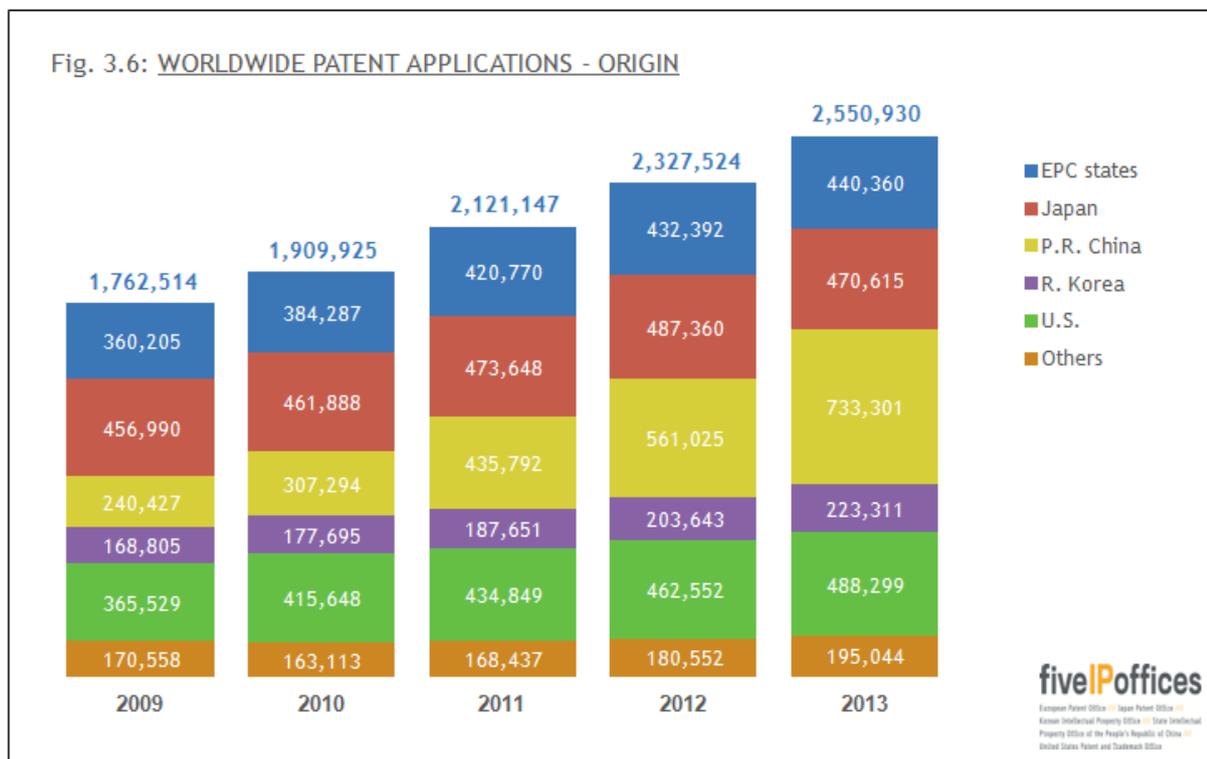


In 2013, more than 2.5 million patent applications were filed worldwide. This represented a 10 percent increase compared to 2012.

While the number of direct national applications increased by 11 percent. The numbers of PCT national/regional applications increased by 6 percent.

²⁵ The international phase is up to 30 months after the priority date of the first filing.

Fig. 3.6 shows the origin (residence of first-named applicants or inventors) of the worldwide patent applications of Fig. 3.5 entering a national or regional granting procedure.



The number of patent applications increased for most of the IP5 Blocs in 2013, with P.R. China remaining the region from which the largest share of applications originated. P.R. China also had the largest percentage increase in applications by origin in 2013 (31 percent). The number of applications from R. Korea, the U.S. and the EPC states increased by 10 percent, 6 percent and 2 percent respectively while the number of applications from Japan decreased by 3 percent.

These data should be interpreted with caution as the origins of the PCT applications entering national procedures are not reported in detail by all offices outside the IP5 area.

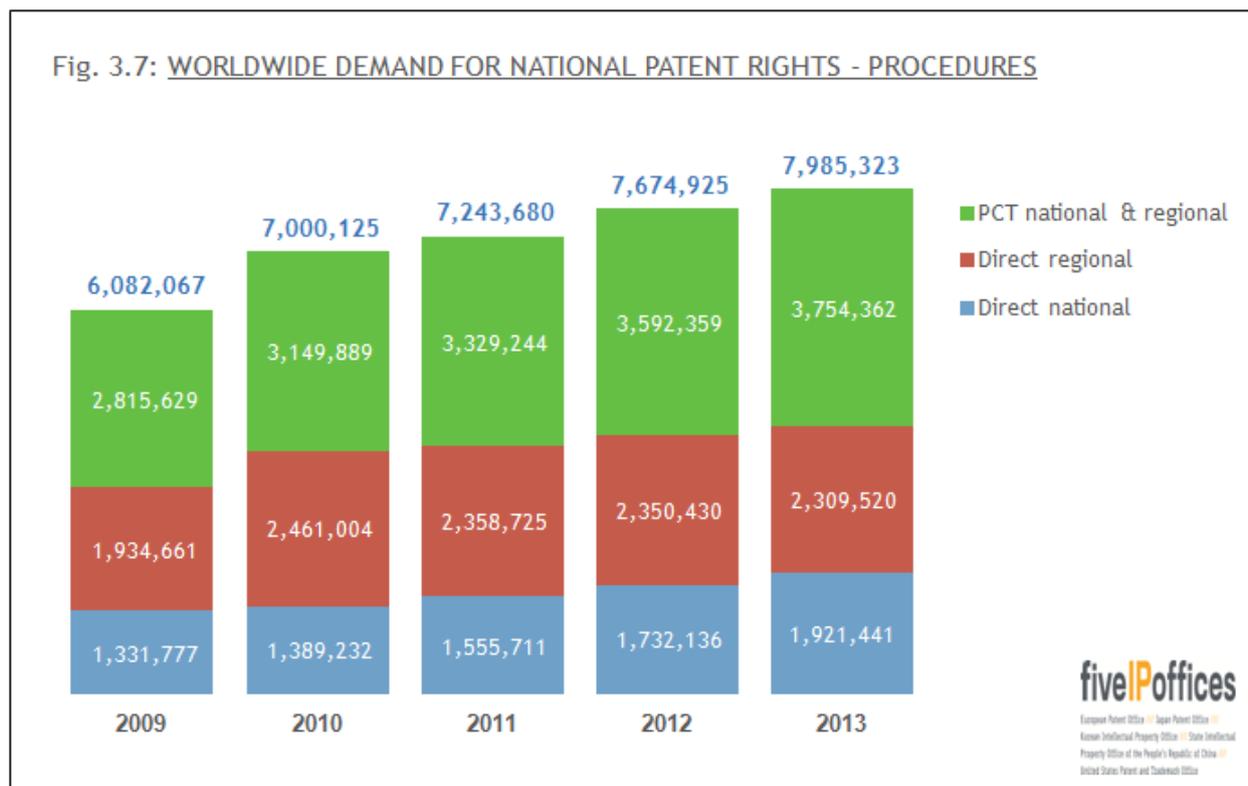
DEMANDS FOR NATIONAL PATENT RIGHTS

Patent applications counted in this section (with Figs. 3.7, 3.8, and 3.9) include direct national and national stage PCT applications; and designated countries in regional and in regional stage PCT applications.

With an increasing use of international and regional systems, and also the increasing number of countries joining such systems, the number of applications filed corresponds to a far larger number of demands for national patent rights. This cumulates the number of designated countries over applications. It effectively measures the number of national patent applications that would have been necessary to seek patent protection in the same number of countries if there were no international or regional systems.

The direct national applications have effect in one country only, as does any PCT application entering one national phase procedure. But direct regional applications and PCT applications entering in a regional system are demands for almost each and every individual member country. So, demand counts for regional offices are expanded to the numbers of countries covered by regional systems²⁶.

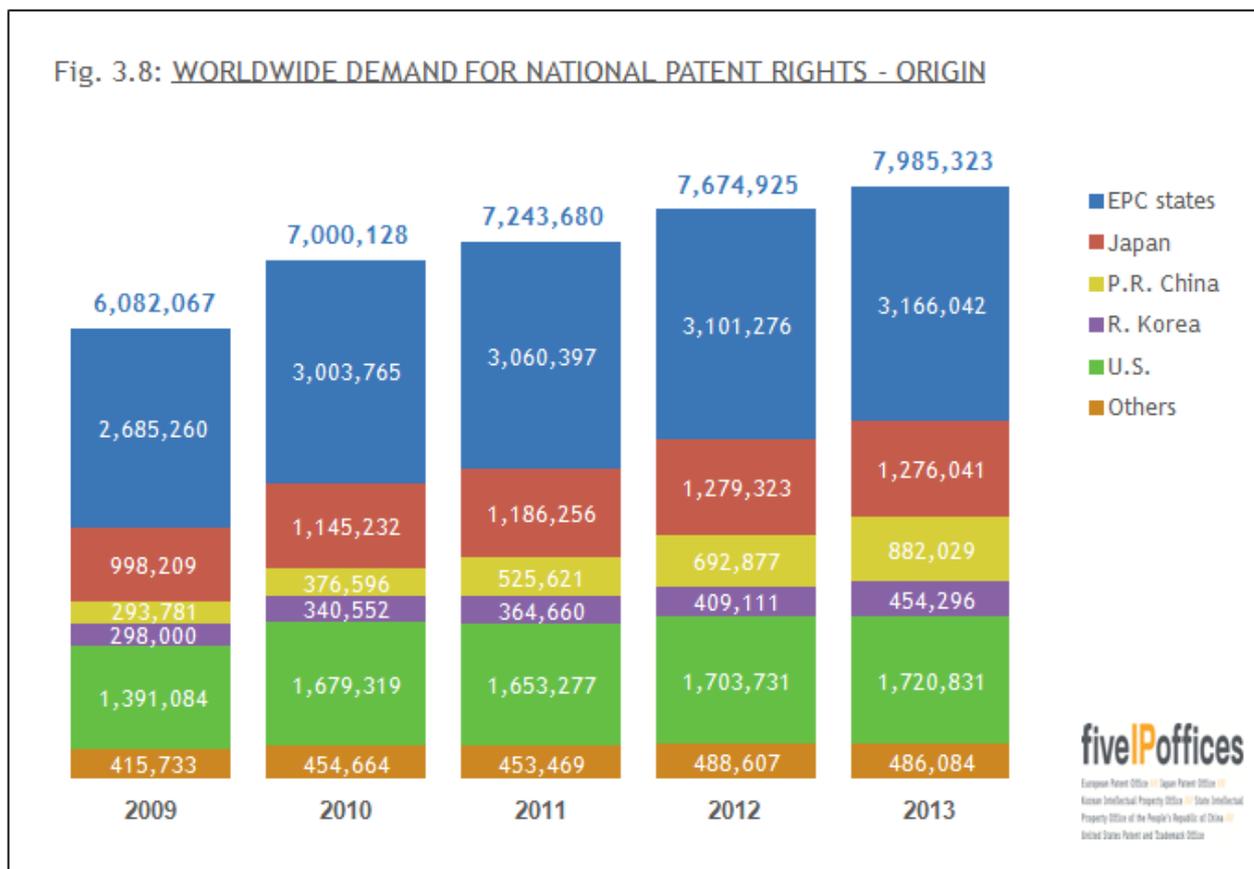
Fig. 3.7 shows the development of demand for national patent rights broken down by filing procedures.



²⁶ At the end of 2013, 89 states were party to a regional patent system, EPC 38, EAPC 9, ARIPO 19, OAPI 17, GCCPO 6. This compares to 83 states at the beginning of 2009. Also at the end of 2013, 148 states were party to the PCT, compared to 142 states at the beginning of 2009.

The demand for patent rights measured in terms of equivalent national patent rights increased by 4 percent from 2012 to 2013. In addition to the growing number of patent filings, the ongoing growth shown in Fig 3.7 illustrates the effect of the centralized procedures (regional and international) to help users of the system to expand their patent protection without needing to make separate applications to every country of interest.

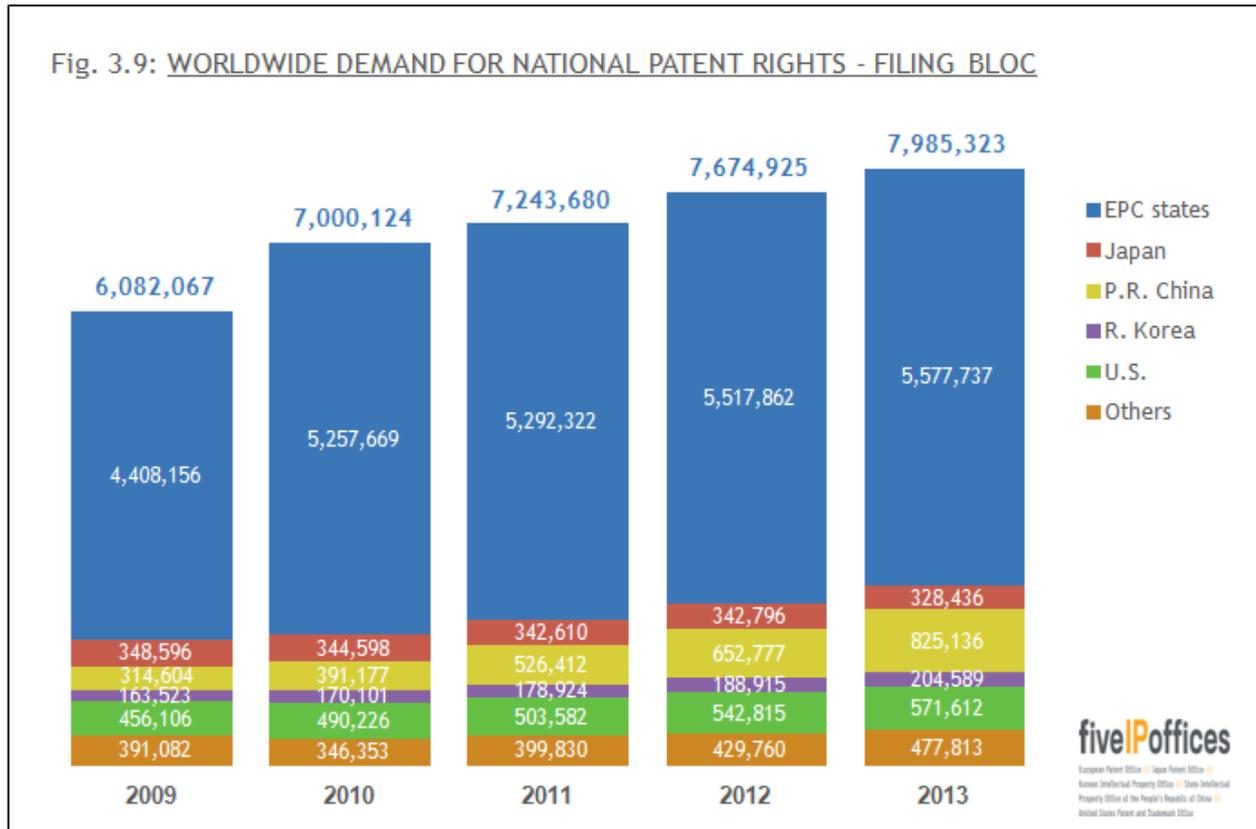
Fig. 3.8 shows the trend for the demand of national patent rights by blocs of origin (residence of first-named applicants or inventors) and is based on the same data as Fig. 3.7.



From 2012 to 2013, the demand for patent rights increased from P.R. China, R. Korea, the EPC states and the U.S. by 27 percent, 11 percent, 2 percent and 1 percent respectively, while the demand for patent rights decreased marginally from Japan.

The large share of the EPC states reflects, among other factors, the intensive use of the international and regional systems.

Fig. 3.9 shows the distribution of the demand for national patent rights according to the filing or targeted blocs and is based on the same data as in Fig. 3.7 and Fig. 3.8.

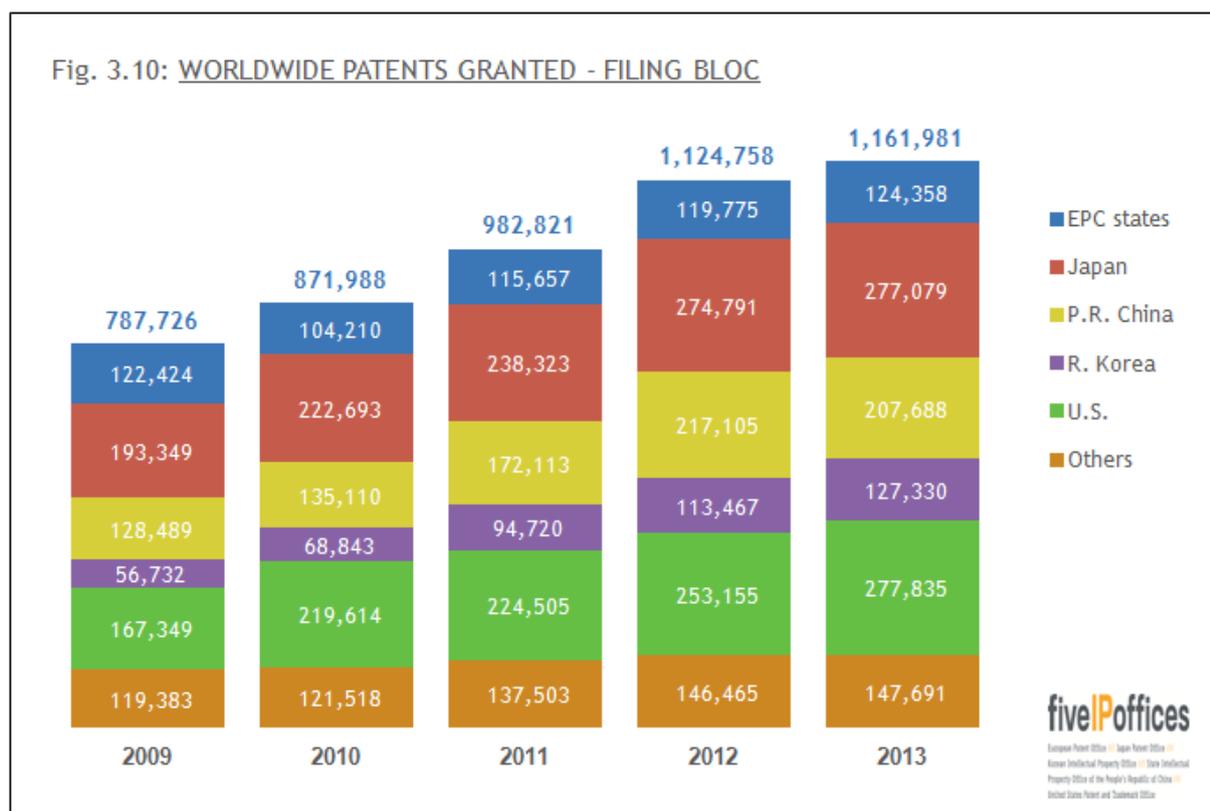


This chart demonstrates the influence of regional patent systems on global demand for patents. In 2013, the demand for national patent rights decreased in Japan and increased in P.R. China, R. Korea, the U.S. and the EPC states. Demand in P.R. China had the largest increase at 26 percent.

PATENT GRANTS

The development of the use of patents is shown in this section in terms of grants.

Fig. 3.10 displays the cumulative numbers of patents granted in each of the blocs.



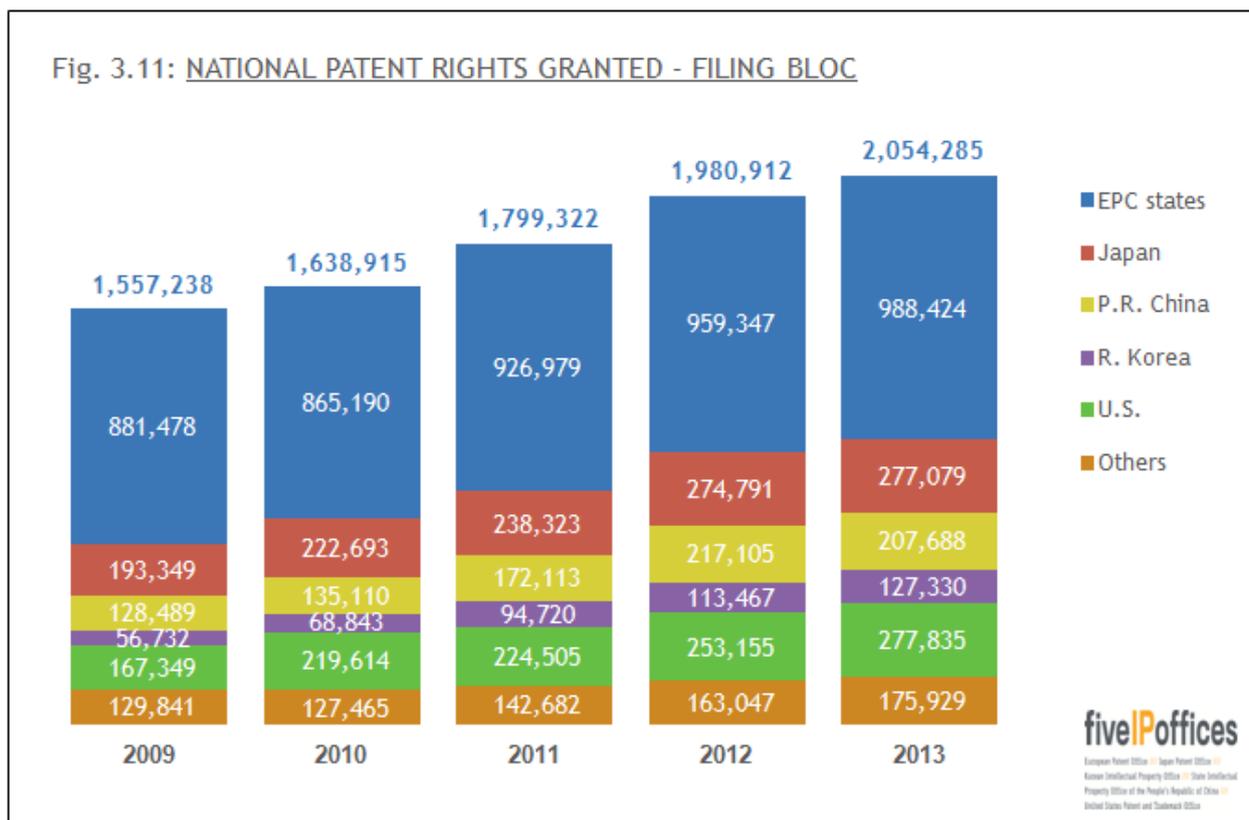
The number of patent grants increased for R. Korea, the U.S., EPC states and Japan in 2013. The largest percentage increase in 2013 was in R. Korea (12 percent). In the U.S., the EPC states and Japan, there were also increases of 10 percent, 4 percent and 1 percent respectively. The number of patent grants in P.R. China decreased by 4 percent in 2013.

The data for Others should only be compared between years with care. The changes from year to year may reflect different numbers of countries reporting their count of grants as well as changes in the numbers of grants.

Patent grants are counted only once per office, although the same invention may lead to grants at several offices. However, each grant action by a regional office (e.g. the EPO) can lead to as

many national patents as the number of member states that have been designated²⁷. This has an effect only in the EPC states and Others, as shown in the following Fig. 3.11.

Fig. 3.11 illustrates the development of the validated national grants resulting from the decisions reported in Fig. 3.10. Direct national grants are counted only once, but the counts for regional office grants are replicated over the numbers of countries for which the grant provides valid registrations. This gives a representation in terms of national patent rights obtained in each bloc.



In 2013, more than 2.0 million patent rights were granted, which represents a 3.7 percent increase compared to 2012.

The fact that the EPC states bloc is made up of many countries, with an option for a centralized grant procedure at the EPO, explains why the number of patent rights granted there in Fig. 3.11 is much larger than the number of grant actions shown in Fig. 3.10.

²⁷ National patents can also be created in other states that have extension agreements with the EPC states.

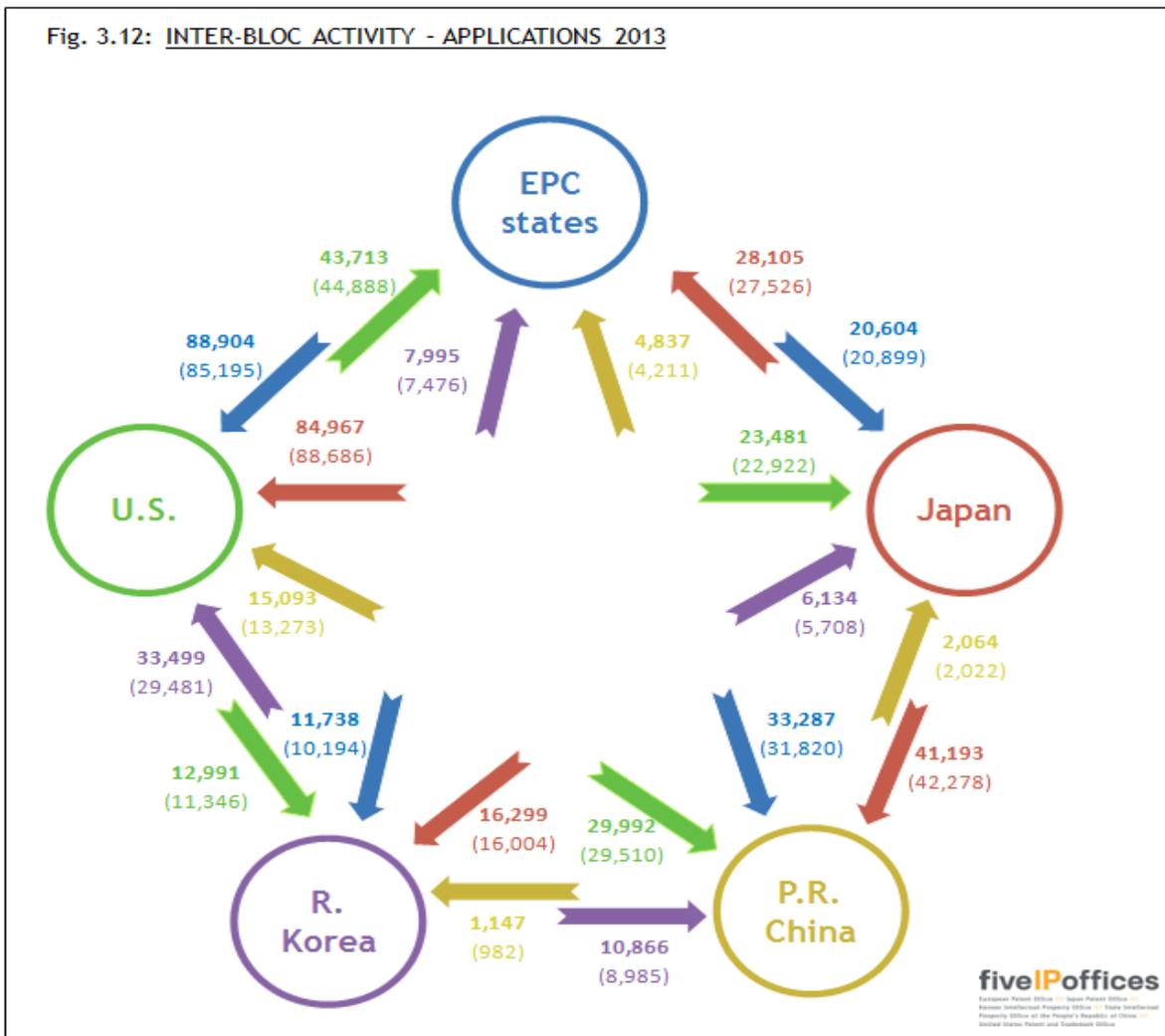
INTER-BLOC ACTIVITY

In this section, the flows between the different blocs and especially the IP5 Blocs are analysed first in terms of applications and then in terms of patent families.

FLOWS OF APPLICATIONS

Fig. 3.12 shows the flows, between IP5 Blocs by origin (residence of first-named applicants or inventors), of distinct patent applications entering a grant procedure (as in Fig. 3.5) in 2013, with 2012 figures given in parentheses.

Direct applications to the offices are counted at the date of filing. PCT applications are counted at the moment they enter the national or regional phase. Direct national and direct regional filings are counted only once. PCT filings are replicated over the numbers of national/regional procedures that are started.



As a general pattern, applicants worldwide filed many more applications outside their own blocs to the U.S. than in any of the other IP5 Blocs. U.S. applicants applied more in the EPC states than in any of the other regions.

In 2013, the following flows decreased: from Japan to the U.S. and to P.R.China, from the U.S. to the EPC states, and from the EPC states to Japan. All other flows between blocs increased compared to 2012. The largest percentage increase of flow is from R. Korea to P.R. China (21 percent).

PATENT FAMILIES

A patent family is a group of patent filings that claim the priority of a single first filing.

The information in this section on the flows of patent families between blocs was obtained from the DOCumentDataBase (DOCDB)²⁸ of worldwide patent publications. The statistics are based on the references to priorities that were given in published applications and grants. Where no reference to a priority appears in an application, it is considered to be a first filing. Otherwise it is a subsequent filing. For the patent family measures of first filings in Chapter 3, the numbers of domestic national filings are taken which means that the numbers of first filings in Table 3 conform with those in Fig. 3.4. Due to the delay in publication (relative to the time of filing), patent families counts can only be reported with a degree of accuracy after several years have passed.

The following Table 3 shows the numbers of first filings per bloc and details of flows of patent families between blocs for the priority years 2009 and 2010. Each percentage under a number translates this number into a proportion of the number of first filings made in the initial filing bloc where the priority filings were made.

²⁸DOCDB is the EPO master documentation database with worldwide coverage containing bibliographic data, abstracts and citations (but no full text).

Table 3: NUMBERS OF PATENT FAMILIES

Year of priority: 2009

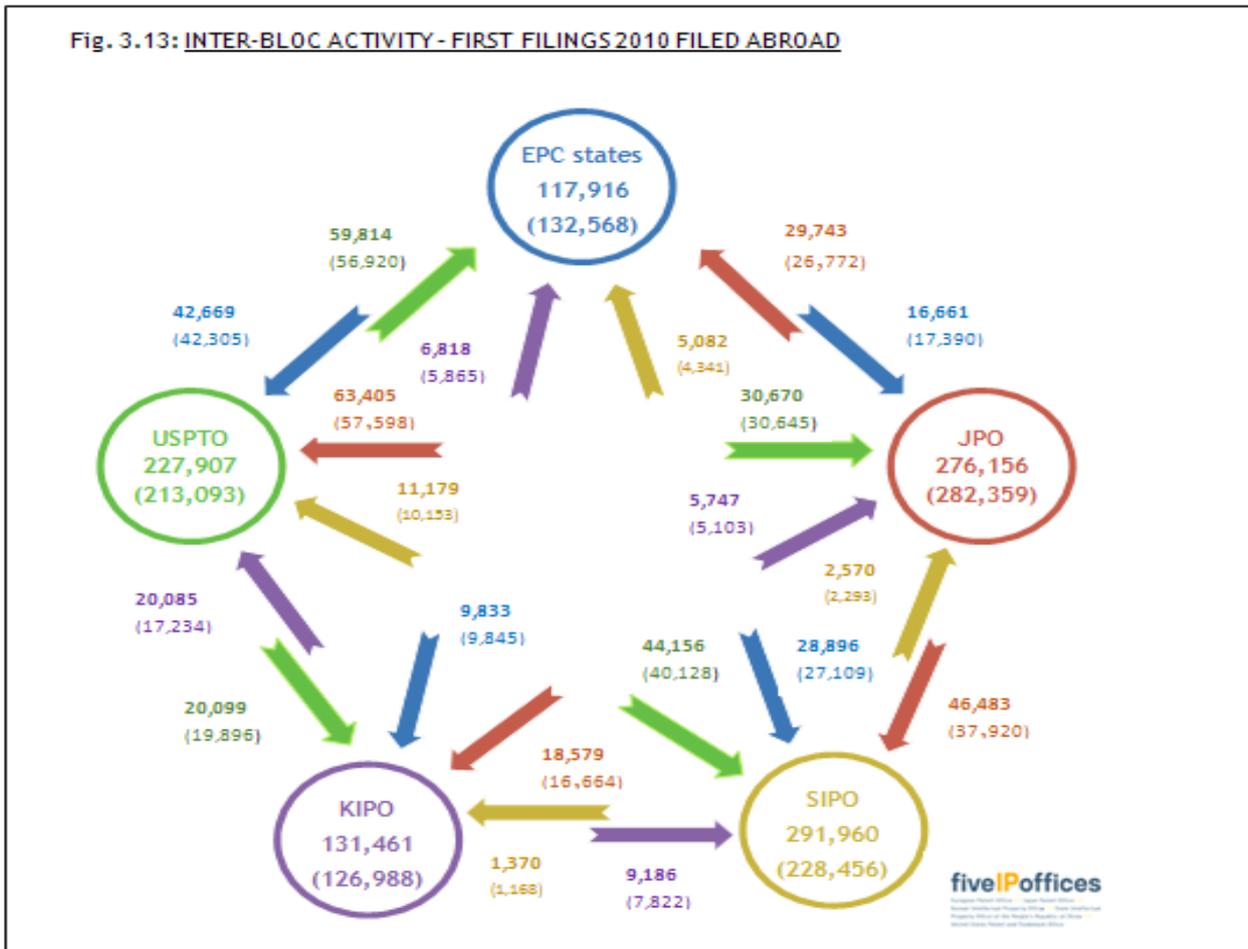
Bloc of origin from which priority is claimed	First Filings in Bloc of Origin	Flows to Subsequent Filings								Five Blocs Patent Families from bloc of origin
		Any other Bloc	Any other Five Bloc	First filings in Bloc of Origin leading to priority claims in filings in:						
				EPC States	Japan	P.R. China	R.Korea	U.S.	Other countries	
EPC States	132,568	48,727 (36.8%)	46,885 (35.4%)	-	17,390 (13.1%)	27,109 (20.4%)	9,845 (7.4%)	42,305 (31.9%)	19,627 (14.8%)	7,072 (5.3%)
Japan	282,359	67,636 (24.0%)	66,413 (23.5%)	26,772 (9.5%)	-	37,920 (13.4%)	16,664 (5.9%)	57,598 (20.4%)	15,343 (5.4%)	8,457 (3.0%)
P.R. China	228,456	11,386 (5.0%)	11,175 (4.9%)	4,341 (1.9%)	2,293 (1.0%)	-	1,168 (0.5%)	10,153 (4.4%)	1,462 (0.6%)	701 (0.3%)
R. Korea	126,988	19,292 (15.2%)	19,065 (15.0%)	5,865 (4.6%)	5,103 (4.0%)	7,822 (6.2%)	-	17,234 (13.6%)	2,457 (1.9%)	2,333 (1.8%)
U.S.	213,093	76,111 (35.7%)	66,470 (31.2%)	56,920 (26.7%)	30,645 (14.4%)	40,128 (18.8%)	19,896 (9.3%)	-	45,764 (21.5%)	13,463 (6.3%)
Five blocs subtotal	983,464	223,152 (22.7%)	210,008 (21.4%)	93,898 (9.5%)	55,431 (5.6%)	112,979 (11.5%)	47,573 (4.8%)	127,290 (12.9%)	84,653 (8.6%)	32,026 (3.3%)
Others	90,607	15,845 (17.5%)	15,845 (17.5%)	4,539 (5.0%)	1,920 (2.1%)	2,142 (2.4%)	1,050 (1.2%)	14,602 (16.1%)	-	504 (0.6%)
Global total	1,074,071	238,997 (22.3%)	225,853 (21.0%)	98,437 (9.2%)	57,351 (5.3%)	115,121 (10.7%)	48,623 (4.5%)	141,892 (13.2%)	84,653 (7.9%)	32,530 (3.0%)

Year of priority: 2010 (Preliminary)

Bloc of origin from which priority is claimed	First Filings in Bloc of Origin	Flows to Subsequent Filings								Five Blocs Patent Families from bloc of origin
		Any other Bloc	Any other Five Bloc	First filings in Bloc of Origin leading to priority claims in filings in:						
				EPC States	Japan	P.R. China	R.Korea	U.S.	Other countries	
EPC States	117,916	50,269 (42.6%)	48,233 (40.9%)	-	16,661 (14.1%)	28,896 (24.5%)	9,833 (8.3%)	42,669 (36.2%)	18,994 (16.1%)	6,528 (5.5%)
Japan	276,156	76,266 (27.6%)	74,498 (27.0%)	29,743 (10.8%)	-	46,483 (16.8%)	18,579 (6.7%)	63,405 (23.0%)	17,545 (6.4%)	9,063 (3.3%)
P.R. China	291,960	12,858 (4.4%)	12,524 (4.3%)	5,082 (1.7%)	2,570 (0.9%)	-	1,370 (0.5%)	11,179 (3.8%)	1,864 (0.6%)	792 (0.3%)
R. Korea	131,461	22,140 (16.8%)	21,931 (16.7%)	6,818 (5.2%)	5,747 (4.4%)	9,186 (7.0%)	-	20,085 (15.3%)	2,784 (2.1%)	2,808 (2.1%)
U.S.	227,907	80,812 (35.5%)	71,151 (31.2%)	59,814 (26.2%)	30,670 (13.5%)	44,156 (19.4%)	20,099 (8.8%)	-	45,971 (20.2%)	13,188 (5.8%)
Five blocs subtotal	1,045,400	242,345 (23.2%)	228,337 (21.8%)	101,457 (9.7%)	55,648 (5.3%)	128,721 (12.3%)	49,881 (4.8%)	137,338 (13.1%)	87,158 (8.3%)	32,379 (3.1%)
Others	75,585	17,378 (23.0%)	17,378 (23.0%)	4,706 (6.2%)	2,018 (2.7%)	3,341 (4.4%)	1,175 (1.6%)	15,626 (20.7%)	-	476 (0.6%)
Global total	1,120,985	259,723 (23.2%)	245,715 (21.9%)	106,163 (9.5%)	57,666 (5.1%)	132,062 (11.8%)	51,056 (4.6%)	152,964 (13.6%)	87,158 (7.8%)	32,855 (2.9%)

Source: EPO DOCDB Database

Fig. 3.13 shows the flows of patent families from first filings (at the patent offices of the specified IP5 Bloc) to subsequent filings among the IP5, with application counts based on the bloc of the patent office from which the claimed priority was filed. The number given for each bloc is the total number of first filings in 2010. The flow figures between blocs of origin and target blocs indicate the numbers of 2010 first filings from the bloc of origin that led to subsequent filings in the target bloc. The comparable figures for 2009 are given in parentheses.



Even though the numbers for IP5 patent families after 2009 may not yet be complete, because more time is needed to gather all evidence of subsequent filing activity from first filings in later years, the numbers for 2010 in Fig. 3.13 and the corresponding numbers in the lower part of Table 3 are nevertheless fairly accurate.

From information in Table 3, out of all first filings in the IP5 Blocs in 2009 (983,464), 21.4 percent formed patent families that included at least one of the remaining IP5 Blocs (210,008). Proceeding to a higher degree of selectivity, only 3.3 percent of all first filings in the IP5 Blocs in 2009 formed *IP5 patent families*, where activities of first and/or subsequent filings were made in all the IP5 Blocs.

The IP5 patent family proportion of first filings differed considerably according to the bloc of origin of the first filings, as can be seen in Table 3 (U.S. 6.3 percent, EPC states 5.3 percent, Japan 3.0 percent, P.R. China 0.3 percent, R. Korea 1.8 percent and for Others 0.6 percent).

Due to the influence of the recession that started in late 2008, it should be recognised that worldwide total numbers of first filings dipped in 2009 compared to 2008 and 2010²⁹.

Fig. 3.14 presents a separate diagram for each IP5 Bloc to display the percentages of first filings in that Bloc that led to subsequent filings in each of the other IP5 Blocs. The diagrams show graphical displays of 2009 patent family data as presented in Table 3. Four coloured circles appear in each diagram with each circle representing the percentage of subsequent filings in an IP5 Bloc resulting from the number of first filings in the bloc of origin. Areas where the circles overlap correspond to subsequent filings in more than one other IP5 Bloc. Recall that, in the case of the EPC states, the activities at national offices are included as well as at the EPO.

Above each diagram appears first the total number of first filings that were received in each of the IP5 Blocs in 2009. Then the proportions of those first filings that led on to subsequent filings in each other bloc are shown. Some of these percentages also appear in the upper part of Table 3.

Underneath the coloured diagrams, the percentages next to the bloc combinations show subsidiary percentages of subsequent filings that flowed to more than one other IP5 Bloc.

For instance, patent families from first filings in EPC member states that were subsequently filed in the P.R. China and the U.S. blocs are indicated in the graphical display by the area where the green and yellow circles overlap in the first diagram. The corresponding percentage is 17.4 percent, as shown next to the pair of yellow and green dots that appear lower down in the figure. The non-overlapping areas of the graphical displays are representative of the percentage or number of patent families that were not subsequently filed in any of the other IP5 Blocs. For instance, for first filings in EPC states, the small non-overlapping area of the P.R. China circle indicates that only a small percentage and number of the patent families from EPC states were filed in P.R. China without also being filed in at least one of the other IP5 Blocs, as well.

The last row of the table in Fig. 3.14 shows the proportions of IP5 patent families, as also appear in the last column of the upper part of Table 3.

²⁹ To verify these statements see the patent families section of the statistical tables at the website.

Fig. 3.14: 2009 PATENT FAMILIES - PERCENTAGES OF FIRST FILINGS WITH SUBSEQUENT FILINGS IN OTHER IP5 BLOCs

First filings in	EPC states offices* 132,568	Japan (JPO) 282,359	P.R. China (SIPO) 228,456	R. Korea (KIPO) 126,988	U.S. (USPTO) 213,093
Bilateral families with subsequent filings in					
EPC states	-	9.5%	1.9%	4.6%	26.7%
Japan	13.1%	-	1.0%	4.0%	14.4%
P.R. China	20.4%	13.4%	-	6.2%	18.8%
R. Korea	7.4%	5.9%	0.5%	-	9.3%
U.S.	31.9%	20.4%	4.4%	13.6%	-
Three bloc families with subsequent filings in					
EPC states & Japan	-	-	0.7%	2.3%	12.9%
EPC states & R. Korea	-	3.3%	0.4%	-	7.9%
EPC states & P.R. China	-	7.2%	-	3.2%	15.7%
EPC states & U.S.	-	8.7%	1.6%	4.4%	-
Japan & R. Korea	5.9%	-	0.4%	-	7.3%
Japan & P.R. China	10.4%	-	-	2.8%	10.8%
Japan & U.S.	12.4%	-	0.9%	3.5%	-
P.R. China & R. Korea	6.7%	5.1%	-	-	7.9%
P.R. China & U.S.	17.4%	10.9%	-	5.1%	-
R. Korea & U.S.	6.9%	4.6%	0.4%	-	-
Four bloc families with subsequent filings in					
EPC states & Japan & R. Korea	-	-	0.3%	-	6.7%
EPC states & Japan & P.R. China	-	-	-	1.9%	10.1%
EPC states & Japan & U.S.	-	-	0.6%	2.2%	-
EPC states & R. Korea & P.R. China	-	3.1%	-	-	7.2%
EPC states & R. Korea & U.S.	-	3.2%	0.4%	-	-
EPC states & P.R. China & U.S.	-	6.8%	-	3.1%	-
Japan & R. Korea & P.R. China	5.5%	-	-	-	6.7%
Japan & R. Korea & U.S.	5.6%	-	0.4%	-	-
Japan & P.R. China & U.S.	9.9%	-	-	2.5%	-
P.R. China & R. Korea & U.S.	6.3%	4.1%	-	-	-
IP5 families	5.3%	3.0%	0.3%	1.8%	6.3%

* EPO or EPC states national offices

From Fig. 3.14 and Table 3, the 2009 data indicate that the U.S. market may be considered as the most important foreign market for the other IP5 Blocs since, for each of those blocs, subsequent applications in the U.S. represent the highest percentages among target blocs. The percentages of subsequent applications filed in the U.S. following 2009 first filings in the EPC member states, Japan, P.R. China, and R. Korea are 31.9 percent, 20.4 percent, 4.4 percent, and 13.6 percent respectively. The second most important market for the other IP5 Blocs is P.R. China.

In general, first filings in the U.S. also tend to result in a higher percentage of subsequent filings elsewhere, as compared to the first filings in other IP5 Blocs as seen in Fig. 3.14 and the fifth data row of Table 3. The single exception to this is that the percentage from EPC states to P.R. China is highest.

For the first filings in the EPC member states, the percentages that led also to subsequent filings in other blocs are mostly second largest behind first filings from the U.S. It is notable that the percentages from both the EPC states and the U.S. to the Asian offices are higher than the percentages between the three Asian blocs themselves.

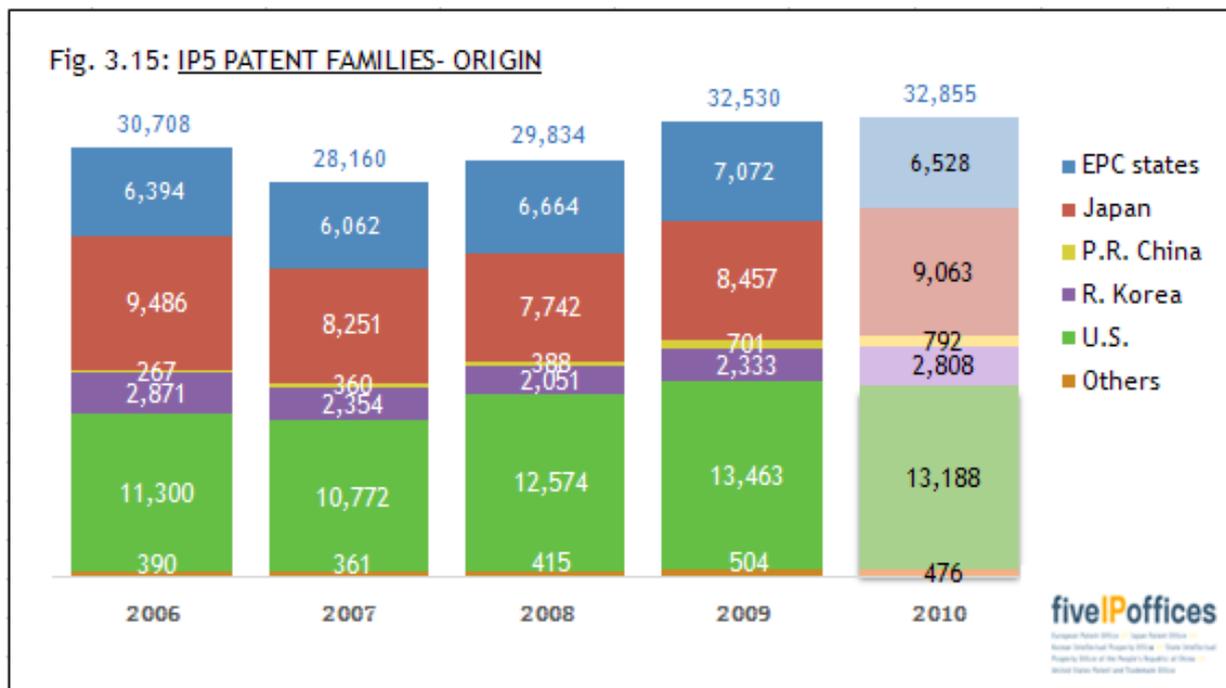
Japan has the highest number of first filings in 2009 of 282,359 and the percentages that led to subsequent filings in the EPC states, R. Korea and P.R. China are lower than the percentage for first filings in the U.S. This makes the flows (numbers of patent families) from Japan to the EPC states, R. Korea and P.R. China smaller than the flow to the U.S.

For the first filings in P.R. China, the percentage of subsequent applications filed in the U.S. (4.4percent) is the largest. The percentage that was filed in both the EPC member states and Japan is about 0.7 percent. The percentage of subsequent applications that were filed in the EPC member states, Japan, and the U.S. is also about 0.6 percent, indicating that most of the subsequent applications filed in both the EPC states and Japan have also been filed in the U.S. Despite the low proportions of first filings in P.R. China that led to subsequent applications anywhere else, rapidly growing numbers of first filings have resulted in continued growth of the absolute numbers of patent families flowing out to other IP5 Blocs, as can be seen by comparing the 2009 and the preliminary 2010 data displayed in Table 3 (11,175 compared to 12,524 respectively).

For the first filings in R. Korea, as with the other blocs, the percentage of subsequent applications filed in the U.S. (13.6 percent) is the largest, followed by P.R. China (6.2 percent). In addition, the percentage of subsequent applications filed in the EPC member states is 4.6 percent. This last percentage is close to the percentage of subsequent applications filed in both the EPC member states and the U.S. together (4.4 percent), indicating that most of the subsequent applications filed in the EPC member states have been also filed in the U.S.

Among the first filings in the U.S., the percentage of subsequent applications filed in other blocs is the highest in the EPC member states (26.7 percent).The percentage of subsequent applications filed in P.R. China (18.8 percent) is the next highest, although Japan is not so far behind at 14.4 percent.

Fig. 3.15 shows the development over time of IP5 patent families by bloc of origin (residence of first-named applicants or inventors) of the priority forming filings. To indicate that the figures for 2010 are still provisional, the last column is more lightly shaded.



The total number of IP5 patent families in 2010 was 32,855, of which 40 percent were from the U.S., 28 percent were from Japan, 20 percent were from the EPC states, 9 percent were from R. Korea, 2 percent were from P.R. China, and 1 percent were from Others. The number will probably increase when the data set for 2010 becomes complete later on.

The total number of IP5 families went lower in 2007, but increased through 2010. The numbers from Japan and R. Korea also decreased from 2007 to 2008, but were compensated for by growth from the other IP5 Blocs. The numbers from Japan, R. Korea and China increased from 2009 to 2010.