

Chapter 3

WORLDWIDE PATENTING ACTIVITY

Patent activity is recognized throughout the world as a measure of innovation. This chapter examines worldwide patent activities in terms of patent applications and grants. The statistics mostly cover the five-year period from 2006 to 2010. The effects of the recent worldwide recession in 2009 are visible in this chapter. After a decrease in patent applications in 2009, the number of patent applications rebounded in 2010. This suggests that the effects of the recent worldwide recession on the number of patent applications at the IP5 Offices have been limited. Comparable statistics on the usage of the PCT system appear in Chapter 5.

Applications reported hereafter are counted by the calendar year of filing and grants by the calendar year of grant. Statistics are derived primarily from the Intellectual Property Statistics of WIPO¹³, as collected from each country and region. Patent statistics are sometimes retrospectively updated and where necessary and possible the counts have been augmented from other sources, but otherwise no estimated counts have been included to compensate for missing data. Considering that not all the Offices report filing statistics on a regular basis, some of these data, especially when referring to countries outside the IP5 Blocs, should be interpreted with care.

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 which is followed within a period of one year by applications to as many other Offices as required, each such application claiming the priority of the earlier first filing. First filings can be thus 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; requests for patents 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

¹³ This edition refers to general patent data as of March 2012, and to July 2012 for PCT international applications. <http://www.wipo.int/ipstats/en/statistics/patents/>.

- ‘Requests for patents entering a grant procedure’ 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

Counts of patent grants, in this chapter, are based on the WIPO Industrial Property Statistics series. They are counted in the year that the grants are issued or published. As with the demand for patent protection, alternative presentations are also given in this chapter for grants in terms of the demand for rights, after cumulating the number of designated countries over applications within regional procedures.

The last part of this chapter discusses interbloc 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.

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 once only: Direct national, direct regional filings (filed with the EPO, EAPO, ARIPO¹⁴), and PCT international filings.

Figs. 3.5, 3.6 and 3.12 show the numbers of **requests for patents** as they 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 once only. 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 once only. 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 once each only, 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 once only (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 once only, but 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 (analogous to Figs. 3.7, 3.8 and 3.9 for applications).

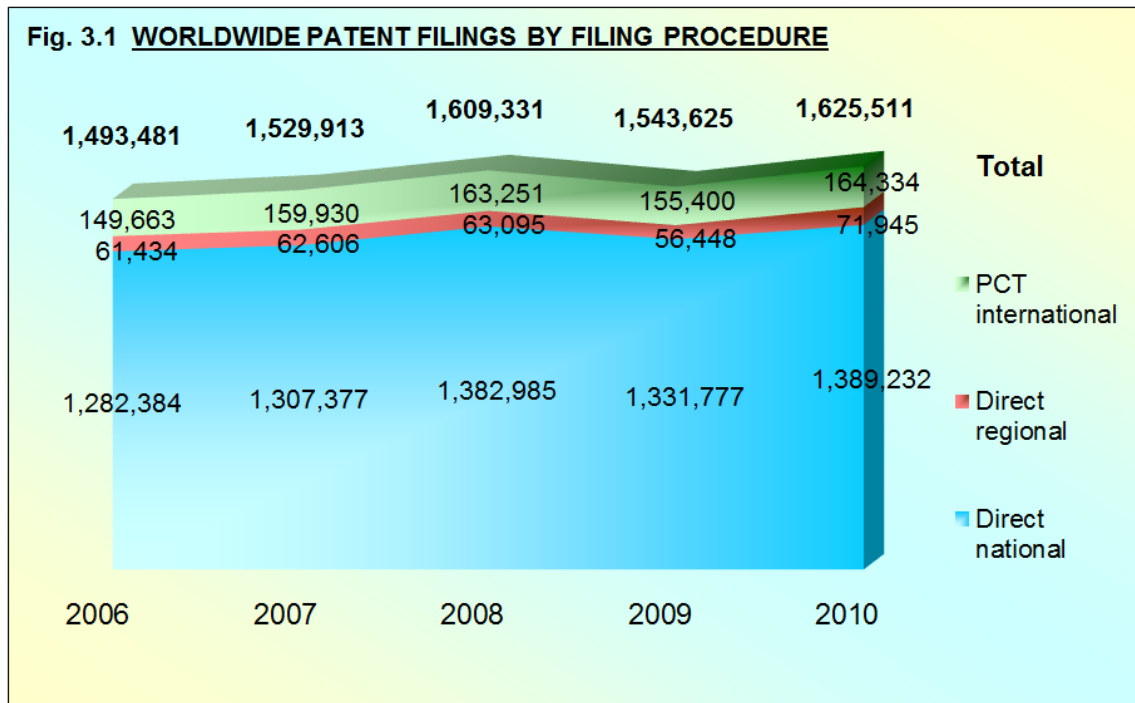
¹⁴ The EAPO is the Eurasian Patent Office. The ARIPO is the African Regional Intellectual Property Office.

PATENT FILINGS

Patent applications 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. These applications are counted once only. 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.¹⁵



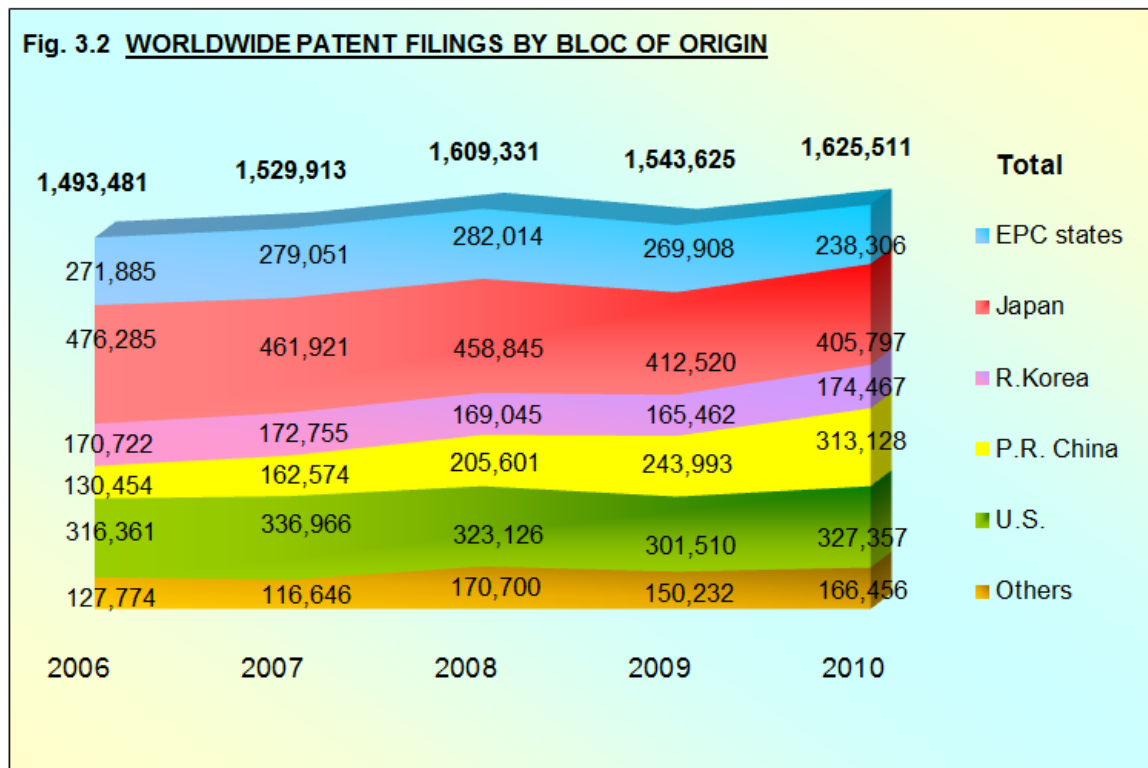
The number of patent filings in 2010 increased by 5 percent to 1.63 million. This may reflect a return to the increasing annual application filings seen prior to 2009.

In 2010, the number of PCT international, direct regional, and direct national applications increased by 6 percent, 27 percent and 4 percent respectively, and 85 percent of these applications were filed according to direct national procedures, a slight decrease from

¹⁵ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

2009 (86 percent). 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).¹⁶

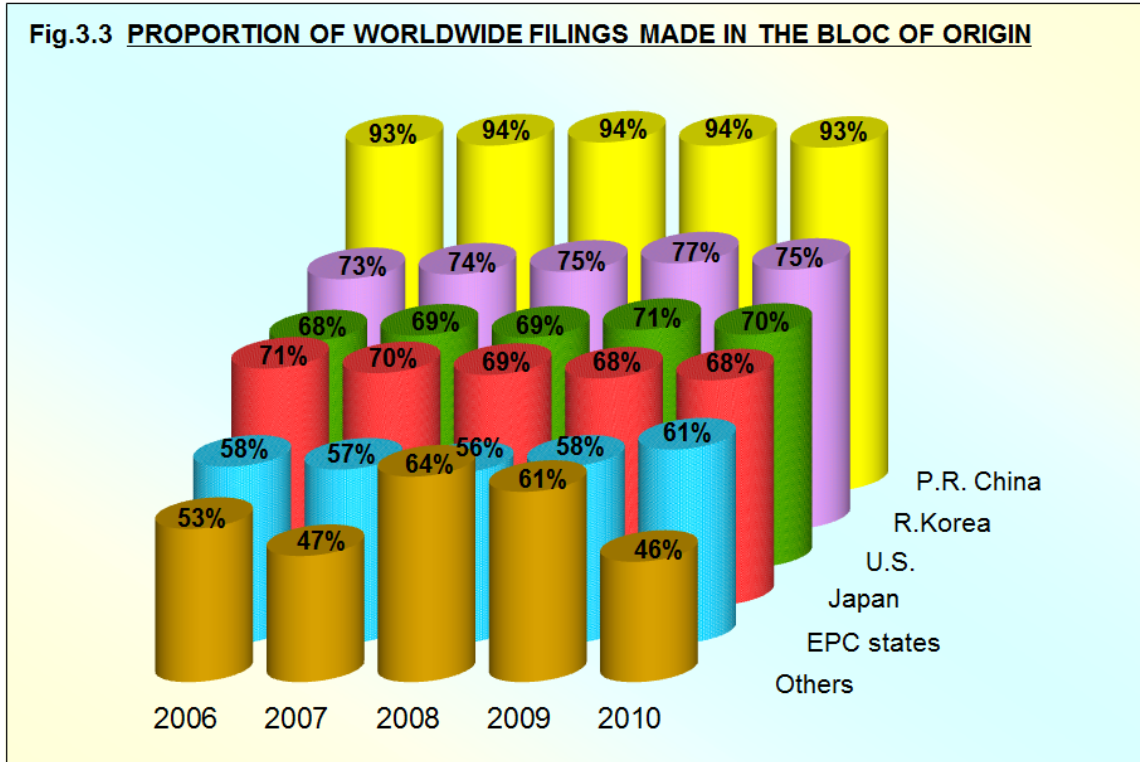


The IP5 Blocs were the origin of 91 percent of the patent filings overall from 2006 to 2010 with the annual share consistently at or above 89 percent during this period. The sharp rise of Others in 2008 was due to a larger number of offices for which statistics became available and a significant increase that was reported from some offices.

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

¹⁶ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

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).¹⁷



For the IP5 Blocs, P.R. China had the largest proportion of filings made at home in 2010 with 93 percent. The EPC states¹⁸ had the lowest proportion with 61 percent.

¹⁷ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

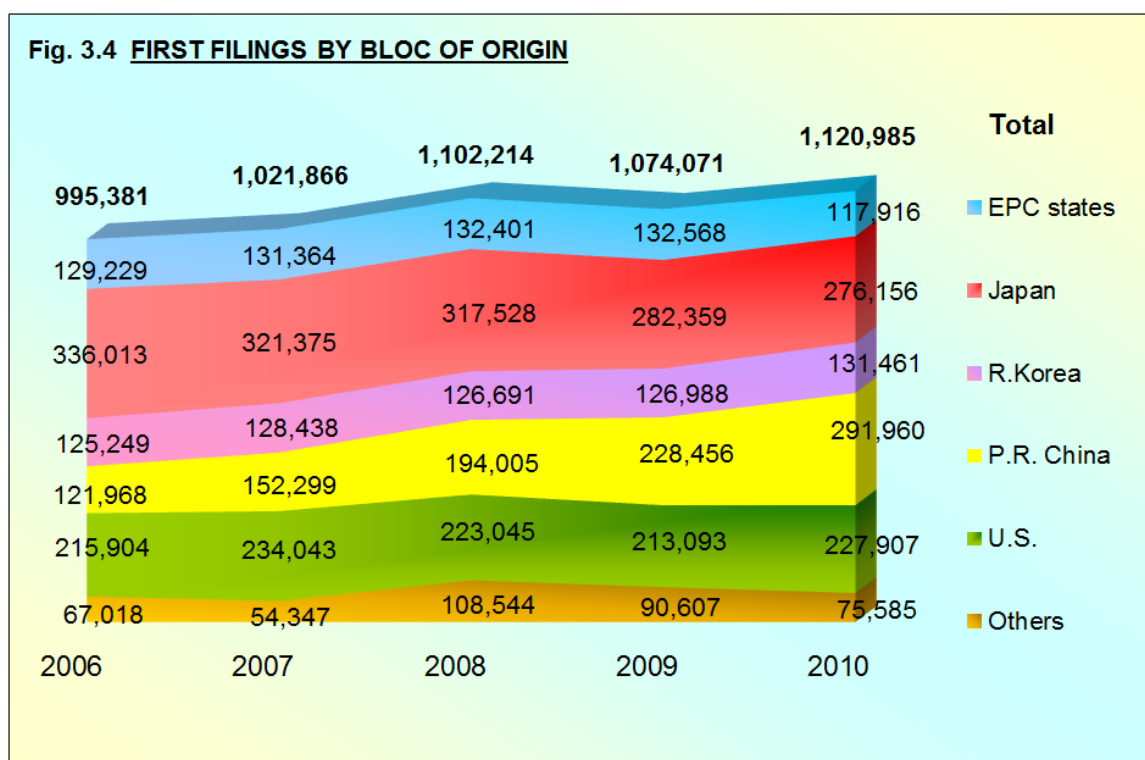
¹⁸ For the purpose of reporting statistics for the EPC states considered as a bloc, an application by an EPC states resident applicant to another EPC state or to the EPO is considered to be filed within the bloc of origin. See the EPO section of Chapter 2 for a listing of EPC states.

FIRST FILINGS

Patent applications counted in this section (with Fig. 3.4) continue to consist of initial applications. 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).¹⁹



P.R. China recorded 291,960 first filings²⁰ in 2010, the highest number of first filings by any bloc within the IP5 area. This was an increase of 28 percent from its 2009 number. There were also increases in first filings from the U.S. and R. Korea of 7 percent and 4 percent in 2010, while the EPC states²¹ and Japan had decreases of 11 percent and 2 percent. Overall, first filings increased by 4 percent between 2009 and 2010.

¹⁹ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

²⁰ This figure refers to the first filings filed by domestic applicants with the SIPO in 2010.

²¹ EPC states applications are applications made by residents from within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states.

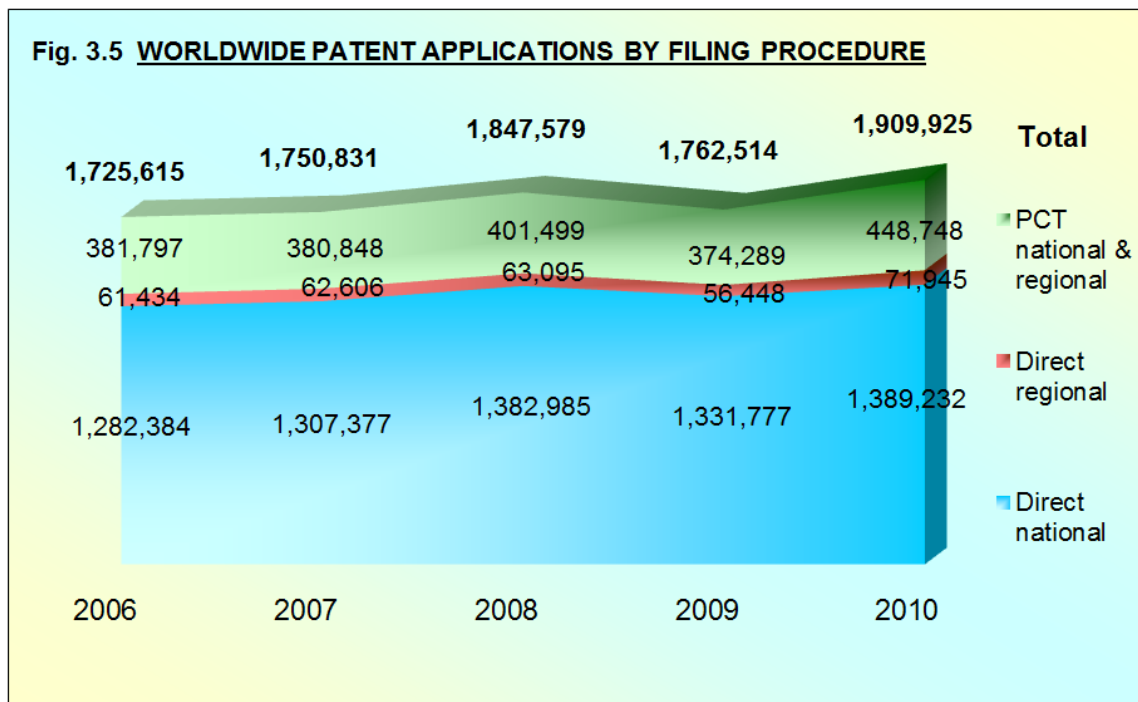
Not all domestic applications are first filings. Also not all first filings are domestic filings. Nevertheless, comparison of Figs. 3.2 and 3.4 demonstrates that there are considerable numbers of subsequent filings, where the first filing for an invention at one office leads on to further filings.

REQUESTS FOR PATENTS 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 phase. In the following figures the PCT application numbers count 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 procedure.²²

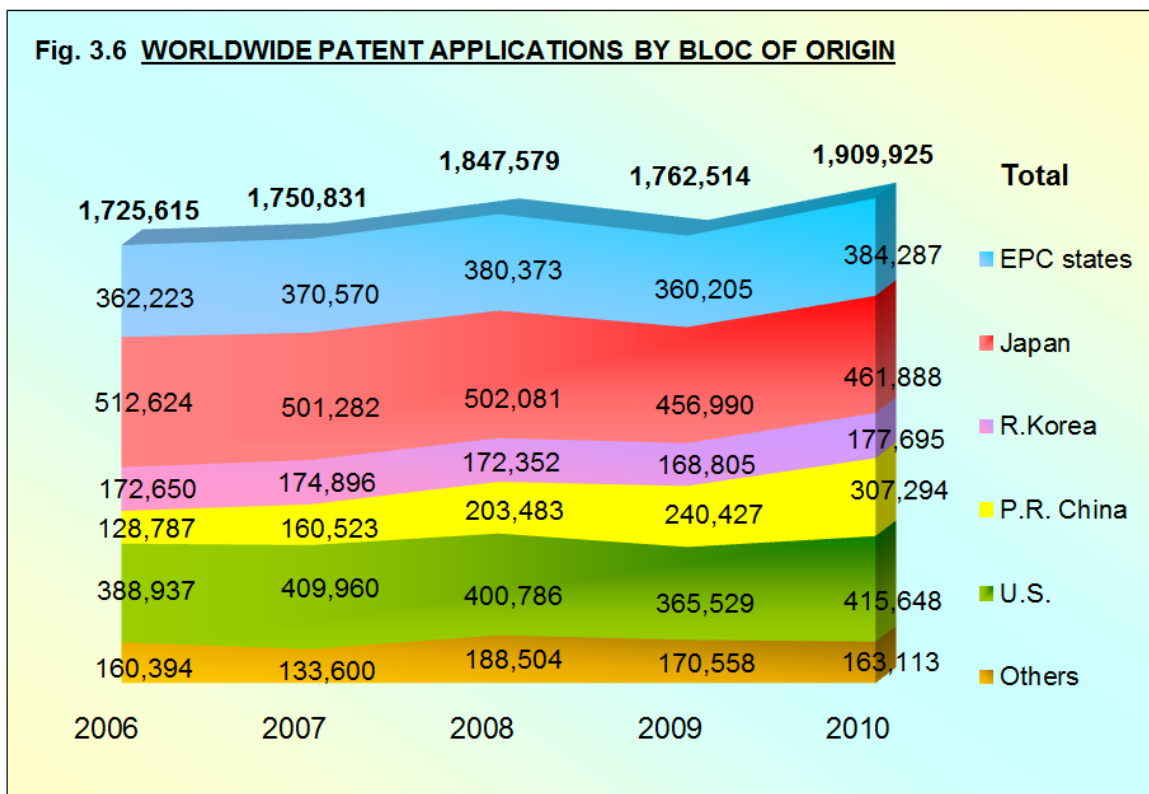


From 2009 to 2010, the number of patent applications increased in each procedure. PCT national and regional increased by 20 percent, direct regional increased by 27 percent and direct national increased by 4 percent. In total, worldwide patent applications increased by 8 percent.

²² A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

Considering the delay set in the PCT, the decrease of the number of PCT applications entering a national or regional granting procedure in 2009 corresponds to a period (2007-2008) during which the number of PCT international applications was still increasing. This might be interpreted as a lower tendency to continue PCT application into grant procedures during the period, perhaps as an effect of the worldwide recession.

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.²³



The number of patent applications increased for each of the IP5 Blocs²⁴ in 2010, with Japan remaining the region from which the largest share of applications originate. The largest percent increase in applications by origin in 2010 came from P.R. China (28 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.

²³ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

²⁴ EPC states applications are applications made by residents from within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states.

DEMAND FOR NATIONAL PATENT RIGHTS

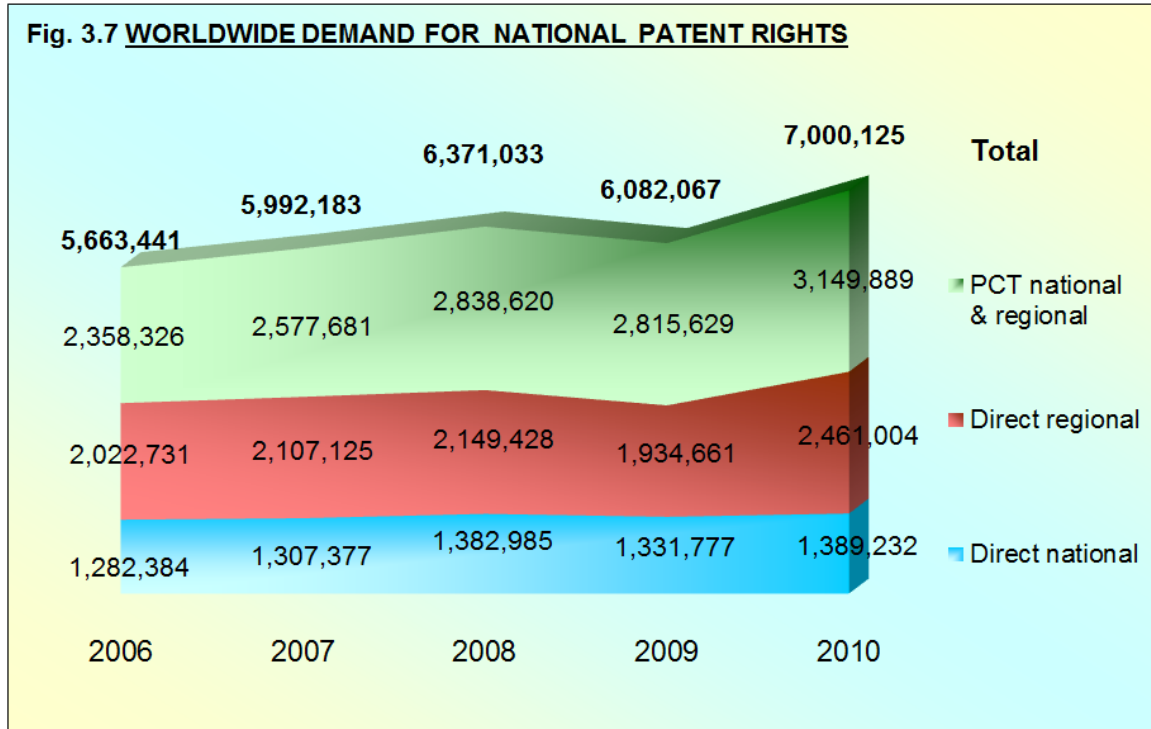
Patent applications counted in this section (with Figs. 3.7, 3.8 and 3.9) include direct national and national stage PCT applications, and designated countries in regional and in regional stage PCT applications.

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 systems²⁵.

²⁵ At the end of 2010, 78 states were party to a regional patent system, EPC 38, EAPC 9, ARIPO 15, Organization Africaine del la Propriete Intellectuelle 16. This compares to 77 states at the beginning of 2006. Also 142 states were party to the PCT, compared to 128 states at the beginning of 2006.

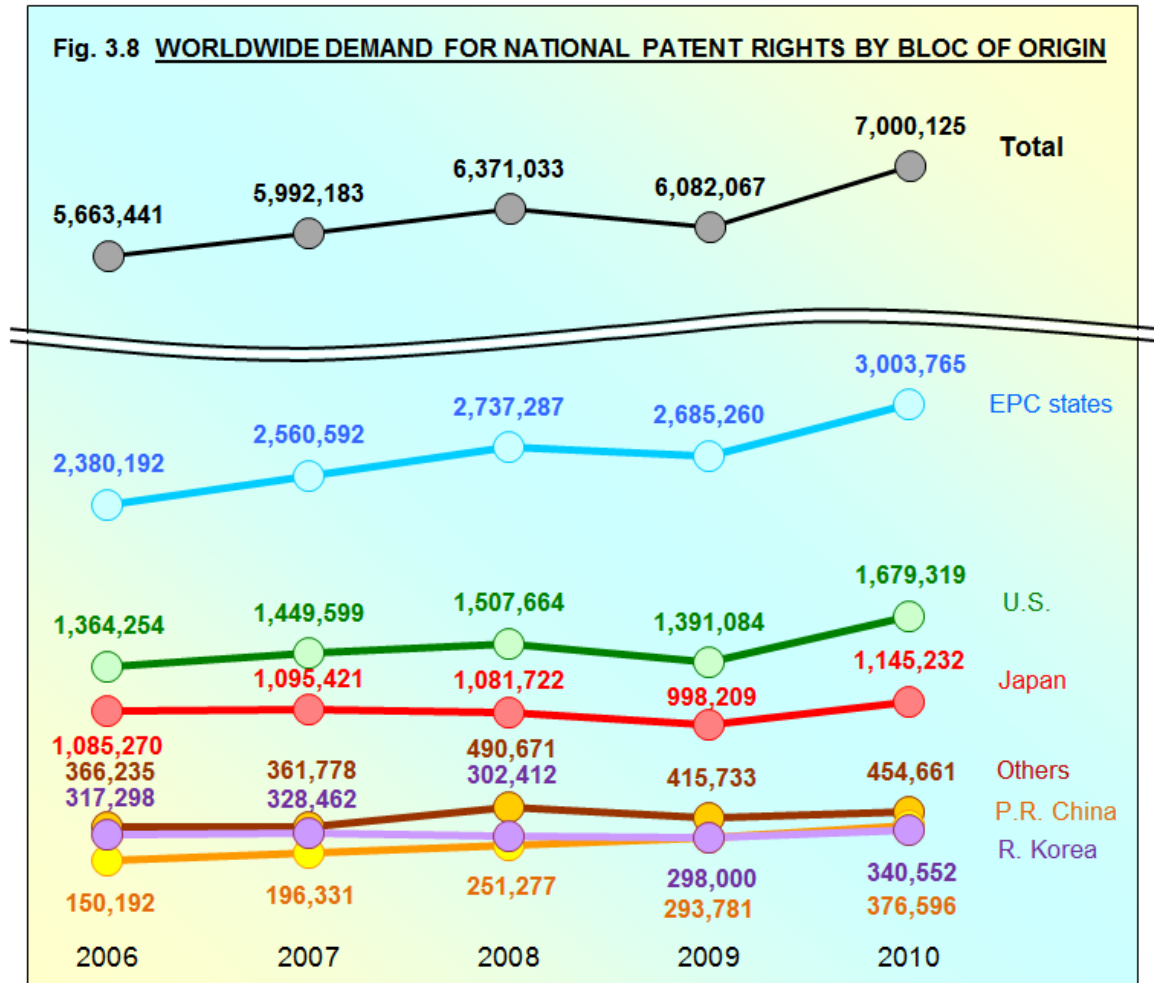
Fig. 3.7 shows the development of demand for national patents rights broken down by filing procedures.²⁶



Despite a decline in numbers from 2008 to 2009, the overall growth from 2006 to 2010 shows 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.

²⁶ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

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. 3.7.²⁷



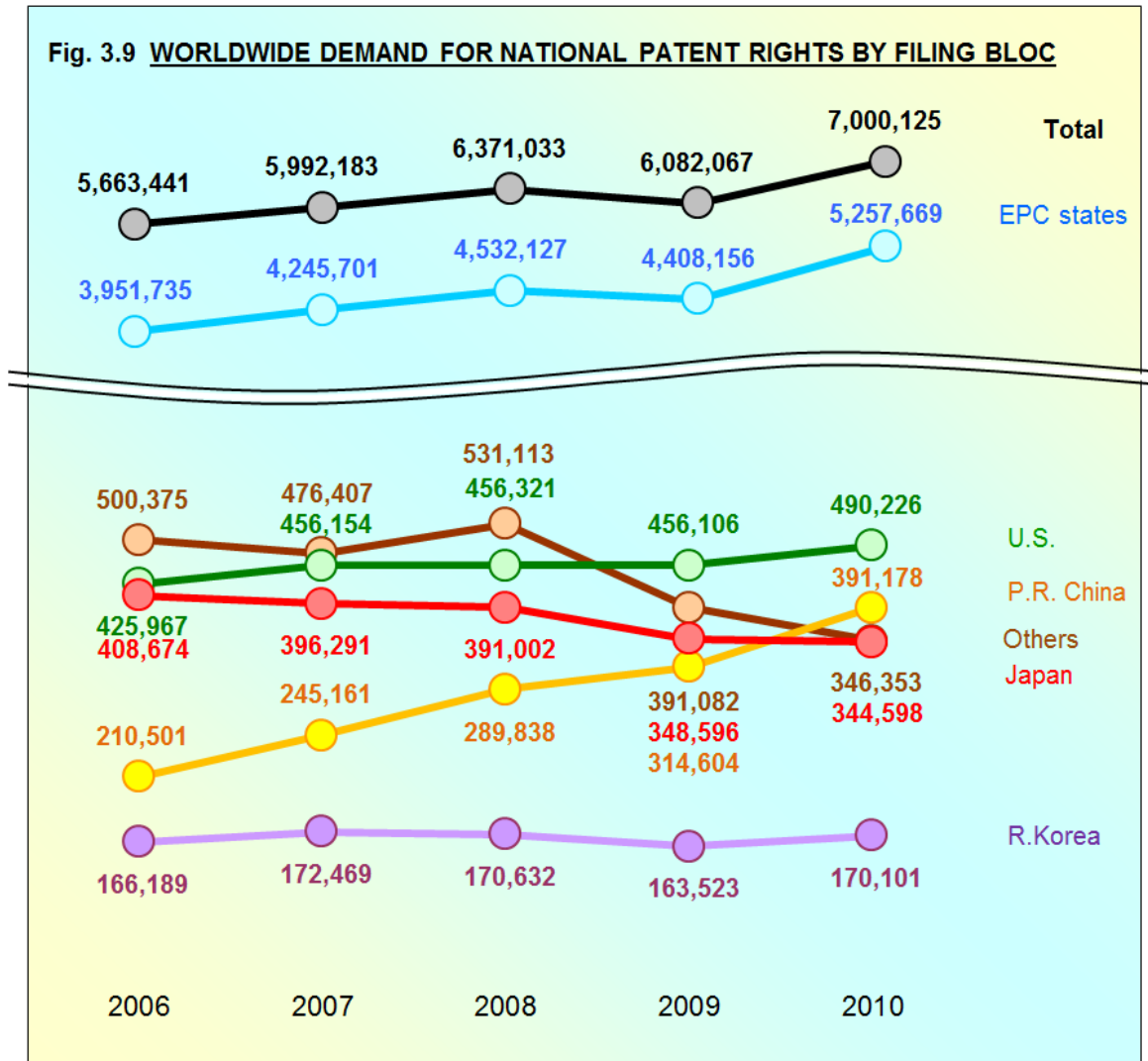
From 2009 to 2010 worldwide demand for national patent rights increased by 15 percent. During this time, demand from all blocs increased. The total worldwide demand for national patent rights increased at a compound growth rate of 5.4 percent per year from 2006 to 2010.

The large share of the EPC states²⁸ reflects, among other factors, the intensive use of the international and regional systems there.

²⁷ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

²⁸ EPC states applications are applications made by residents from within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states.

Fig. 3.9 shows the distribution of the demand for national patent rights according to the filing or targeted blocs and is related to the data in Fig. 3.7 and Fig. 3.8.²⁹



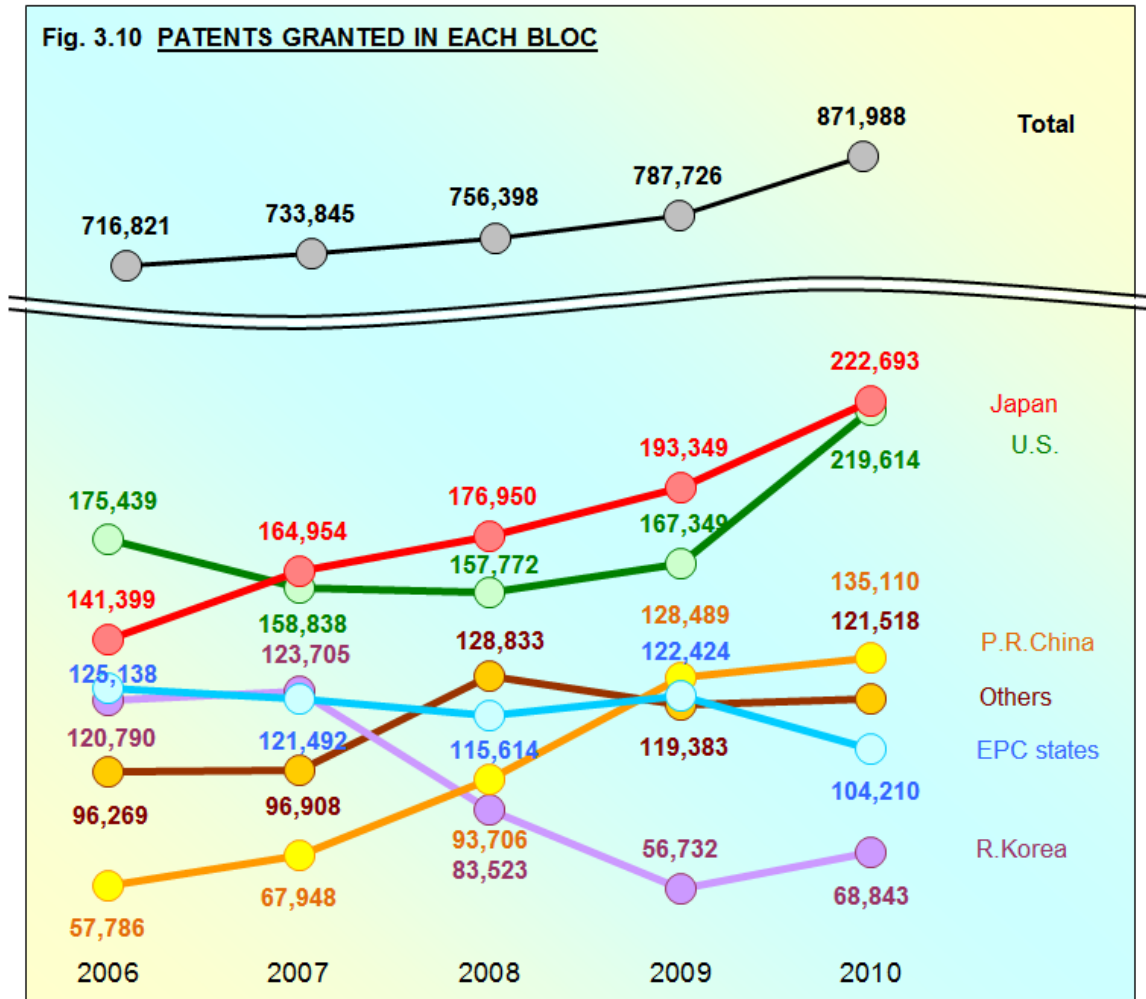
This chart demonstrates the influence of regional patent systems on global demand for patents. In 2010, the demand for national patent rights increased in the EPC states, P.R. China, R. Korea, and the U.S., while decreasing in Japan. P.R. China and the EPC states had the largest increases at 24 percent and 19 percent respectively.

²⁹ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

PATENT GRANTS

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

Fig. 3.10 displays the cumulative numbers of patents granted in each bloc.³⁰



The total number of patents granted in the world increased by 11 percent in 2010. The number of grants for P.R. China, Japan, R. Korea, and the U.S. increased, while grants for the EPC states decreased. Patent grants are counted once only (although EPC states counts include grants both by the EPO and the EPC states national offices).

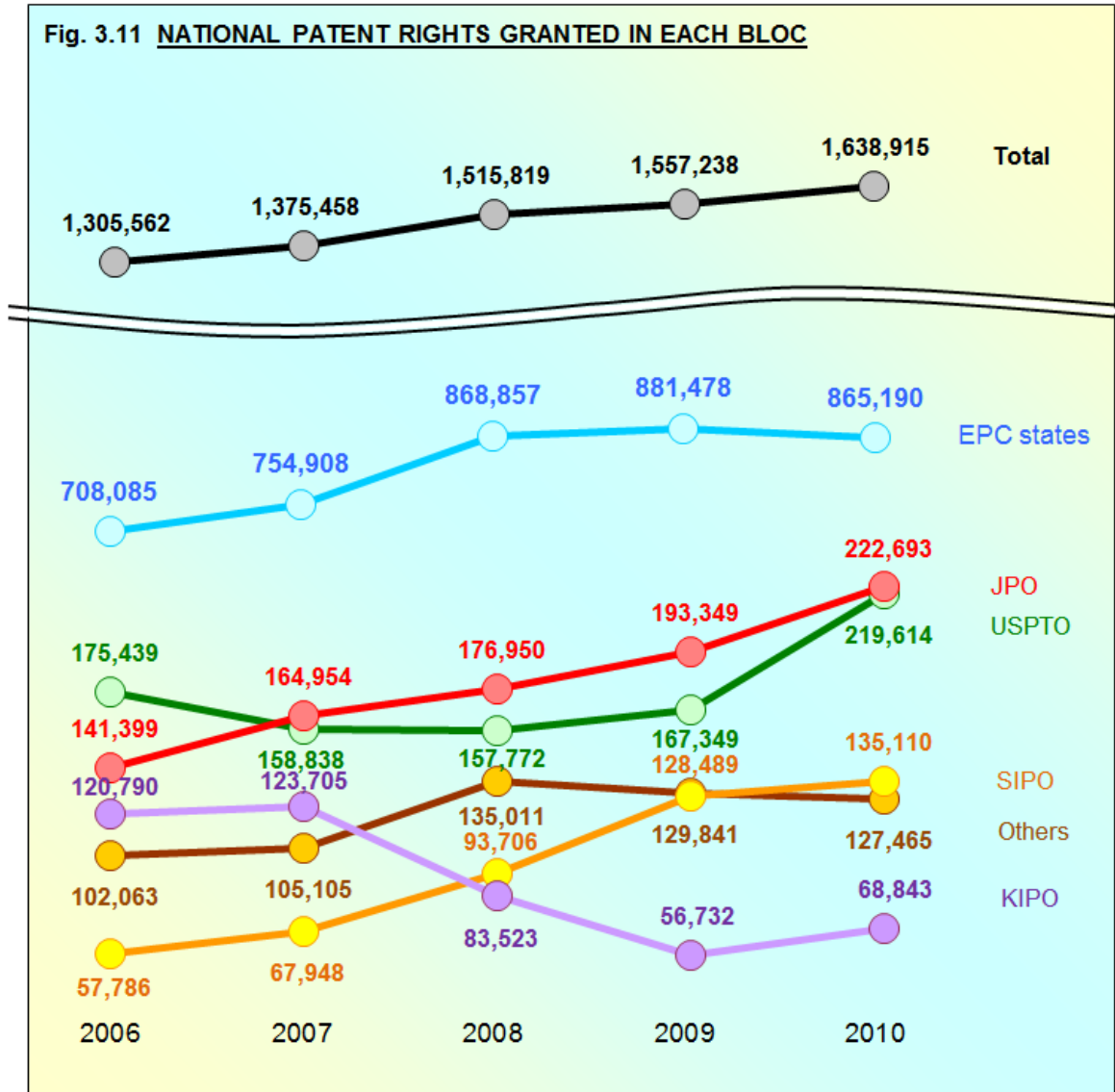
The data for Others should be compared between years with caution, since more countries reported figures in 2009, in particular some countries with large numbers of grants. However superimposed on this, there have been genuine increases in the last few years.

³⁰ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

As currently implemented, note that 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 designated.³¹ This has an effect only in EPC states and Others, as shown in the following Fig. 3.11.

³¹ National patents can also be created in other states that have extension agreements with the EPC or otherwise recognize the validity of EPO patents.

Fig. 3.11 illustrates the development of the validated national grants resulting from the decisions reported in Fig. 3.10.³² Direct national grants are counted once only, but 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.



The overall number of national patent rights granted increased by 26 percent over the five-year period to more than 1.6 million patent rights granted in 2010.

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.

³² A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

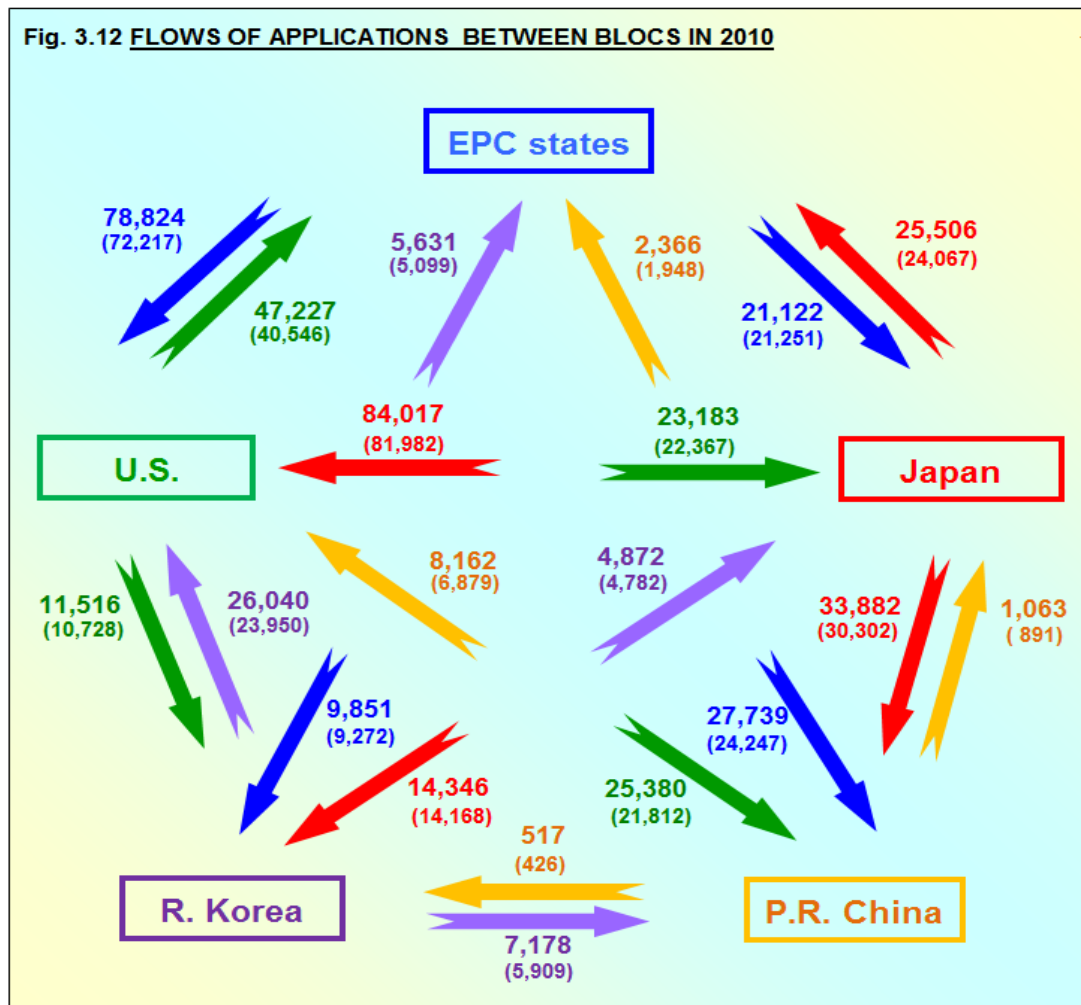
INTERBLOC ACTIVITY

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 applications or inventors), of distinct patent applications entering a grant procedure (as in Fig. 3.5) in 2010, with 2009 figures given in parentheses.³³

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 once only. PCT filings are replicated over the numbers of national/regional procedures that are started.



³³ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.

As a general pattern, applicants worldwide filed many more applications in the U.S. than in any of the other IP5 Blocs. U.S. applicants applied more in the EPC states³⁴ than in any of the other regions.

In 2010, flows between all the blocs increased with the exception of the flow from the EPC states to Japan which declined slightly.

³⁴ EPC states applications are applications made by residents from within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states.

PATENT FAMILIES

A patent family is a group of patent filings that claim the priority of a single first filing.³⁵

The information in this section on flows between blocs of patent families was obtained from the DOCument DataBase (DOCDB)³⁶ of worldwide patent publications. The statistics are based on references to priorities given in published applications. Where no reference to a priority appears in an application, it is considered to be a first filing. Otherwise it is a subsequent filing. This differs to some extent from other statistics in this chapter that are based on counts of filed patent applications provided by individual Patent offices, where domestic applications are used as a proxy for first filings. Here, the number of applications is counted based on the bloc of origin for which priority was claimed. Due to the delay in publication (relative to the time of filing), patent families counts can only be reported with any degree of accuracy after several years have passed.

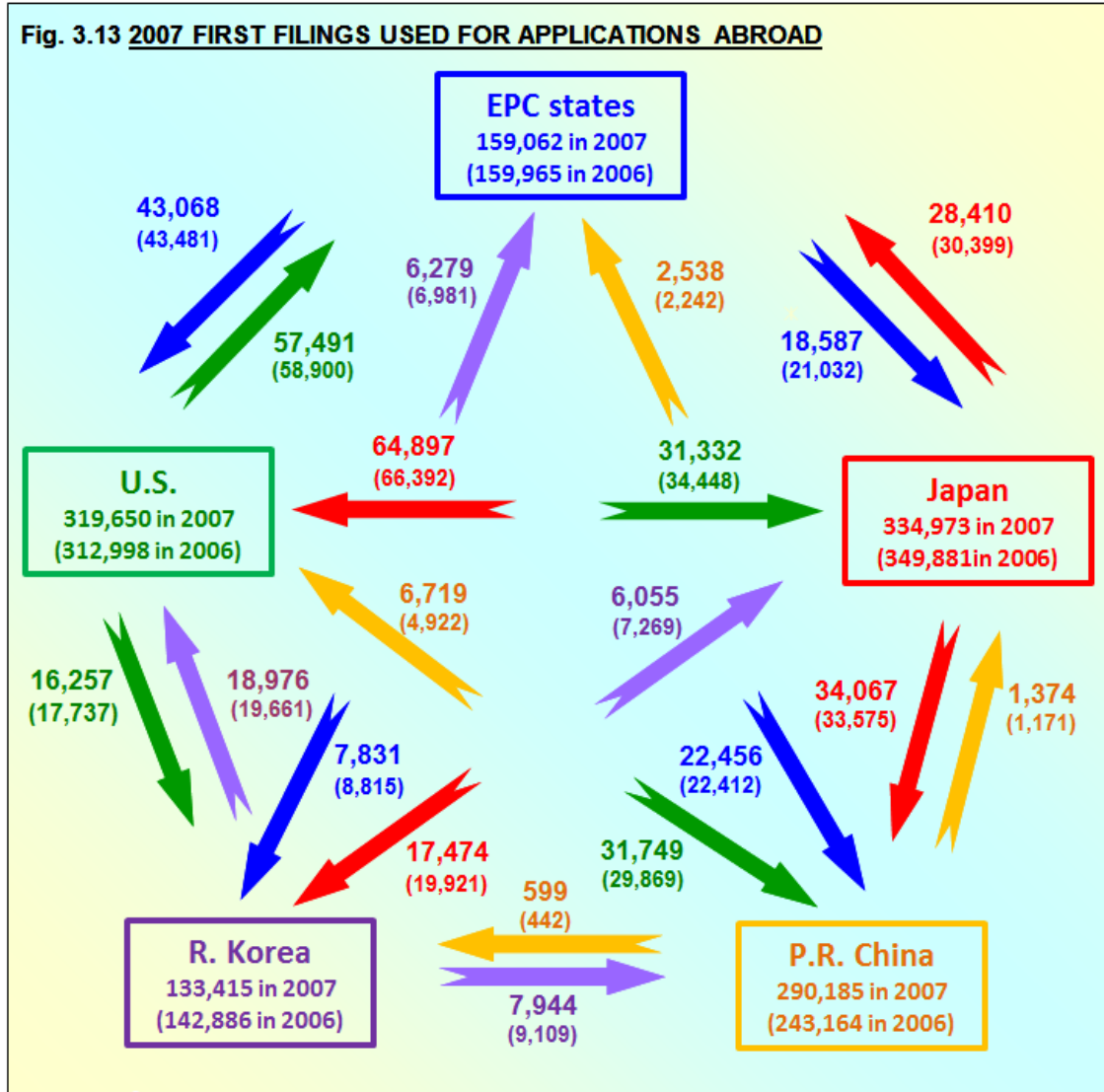
Fig. 3.13 shows the flows of patent families from first filings to subsequent filings among the IP5³⁷, with application counts based on the bloc within which the claimed priority was filed.³⁸ The number given in this box for each bloc is the total number of first filings in 2007. The flow figures between blocs of origin and target blocs indicate the numbers of 2007 first filings from the bloc of origin that led to subsequent filings in the target bloc. The comparable figures for 2006 are given in parentheses.

³⁵ For a further discussion of patent families, see the term definitions in Annex 2.

³⁶ DOCDB is the EPO master documentation database with worldwide coverage containing bibliographic data, abstracts and citations (but no full text).

³⁷ EPC states applications are applications made by residents from within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states.

³⁸ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.



The following Table 3 shows details of flows of patent families between blocs for the priority years 2006 and 2007. Historical tables for the years from 1995 to 2007 can be found in the statistical data files attached to the web based version of this report.

Table 3: NUMBERS OF PATENT FAMILIES

BloC of origin from which priority is claimed		2006										IP5 BloCs Patent Families from bloc of origin (EPC, Japan, R. Korea, P.R. China, U.S.)	
		Flows to Subsequent Filings											
		First filings in BloC of Origin leading to priority claims in filings in:											
First Filings in BloC of Origin	Any other BloCs	Any Other Triateral BloC	Any other Four BloC	Any other IP5 BloC	EPC states	Japan	R. Korea	P.R. China	U.S.	Other countries			
EPC states	159,965 (31.1%)	45,650 (28.5%)	45,989 (28.7%)	48,019 (30.0%)	-	21,033 (13.1%)	8,796 (5.5%)	22,412 (14.0%)	44,109 (27.6%)	18,981 (11.9%)	5,866 (3.7%)		
Japan	349,881 (21.4%)	74,765 (45.6%)	73,643 (45.1%)	30,390 (18.7%)	30,390 (8.7%)	-	20,074 (5.7%)	33,575 (9.6%)	66,586 (19.0%)	14,259 (4.1%)	8,591 (2.5%)		
R. Korea	142,886 (15.2%)	20,735 (22.4%)	20,735 (22.4%)	21,511 (23.1%)	6,981 (4.9%)	7,266 (5.1%)	-	9,109 (6.4%)	19,687 (13.8%)	2,780 (1.9%)	2,630 (1.8%)		
P.R. China	243,164 (2.5%)	5,800 (2.4%)	5,833 (2.4%)	5,833 (2.4%)	2,242 (0.9%)	1,171 (0.5%)	442 (0.2%)	-	4,922 (2.0%)	661 (0.3%)	233 (0.1%)		
U.S.	312,998 (24.6%)	77,103 (62.6%)	63,655 (51.3%)	67,590 (54.5%)	58,812 (46.6%)	34,437 (27.3%)	17,688 (13.9%)	29,869 (23.5%)	-	45,252 (35.7%)	9,613 (7.5%)		
IP5 bloCs subtotal	1,208,894 (19.0%)	203,225 (32.2%)	207,547 (33.2%)	216,596 (34.5%)	98,425 (15.7%)	63,907 (10.1%)	47,000 (7.5%)	94,965 (15.2%)	135,304 (21.7%)	81,933 (13.2%)	26,933 (4.3%)		
Others	114,939 (13.3%)	15,301 (13.2%)	15,301 (13.3%)	15,473 (13.5%)	4,273 (3.7%)	2,765 (2.4%)	1,002 (0.9%)	1,607 (1.4%)	13,945 (12.1%)	-	325 (0.3%)		
Global total	1,323,833 (18.5%)	244,615 (16.5%)	222,848 (16.8%)	232,069 (17.5%)	102,698 (7.8%)	66,672 (5.0%)	48,002 (3.6%)	96,572 (7.3%)	149,249 (11.3%)	81,933 (6.2%)	27,258 (2.1%)		

BloC of origin from which priority is claimed		2007										IP5 BloCs Patent Families from bloc of origin (EPC, Japan, R. Korea, P.R. China, U.S.)	
		Flows to Subsequent Filings											
		First filings in BloC of Origin leading to priority claims in filings in:											
First Filings in BloC of Origin	Any other BloCs	Any Other Triateral BloC	Any other Four BloC	Any other IP5 BloC	EPC states	Japan	R. Korea	P.R. China	U.S.	Other countries			
EPC states	159,062 (30.9%)	44,370 (27.9%)	44,683 (28.1%)	47,132 (29.6%)	-	18,587 (11.7%)	7,831 (4.9%)	22,456 (14.1%)	43,068 (27.1%)	18,478 (11.6%)	5,333 (3.4%)		
Japan	334,973 (22.2%)	74,277 (45.6%)	69,909 (41.6%)	72,699 (44.1%)	28,410 (8.5%)	-	17,474 (5.2%)	34,067 (10.2%)	64,897 (19.4%)	16,285 (4.9%)	7,242 (2.2%)		
R. Korea	133,415 (15.8%)	20,105 (20.0%)	20,027 (20.0%)	20,914 (20.9%)	6,279 (4.7%)	6,055 (4.5%)	-	7,944 (6.0%)	18,976 (14.2%)	2,969 (2.2%)	2,164 (1.6%)		
P.R. China	290,185 (2.7%)	7,772 (2.6%)	7,595 (2.6%)	7,595 (2.6%)	2,638 (0.9%)	1,374 (0.5%)	599 (0.2%)	-	6,719 (2.3%)	804 (0.3%)	333 (0.1%)		
U.S.	319,650 (24.2%)	77,230 (61.5%)	62,792 (49.6%)	67,029 (51.4%)	57,491 (46.0%)	31,332 (24.8%)	16,257 (12.5%)	31,749 (24.8%)	-	45,276 (35.3%)	9,318 (7.1%)		
IP5 bloCs subtotal	1,237,285 (18.6%)	209,541 (33.2%)	205,006 (32.7%)	215,369 (34.5%)	94,718 (14.6%)	57,348 (8.6%)	42,161 (3.4%)	96,216 (14.6%)	133,660 (20.8%)	83,812 (12.8%)	24,390 (3.0%)		
Others	116,929 (12.9%)	15,129 (12.9%)	15,129 (12.9%)	15,319 (13.1%)	4,041 (3.5%)	2,401 (2.1%)	882 (0.8%)	1,620 (1.4%)	13,858 (11.9%)	-	314 (0.3%)		
Global total	1,354,214 (18.1%)	244,670 (15.9%)	220,135 (16.3%)	230,688 (17.0%)	98,759 (7.3%)	59,749 (4.4%)	43,043 (3.2%)	97,836 (7.2%)	147,518 (10.9%)	83,812 (6.2%)	24,704 (1.8%)		

Percentages are the counts expressed as proportions of the numbers of First Filings in the countries/blocs of origin.

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From information in Table 3, out of all first filings in the IP5 Blocs in 2007 (1,237,285), only 17 percent formed patent families that included at least one of the remaining IP5 Blocs (215,369). Proceeding to a higher degree of selectivity, only 2.2 percent of all first filings in the IP5 Blocs in 2006 formed “IP5 Blocs patent families”, where activities of first and/or subsequent filings were made to all the IP5 Blocs.

The proportions of IP5 Blocs patent families differed considerably according to the bloc of origin of the priority filings (EPC states 3.7 percent, U.S. 3.1 percent, Japan 2.5 percent, R. Korea 1.8 percent, P.R. China 0.1 percent and for Others 0.3 percent).

The first filings and flows between the IP5 Blocs in Fig. 3.13 and Table 3 are fairly accurate up to the year 2007. The numbers for IP5 Blocs patent families after 2006 may not yet be complete, because more time is needed to gather all evidence of subsequent filing activity from first filings in later years.

Fig. 3.14 presents a separate diagram for each IP5 Bloc that displays the percentages of first filings in that Bloc that led to subsequent filings in each of the other IP5 Blocs. The diagrams include graphical displays of 2006 patent family data that also are presented in Table 3. Four circles are presented in each diagram with each circle representing the percentage of subsequent filings in one of the other IP5 Blocs. In addition to percentages, the circles also may be viewed as graphically representative of the relative proportions of subsequent filings in the other IP5 Blocs. Areas where the circles overlap correspond to subsequent filings in more than one other IP5 Bloc.

Each diagram includes a label that lists the name of the profiled IP5 Bloc and the total number of first filings received there. Recall that, while the IP5 Blocs correspond to the same geographical areas that are covered by the IP5 Offices, in the case of the EPC states the activities at national offices are included as well as the EPO.

Each profiled IP5 Bloc's graphical display presents the name of the other four IP5 Blocs around the periphery with the corresponding percentage shares of the first filings from the profiled Bloc that were subsequently filed in those other Blocs. The size of each circle is representative of both the percentage and number of patent families subsequently filed in the corresponding color-coded bloc. Overlapping areas are representative of both the percentage and number of patent families subsequently filed in two or more IP Blocs.

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. The corresponding percentage is 12 percent, as shown next to the green and yellow dots that appear lower down in the figure, which are explained further below. 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 percentages next to the color code combinations under each graphical display show subsidiary percentages of subsequent filings that flowed to more than one other IP5 Bloc. For example, the 4 way combination, "Japan, R. Korea, P.R. China, U.S." under "First Filings in EPC 159,965" is 3.7 percent, corresponding to the proportion of IP5 Blocs Patent families with first filings in the EPC and subsequent filings in all of the other four IP5 blocs, as well. This proportion also appears in Table 3.

Fig. 3.14 2006 PROPORTIONS OF PATENT FAMILIES INVOLVING SEVERAL IP5 BLOCS

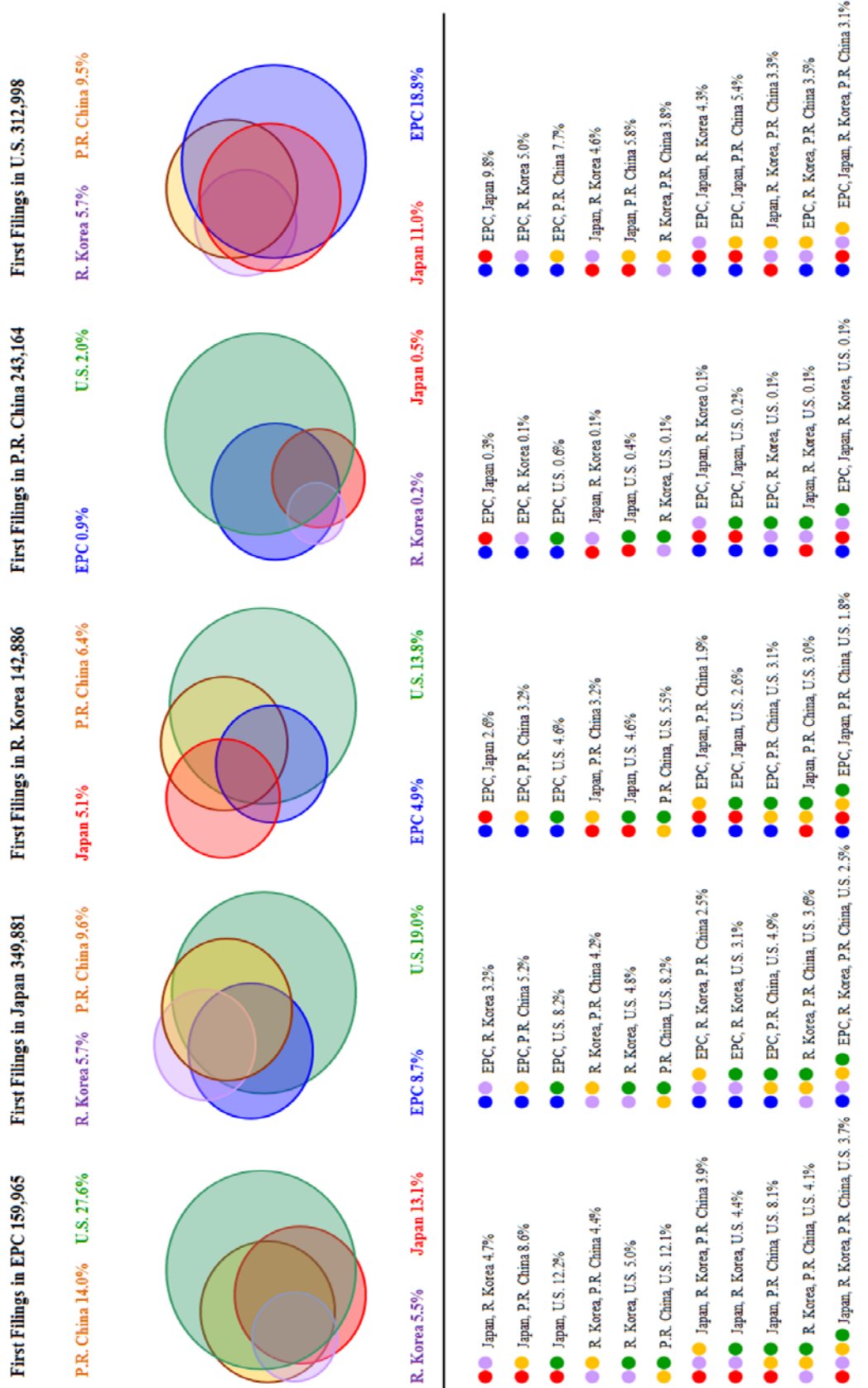


Figure 3.14 and Table 3 indicate that the U.S. market may be considered as the most important foreign market for the other IP5 Blocs since, for each of those Blocs, subsequent applications in the U.S. represent the highest percentages among target Blocs. The percentages of subsequent applications filed in the U.S. following 2006 first filings in the EPC member states, Japan, R. Korea, and P.R. China are 27.6 percent, 19.0 percent, 13.8 percent, and 2.0 percent, respectively.

For first filings in the EPC member states, the largest percentage of subsequent filings is directed to the U.S. (27.6 percent). In general, first filings in the EPC member states tend to result in a higher percentage of subsequent filings overseas, as compared to the first filings in other IP5 Blocs as seen in Fig. 3.14 and column 6 of Table 3.

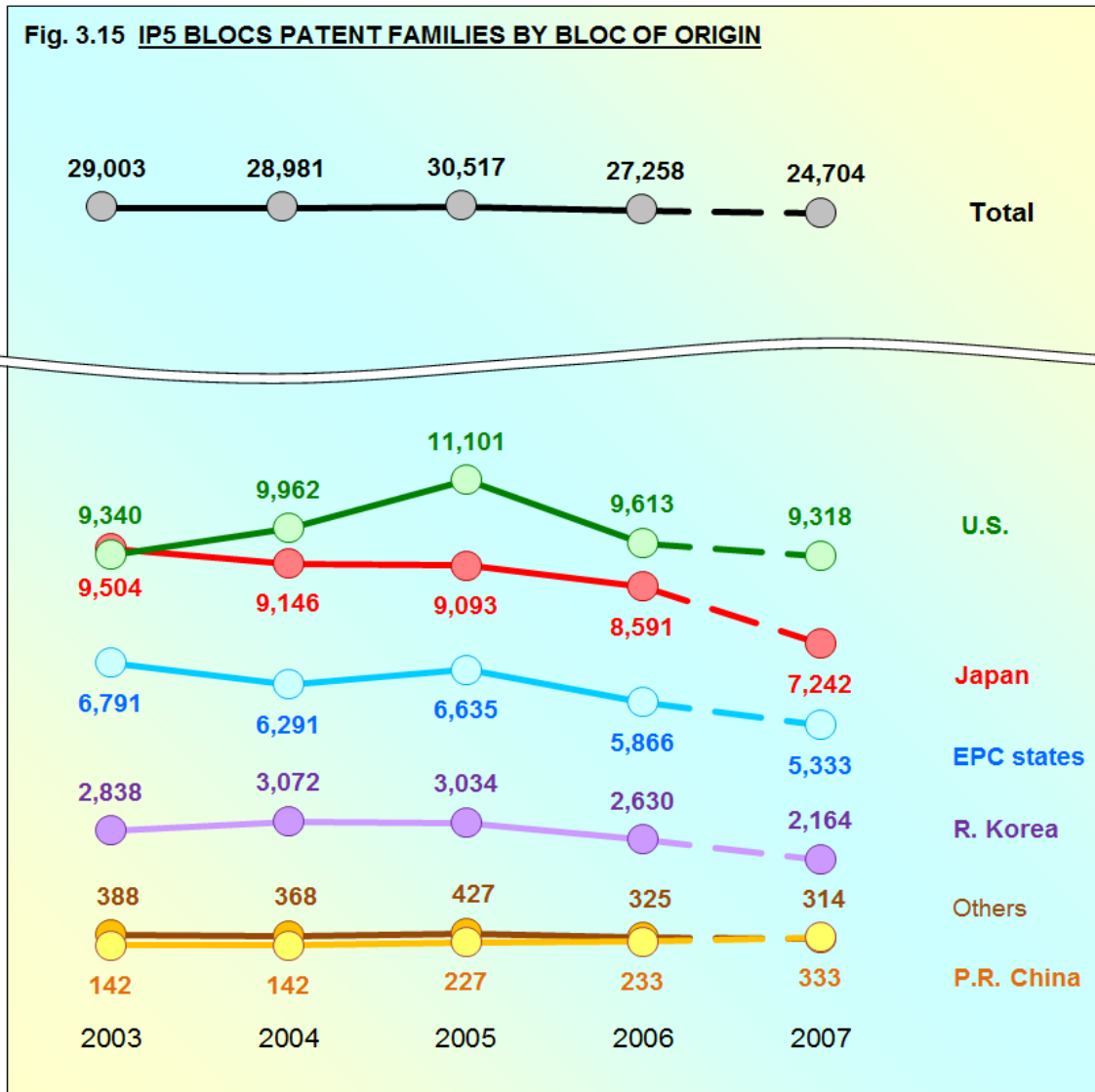
For the first filings in Japan, the largest percentage of subsequent applications is directed to the U.S. (19.0 percent). In addition, the percentage of subsequent applications directed to P.R. China is growing, as is demonstrated by comparing 2006 and 2007 data in Table 3, with P.R. China geographically close to Japan and growing in market importance.

For the first filings in R. Korea, the percentage of subsequent applications filed in the U.S. (13.8 percent) is the largest, followed by P.R. China (6.4 percent), which, like Japan, is in close proximity geographically. In addition, the percentage of subsequent applications filed in the EPC member states is 4.9 percent. This last percentage is close to the percentage of subsequent applications filed in both the EPC member states and the U.S. together (4.6 percent), indicating that most of the subsequent applications filed in the EPC member states have been also filed in the U.S.

For the first filings in P.R. China, the percentage of subsequent applications that were filed in both the EPC member states and Japan is about 0.3 percent. The percentage of subsequent applications that were filed in the EPC member states, Japan, and the U.S. is about 0.2 percent, indicating that many of the subsequent applications filed in both the EPC 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, as can be seen by comparing the 2006 and 2007 data displayed in Table 3.

Among the first filings in the U.S., the percentage of subsequent applications filed is highest in the EPC member states (18.8 percent). The percentage of subsequent applications filed in Japan (11.0 percent) is the next highest, with P.R. China at 9.5 percent and R. Korea at 5.7 percent.

Fig. 3.15 shows the development over time of IP5 Blocs patent families by bloc of origin (residence of first-named applicants or inventors) of the priority forming filings.³⁹



The total number of IP5 Blocs patent families in 2006 was 27,258, of which 35 percent were from the U.S., 32 percent were from Japan, 22 percent were from the EPC states, 10 percent were from R. Korea, 1 percent were from P.R. China, and 1 percent were from Others.

In the statistical annex to this report, that is available for the web based edition, similar data (back to 1995) are also given for Trilateral patent families and Four blocs patent families. This allows for comparison of IP5 Blocs patent families with statistics given in earlier editions of this report.

³⁹ A guide is located at the beginning of Chapter 3 that provides a further description of the contents of the displayed figure.