

# Four Office Statistics Report

2010 EDITION



Four Office Statistics Report 2010 Edition

European Patent Office,  
Japan Patent Office,  
Korean Intellectual Property Office,  
United States Patent and Trademark Office

Edited by  
JPO, Tokyo, October 2011



## Preface

From 1985 to 2008, the European Patent Office (EPO), the Japan Patent Office (JPO), and the United States Patent and Trademark Office (USPTO), which are commonly referred to as the Trilateral Offices in the patent community, had jointly produced the Trilateral Statistical Report (TSR). Collaboration between the Trilateral Offices has proved to be successful in the area of patent statistics. Since the 2008 edition, the TSR expanded to become the “Four Office Statistics Report (FOSR)” with the inclusion of one additional major player in the worldwide intellectual property activity, the Korean Intellectual Property Office (KIPO). JPO serves as the editor of this 2010 edition.

This is an annual compilation of patent statistics. In addition to promoting a better understanding of the importance of patenting in the world, the report explains each Office’s operations and informs about patent grant procedures. The report discusses background activities at each Office, reviews worldwide patenting developments and then compares the patent related work at the Four Offices. The FOSR supplements reports for each of the Four Offices and also presents specific statistics that are collected by the International Bureau of the World Intellectual Property Organisation (WIPO) and made available in their published data sets.

The total number of applications in 2010 among the Four Offices recovered slightly, after an earlier decline from 2008 to 2009. Together the Four Offices averaged a year-on-year increase of 5 percent in patent applications in 2010. There was a 12 percent increase at EPO, a 4 percent increase at KIPO, and a 7 percent increase at USPTO; while on the other hand, JPO experienced a 1 percent decrease, continuing a downward trend. JPO had the highest proportion of domestic filings, at almost 84 percent. The ratio of domestic filings at EPO was 49 percent; at KIPO, 77 percent; and at USPTO, 46 percent. In terms of technical fields, the highest number of patents was filed in Electrics/Electronics at each Office, except USPTO; while the lowest number at all Offices was filed in Textiles/Paper. The Four Offices in combination granted a total of 569 258 patents in 2010, a significant 21 percent increase from the 469 876 patents granted in 2009; with EPO 11 percent more patents, JPO 15 percent more, KIPO 21 percent more, and USPTO 31 more year-on-year.

There seems to be diverse factors that influence patent filing trends. In the past, some major causes were changes in patent rules and fees. As the economy has become a considerably more important factor in patent activities, the correlation between the economy and patent filings is now becoming more obvious. According to the *World Economic Outlook* of the International Monetary Fund (IMF), the global economic crisis since 2008 has caused an economic slowdown<sup>1</sup> affecting the number of patent filings, which actually decreased in 2009. In 2010, however, economic recovery has increased its power, and the world economic growth was achieved by approximately 5 percent according to the IMF. Needless to mention, a direct quantitative interpretation of worldwide patenting activities is not easy. Other factors such as political and technological developments need to be considered as well.

Nevertheless, as already mentioned above, most counts related to patent filings in 2010 show an upward trend. This illustrates that patent filings trends are correlated to

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<sup>1</sup> World Economic Outlook, April 2011, IMF, <http://www.imf.org/external/pubs/ft/weo/2011/01/>

## Four Office Statistics Report 2010

### Preface

developments in the world economy and may in fact be leading indicators in the recovery phase of the business cycle.

Globalisation of markets and production continue to be key business trends. There is a worldwide tendency to harmonise patent laws with common international standards and to stimulate the flow of patent applications across borders. This has had a positive impact on worldwide patent growth over recent years.

The Four Offices hope that this report brings useful information to the reader. The Offices will continue to improve and refine the report to better serve expectations and objectives of the public. The report is also available on-line<sup>2 3</sup>. Materials can be freely reproduced in other publications but we request that this should be accompanied by a reference to the title and a web site location of this report. An additional annex appears in the web version that gives a glossary of patent related terms, and there is also a file that contains statistics covering more years.

EPO, JPO, KIPO and USPTO

With co-operation of WIPO

October 2011

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<sup>2</sup> Trilateral Co-operation web site, <http://www.trilateral.net/statistics/tsr.html>

<sup>3</sup> Five Offices website, <http://www.fiveipoffices.org/stats.html>

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## Chapter 1

### DEFINITION OF TERMS

There are various types of intellectual property (IP) protection. These include:

- Patents of invention
- Utility model patents
- Industrial design patents
- Trademarks

This report concentrates on patents<sup>4</sup> of invention.

In order to get protection for their innovations, applicants may use the following types of granting procedures, or combinations of them:

- National procedures,
- Regional procedures (for example the European, Eurasian, African Intellectual Property Organisations, or Gulf Cooperation Council),

and the

- International PCT procedure.

Although regional and international patenting procedures exist, patent law varies from country to country. With differing regulations and procedures, patent applications can have a different scope from place to place, e.g., with respect to the average number of claims included in one application. These variations limit the ability to compare patents between countries.

While applications filed under national procedures are handled immediately by national authorities, regional applications are subject to a centralized procedure and usually only after grant do they fall under national (post grant) regulations. International applications filed under the PCT are first handled by appointed Offices during the international phase. Then after about 30 months from first filing, they enter the national/regional phase to be treated as national or regional applications in each designated Office. Reference is made to "direct" applications as opposed to "PCT" applications in order to distinguish the two subsets of applications handled by patent Offices.

In this chapter, the statistics presented in the report and the relations between them will be briefly described. With the exception of some items presented in Chapter 6, all statistics relate to patents of invention only.

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<sup>4</sup> Patents of invention are called utility patents in the case of USPTO. These are different from utility model patents as explained in Chapter 6.

Statistics are presented in accordance with the following definitions:

- Domestic applications are defined as all demands for patents made by residents of the country where the application is filed<sup>5</sup>. For the purpose of reporting statistics for the European Patent Convention (EPC) contracting states (see below) considered as a bloc, foreign applications are given with regard to the applications made by residents from outside the EPC bloc as a whole. For example, applications made by residents of France in one of the other EPC contracting states are counted as domestic demand in the EPC bloc.
- First filings are applications filed without claiming the priority<sup>6</sup> of another previous filing, and all other applications are subsequent filings. They are usually made in the home country. The subsequent filings should be made within one year of the first filings. In the absence of a complete set of available statistics on first filings, it is assumed in this report that domestic national filings are equivalent to first filings<sup>7</sup>, and that PCT filings are subsequent filings.
- Five geographical blocs are defined:
  - The EPC contracting states (EPC states in this report) corresponding throughout the period covered in this report to the territory of the 38 states party to the EPC at the end of 2010.,
  - Japan (Japan),
  - the Republic of Korea (R. Korea in this report),
  - the United States of America (U.S. in this report),that are referred to together as the “Four Blocs”, and
  - the rest of the world (Others).

These blocs are referred to as blocs of origin on the basis of the residence of the applicant (throughout the report) or as filing blocs on the basis of the place where the patents are sought (in Chapters 3 and 5).

- Demand for patent protection is considered principally by counting each national, regional or international application once only. However, alternative representations are also given in Chapter 3 in terms of the demand for rights, after cumulating the number of designated countries over applications.

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<sup>5</sup> For USPTO this is by the residence of the first named inventor; For EPO, JPO and KIPO, this is by the residence of the first named applicant.

<sup>6</sup> See the Article 4A to 4D of the Paris Convention at the WIPO web site;  
[http://www.wipo.int/export/sites/www/treaties/en/ip/paris/pdf/trtdocs\\_wo020.pdf](http://www.wipo.int/export/sites/www/treaties/en/ip/paris/pdf/trtdocs_wo020.pdf)

<sup>7</sup> Except in the sections on patent families, an approximation of the number of first filings in the EPC Bloc is made by adding first filings at the EPO to aggregated domestic national applications in the EPC contracting states. The data source used for patent families allows a precise count of first filings.

Direct applications (not PCT) are counted in the year they are filed.

PCT applications are usually counted in the year that they enter the national (or regional) phase. In some parts of this report they are counted in the year of filing in the earlier international phase<sup>8</sup>.

Grant counts in Chapter 3 are based on the WIPO Industrial Property Statistics series<sup>9</sup>. They are counted in the year that the grants are issued or published. As for the demand for patent protection, the rights granted are considered after cumulating the number of designated countries for which rights have been granted via regional procedures. Counts in Chapter 4 are based on Offices data.

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. For the purposes of this report<sup>10</sup>, Four Office Patent families are a filtered subset of patent families for which there is evidence of patenting activity in all Four Blocs.<sup>11</sup>

Further definitions for statistics on procedures are given in Annex 2. Definitions of patent related terms can be found in the glossary located in the web annex<sup>12</sup>.

## Chapter 2

In this chapter, a summary of the recent developments in the Four Offices is presented. Further information on budget item definitions is given in Annex 1.

## Chapter 3

This chapter provides an assessment of the development of worldwide patent activity. Statistics are derived primarily from the Intellectual Property Statistics of WIPO<sup>13</sup>, 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.

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

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<sup>8</sup> An international phase PCT application can in theory be a first filing but is usually a subsequent filing made up to twelve months after a first filing. A national (or regional) phase PCT entry can follow on from the corresponding international phase PCT filing and is made up to 30 months after the first filing.

<sup>9</sup> <http://www.wipo.int/ipstats/en/statistics/pct/index.html>

<sup>10</sup> The statistical annex of this report, that is available at the web site, and previous editions of this report, also give statistics on Trilateral Patent families. These are a filtered subset of patent families for which there is evidence of patenting activity in all the Trilateral blocs (EPC, Japan and U.S.).

<sup>11</sup> For discussion of patent families in general see the OECD working paper "Insight into different types of patent families", by C. Martinez, <http://www.oecd.org/dataoecd/21/32/44604939.pdf>

<sup>12</sup> <http://www.trilateral.net/statistics/tsr.html>

<sup>13</sup> This edition refers to WIPO data as of January 2011 for PCT international applications.

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 globalisation. Applications can be counted in terms of patent filings; requests for patents; and requests for national patent rights.<sup>14</sup>

This chapter provides some indication of the interdependency and importance of the major geographical markets. The total number of applications filed worldwide is given first. There is then a discussion of bloc-wise patent activity for applications and grants. This is followed by a description of inter-bloc activity, firstly in terms of the flows of applications between the Four Blocs, and then in terms of patent families.

## Chapter 4

This part of the report considers the substantive activities of the Four Offices.

Statistics are given for requests for patents with the Four Offices from each filing bloc, also showing domestic and foreign filings. Part of the demand for patents in the EPC states is processed through the national offices and is not considered in this chapter. The demand at the EPO is given in terms of applications rather than in terms of designations.

Statistics are provided on the breakdown of applications by fields of technology according to the International Patent Classification (IPC)<sup>15</sup>.

The filing of patent applications represents demands for services from patent Offices, but the work is not always performed at a comparable point in time at the various Offices. Consequently, neither the number of applications filed nor the number of requests for examination is a perfect basis for comparison of Offices. Some indication of the services that have actually been demanded can be provided using statistics on granted patents. In Chapter 4, the numbers of grant actions by the Four Offices themselves and broken down by the blocs of origin of the grants and the distributions of numbers of grants per applicant are described as well. To illustrate the similarities as well as the differences in the granting procedures at the Four Offices, comparisons of the characteristics and statistics of the four patent granting procedures are given in the last part of the chapter. It should be remembered that each grant action by the EPO can lead to as many national patents as the number of EPC states that had been designated<sup>16</sup>.

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<sup>14</sup> These three terms are defined at the beginning of Chapter 3.

<sup>15</sup> <http://www.wipo.int/classifications/ipc/en/>

<sup>16</sup> National patents can also be created in other states that have extension agreements with the EPC or otherwise recognise the validity of EPO patents.

## **Chapter 5**

This chapter shows how the PCT influences patenting activities, particularly at the Four Offices. This includes the actions required by each Office for PCT applications in the international phase as Receiving Office (RO), international searching authority (ISA) and international preliminary examining authority (IPEA).

Most of the data were obtained from the WIPO Statistics, as explained above regarding Chapter 3.

## **Chapter 6**

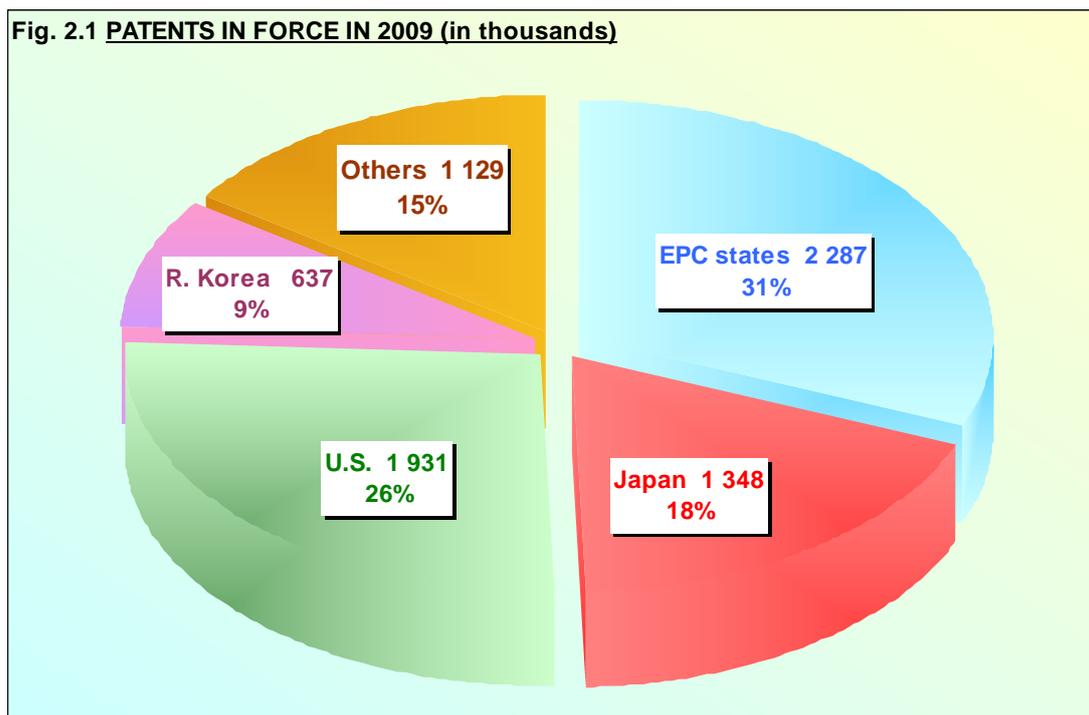
This chapter is dedicated to the other activities that are not common to all of the Four Offices, as well as work related to other types of industrial property rights.



## Chapter 2

### THE FOUR OFFICES

Patents are recognized throughout the world as a measure of innovative activity. EPO, JPO, KIPO and USPTO are among the largest IP Offices in terms of the volume of patent applications they handle. The following figure shows the prominent role played by the Four Offices in terms of the numbers of patent in force at the end of 2009. The data are based on the most recent information on worldwide patents available from the WIPO Patent Statistics and from some other Offices.



It appears that, at the end of the year 2009, 85 percent of the 7.3 million patents in force<sup>17</sup>, were valid in the Four Offices jurisdictions.

<sup>17</sup> Data for 2009 are missing for some countries in WIPO data, in which case data for 2009 in each annual report of such countries or WIPO data for 2007 or 2008 were substituted as the best available estimates for 2009.

## EUROPEAN PATENT OFFICE

As the main patent granting authority for Europe, EPO is an example of economic and political cooperation, providing patent protection at the end of 2010 in up to 40 countries on the basis of a single patent application and a unitary grant procedure. This represents a market of about 610 million people. EPO receives currently more than 50 percent of all the patent applications filed in the area of the EPC contracting states.

At the end of 2010, the 38 members of the underlying European Patent Organisation were:

Albania	Austria	Belgium	Bulgaria	Croatia
Cyprus	Czech Republic	Denmark	Ellas	Estonia
Finland	France	Germany	Hungary	Iceland
Ireland	Italy	Latvia	Liechtenstein	Lithuania
Luxemburg	Malta	Monaco	Fyr of Macedonia	Netherlands
Norway	Poland	Portugal	Romania	San Marino
Slovakia	Slovenia	Spain	Serbia	Sweden
Switzerland	Turkey	United Kingdom		

Other states have agreements with EPO to allow applicants to request an extension of European patents to their territory. At the end of 2010, such extensions of European patents could be requested for:

Bosnia-Herzegovina  
Montenegro

On May 1, 2010, Albania became the 37th member of the European Patent Organisation. On October 1, 2010, Serbia became the 38<sup>th</sup> member of the European Patent Organisation. On March 1, 2010, the extension agreement with Montenegro entered into force.

In July 2010, Mr Benoît Battistelli became the sixth president of EPO. Two new vice presidents were also appointed later in the year.

### Grant Procedure

The mission of EPO is to support innovation, competitiveness, and economic growth across Europe through a commitment to high quality and efficient services delivered under the EPC, particularly by granting European patents. EPO also acts as a receiving, searching, and examining authority under the PCT. A further task is to perform, on the behalf of patent offices of certain member states, state of the art searches for the purpose of national procedures.

To keep the European patent system fit for purpose in the long term, EPO prepared a set of adjustments that were to be implemented as from Spring 2010. The effect was to enhance the quality of incoming applications, to improve the coordination between search and substantive examination and to tighten some time limits. On the longer

perspective, further projects are elaborated to affect the patent system in its global dimension, in cooperation with European and non-European patent Offices.

One of the changes affected divisional applications within Rule 36 of the EPC. A new time limit was imposed of twenty-four months from first communication in examination, or before the expiry of a time limit of twenty-four months from any first objection by the Office regarding on the requirements for the examination. This limit came into effect fully for all pre-existing applications on October 1, 2010. Because of the new time limit, there were a number of additional divisional filings made in 2010 with respect to earlier applications.

The adjustments also related to pre-search communications between examiner and applicant, obligatory responses to the search opinion prior to entry into substantive examination, a requirement for applicants to identify and indicate the basis for amendments and a clearer restriction of examination only to the subject matter that had been searched.

There was a recovery in demand following the end of the worldwide economic recession of 2009. The overall number of filed applications increased markedly in 2010 compared to 2009. In Table 2.1, production figures for search (European, PCT and national searches), for examination (European and PCT Chapter II), for opposition and for appeal in the European procedure are given for the years 2009 and 2010.

In 2010, the Office production was 11 percent higher than in 2009. The number of searches completed was almost unchanged at about 201 500. While the examination work under the PCT further reduced, the number of final actions in examination at EPO increased by 10 percent to about 125 700. As will be shown below in Chapter 4, this is reflected in an increased number of grant actions. In 2010, about 2 030 decisions in appeal were completed (similar to 2009). On average in 2010, a patent granted by EPO was designating 21 countries (19 in 2009).

**Table 2.1: EPO PRODUCTION INFORMATION**

<b>PRODUCTION FIGURES</b>	<b>2009</b>	<b>2010</b>
<b>Patent filings (Euro-direct &amp; PCT international phase)</b>	211 324	235 029
<b>Searches carried out</b>		
European (including PCT supplementary)	99 105	100 010
PCT international	81 463	73 686
On behalf of national Offices and other	22 941	27 818
<b>Total production search</b>	<b>203 509</b>	<b>201 514</b>
<b>Examination - Opposition (final actions)</b>		
European examination	102 178	114 991
PCT Chapter II	9 601	8 410
Oppositions	2 314	2 309
<b>Total final actions examination-opposition</b>	<b>114 093</b>	<b>125 710</b>
<b>Appeals settled</b>		
Technical appeals	1 893	1961
PCT protests	25	3
Other appeals	61	67
<b>Total decisions</b>	<b>1 979</b>	<b>2031</b>

### **Patent Information**

EPO is a producer of patent information products and services and has set up databases that are available not only for internal use, but also for dissemination by national offices.

The Global Patent Index product that was introduced at the end of 2009 was used widely and effectively in 2010.

In October 2010, EPO and the USPTO agreed to develop a joint classification system, to be known as the Cooperative Patent Classification (CPC), with the intention to simplify the use of patent information.

In November 2010, EPO signed a Memorandum of Understanding with Google Inc. regarding the intention to agree on the development of the best machine translation method for patents.

### **Other International Cooperation**

In December 2010, an agreement was signed with Morocco on the validity of European patents in that country, although this agreement has not yet entered into force.

The Five IP Offices continued to work on their joint initiative on changes to the global patent system<sup>18</sup>. The ten cooperative Foundation Projects are run by three working groups. Cooperation was enhanced in 2010 via progress in all ten projects. Meetings were held between heads and deputy heads of the Five Offices during the course of the year.

There has been further progress on the Patent Prosecution Highway (PPH) projects, with a new such system set up between EPO and JPO in January 2010.

### **EPO Budget**

EPO is financially autonomous and makes its financial statements since 2006 in accordance with International Financial Reporting Standards (IFRS). Expenses are to be covered entirely out of revenue, mainly from patent fees paid by applicants and patentees.

Fees related to the patent grant process, such as filing, search, examination, appeal fees as well as renewal fees for European patent applications (i.e. before grant) are paid to EPO directly. Renewal fees for European patents (i.e. after grant) are collected by the designated contracting states and determined by national law. From these renewal fees, 50 percent is kept by the national Offices and 50 percent is transferred to EPO.

Under IFRS, procedural fees are not recorded automatically as revenue in the accounting year in which they are received, but instead are treated as deferred income, to be included as revenue in the year during which the relevant task is actually performed. A similar concept is applied also for all other types of income. In 2010, the total operating income amounted to EUR 1 432 million.

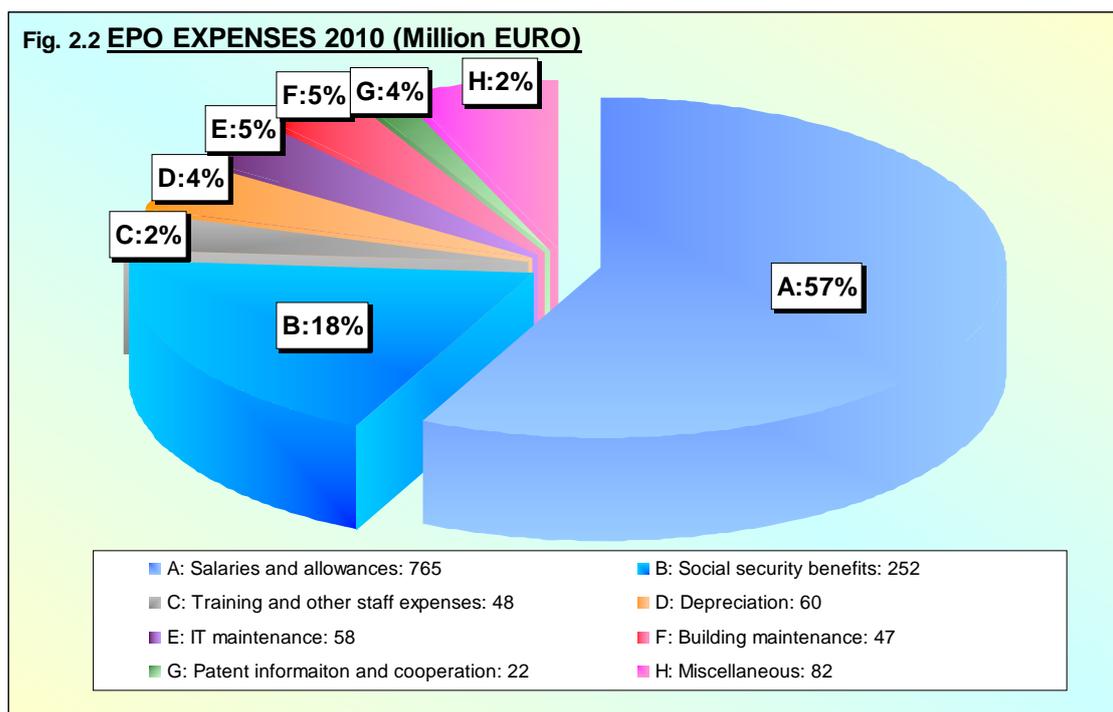
On the expenses side, in addition to salaries, allowances and training, staff expenses include entitlements for post-employment social benefits as far as these are built up during the accounting year, including pensions as well as sickness and long-term care costs.

In conformity with IFRS, all expenses were recorded following the accrual principle, irrespective of whether or not cash disbursements took place in the period under consideration. For the same reason, depreciation for buildings, IT equipment and other tangible and intangible assets are shown under expenses. Operating expenses totalled EUR 1 334 million.

The financial result for 2010 still suffered to some extent from problems related to the recent worldwide recession and closed with a deficit of EUR 67 million.

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<sup>18</sup> [www.fiveipoffices.org](http://www.fiveipoffices.org)



A detailed description of the items in Fig. 2.2 can be found in Annex 1.

### **EPO Staff**

In 2010, 64 examiners were recruited. By the end of the year, the staff complement reached a total of 6 778, including 3 966 examiners in search, examination, opposition, and 157 members of Board of Appeal.

### **More information**

Further information can be found on the EPO's website:  
<http://www.epo.org/>

## **JAPAN PATENT OFFICE**

### **Development of Intellectual Property Policy**

“The Intellectual Property Promotion Plan 2010” established by “The Intellectual Property Policy Headquarters,” headed by the Prime Minister, states the three main strategies:

- 1) Acquisition of international standard in specific strategic fields,
- 2) Growth strategy with the strengthening of content as its core and
- 3) Measures for enhancing intellectual property policy from a cross-industrial point of view.

In particular, the enhancement of support measures for venture and Small and Medium Size Industries (SME) businesses, the construction of a place for industry-government academia joint creation, the improvement of cooperation of universities with the industry, and the promotion of international harmonisation of the patent system as a particular measures.

### **Recent Improvements to Japan’s IP System**

The year 2010 is a memorable year marking the 125th anniversary of the establishment and proclamation of the Patent Monopoly Act which was enacted in 1885 (18<sup>th</sup> year of the Meiji era) in Japan. During the past 125 years, from the early stage of Japan’s industrial development to the present day in which Japan is a leading global economic power, the industrial property rights (IPR) system has played an important role in Japan.

The recent environment surrounding IPR systems has been changing to a great extent in light of the development of the open innovation accompanying globalized corporate activities and advanced technology. Playing a central role in IPR policy, the JPO has instituted a succession of innovation enhancement measures to increase the growth potential of the Japanese economy while coping with the change surrounding IPR systems and striving to create an IPR system that will meet the demands of this new age.

### **Efforts related to Patents**

With respect to global applications, the network of the PPH, which was first introduced to the world by the JPO, has steadily been expanding and, as of December 2010, included 13 countries/organisations engaged in PPH programs with Japan.

### **Promotion of Quality Management of Patent Examination**

The JPO has maintained and improved the quality of patent examination through both

- 1) “Quality Control” performed for each patent application at each Art Unit and
- 2) “Quality Management” exercised from a cross-sectional point of view.

### 1) “Quality Control” of Examination for Each Patent Application

Each Art Unit at which applications of each technical field are examined strives to perform the “Quality Control” of examinations for proper examinations of individual cases based on the Examination Guidelines by unifying application of the judgment standards between each examiner through consultations between several examiners, checks of the content by a director, etc.

### 2) Cross-sectional “Quality Management”

Furthermore, the JPO sets a quality management system to continuously improve the examination quality based on a concept of the quality management cycle (PDCA cycle<sup>19</sup>) of patent examination. Under this concept, examination results are post-measured and analyzed objectively, and then the results are reflected on the implementation plan to maintain and improve examination quality. In April 2010, the JPO established “Quality Management Section” in the Administrative Affairs Division, and the quality management system was enhanced further.

To be specific, the Quality Management Section conducts the internal review on individual case by the third party in the JPO, collects user reviews, and analyzes related statistical information. In addition, these results of the analyses are utilized for considerations on measures to improve examination quality by related sections, and the feedback is given to the Art Units for supporting the Quality Control at each Art Unit.

### Further efforts toward expeditious and efficient patent examination

JPO has employed 98 fixed-term patent examiners each fiscal year (FY<sup>20</sup>) from FY2004 to FY2008, to give a total of 490 as of the end of FY2008, added to regular examiners. The number of the fixed-term patent examiners remained unchanged in 2010 and is to be kept for some more years.

Ahead of the other countries, JPO has established a paperless system for all procedures, from filing an application to receiving an examiner’s decision. This enabled JPO to be the world’s first patent office to outsource prior art searches to private sectors, enhancing efficiency to a significant degree.

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<sup>19</sup> Management cycle to maintain and improve the quality and promote the improvement of works suggested by Dr. Deming, an American statistician, in the 1950’s: The process of Plan, Do, Check and Act is implemented in order for continuously improving a system by utilizing the results of Check.

<sup>20</sup> The fiscal year begins in April at JPO.

**Table 2.2: JPO NUMBER OF PATENT EXAMINERS**

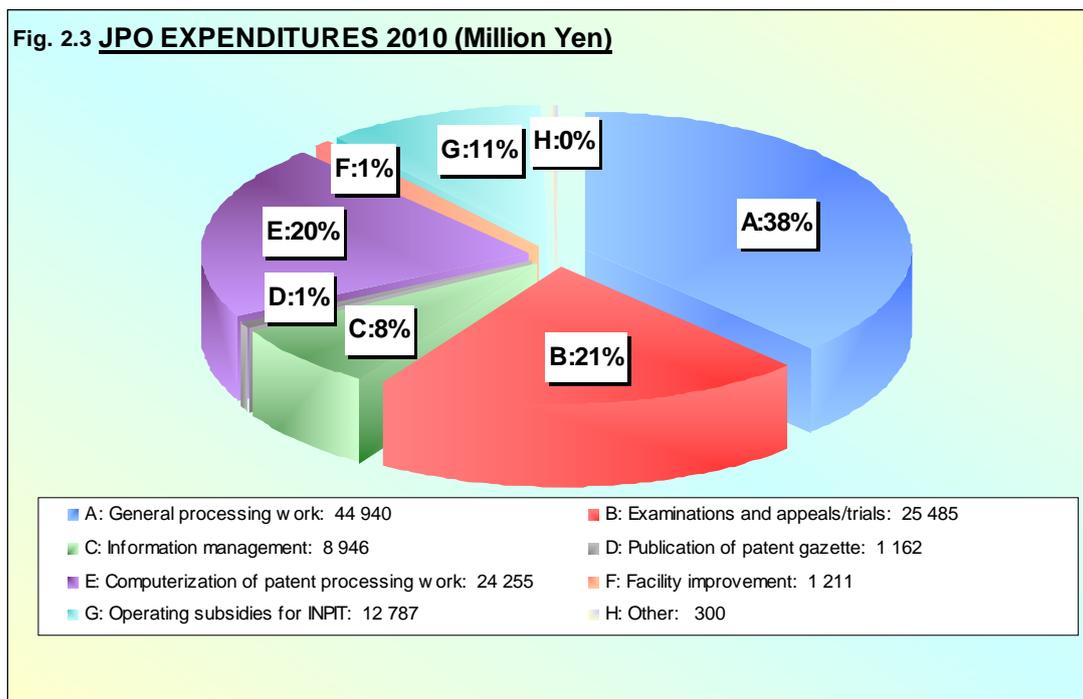
Examiners	FY 2009	FY 2010
Regular	1 202 (+12)	1 213 (+11)
Fixed-term	490	490
Total	1 692 (+12)	1 703 (+11)

**Table 2.3: JPO PRODUCTION INFORMATION**

<b>PRODUCTION FIGURES</b>	<b>2009</b>	<b>2010</b>
<b>Applications filed</b>		
Domestic	295 315	290 081
Foreign	53 281	54 517
Total	348 596	344 598
<b>Examination</b>		
Requests	254 368	255 192
First actions	361 439	377 089
Final actions	354 792	374 891
<b>Grants</b>		
Domestic	164 459	187 237
Foreign	28 890	35 456
Total	193 349	222 693
<b>Appeals/Trials</b>		
Demands for Appeal against examiner's decision of refusal	24 137	27 889
Demands for Trial for invalidation	257	237
<b>PCT activities</b>		
International searches	28 927	29 993
International preliminary examinations	2 173	1 952

## JPO Budget

(Unit: Million Yen)



A detailed description of the items in Fig. 2.3 can be found in Annex 1.

## JPO Staff Composition

As of the end of FY 2010, the total number of staff at JPO was a total of 2,903 staff. This includes 490 fixed-term patent examiners.

Examiners:	Patent / Utility model:	1,703
	Design:	52
	Trademark:	149
Appeal examiners:		387
General staff:		612
Total:		2,903

## More information

Further information can be found on the JPO's website:  
[www.jpo.go.jp](http://www.jpo.go.jp)

## **KOREAN INTELLECTUAL PROPERTY OFFICE**

### **Mission Statement**

The Korean Intellectual Property Office (KIPO) is the government agency in charge of IP matters in Korea. Its mission statement is as follows:

*To contribute to technological innovation and industrial development by facilitating the creation, commercialisation and utilisation of intellectual property and by strengthening the protection of intellectual property.*

KIPO strives to fulfil its mission by implementing diverse policies focused on timely, high-quality examinations.

### **Major Developments in 2010**

KIPO received 170 101 patent applications in 2010, and its requests for international searches soared from 5 898 in 2006 to 22 707 in 2010. At the same time, KIPO implemented various measures to make its IP system more customer-oriented. One example is a set of revisions to the Rules for Collecting Patent Fees, which came into effect in January and December 2010; the rules revised to enhance the convenience of customers by enabling them to pay their patent fees by credit card or in instalments.

KIPO also implemented various measures to ensure that its examination service is of the highest quality. For instance, it recently amended approximately 39 percent of its examination standards on the basis of comparative research on the examination standards and practices of five major intellectual property offices. It has also made translations of its patent examination standards available to overseas applicants and agents.

### **International Cooperation**

KIPO has implemented PPH agreements with eight nations. The first PPH was set up with Japan in 2007; The others include the United States in 2008; Denmark, the United Kingdom, Canada, and Russia in 2009; and Finland and Germany in 2010.

Between September 2009 and December 2010, Korea and the United States implemented a project called Strategic Handling of Applications for Rapid Examination (SHARE<sup>21</sup>). The SHARE project, which was trialled separately from the PPH, dealt exclusively with applications pertaining to fuel cells and semiconductors.

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<sup>21</sup> The program is designed to provide mechanisms for exchanging information and best practices, with the ultimate goal of advancing worksharing between the Offices.

## **IP Policies**

In 2008, KIPO's IPR examination policy underwent a paradigm shift. The focus shifted from high-speed examinations to a customer-oriented approach to examination and trial systems.

### **1) Customized three-track patent examination**

The three-track patent examination system was launched on October 1, 2008. It enables customers to select an examination track that suits their patent strategy. They can choose an accelerated, regular, or customer-deferred examination. The accelerated track helps customers acquire patent rights expeditiously so that they can secure an exclusive position in the market. The customer-deferred track, on the other hand, gives customers ample time to prepare for the commercialisation of the invention.

### **2) Super-accelerated examinations for green technology**

A super-accelerated examination system for green technology was introduced in October 2009. The aim of this system is to ensure that the examination results for green technology are provided more expeditiously than the accelerated track (that is, within a month of the request). The system, which was researched and developed in accordance with the national strategy of "low carbon, green growth", is limited to technologies that are either designated in environmental laws or classified as green by the government (in the form of financial aid or certification). Other prerequisites for a super-accelerated examination include a prior art search report from one of the designated prior art search organisations and a statement (on the application form) on the purpose of the super-accelerated examination.

The customized examination system began to stabilize in 2010. In that year, KIPO received the following number of applications: 20 832 for preferential examinations, 953 deferred examinations, and 229 for super-accelerated examinations.

### **3) Three-track patent trial system**

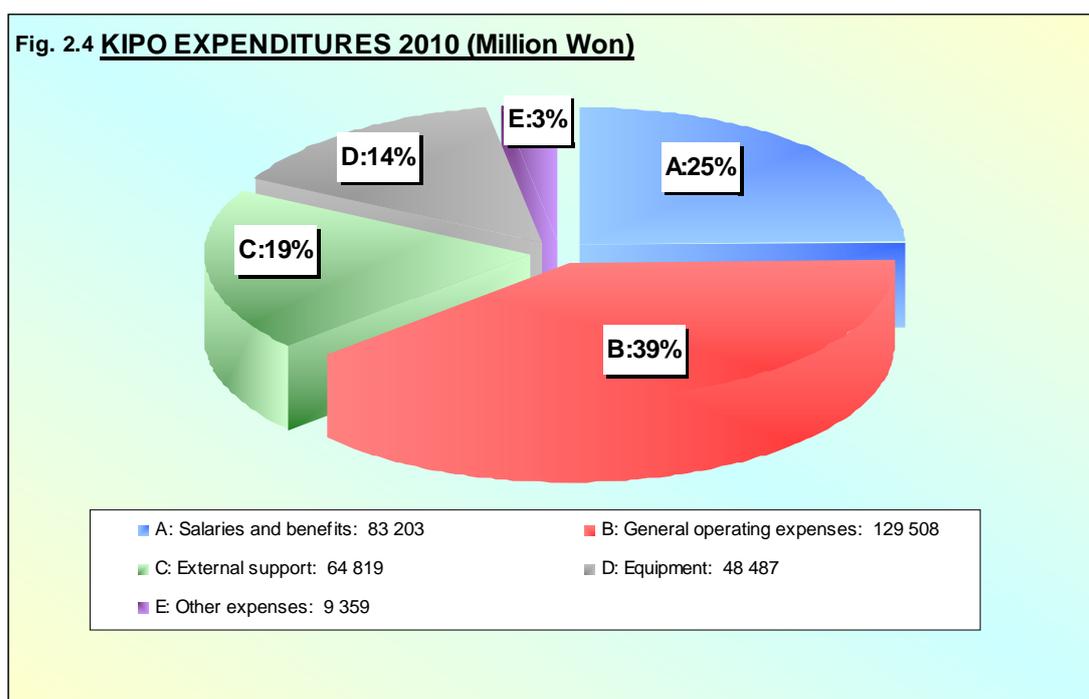
In KIPO's former preferential patent trial system, some types of cases took priority over general cases. However, in November 2008, KIPO adopted a patent trial system with three separate tracks: a regular track, an accelerated track, and a super-accelerated track. The super-accelerated trial proceeds as follows: after both parties have applied for a super-accelerated trial, an oral hearing is held within a month of the deadline for submitting a written reply, and a trial decision is made within two months of the oral hearing. Thus, the parties are informed of the trial decision within four months of requesting the trial. An accelerated trial generally takes six months, and a regular trial takes about nine months.

**Table 2.4: KIPO PRODUCTION INFORMATION**

<b>PRODUCTION FIGURES</b>	<b>2009</b>	<b>2010</b>
<b>Applications filed</b>		
Domestic	127 316	131 805
Foreign	36 207	38 296
Total	163 523	170 101
<b>Examination</b>		
Requests	132 773	143 071
First actions	94 300	125 633
Final actions	89 272	110 356
<b>Grants</b>		
Domestic	42 129	51404
Foreign	14 603	17439
Total	56 732	68 843
<b>Applications in appeal</b>	10 561	9 270
<b>PCT activities</b>		
International searches	16 926	20 810
International preliminary examinations	362	324

**KIPO Budget**

In 2010, KIPO had a total expenditure of 335 376 million won. Twenty-five percent of the expenditure was allocated to salaries and benefits, 39 percent to general operating expenses, 19 percent to external support, 15 percent to equipment, and 3 percent to other expenses.



A detailed description of the items in Fig. 2.4 can be found in Annex 1.

### **KIPO Staff Composition**

At the end of 2010, KIPO had a total staff 1 548. The breakdown is as follows.

Examiners	
Patents	712
Designs	36
Trademarks	95
Appeal examiners	99
Other staff	606
Total	1 548

### **More information**

Further information can be found on KIPO's website:  
<http://www.kipo.go.kr/>

## UNITED STATES PATENT AND TRADEMARK OFFICE

### Mission Statement

The mission of the United States Patent and Trademark Office is:

*Fostering innovation and competitiveness and economic growth, domestically and abroad to deliver high quality and timely examination of patent and trademark applications, guiding domestic and international intellectual property policy, and delivering intellectual property information and education worldwide, with a highly skilled, diverse workforce.*

USPTO is pivotal to the success of innovators. In fulfilling the mandate of Article 1, Section 8, Clause 8, of the U.S. Constitution, “to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries” USPTO is on the cutting edge of the United States’ technological progress and achievement.

As an Agency of the U.S. Department of Commerce (DOC), the primary services provided by USPTO are examining patent and trademark applications and disseminating patent and trademark information. USPTO provides valued products and services to its customers in exchange for fees that are appropriated to fund its operations. The powers and duties of USPTO are vested in the Under Secretary of Commerce for Intellectual Property and Director of USPTO, who consults with the Patent Public Advisory Committee and the Trademark Public Advisory Committee. USPTO operates with two major business lines, Patents and Trademarks.

### USPTO Strategic Plan

In 2010 USPTO released the *2010-2015 Strategic Plan* and implementation has already begun. A well-run USPTO is critical to the nation’s continued economic prosperity. The *USPTO 2010-2015 Strategic Plan* is designed to strengthen the capacity of USPTO, to improve the quality of patents and trademarks that are issued, as well as to shorten the time it takes to obtain a patent. The *USPTO 2010-2015 Strategic Plan* outlines a focused, specific set of goals and the steps that must be taken to reach those goals.

- Goal 1: Optimize Patent Quality and Timeliness.
- Goal 2: Optimize Trademark Quality and Timeliness.
- Goal 3: Provide Domestic and Global Leadership to Improve IP Policy, Protection and Enforcement Worldwide
- Management Goal: Achieve Organisational Excellence.

### **Patent Quality and Timeliness**

It is critical that USPTO strengthen the examination capacity of USPTO, improve the quality of patents issued, and provide optimal timing for obtaining a patent. Enhancing quality for all, and allowing faster examination for those applicants who need it, will increase value for the entire IP system and for America.

FY 2010 was a remarkable year for the Patent organization. Despite the continued effects of the economic downturn, the Patent organization successfully launched new and innovative initiatives to meet strategic goals. Many routine programs, such as replacement hiring and funding workload-related contracts, were suspended due to budget constraints. Yet the USPTO's commitment to making progress focused on ways to be more efficient and effective in business processes, human capital management, policy, and managing workload.

A market-driven approach to patent application processing was introduced and methods were devised for providing applicants more control over examination timing. The Office moved forward on refining optimal timeliness and patent quality measures, and recognized the ultimate solution will need to blend applicant needs with efficient patent application processing. The challenges of timely application processing are being met by a combination of increasing examiner capacity, improving efficiency, and leveraging work sharing programs. A quality patent removes risks to patent holders and strengthens the entire IP system.

### **Intellectual Property Protection**

USPTO plays a significant leadership role in promoting effective domestic and international protection and enforcement of IP rights. The Office is working to formulate a data-driven U.S. Government (USG) IP policy and to develop unified standards for international IP. USPTO is also working closely with the White House's U.S. IP Enforcement Coordinator to help formulate a robust and effective Administration IP enforcement plan.

The Office of the Chief Economist was created and an initiative was launched to collect and analyze data on the role IP plays in the promotion of innovation. USPTO placed additional focus on the IP Attaché Program to assist in improving the protection and enforcement of IP. Through the Global Intellectual Property Academy, the Office continues to provide high-level IP rights training, capacity building programs, and technical assistance training to IP officials from around the world. USPTO continues to work with Congress and the courts to improve the state of U.S. IP law.

Progress was achieved towards the goal of providing domestic leadership to improve IP policy, protection, and enforcement worldwide by developing a national IP strategy that is integrated into the Administration's innovation strategy, monitoring and providing policy guidance on key IP issues in cases; providing domestic education outreach and capacity building; and engaging USG agencies and Congress on legislation that improves the IP system. Similarly, progress was also made toward the goal of promoting effective international protection and enforcement of IP rights by leading efforts at the WIPO and other intergovernmental/international organizations to

improve international IP rights systems; improving enforcement in, and providing capacity building and technical assistance to, key countries/regions; improving efficiency and cooperation in global IP system; providing technical expertise in negotiation and implementation of bilateral and multilateral agreements; and increasing the effectiveness of IP attachés in prioritized countries/regions.

**Table 2.5: USPTO PRODUCTION INFORMATION**

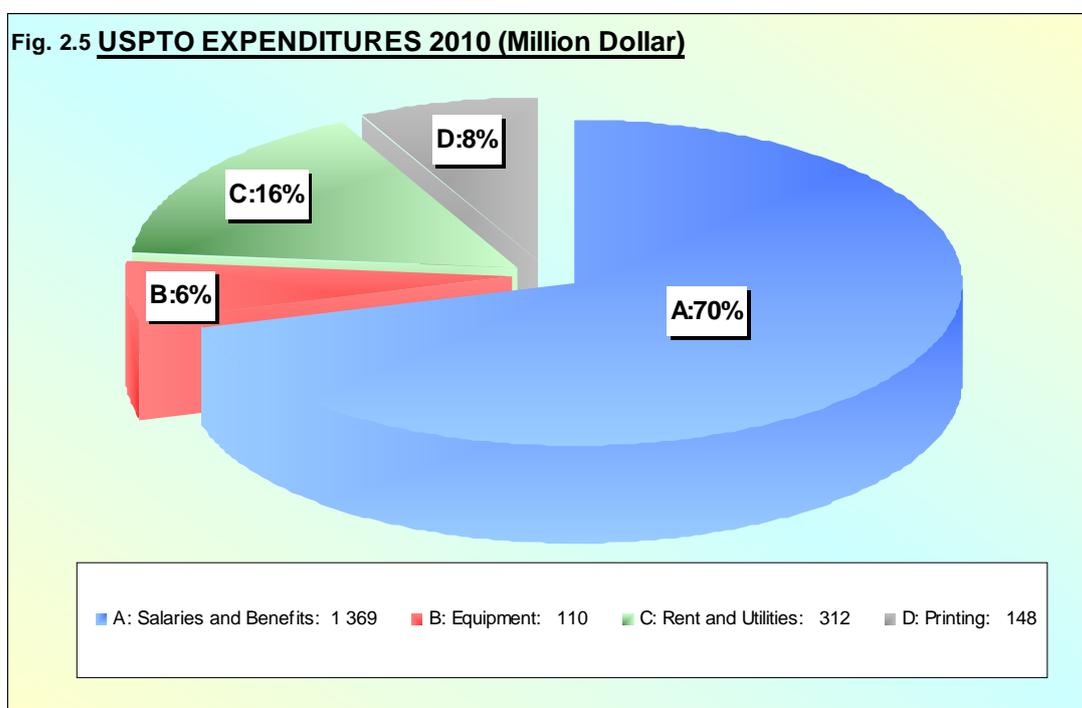
<b>USPTO Production Information</b>	<b>2009</b>	<b>2010</b>
<b>Applications filed</b>		
Utility (patents for invention)	456 437	490 226
Plant	959	992
Reissue	1 019	1 180
<i>Total Patents of Invention</i>	<i>458 415</i>	<i>492 398</i>
Design	25 806	29 059
Provisional	133 803	142 274
<b>Total</b>	<b>618 024</b>	<b>663 731</b>
<b>PCT Chapter I Searches</b>	<b>46 670</b>	<b>45 732</b>
<b>PCT Chapter II Examination</b>	<b>1 930</b>	<b>1 452</b>
First actions	466 403	445 245
<b>Grants (total)</b>	<b>167 349</b>	<b>219 614</b>
U.S. residents	82 382	107 792
Foreign	84 967	111 822
Japan	35 501	44 814
EPC states	23 677	32 473
R. Korea	15 372	11 671
Others	10 417	22 864
<b>Applications in appeal and interference proceedings</b>		
Ex Parte Cases Received	14 773	14 022
Ex Parte Cases Disposed	7 071	7 461
Inter Partes Cases Declared	54	48
Inter Partes Cases Disposed	60	54
<b>Patent Cases in Litigation</b>		
Cases filed	179	149
Cases disposed	73	150
Pending cases (end of calendar year)	143	142

## USPTO Budget

USPTO utilizes an activity based information methodology to allocate resources in and indirect costs that support programs and activities within each of the three strategic goals. In FY 2010<sup>22</sup>, USPTO expenditures totalled \$1 939 million. Agency-wide, 9.5 percent of expenditures was allocated to information technology (IT) security and associated IT costs.

Goal 1 - Optimize Patent Quality and Timeliness	\$1 707 million
Goal 2 - Optimize Trademark Quality and Timeliness	\$183 million
Goal 3 - Provide Domestic and Global Leadership to Improve IP Policy, Protection and Enforcement Worldwide	\$49 million

(Unit: Million Dollar)



A detailed description of the items in Fig. 2.5 can be found in Annex 1.

## USPTO Staff Composition

At the end of FY 2010, the USPTO work force was composed of 9 507 federal employees. Included in this number are 6 128 Utility, Plant, and Reissue patent examiner staff and 97 Design examiners; 378 Trademark examiner attorney staff, and 2 904 managerial, administrative and technical support staff.

## More Information

Further information can be found on the USPTO's website:  
<http://www.uspto.gov/>

<sup>22</sup> The fiscal year begins in October at USPTO.

## Chapter 3

### WORLDWIDE PATENTING ACTIVITY

This chapter examines worldwide patent activities in terms of patent applications and grants. The statistics mostly cover the five-year period from 2005 to 2009. The effects of the recent worldwide recession in 2009 are visible in this chapter. The number of patent applications has dropped in 2009, although it remains higher than in 2007. More current and detailed data from the Four Offices are presented in Chapter 4 that show how the number of patent applications has recovered in 2010. This suggests that the effects of the recent worldwide recession on the number of patent applications at the Four 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 granting.

Due to the complexity of the patent system, different representations of the patent filing process will be made to illustrate complementary parts of the process. The following scheme can guide the reader to graphs that correspond to the different representations.

Figures 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 EPO, EAPO, ARIPO<sup>23</sup>), and PCT international filings.

Figures 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 national/regional phase filings are replicated over the numbers of procedures that are started.

Figures 3.7, 3.8 and 3.9 show the equivalent numbers of **requests 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.

Figures 3.13, 3.14 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.

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<sup>23</sup> EAPO is Eurasian Patent Office, ARIPO is African Regional Intellectual Property Office.

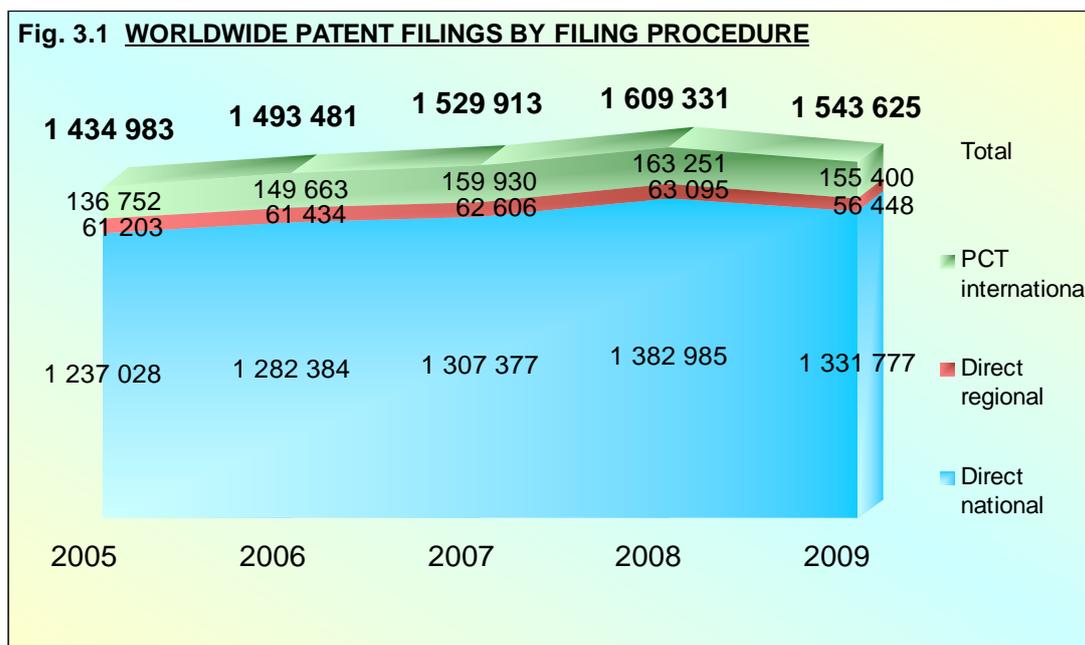
Regarding grants, Fig. 3.10 shows the numbers of **granted patents**. All grants are counted once only.

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 patenting.

## PATENT FILINGS

This section shows the development of 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. The number of applications filed represents a measure of the overall numbers of actions taken to assert IP rights around the world.

Fig. 3.1 shows the breakdown of the three types of applications filed.



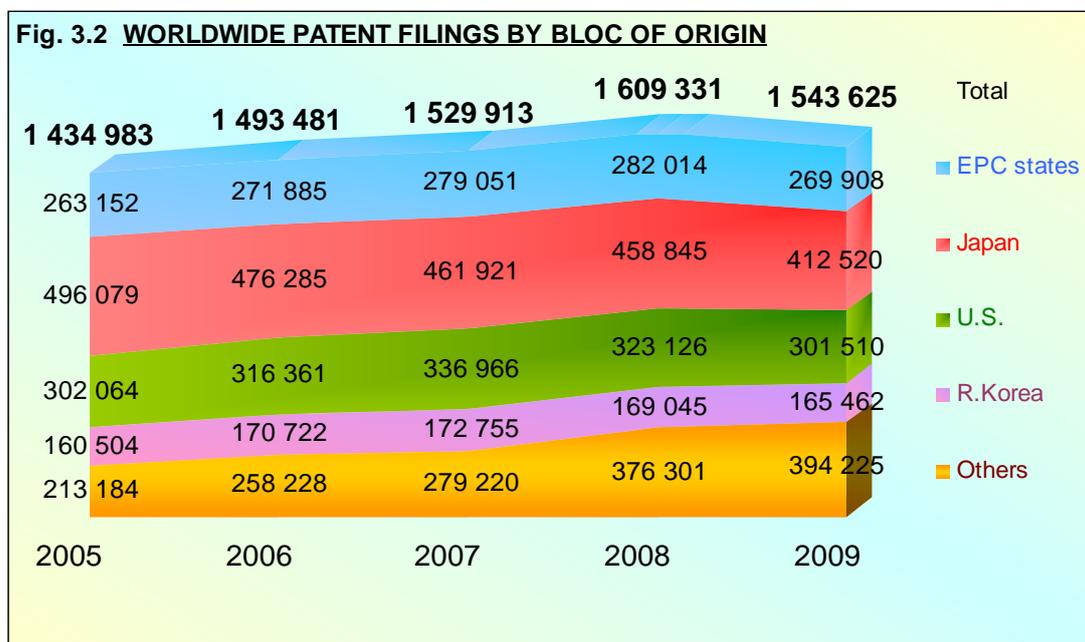
The number of applications filed has dropped by 4 percent in 2009 to 1.54 million, reflecting the impact of the recent crisis on patenting activity. The reduction is seen in each type of filing.

In 2009, the number of PCT international, direct regional and direct national have dropped by 5 percent, 11 percent and 4 percent, and 86 percent of these applications were filed according to direct national procedures, the same as the previous year. Relatively speaking, the PCT system continues to make an important contribution that will be discussed later.

Considering that not all the Offices report filing statistics on a regular basis, these data should be interpreted with care. It can at least be concluded that the prior years' increasing tendency of using the patent system has changed in 2009.

Worldwide patent filings by bloc of origin are shown in the next Fig. 3.2.

Fig.3.2 shows the breakdown of the totals from Fig. 3.1 by bloc of origin of these applications.

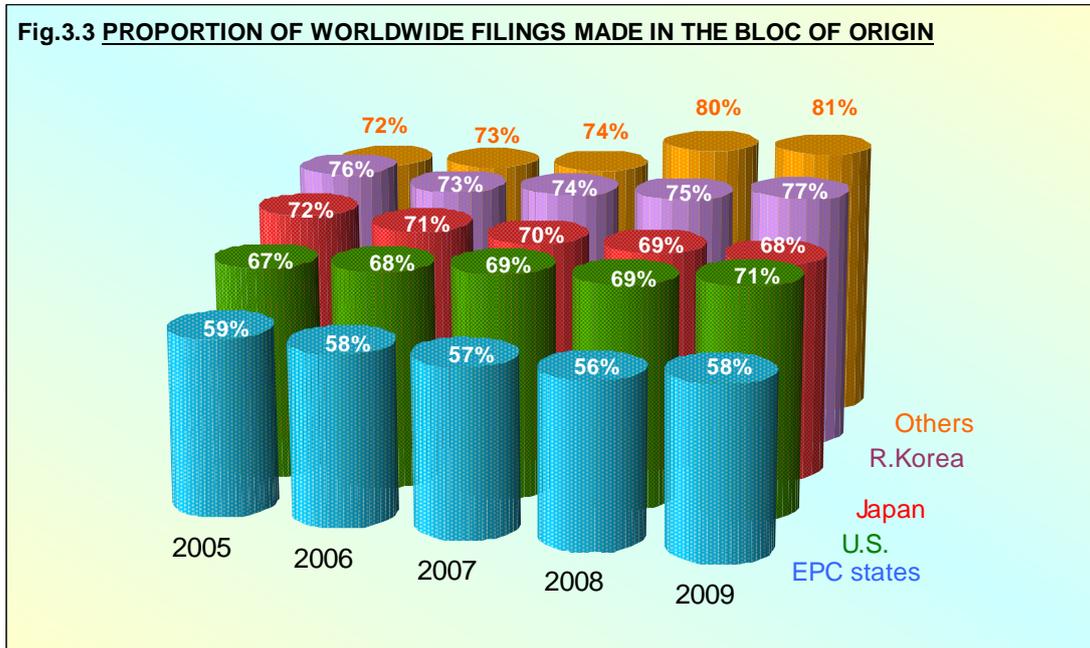


The Four Blocs<sup>24</sup> have consistently been the origin for more than 74 percent of patent filings from 2005 to 2009. The sharp rise of others in 2008 was partially due to a larger number of offices for which statistics are available and a significant increase that was reported from some offices.

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

<sup>24</sup> For the purpose of reporting statistics for the EPC contracting states considered as a bloc, foreign applications are given with regard to the applications made by residents from outside the EPC bloc as a whole.

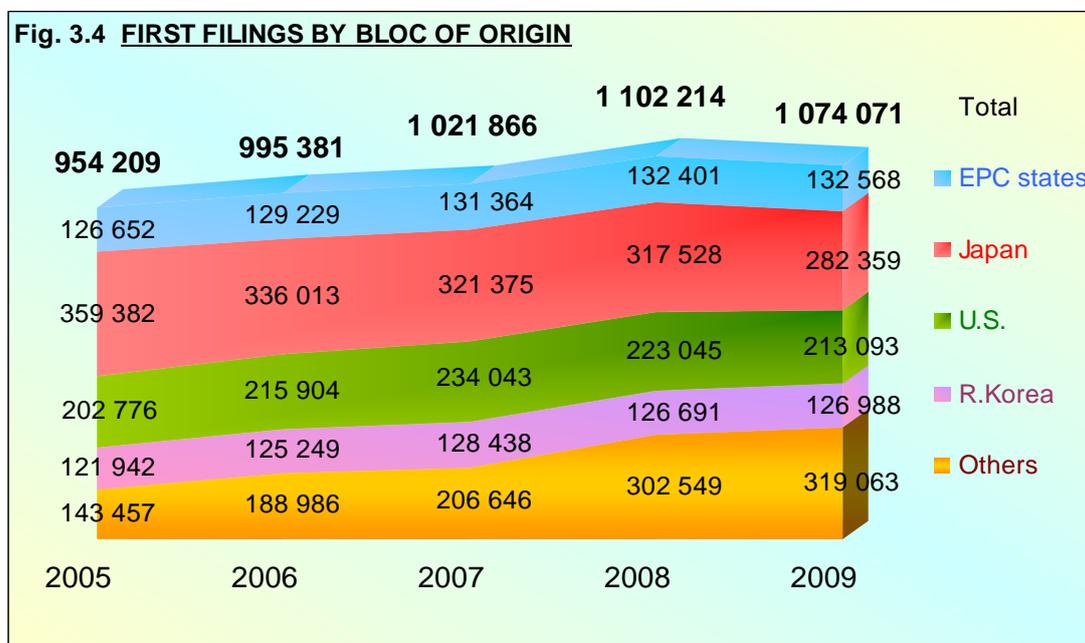
Fig. 3.3 shows the proportion of patent filings throughout the world that are filed within the home bloc of residence.



For the Four Blocs, about 71 percent of applications were made at home in 2009. Contrary to the other blocs, the proportion is slightly decreasing in Japan which indicates the further internationalisation of the patent system there.

## FIRST 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. The development of first filings in the major filing blocs is shown in Fig. 3.4.



Japan recorded 282 359 first filings in 2009, the highest number of first filings by any bloc within the Four Offices area; although this was a decline of 11.1 percent from their 2008 total. In 2009, U.S. first filings decreased by 4.5 percent. On the other hand first filings in both EPC states and R. Korea slightly increased.

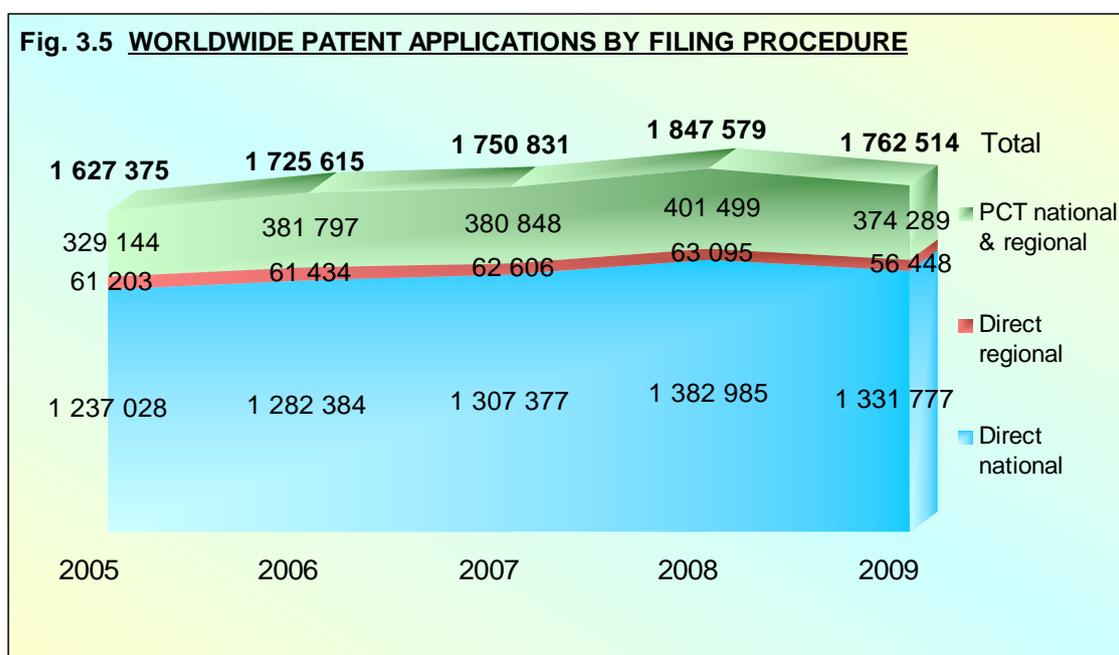
Counts for filing from others, the regions apart from EPC states, Japan, U.S. and R. Korea, have steadily grown and show a sharp rise in 2008 for two reasons. First is the increased availability of worldwide filing data. Second is the increase of filings from some other countries.

Comparing Fig. 3.2 and Fig. 3.4, in 2009, 469 554 subsequent filings were filed (1 543 625 – 1 074 071), related to 1 102 214 first filing made in 2008. This means that, on average, each first filing made in 2008, led to 0.43 subsequent filings in 2009 (469 554 / 1 102 214 = 0.43). In comparison this ratio was 0.52 in 2006 and 0.50 in 2008. This ratio declined more markedly in 2009 than during the previous years.

## PATENT APPLICATIONS

This section 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.

The development of worldwide patent applications by filing procedure is shown in Fig. 3.5.

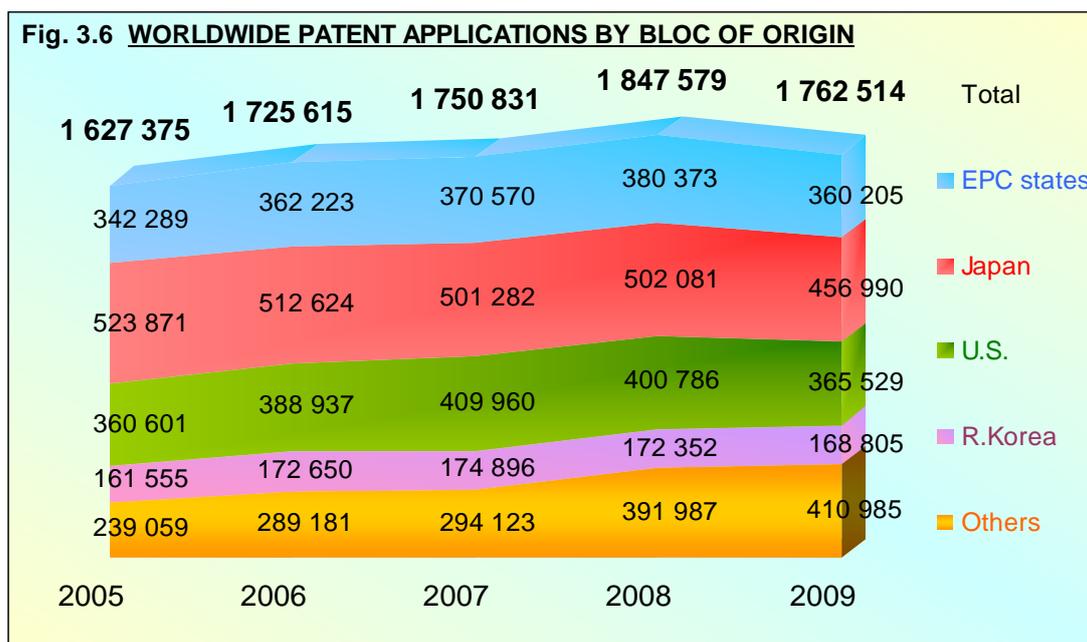


From 2008 to 2009, the number of patent applications decreased in each procedure. PCT national and regional decreased by 6.8 percent, direct regional decreased by 10.5 percent and direct national decreased by 3.7 percent.

In total, worldwide patent applications decreased by 4.6 percent. The recent recession could be one factor in this decline.

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.

Fig. 3.6 shows the origin of these applications.



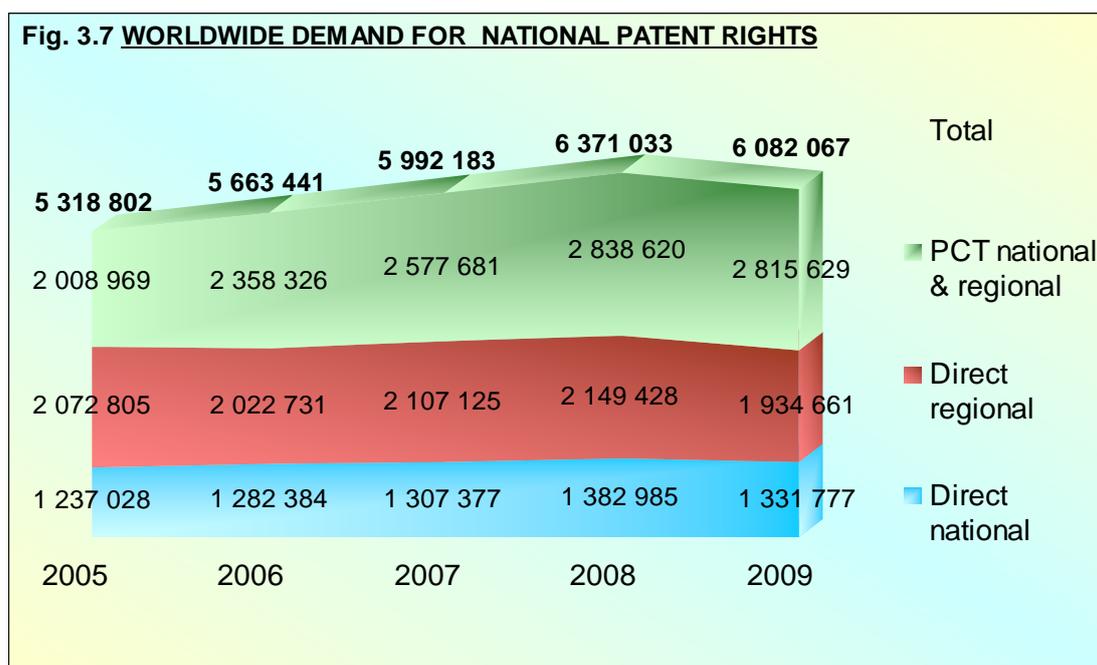
While the number of patent applications decreased for each of the Four Blocs, Japan remains the region from which the largest share of applications originate, although others is catching up. A similar reason to that given on page 28 for Fig 3.1 explains the sharp rise of others in 2008.

These data should be interpreted with caution as the origin of the PCT applications entering national procedure is not reported in detail from all Offices.

## DEMAND FOR PATENT RIGHTS

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 numbers of demands for national patent rights. In this section *demand* cumulates the number of designated countries over applications as was defined in Chapter 1. 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.

While the previous section described the number of grant procedures initiated by the applications filed, Fig. 3.7 describes the development of the demand for patents resulting from these applications. 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 each and every individual member country. So, demand counts for regional Offices are expanded to the numbers of countries covered by regional systems<sup>25</sup>.



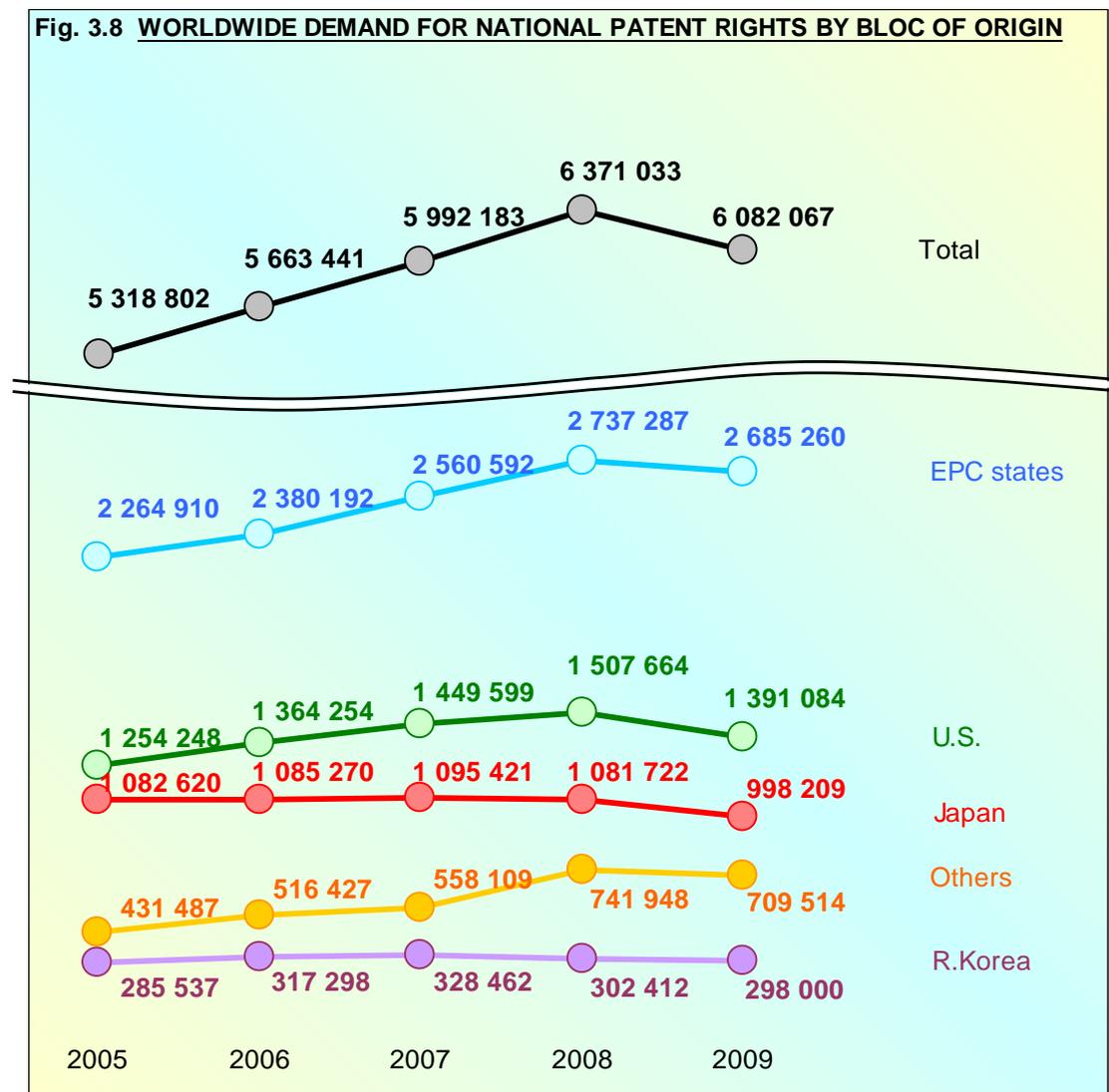
Despite a decline in numbers from 2008 to 2009, the overall growth from 2005 to 2009 shows the effect of the centralized procedures (regional and international) to help users of the system to expand their patent protection with a limited number of procedures.

Compared to the number of patent applications filed (Fig. 3.5), in 2009 on average each filed application corresponded to 3.45 requests for national rights. After increasing since 2005 (3.27), this ratio remained stable in 2009.

<sup>25</sup> At the end of 2009, 82 states were party to a regional patent system, EPC 40, EAPC 9, ARIPO 17, OAPI 16, and 143 to the PCT, compared to 73 and 124 respectively in 2004.

As discussed above under Fig. 3.5, from 2005 to 2008, for each first filing less subsequent applications were filed one year later. But Fig. 3.7 shows that the demand for patent rights nevertheless increased over the period. This illustrates how the greater usage of the international and regional patent systems allows for a broader geographical coverage of protected inventions even while filing fewer applications worldwide. In 2009, these trends were potentially affected by the recession. While the rate of subsequent filing per first filing decreased more markedly than before in 2009; the average coverage per applications remained almost the same as in 2008.

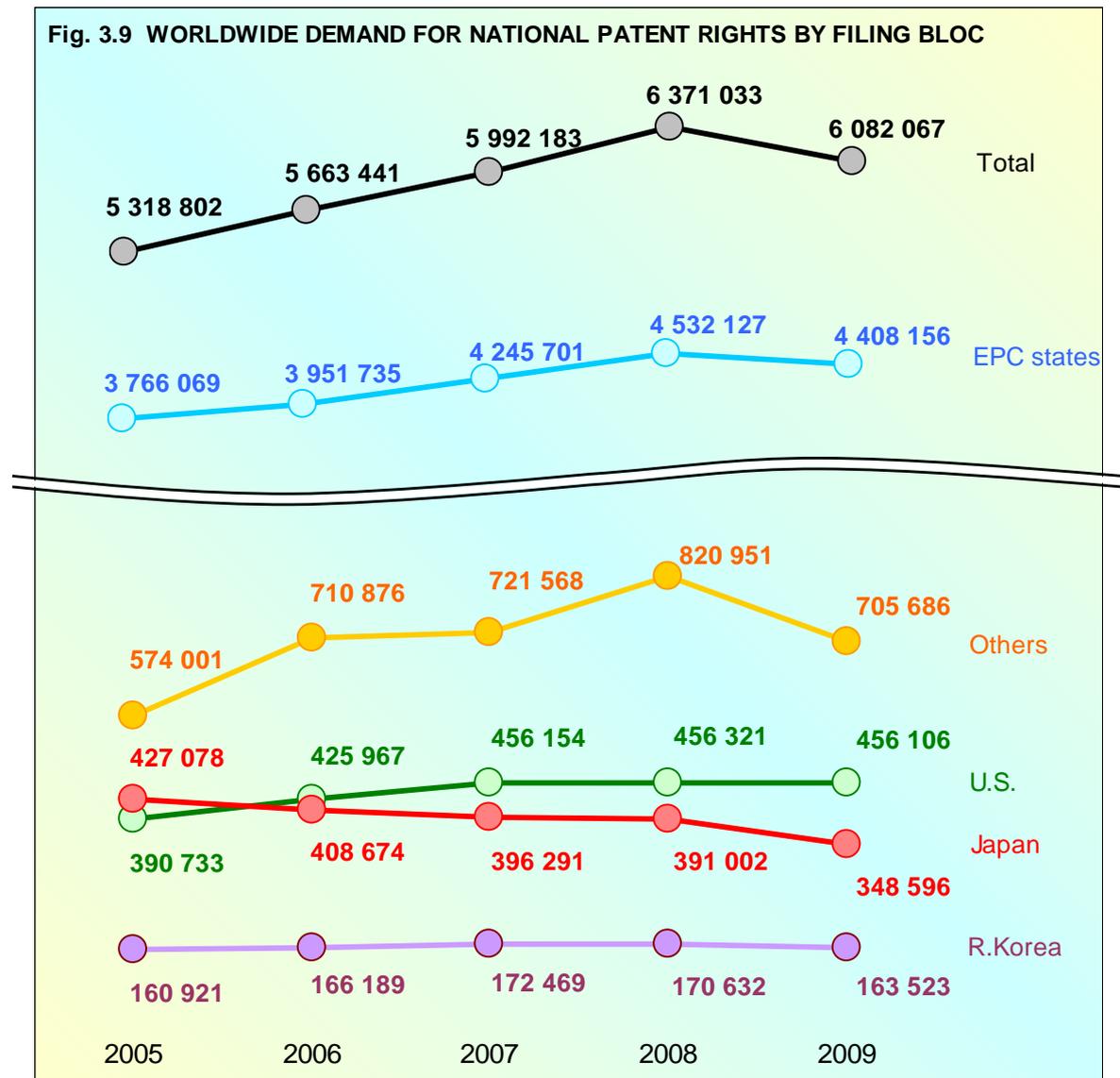
Based on the same data as Fig. 3.7, Fig. 3.8 shows the trend for the demand of patents by blocs of origin of the applicants.



From 2008 to 2009 demand from all blocs decreased. As a result the total worldwide demand for national patent rights fell back towards the level of 2007. However, the total worldwide demand for national patent rights is still increasing at a compound growth rate of 3.4 percent per year from 2005 to 2009.

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

Fig. 3.9 shows the distribution of the demand for national patent rights according to the targeted regions. This graph is also related to the data described in Fig. 3.7 and Fig. 3.8.

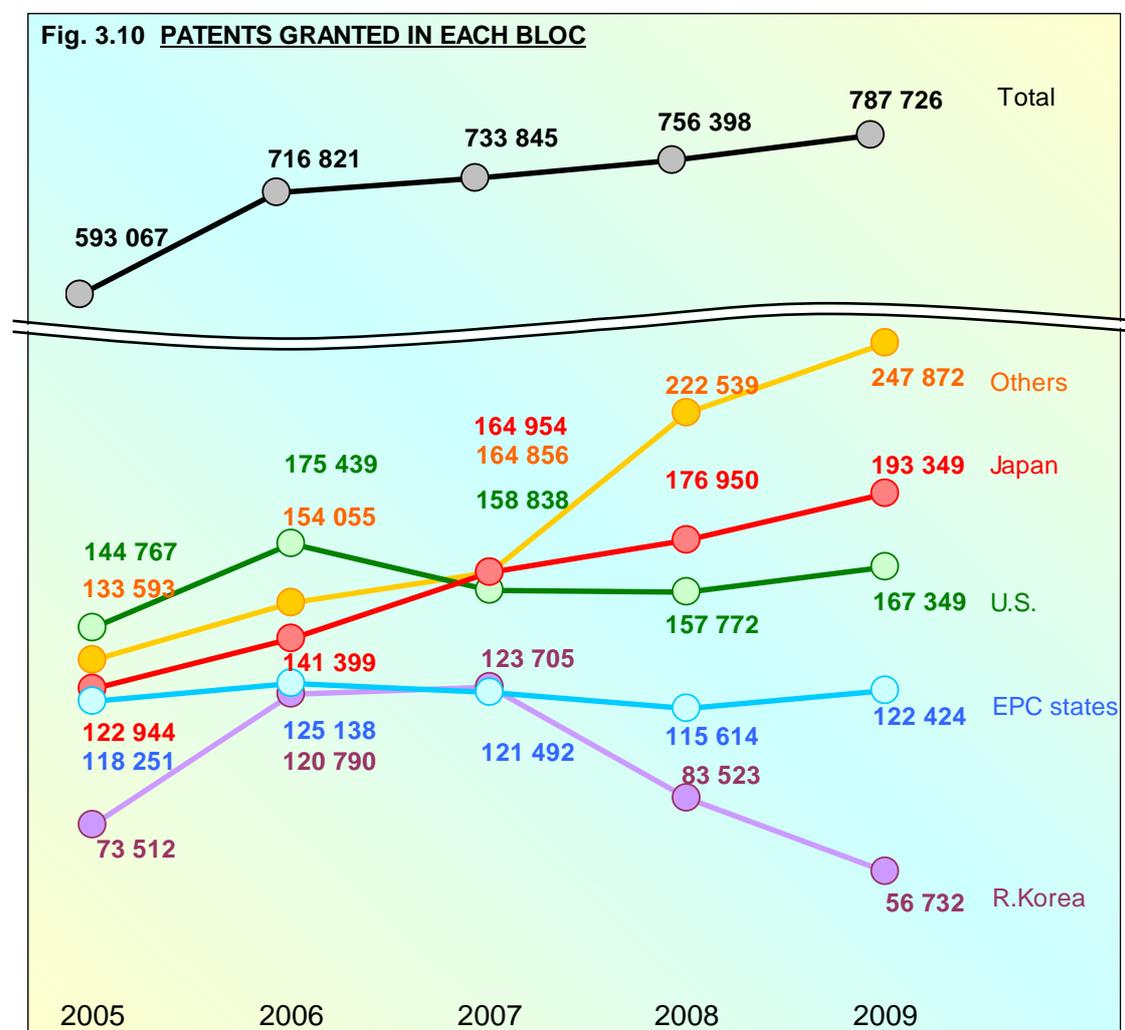


This chart demonstrates the influence of regional patent systems on global demand for patents. All blocs show declines in 2009 compared to 2008.

Since 2007 the demand for national patent rights in U.S. remained stable and declined in R. Korea and Japan. In the EPC states, a previous positive trend since 2005 was interrupted in 2009.

## PATENT GRANTS

The development of the use of patent systems is shown next in terms of grants. Fig. 3.10 displays the cumulative numbers of patents granted in each of blocs.

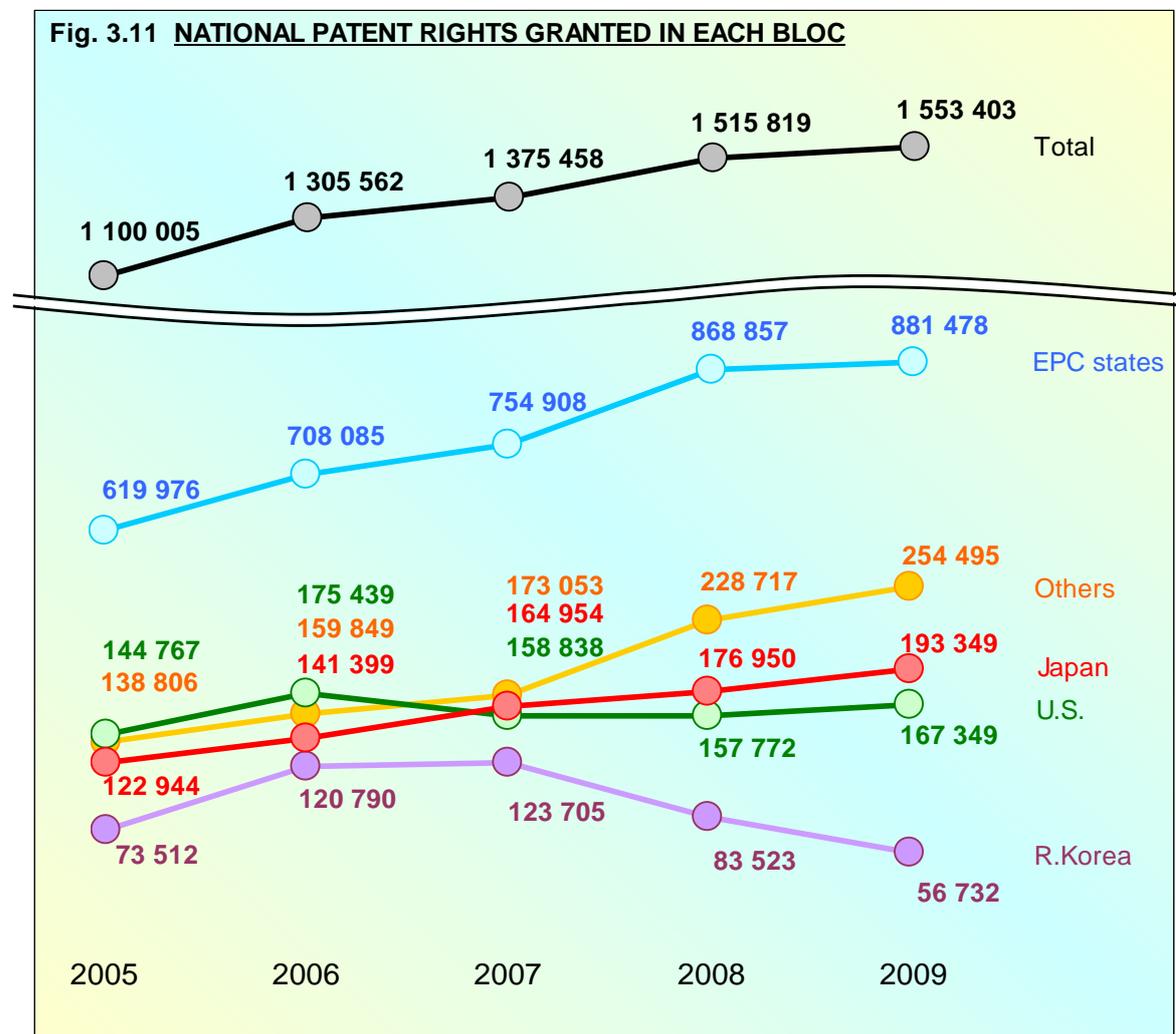


The total number of patents granted in the world increased by 4.1 percent in 2009. The number of grants in Japan increased by 9.3 percent in 2009, and in the U.S. by 6.0 percent. The EPC states granted 5.9 percent more patents in 2009 than in 2008. The number of patents granted in R. Korea decreased by 32.1 percent in 2009.

It is not possible to evaluate from these figures any particular impact of the recession on the number of granted patents, among other reasons because procedural delays in examination mean that patents granted in 2009 were already in the examination pipeline at the Four Offices when the recession struck.

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.

Regional granting procedures lead to multiple patents in the various designated states within the region concerned. This has an effect only in EPC states and others. Fig. 3.11 illustrates the development of the validated national grants resulting from the decisions reported in Fig. 3.10.



The overall number of national patent rights granted increased by 41 percent over the five-year period to more than 1.5 million patent rights granted in 2009.

There has been a steady growth of the number of national patent rights granted in the EPC states. This resulted from the expansion to more member countries, leading to a growing number of patents that were granted via the regional procedure at the EPO (either directly or via the PCT system).

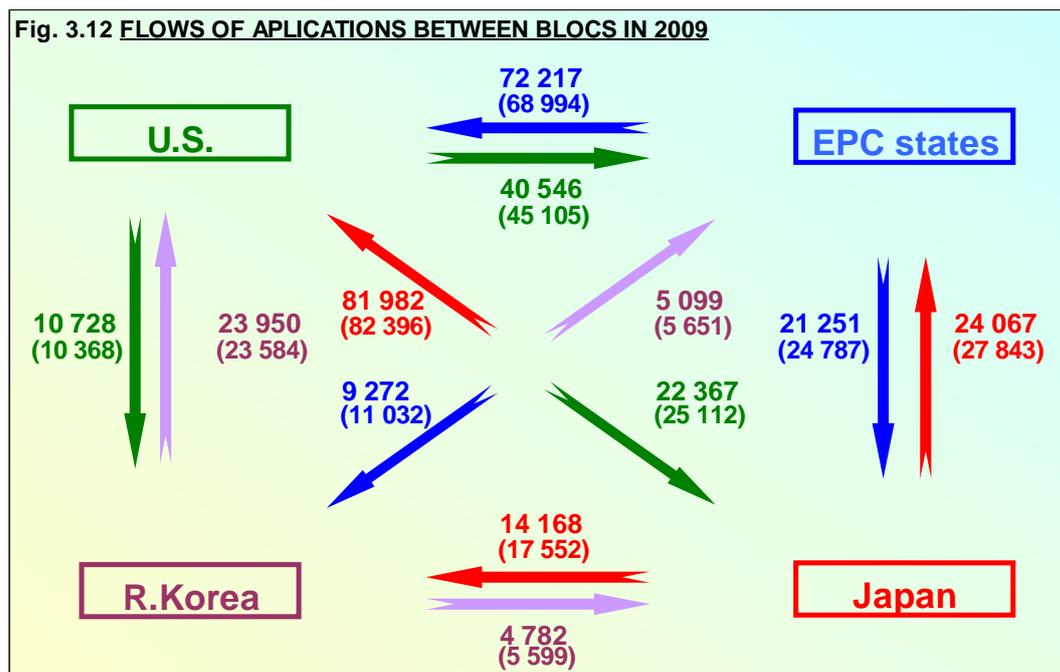
The fact that the EPC states bloc is made up of many countries explains why the number of patent rights granted there is much larger than the number of grant actions shown in Fig. 3.10.

## INTERBLOC ACTIVITY

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

### FLOWS OF APPLICATIONS

The flows of patent applications between the Four Blocs in 2009 are described in Fig. 3.12, which is based on the distinct applications entering a grant procedure (as in Fig. 3.5). The 2008 figures are given in parentheses.



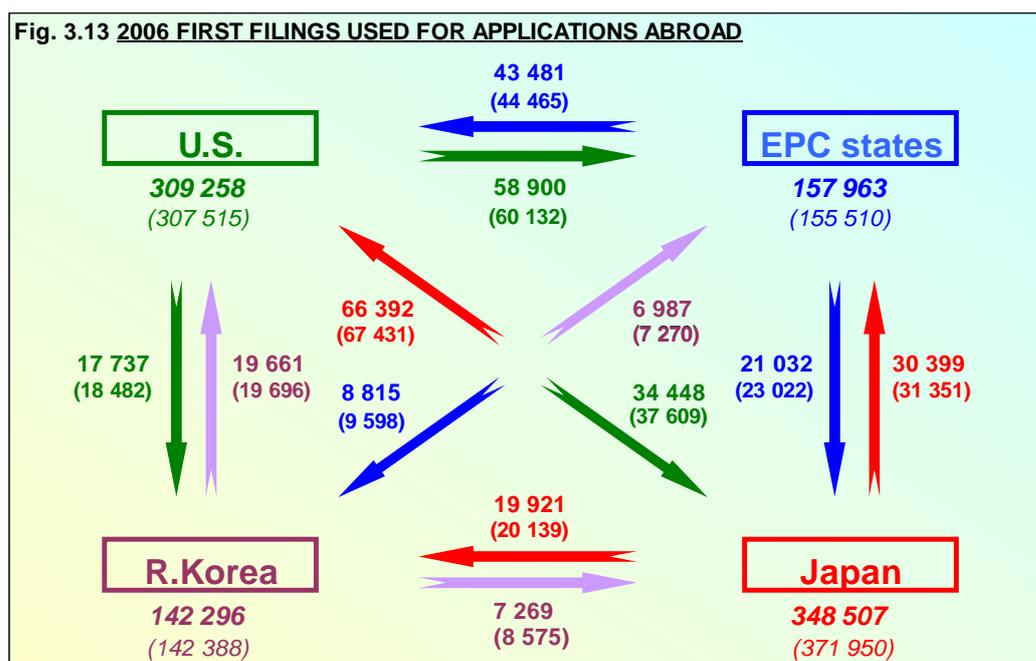
As a general pattern, applicants worldwide filed many more applications in the U.S. than in any of the other Four Blocs. U.S. applicants applied more in the EPC states than in the other regions.

In 2009, flows between R. Korea and the U.S (both directions) and from the EPC states to the U.S. increased. All other flows experienced declines, especially between R. Korea and Japan. From Japan to R. Korea it dropped by 19 percent and from R. Korea to Japan it dropped by 15 percent. EPC states filed 16 percent less in R. Korea than in 2008.

## PATENT FAMILIES

The information in this section on flows between blocs of patent families was obtained from the DOCDB<sup>26</sup> of worldwide patent publications. The statistics are based on references to priorities given in published applications and differ to some extent from other statistics in this chapter that are based on counts of filed patent applications provided by individual patent offices. In Fig. 3.4, direct applications were counted as first filings, while in Fig. 3.13 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.

The flows of patent families from first filings to subsequent filings between the Four Blocs are shown in Fig. 3.13. The number given for each bloc is the total number of distinct references to priority filings in 2006. This can be taken as an indicator of the number of first filings in the bloc for that year. The flow figures between blocs of origin and target blocs indicate the numbers of 2006 priority forming first filings from the bloc of origin that were referenced by subsequent filings in the target bloc. The comparable figures for 2005 are given in parentheses.



The following Table 3 shows details of flows of patent families between blocs for the priority years 2005 and 2006. Historical tables for the years from 1995 to 2006 can be found in the statistical data files attached to the web based version of this report. From information in Table 3, out of all first filings in the Four Blocs in 2006 (958 024), only 22 percent formed patent families which included at least one of the remaining blocs (210 464). Between 2005 and 2006, all flows to other blocs in each bloc have decreased- the EPC states decreased 94 percent, Japan decreased 98 percent, U.S. decreased 95 percent and R. Korea decreased 94 percent.

<sup>26</sup> DOCDB 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**

**NUMBERS OF PATENT FAMILIES**

Source: EPO DOCDB database

Year of priority filings: **2005**

Bloc of origin from which priority is claimed	First Filings in Bloc of Origin	Flows to Subsequent Filings								Patent Families from bloc of origin
		First filings in Bloc of Origin leading to priority claims in filings in:								
		Any other Blocs	Any other Four Bloc	EPC States	Japan	R.Korea	U.S.	Other countries		
EPC States	155 510	49 640 (31.9%)	48 338 (31.1%)	-	23 022 (14.8%)	9 598 (6.2%)	44 465 (28.6%)	29 509 (19.0%)	7 740 (5.0%)	
Japan	371 950	74 538 (20.0%)	74 435 (20.0%)	31 351 (8.4%)	-	20 139 (5.4%)	67 431 (18.1%)	35 022 (9.4%)	11 315 (3.0%)	
R. Korea	142 388	22 036 (15.5%)	21 978 (15.4%)	7 270 (5.1%)	8 575 (6.0%)	-	19 696 (13.8%)	11 033 (7.7%)	4 165 (2.9%)	
U.S.	307 515	75 162 (24.4%)	68 387 (22.2%)	60 132 (19.6%)	37 609 (12.2%)	18 482 (6.0%)	-	54 089 (17.6%)	14 789 (4.8%)	
<b>Four blocs subtotal</b>	<b>977 363</b>	<b>221 376 (22.7%)</b>	<b>213 138 (21.8%)</b>	<b>98 753 (10.1%)</b>	<b>69 206 (7.1%)</b>	<b>48 219 (4.9%)</b>	<b>131 592 (13.5%)</b>	<b>129 653 (13.3%)</b>	<b>38 009 (3.9%)</b>	
Others	298 538	20 133 (6.7%)	20 133 (6.7%)	6 522 (2.2%)	4 075 (1.4%)	1 442 (0.5%)	18 079 (6.1%)	-	815 (0.3%)	
<b>Global total</b>	<b>1 275 901</b>	<b>241 509 (18.9%)</b>	<b>233 271 (18.3%)</b>	<b>105 275 (8.3%)</b>	<b>73 281 (5.7%)</b>	<b>49 661 (3.9%)</b>	<b>149 671 (11.7%)</b>	<b>129 653 (10.2%)</b>	<b>38 824 (3.0%)</b>	

Year of priority filings: **2006**

Bloc of origin from which priority is claimed	First Filings in Bloc of Origin	Flows to Subsequent Filings								Patent Families from bloc of origin
		First filings in Bloc of Origin leading to priority claims in filings in:								
		Any other Blocs	Any other Four Bloc	EPC States	Japan	R.Korea	U.S.	Other countries		
EPC States	157 963	49 236 (31.2%)	47 787 (30.3%)	-	21 032 (13.3%)	8 815 (5.6%)	43 481 (27.5%)	29 157 (18.5%)	6 903 (4.4%)	
Japan	348 507	73 667 (21.1%)	73 555 (21.1%)	30 399 (8.7%)	-	19 921 (5.7%)	66 392 (19.1%)	33 841 (9.7%)	10 665 (3.1%)	
R. Korea	142 296	21 530 (15.1%)	21 505 (15.1%)	6 987 (4.9%)	7 269 (5.1%)	-	19 661 (13.8%)	9 232 (6.5%)	3 641 (2.6%)	
U.S.	309 258	75 010 (24.3%)	67 617 (21.9%)	58 900 (19.0%)	34 448 (11.1%)	17 737 (5.7%)	-	53 158 (17.2%)	13 566 (4.4%)	
<b>Four blocs subtotal</b>	<b>958 024</b>	<b>219 443 (22.9%)</b>	<b>210 464 (22.0%)</b>	<b>96 286 (10.1%)</b>	<b>62 749 (6.5%)</b>	<b>46 473 (4.9%)</b>	<b>129 534 (13.5%)</b>	<b>125 388 (13.1%)</b>	<b>34 775 (3.6%)</b>	
Others	345 577	21 153 (6.1%)	21 153 (6.1%)	6 577 (1.9%)	3 969 (1.1%)	1 447 (0.4%)	18 770 (5.4%)	-	704 (0.2%)	
<b>Global total</b>	<b>1 303 601</b>	<b>240 596 (18.5%)</b>	<b>231 617 (17.8%)</b>	<b>102 863 (7.9%)</b>	<b>66 718 (5.1%)</b>	<b>47 920 (3.7%)</b>	<b>148 304 (11.4%)</b>	<b>125 388 (9.6%)</b>	<b>35 479 (2.7%)</b>	

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

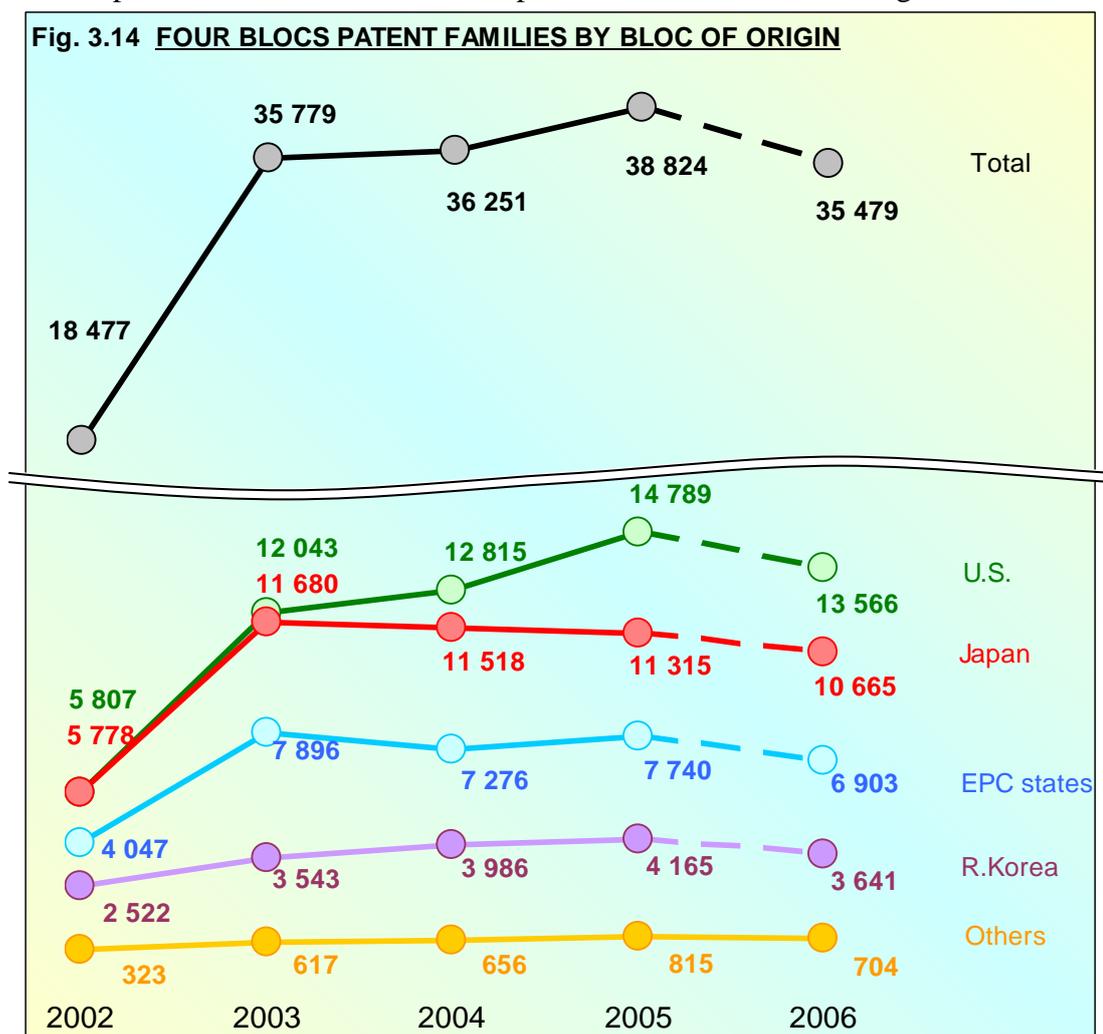
Four Office Statistics Report 2010  
Chapter 3

The references to priorities and flows between the Four Blocs in Fig. 3.13 and Table 3 are fairly accurate up to the year 2006. But the numbers for Four Blocs patent families after 2005 may not be complete, because more time is needed to gather all evidence of subsequent filing activity from first filings in later years.

86 percent (90 276 / 105 275) of worldwide priorities coming from outside Europe that led to (published) patent activity in that bloc in 2005, involved applications to EPO.

Out of all priority forming filings in the Four Blocs in 2005, Table 3 showed that 3.9 percent formed Four Bloc Patent families. The proportions differed considerably according to the bloc of origin of the priority forming filings. For the EPC states, 5.0 percent of priority forming filings formed Four Bloc Patent families, for the U.S. 4.8 percent, for Japan 3.0 percent, for R. Korea 2.9 percent, and for others 0.3 percent.

The development over time of Four Blocs patent families is shown in Fig. 3.14.



The total number of Four Bloc patent families in 2005 was 38 824, of which 38 percent were from the U.S., 29 percent were from Japan, 20 percent were from the EPC states, 11 percent were from R. Korea, and 2 percent were from Others. The count from U.S. increased 15 percent from 2004 to 2005. EPO has recovered to 7 740 in 2005, but this number is less than in 2003 and Japan has dropped continuously since 2003.



## Chapter 4

### PATENT ACTIVITY AT THE FOUR OFFICES

This chapter presents trends in patent application filings and grants at the Four Offices. These statistics are generally available on a more up-to-date basis than those presented by Blocs in Chapter 3; so most information that appears here goes beyond 2009 to cover 2010. Regarding Europe, statistics are for the EPO only. Whereas the EPO is indicated from the viewpoint of an Office, the EPC states are still indicated as a bloc of origin.

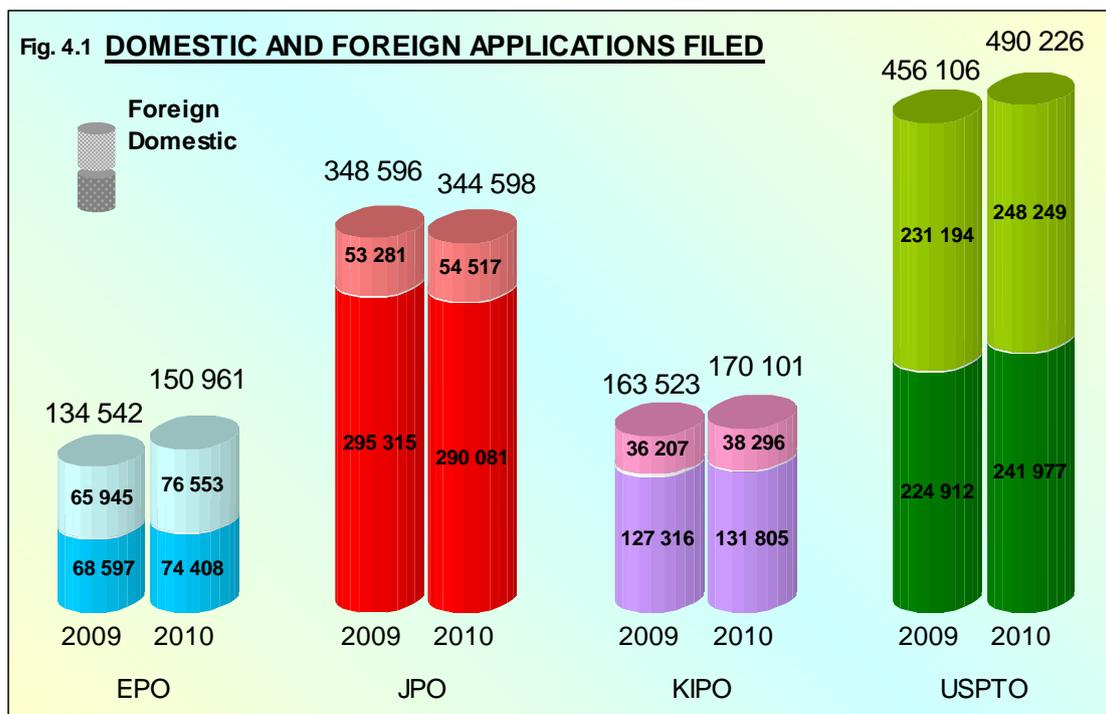
The statistics give insight into the work that is requested and carried out at the Four Offices. For patent applications the representations are analogous to those of the earlier Figures 3.5, 3.6 and 3.12.

The activities at the Four Offices are demonstrated by counts of the numbers of patent applications that were filed. These counts represent the total of direct national/regional applications filed and PCT applications entering the national/regional phase. In general there seem to have been drops or levellings of numbers of applications filed in 2009, presumably due to the recession, followed by some evidence of recovery in 2010.

For granted patents, the statistics combine information on direct (national or regional) and PCT applications by year of grant. The representations here are similar to Fig. 3.10, except that for EPC states only the EPO is considered as the granting authority. Hereinafter "patents granted" will correspond to the number of grant actions (issuances or publications) by the Four Offices.

## PATENT APPLICATIONS FILED

The numbers of domestic (residents of the country) and foreign (non-residents) patent applications filed with each of the Four Offices are shown in Fig. 4.1. To demonstrate effects caused by the recession, in this edition we show applications for the three years 2008, 2009 and 2010 rather than just for the two most recent years.



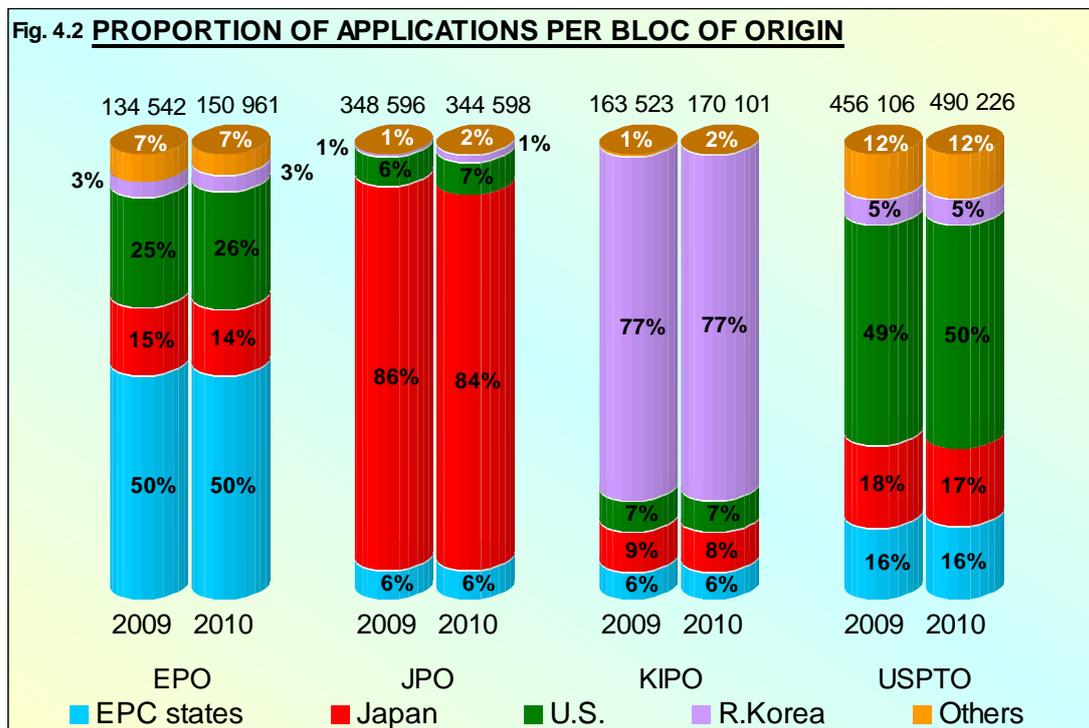
In 2010, about 1 156 000 patent applications have been filed at the Four Offices, almost as many as in 2008.

By the recent recession, the number of patent applications at the Four Offices in 2009 was decreased. However, the number of patent applications has been recovered in 2010 except JPO.

In Japan a recovery of sorts in 2010 is only marked by a lower drop by 1 percent than in the previous year, which should be interpreted positively in line with a longer term slow downward trend in filings (see Fig. 3.9). The increases in applications at EPO, KIPO and USPTO were 12 percent, 4 percent and 7 percent. Part of the large increase at EPO can be explained by the one-off effect of a rule adjustment that was mentioned in Chapter 2, that led to a number of additional divisional filings made in 2010.

At EPO, KIPO and USPTO, domestic and foreign applications increased in 2010. However at JPO, domestic applications continued to decline slightly while foreign applications increased. This figure also illustrates the predominance of domestic applications at JPO and KIPO.

Fig. 4.2 shows the respective shares of patent application filings by origin (residence of applicants or inventors) relative to total filings at each Office for 2009 and 2010.



Comparison of the numbers of applications at the Four Offices should only be made with caution. For example, the numbers of claims given in applications are significantly different among the Four Offices. On average, in 2010, an application filed at EPO contained 13.4 claims (13.9 in 2009), one filed at the JPO contained 9.6 claims (9.7 in 2009), one filed at KIPO contained 10.7 claims (10.3 in 2009), while one application at USPTO had 18.5 claims (18.6 in 2009).

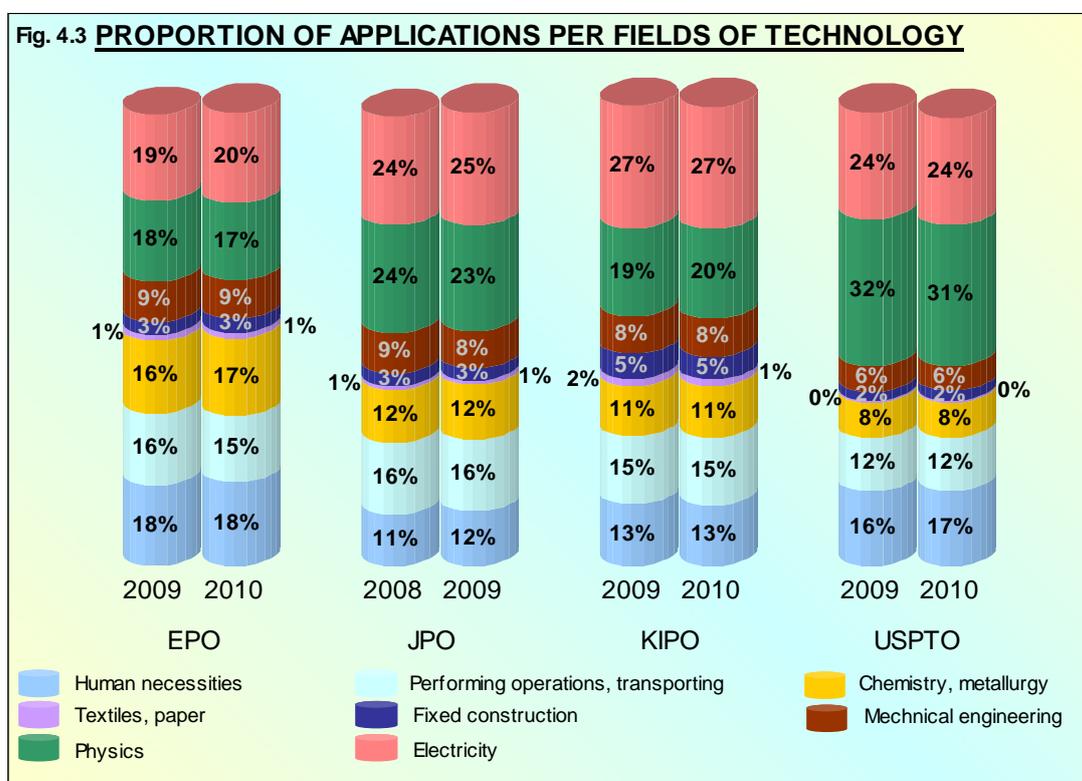
The shares of patent application filings by each bloc of origin are quite consistent for 2009 and 2010.

## FIELDS OF TECHNOLOGY

Patents are classified by the Four Offices according to the International Patent Classification (IPC). This provides for a hierarchical system of language independent symbols for the classification of patents and utility models according to the different areas of technology to which they pertain. Fig 4.3 shows the distribution of applications according to the main sections of the IPC.

The classification takes place at a different stage of the procedure in the Offices. Data are shown for the EPO, KIPO, and the USPTO for the filing years 2009 and 2010<sup>27</sup>, while for the JPO the breakdown is given for the filing years 2008 and 2009<sup>28</sup>.

Fig. 4.3 indicates the share of applications by fields of technology at each Office. The shares are determined for all applications for which a classification is available.



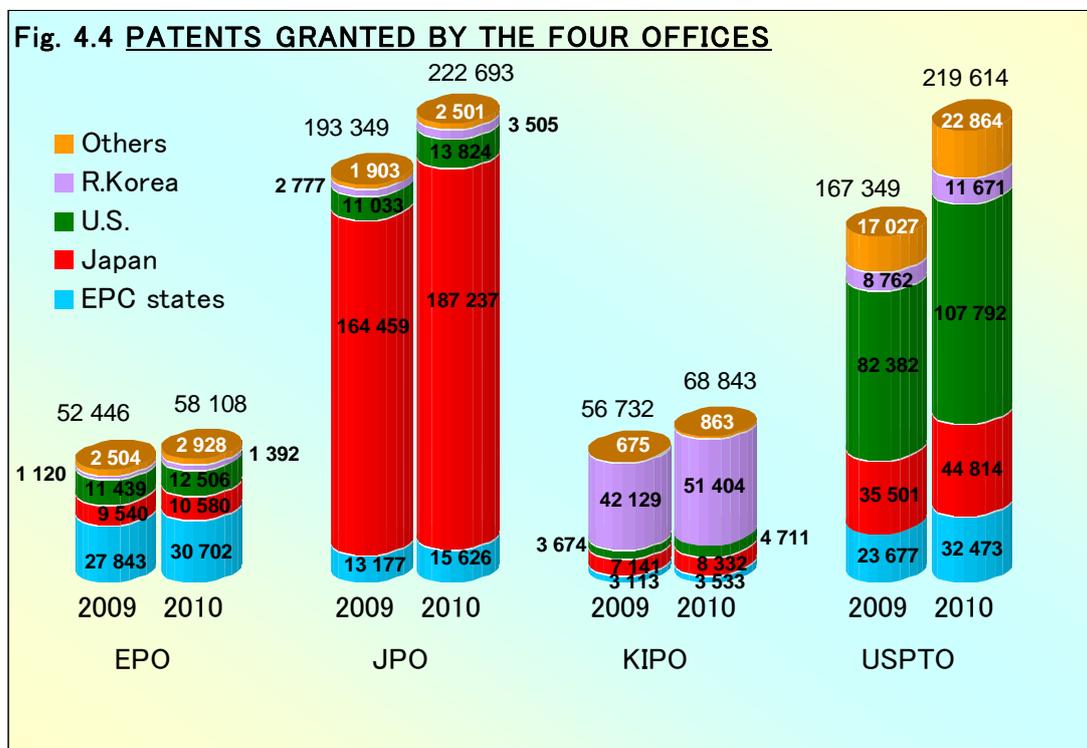
More than half of the applications filed at USPTO were related to the fields of Physics or Electricity. These fields are also important at the other Offices, although less so at EPO where there is a more balanced distribution between the fields. No major changes of proportions can be seen between the pairs of years that are compared for each Office.

<sup>27</sup> USPTO applications are classified according to U.S. Patent Classification system. The breakdown according to the IPC has been determined by means of a general concordance between both classifications. The connection between the two systems is not one-to-one in all cases. Therefore, there may be some technical differences between the nature of USPTO's IPC data and that from EPO, JPO and KIPO.

<sup>28</sup> JPO data for 2009 are the most recent available figures because the IPC assignment is completed just before the publication of the Unexamined Patent Application Gazette (18 months after the first filing).

## PATENT GRANTS

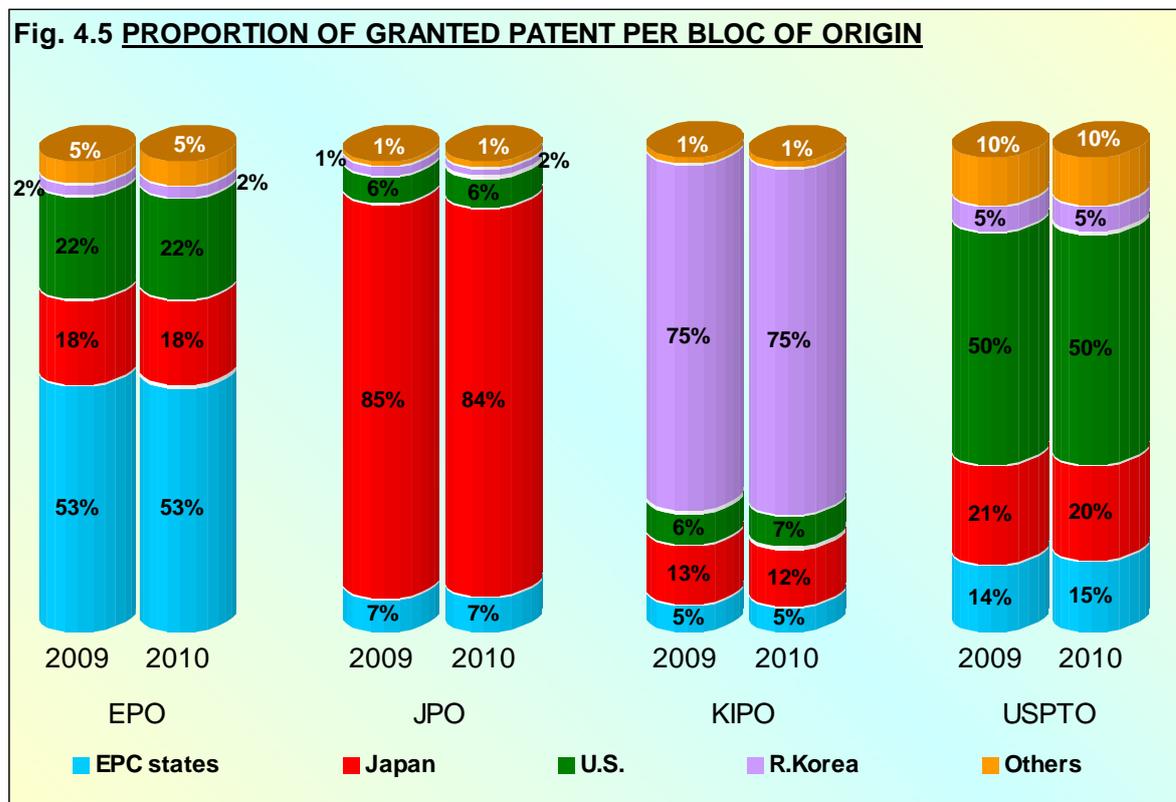
Fig. 4.4 shows the numbers of patents granted by the Four Offices, according to the bloc of origin.



Together the Four Offices granted 569 258 patents in 2010, which were 99 382 more than in 2009. This is an overall growth of 21.2 percent.

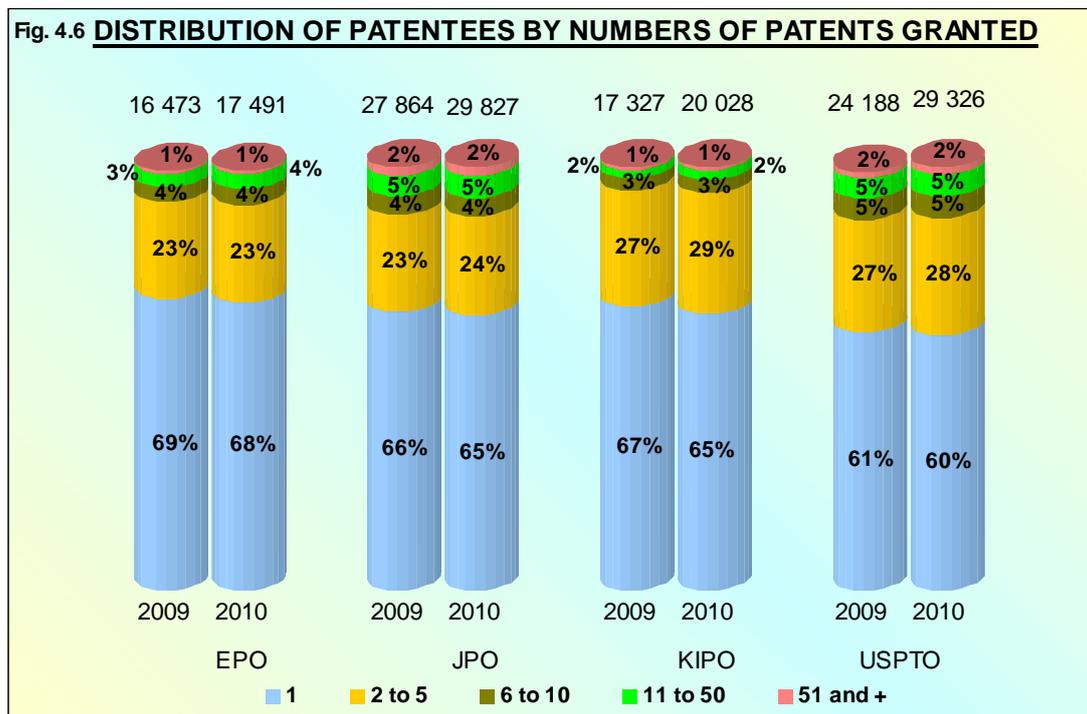
The number of patents granted by each of the Four Offices increased in 2010, especially at KIPO and USPTO where the increases were 21 percent and 31 percent, respectively. The differences between the Four Offices regarding the absolute numbers of patents granted can only be partly explained by differences in the number of corresponding applications. These numbers are also affected by differing grant rates and durations to process applications by the Four Offices (see section below on "Patent Procedures").

Fig. 4.5 presents the percentage shares of total patents granted by bloc of origin.



The shares from the different blocs of origin are not far away from those observed for the filings in each Office as presented in Fig. 4.2, although at the EPO the shares of the EPC states and Japan are somewhat higher than their shares in applications filed.

The breakdown of numbers of patentees by numbers of patents granted is shown in Fig. 4.6.



This diagram shows that the distribution of grants to patentees is similar at each Office and is highly skewed at all of them.

At the Four Offices, the proportion of patentees that received one grant only in a year was between 61 percent for USPTO in 2010 and 69 percent for EPO in 2009. The proportion of patentees that received less than 6 patents was between 88 percent for USPTO and 94 percent for KIPO. In 2010, the proportion of patentees receiving 2 to 5 grants is larger at KIPO (29 percent in 2010) and at USPTO (28 percent in 2010) than at EPO (23 percent) and at JPO (24 percent).

In 2010, the average patentee received 3.3 patents at EPO, 7.5 at JPO, 3.4 at KIPO and 7.5 at USPTO. The greatest number of patents granted to a single applicant was 754 at EPO, 5 957 at JPO, 13 081 at KIPO, and 5 866 at USPTO.

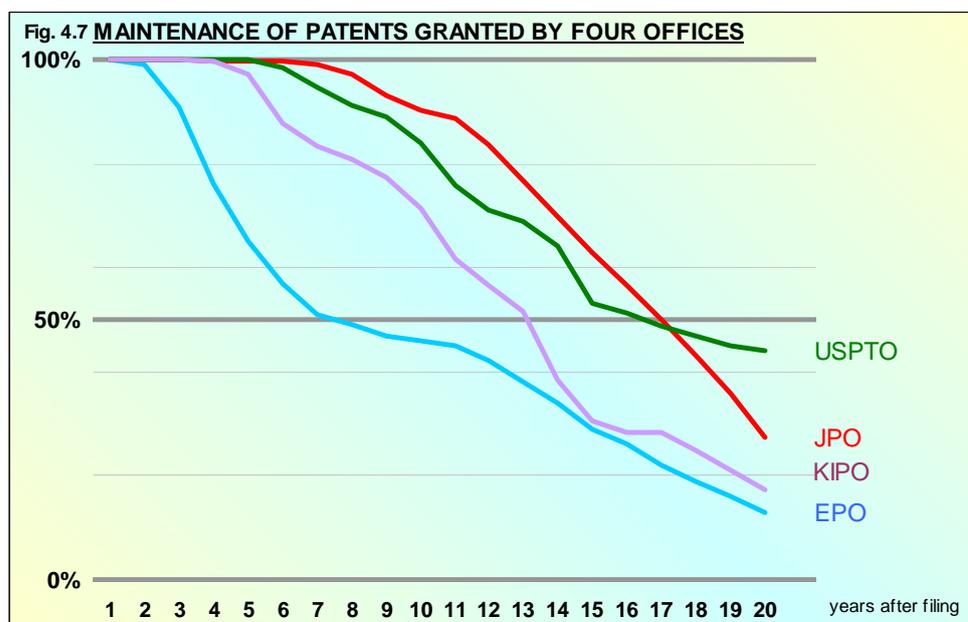
A patent is enforceable for a fixed term, and depends on actions taken by owner. In all Four Offices the fixed term is usually a twenty year term from the date of filing the application. In order to maintain protection during this period, the applicant has to pay what are variously known as renewal, annual or maintenance fees in the countries for which the protection pertains. Maintenance systems differ from country to country. In most jurisdictions, and in particular in those of the Four Offices, protection expires if a renewal fee is not paid in due time.

At EPO, renewal fees are payable from the third year after filing in order to maintain the application. After the patent has been granted, annual renewal fees are then paid to the national Office of each designated EPC contracting state in which the patent has been registered. These national patents can be maintained for different periods in each contracting state.

For a Japanese or R. Korean patent, the annual fees for the first three years after patent registration are paid as a lump-sum and for subsequent annual fees. The applicant can pay either yearly or in advance.

The USPTO collects maintenance fees at 3.5, 7.5, and 11.5 years after the date of allowance and does not otherwise collect an annually payable maintenance fee.

Fig. 4.7 shows the proportions of patents granted by each Office that are maintained for differing lengths of time. It compares the rate of granted patent registrations existing and in force each patent year starting with the year of application. The EPO proportions represent an average ratio of maintenance in the EPC states. The USPTO payment schedule is somewhat hidden because the data are shown on a time basis (by year after application) that is different from the time basis used for collecting the fees (by year after patent grant).



In Japan, over 50 percent of the patents granted are maintained for at least 17 years from filing, compared 13 years for the R. Korea patents, 16 years for the U.S. patents and 8 years for EPO granted rights.



### **Examination: search and substantive examination**

Each of the Four Offices examines a filed patent application based upon novelty, inventive step, and industrial applicability. At EPO, this examination is done in two phases: a search to establish the state of the art with respect to the invention and a substantive examination to evaluate the inventive step and industrial applicability. For the second phase, a separate request has to be filed no later than six months after publication of the search report.

In the national procedures before JPO, KIPO or USPTO, the search and substantive examination are undertaken in one phase.

Filing of a national application with USPTO is taken to imply an immediate request for examination. At both JPO and KIPO, where deferred examination systems exist, filing of a national application does not imply a request for examination; and this may be filed up to three and five years, respectively, after the date of filing.

The international searches and international preliminary examinations carried out by the Four Offices as PCT authorities are not included in the flow chart.

### **Publication**

In the Four Offices, the application is to be published no later than 18 months after the date of filing or the earliest priority date (date of first filing). The application can be published earlier at the applicant's request. In USPTO, an application that has not and will not be the subject of an application filed in foreign countries does not need to be published if an applicant so requests.

### **Grant, refusal / rejection, withdrawal**

When an examiner intends to grant a patent, this information is communicated to the applicant - Announcement of grant (EPO); Decision to grant (JPO); Decision to grant (KIPO); Notice of allowance (USPTO). If a patent cannot be granted in the form as filed before the Office, the intention to reject the application is communicated to the applicant: (unfavourable) Examination Report (EPO); Notification of reason for refusal (JPO); Notification of reason for refusal (KIPO); Office action of rejection (USPTO). The applicant may then make amendments to the application, generally in the claims, after which examination is resumed. This procedural step is iterated as long as the applicant continues to make appropriate amendments. Then, either the patent is granted or the application is finally rejected - Intention to refuse (EPO); Decision of rejection (JPO); Decision of rejection (KIPO); Final rejection (USPTO) - or withdrawn by the applicant - Withdrawal (EPO); Withdrawal or Abandonment (JPO); Withdrawal or Abandonment (KIPO); Abandonment (USPTO). In addition, if no request for examination for an application is filed to EPO, JPO or KIPO within a prescribed period (six months after publication of the search, three years from the date of filing, and five years from the date of filing, respectively), the application will be deemed to have been withdrawn. In all four procedures, an applicant may withdraw or abandon the application at any time before the application is granted or finally refused.

After the decision to grant the patent, the patent specifications are published if certain administrative conditions are fulfilled, known as Publication of patent (EPO, JPO, and KIPO) or Patent issuance (USPTO).

### **Opposition**

The opposition procedures allow third parties to challenge a patent granted before the granting Office.

There is no opposition system at JPO and KIPO.

At EPO, the period for filing opposition(s) begins after granting of the patents and lasts nine months. If successful, the opposition can lead to a revocation of the patent or to its maintenance in amended form. Furthermore, the patentee may request a limitation or a revocation of his own patents.

In the procedure before USPTO, there are two features that may lead to the cancellation of a granted patent: interference proceedings and re-examination. The numbers are not reported because these features are not comparable to the opposition procedure at EPO. In USPTO, the first feature is a priority contest between applicants/patentees seeking to protect the same invention and the second feature may be requested by third parties or by the patentee during the lifetime of a granted patent.

### **Appeal**

An appeal can be filed by any of the parties concerned against a decision taken by the Four Offices. In practice, applicants can appeal decisions to reject an application or revoke a patent, while opponents can appeal decisions to maintain a patent. The procedure is in principle similar for the Four Offices. The examining department first studies the argument brought forward by the appellant and decides whether the decision should be revised<sup>29</sup>. If not, the case is forwarded to a Board of Appeal, which may take the final decision or refer the case back to the examining department.

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<sup>29</sup> In JPO, in the case that amendment of the description, claims or drawings has been made at the same time of the submission of an appeal a decision to reject the application, the examiner first re-examines the amendment brought forward by the appellant in order to decide whether the decision can be overturned. If not, the case will be forwarded to the appeal examiners for the final decision.

## **STATISTICS ON PROCEDURES**

Table 4 shows various statistics as average rates and numbers where applicable for 2009 and 2010. Definitions of the various terms are given in Annex 2.

### **Rates**

The examination rate in USPTO is 100 percent, since filing implies a request for examination, whereas in EPO, JPO and KIPO a specific request for examination has to be made. At EPO the large proportion of PCT applications in the granting procedure gives a high examination rate, as almost all of them proceed to examination. The examination rate is somewhat lower at JPO and KIPO because applicants have substantially more time to evaluate whether to proceed further with the application or not.

The grant rates at KIPO and USPTO increased from 2009 to 2010 and the grant rate is higher at KIPO than at the other Offices. At EPO and JPO the grant rates were similar in 2009 and 2010.

### **Pendencies**

In the successive stages of the procedure, there are pending applications awaiting action in the next step of the procedure. The number of pending applications gives an indication of the workload (per stage of procedure) from the patent grant procedure in each of the Four Offices. However this is not a particularly good indicator for the backlog in handling applications within the Offices, since a substantial part of pending applications are awaiting action from the applicant. This could be for instance a request for examination, or a response to actions communicated by the Office.

As shown in Table 4, altogether more than 3.4 million applications were pending in the Four Offices at the end of 2010, in terms of either awaiting request for examination or awaiting, final action in examination.

**Table 4: STATISTICS ON PROCEDURES**

<b>Progress in the procedure Rates in percentage</b>		<b>Year</b>	<b>EPO</b>	<b>JPO</b>	<b>KIPO</b>	<b>USPTO</b>
Examination		2009	92.1	63.2	79.4	100.0
		2010	92.6	63.2	79.3	100.0
Grant <sup>30</sup>		2009	42.1	50.2	60.4	42.0
		2010	42.5	50.2	63.9	45.6
Opposition		2009	4.7	-	-	-
		2010	5.2	-	-	-
Maintenance after opposition		2009	66.8	-	-	-
		2010	67.2	-	-	-
Appeal <sup>31</sup>	On examination	2009	25.5	24 589	-	6.1
		2009	26.8	28 300	-	5.7
	on opposition	2009	42.7	-	-	-
		2010	46.2	-	-	-
<b>Pendency in the procedure</b>						
Search	Number of pending applications	2009	134 849	-	-	-
		2010	140 946	-	-	-
	Pendency times in search (months)	2009	16.5	-	-	-
		2010	17.0	-	-	-
Examination	Number of applications awaiting request for examination <sup>32</sup>	2009	20 328	870 424	309 586	-
		2010	20 488	816 024	235 004	-
	Number of pending examinations <sup>33</sup>	2009	347 861	716 812	470 245	731 399
		2010	346 449	573 279	517 437	721 831
	Pendency time to first office action (months)	2009	20.2	29.1	15.4	25.9
		2010	21.8	28.7	18.5	24.6
	Pendency time in examination <sup>34</sup> (months)	2009	41.7	35.3	22.2	34.8
		2010	39.1	35.3	24.6	34.9
Opposition	Number of pending applications	2009	5 659	-	-	-
		2010	5 398	-	-	-
	Pendency time in opposition <sup>35</sup> (months)	2009	22.6	-	-	-
		2010	21.4	-	-	-

- = not applicable

<sup>30</sup> The USPTO reports on allowance rate.

<sup>31</sup> For JPO, only numbers are available.

<sup>32</sup> For JPO, numbers include the number of abandoned/withdrawn applications.

<sup>33</sup> For JPO, the applications for which the applicants wished to make deferred payment of examination request fee (see Chapter 2) and have been still deferring the payment are not counted in the number of pending examinations for the year 2009.

<sup>34</sup> For EPO, the counts relate to pendency until dispatch of the decisions.

<sup>35</sup> For EPO, these counts also now relate to pendency until dispatch of the decision.



## Chapter 5

### **THE FOUR OFFICES AND THE PATENT COOPERATION TREATY (PCT)**

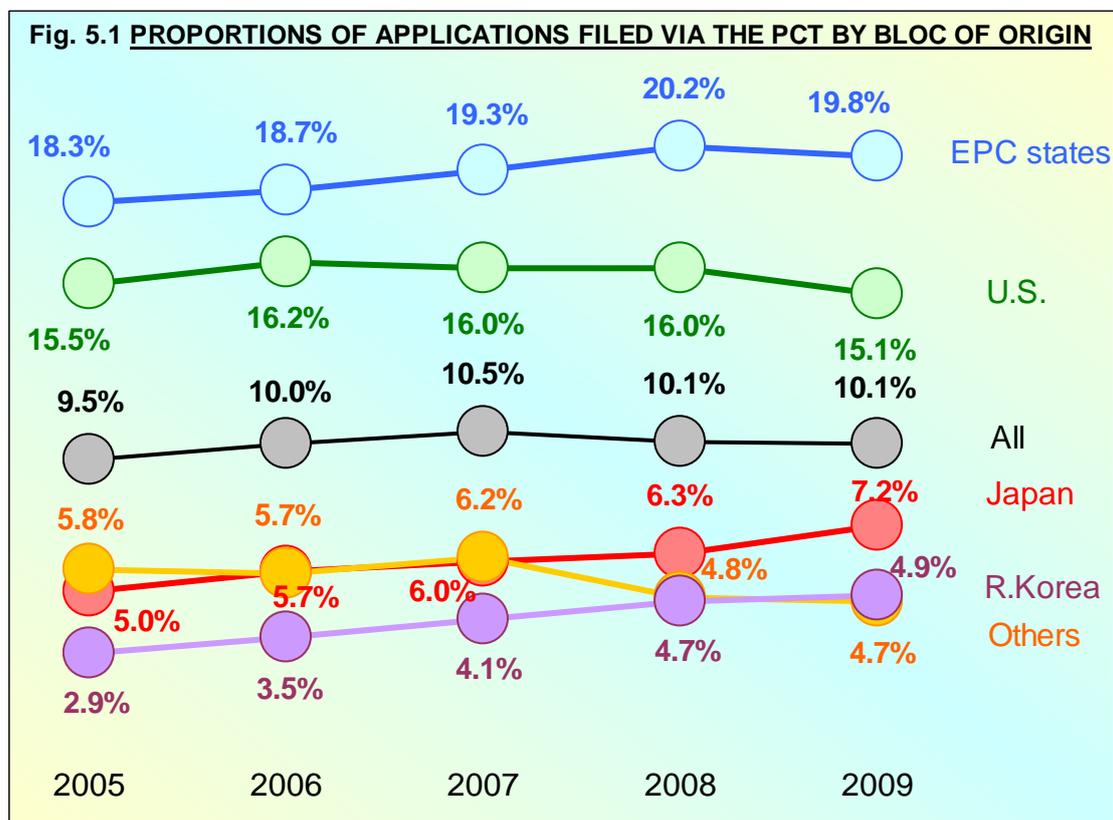
This chapter presents statistics on the extent of the various activities of the Four Offices that relate to the PCT system. The graphs cover five-year periods that include the latest year for which reliable data are available.

Graphs are presented to display the shares of patent applications and grants using the PCT filing route by origin. Descriptions are then given of additional activities of the Four Offices under the PCT as RO for applicants in their respective territories, as the major ISA and as IPEA. PCT searches are a significant workload item at the Four Offices additional to those already described in Chapter 4.

## THE PCT AS FILING ROUTE

### PATENT FILINGS

Fig. 5.1 shows, for each bloc of origin, the proportions of all patent applications filed that are PCT international applications. Applications are counted in the year of filing.



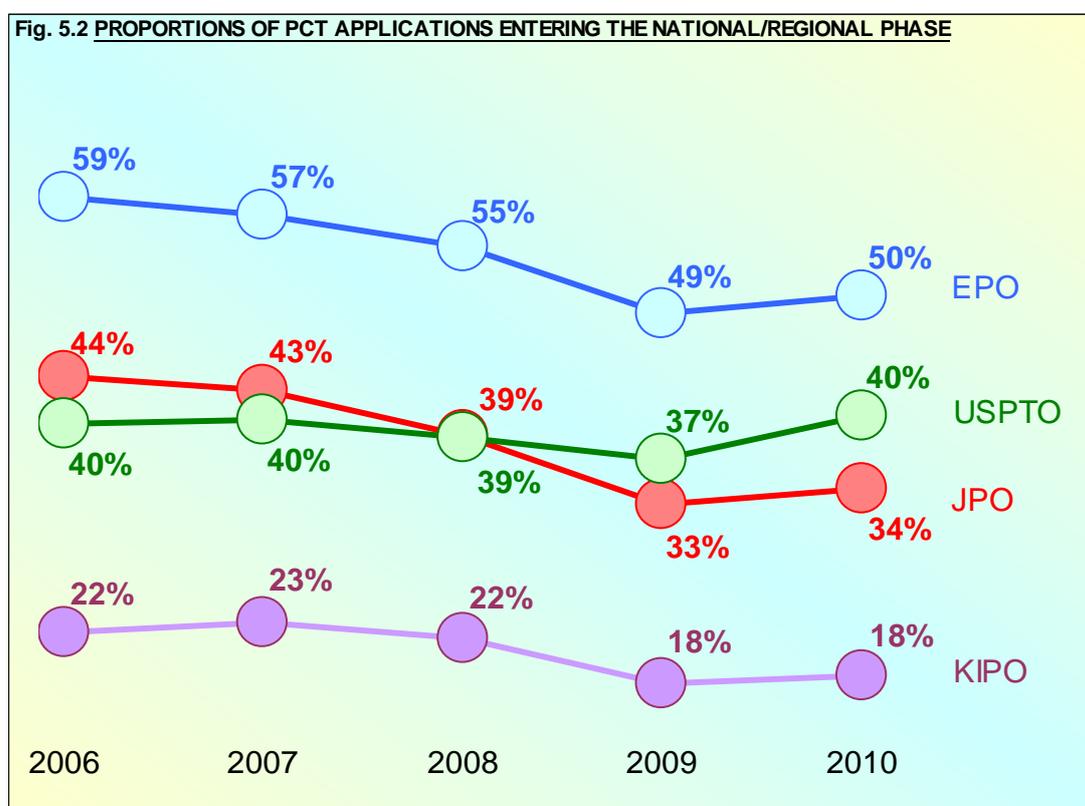
On average 10 percent of the applications filed were filed via the PCT route in 2009.

The proportions from U.S. and EPC decreased slightly in 2009, while Japan in particular continued to increase. In terms of levels however, percentages remain higher for applicants in EPC states and U.S. compared to the remaining blocs.

## NATIONAL/REGIONAL PHASE ENTRY RATE

After the international phase of the PCT procedure, applicants decide whether they wish to continue further with their applications in the national or regional phase for each country of interest. A decision has to be made for each country or regional organisation. If the decision is made to proceed further, the applicant has to fulfil the various requirements of the selected PCT contracting states or organisations. The application then enters the national or regional phase.

The proportions of PCT applications in the international phase that entered the national or regional phase at each of the Four Offices are presented in Fig. 5.2. Applications are counted in the year that they qualify for entry because the delay to enter the national or regional phase has expired<sup>36</sup>.



A higher proportion of PCT applications enter the regional phase at EPO than enter the national phase at USPTO, JPO or KIPO. This is due to the multinational dimension of EPO, which provides an opportunity to proceed further with a unique procedure for several countries.

There is a general declining trend observed at all Offices up to 2009. For 2010 compared to 2009, the proportions then grew for all blocs, which can only partially be explained by the decrease of the number of PCT international applications in 2009 (see Chapter 3). The effect can also not be directly explained by comparing the trend of PCT international applications (Fig. 5.7 below and also in Fig. 3.1) with the trend

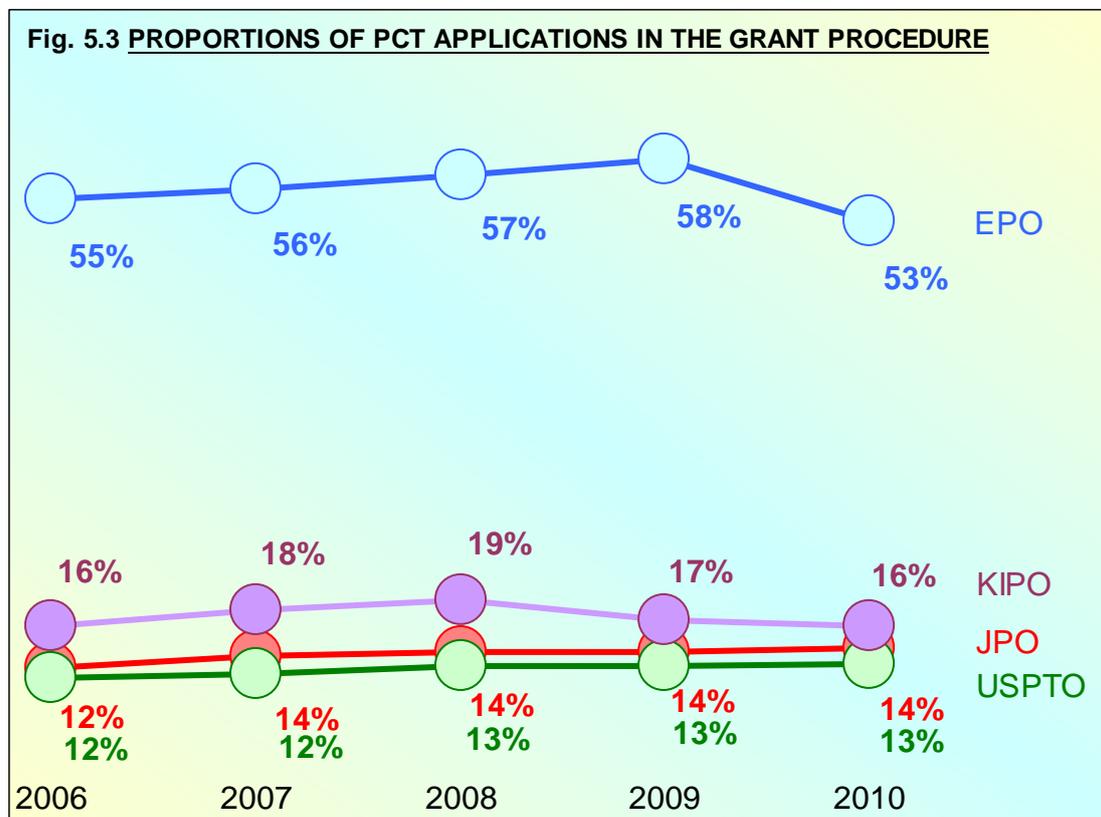
<sup>36</sup> It should be noted that proportions of PCT applications entering national phase at EPC contracting state national offices are not reported here.

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of PCT national and regional applications (in Fig. 3.5) because, while both series have been growing, the latter are growing at almost the same rate (compound 3.3 percent per year) as the former (compound 3.2 percent per year).

## SHARE OF PCT APPLICATIONS

Fig. 5.3 shows the proportions of PCT applications relative to all applications that entered the grant procedure at each Office (as presented earlier in Fig. 4.1).

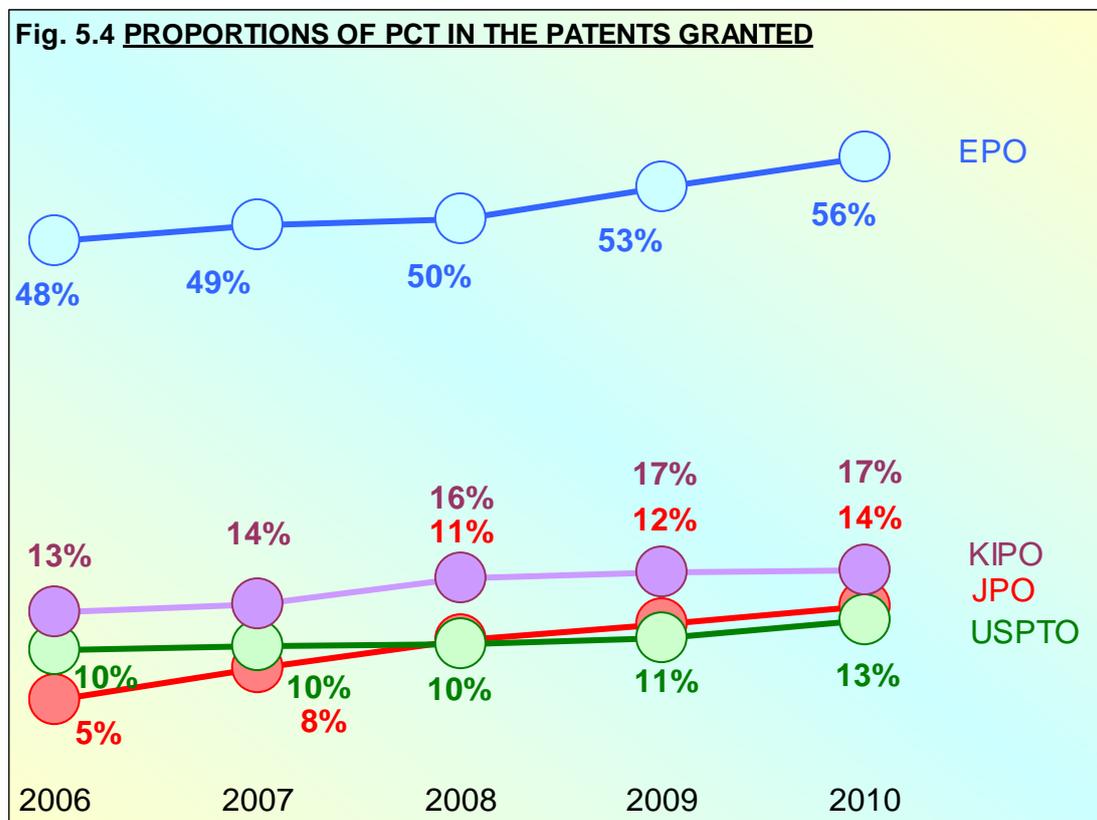


As has already been mentioned above, the EPO has a higher proportion of PCT applications than at the other Offices.

The unusual decrease in 2010 of the proportion of PCT national/regional applications at EPO can probably be explained by the rule adjustment discussed in Chapters 2 and 4, leading to additional non-PCT divisional applications as a one-off effect. The decline at USPTO in 2010 seems to be the continuation of a trend that was established over the period under consideration.

## PCT GRANTS

Fig. 5.4 shows the proportions of patents granted by each of the Four Offices that were based on PCT applications.



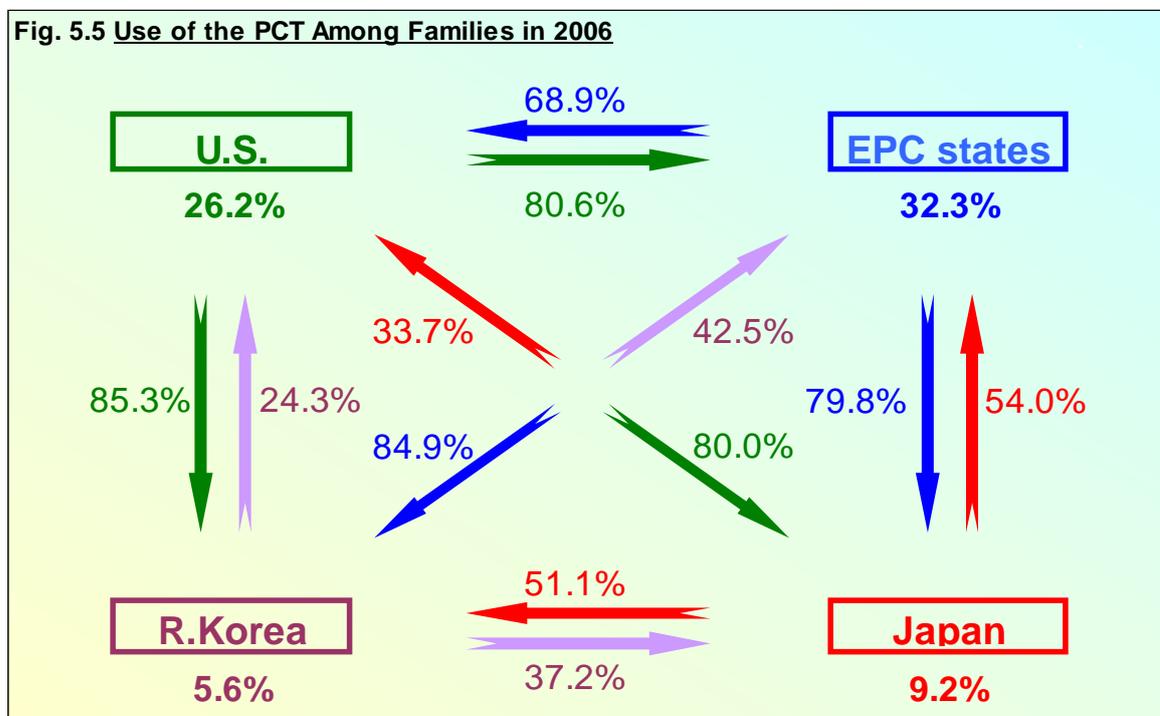
Shares of PCT patents granted are usually somewhat below those of applications (see Fig. 5.3), since granted patents generally relate to applications that had been filed three to five years earlier when the proportions of PCT applications were lower (as shown in Fig. 5.1).

Over the period, there was a general increase of the proportion of PCT in granted patents at the Four Offices. At the EPO and the JPO, the proportion of PCT patents granted increased by 8 percent and 9 percent respectively for 2010 compared with 2006 (both equivalent to a compound growth rate of about 2 percent per year).

## PATENT FAMILIES AND PCT

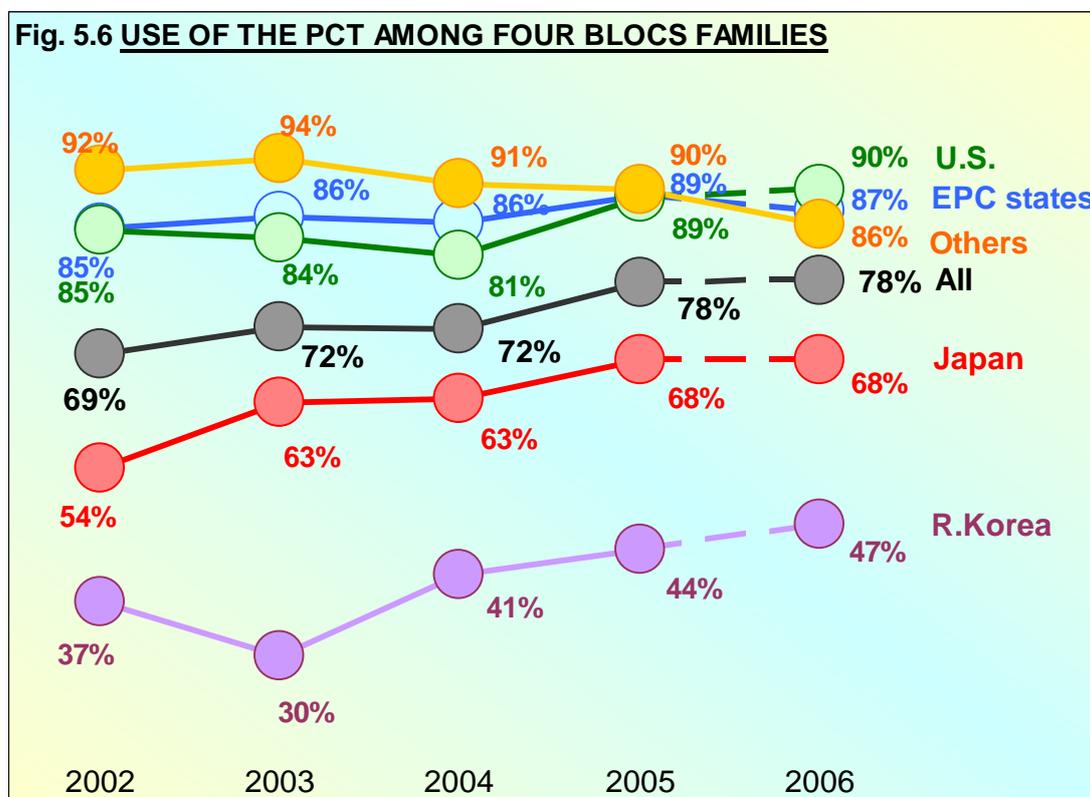
The PCT system provides a good way to make subsequent patent applications in a large number of countries. Therefore it can be expected that many patent families flowing between blocs will use the PCT route. In this section, the use of the PCT system implies that at least one PCT application has been made within the family of filings for the same invention. Historical tables for the years 1995 to 2006 can be found in the statistical data file that is attached to the web based version of this report.

Fig. 5.5 shows two percentages relating to use of the PCT system. The first, next to the name of each bloc, is the proportion of the overall number of distinct referenced priorities for the bloc that generated families using the PCT. The second, next to the arrows indicating flows between-blocs, shows the share of total patent family flows that used the PCT system. This figure is based on first filings in 2006, and can be compared with Fig. 3.13.



In general, the usage of the PCT route is far higher when making applications abroad rather than at home. Applicants from U.S. and EPC states prefer to use the PCT system to a greater extent than applicants from Japan and R. Korea.

Fig. 5.6 shows the proportions of Four Blocs patent families (as given earlier in Fig. 3.14) that made some use of the PCT system.

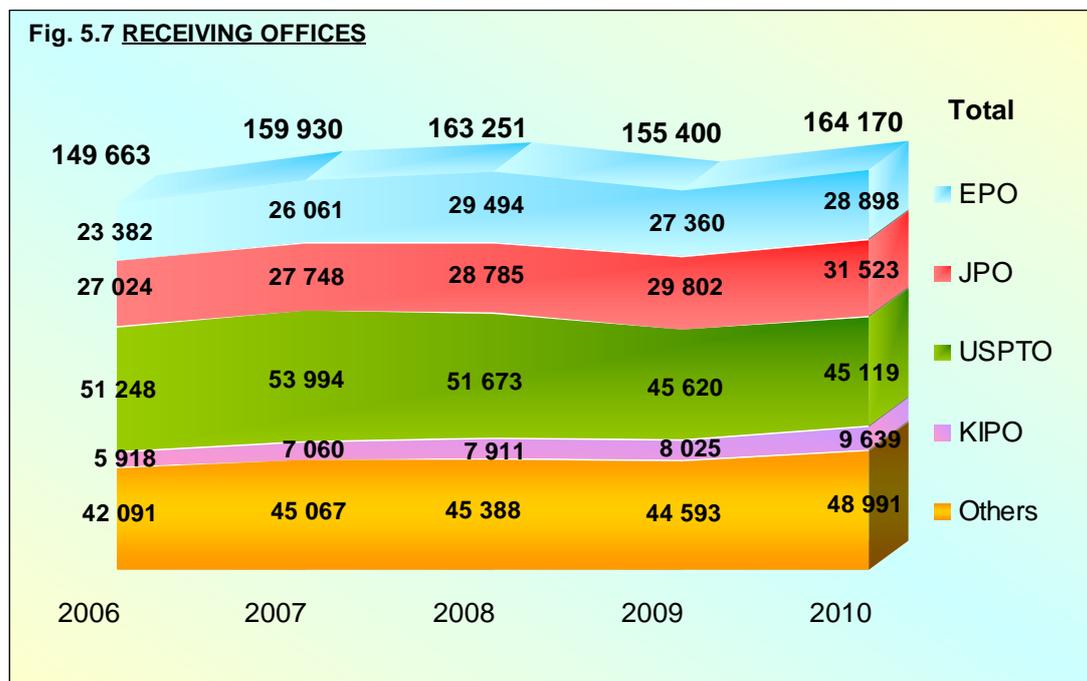


Since Four Blocs patent families represent highly internationalised applications, it is not surprising that the average rate of PCT usage is high compared to the overall usage of PCTs among applications in general, as was shown in Fig. 5.1. The usage of the PCT system has generally grown in the Four Blocs families over the period from 2002 to 2006.

## PCT AUTHORITIES

Under the PCT, each of the Four Offices acts as RO, mainly for applicants from its own geographical zone, and as ISA and IPEA for non-residents and residents. The following graphs show the trends from 2006 to 2010.

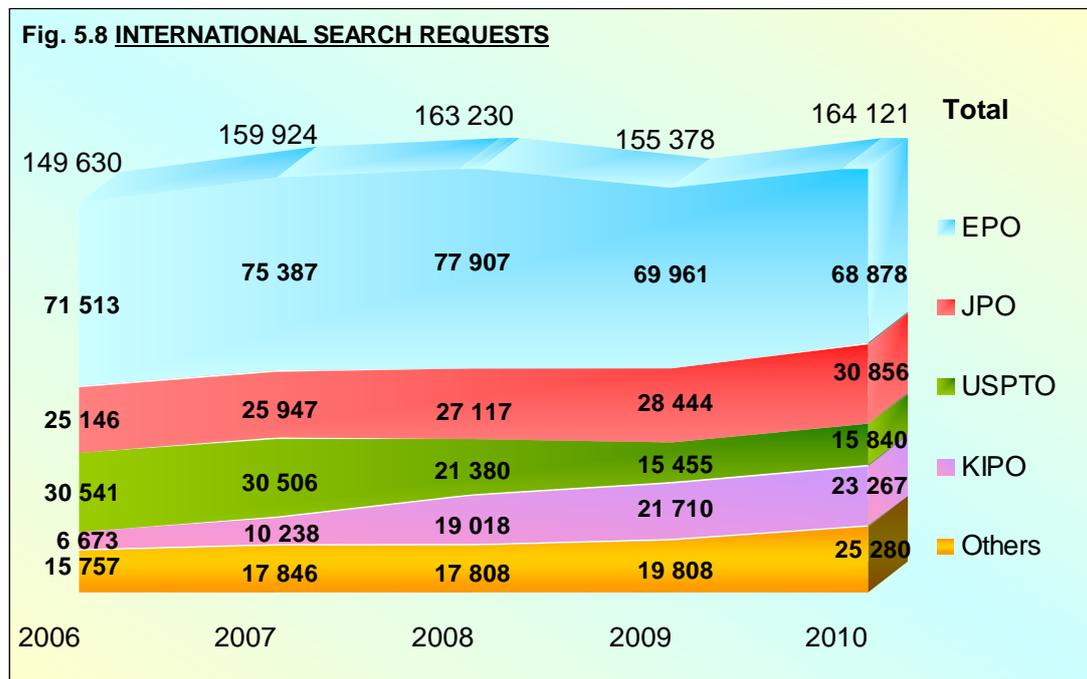
Fig. 5.7 shows the breakdown of PCT international filings by ROs over time.



The totals for PCT international filings were also shown in Fig. 3.1. The totals dropped by about 5 percent in 2009 and then rose by 6 percent in 2010. The compound annual growth rate from 2006 to 2010 was 2.3 percent.

In 2010 USPTO had a 1 percent decline and the other Four Offices had increases of 6 percent (EPO), 8 percent (JPO) and 20 percent (KIPO). Others increased by 10 percent as well.

Fig. 5.8 shows the breakdown of the numbers of international search requests over time.

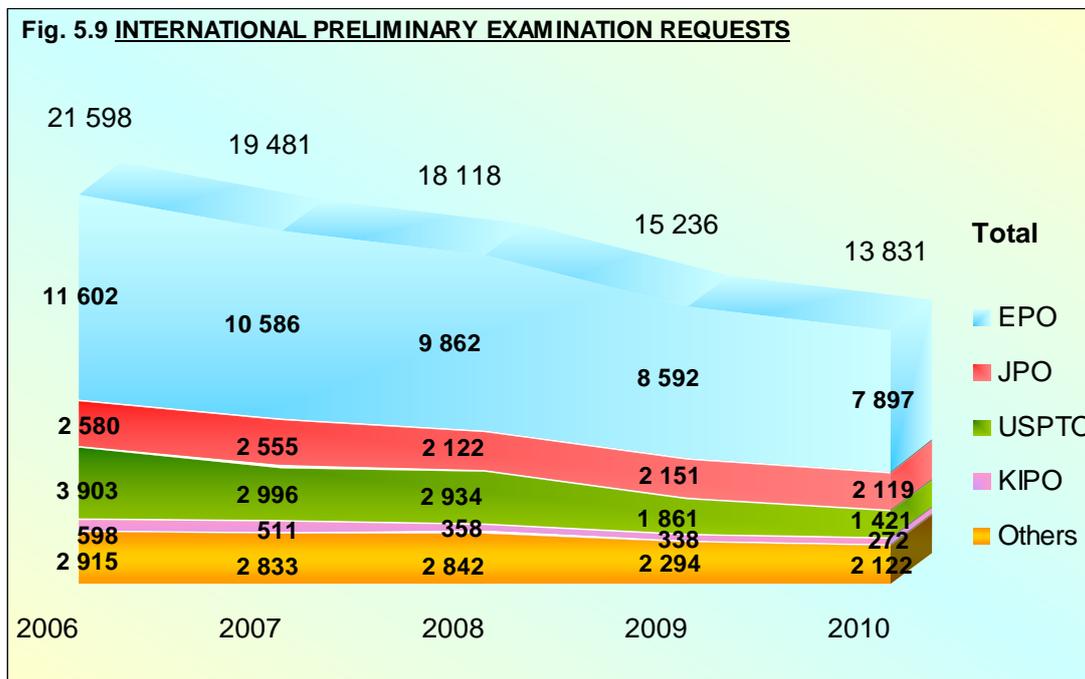


The Four Offices together received nearly 85 percent of the PCT international search requests in 2010, compared to 89 percent in 2006. A growing proportion of applicants selected KIPO to perform the PCT international search (14 percent in 2010).

KIPO and JPO experienced strong, 7 and 8 percent growth in 2010. EPO experienced a small decrease and at USPTO there was a small increase.

Since 2006, KIPO has acted as an available international search authority of PCT international application filed with USPTO. As the search fee at KIPO was reasonable and their international search work is of high quality, some applicants of the PCT international application filed with USPTO tend to select more often KIPO as ISA rather than USPTO. In fact, the combined number of international search requests to KIPO and USPTO remained relatively stable from 2006 to 2010.

Fig. 5.9 shows the breakdown of the numbers of international preliminary examination requests over time.



The number of requests for international preliminary examination declined substantially after rule changes (in 2004) regarding time limits to enter the national or regional phase and the introduction of a written opinion on patentability with the international search report. This made the international preliminary examination less attractive for most applicants. Together the Four Offices were in charge of 85 percent of the work as IPEA in 2010 compared to 87 percent in 2006.

Although numbers are declining, EPO performed a growing proportion of the international preliminary examinations, moving from 54 percent in 2006 to 57 percent in 2010.



## Chapter 6

### OTHER WORK

This brief chapter contains further statistics of work done on IP rights that is not common to all Four Offices. The data presented below supplement the information already presented earlier in this report.

Other work includes applications for plant patents (USPTO); reissue patents (USPTO); applications for patents other than those for inventions: utility models (JPO and KIPO), designs and trademarks (JPO, KIPO and USPTO); and searches on behalf of national Offices as well as searches for third parties (EPO).

The utility model is different from the patent of invention introduced in Chapter 1. The utility model system is designed to protect a device related to the shape or construction of articles or combination of articles (JPO) or a creation of a technical idea using the rules of nature regarding the shape, structure or combination of subjects (KIPO). Contrary to most patent systems, a utility model is registered without a substantive examination as long as it meets basic requirements and its period of protection is shorter.

Neither the EPO nor USPTO grants utility models. However the USPTO's main type of patent is called a utility patent and is issued for the invention of a new and useful process, machine, manufacture, or composition of matter, or a new and useful improvement thereof, and is similar to the EPO, JPO, and KIPO standard patents.

The numbers of requests received for these types of other work are shown for 2009 and 2010 in Table 6.

**Table 6: STATISTICS ON OTHER WORK**

<b>Activities</b>	<b>Year</b>	<b>EPO</b>	<b>JPO</b>	<b>KIPO</b>	<b>USPTO</b>
Searches for national offices & third parties	2009	22 941	-	-	-
	2010	27 818	-	-	-
Design applications	2009	-	30 875	57 903	25 806
	2010	-	31 756	57 187	29 059
Utility model applications	2009	-	9 507	17 144	-
	2010	-	8 679	13 661	-
Plant patent applications	2009	-	-	-	959
	2010	-	-	-	992
Re-issue patent applications	2009	-	-	-	1 019
	2010	-	-	-	1 180
Trademark applications	2009	-	110 841	126 420	351 874
	2010	-	113 519	121 125	370 168

Notable changes from 2009 to 2010 were that searches for national offices and third parties at EPO increased by 21 percent and Utility model applications filed with KIPO decreased by 20 percent.

## **Annex 1**

### **DEFINITIONS FOR OFFICES EXPENDITURES**

#### **EPO EXPENSES (Fig. 2.2)**

##### **A. Salaries and allowances**

Salaries and allowances of permanent staff as well as temporary staff.

##### **B. Social security benefits**

Pensions, long-term care, death, invalidity and sickness coverage as well as pension taxation (taking due account of post-employment liabilities).

##### **C. Training and other staff expenses**

Training, recruitment, transfer and leaving costs, medical care, staff welfare, European School and crèches.

##### **D. Depreciation**

Depreciation for buildings, IT equipment and other tangible and intangible assets, including the depreciation component of financial leases.

##### **E. IT maintenance**

Operating costs related to the maintenance of Electronic Data Processing (EDP) hardware and software, purchases below capitalisation threshold (EUR 750), licenses, programming costs of self-developed systems as far as they do not qualify for capitalisation.

##### **F. Building maintenance**

Operating costs related to the maintenance of buildings, technical installations, equipment, furniture and vehicles, such as rent, cleaning and repairs, electricity, gas, water.

##### **G. Patent information and cooperation**

Published patent documentation on all media, public information, public relations and representation, meetings, costs of supervisory bodies, co-operation with contracting states including support to national patent Offices, assistance to third countries, Trilateral activities.

##### **H. Miscellaneous**

All other expenses not covered by the above.

## **JPO EXPENDITURES (Fig. 2.3)**

### **Expense for JPO's business**

#### **Expense for business processing**

##### **A. General processing work**

- Existing personnel (including increase and transfer)
- General administration
- Various councils
- Encouragement of guidance including patent management
- External rented Offices
- Internationalisation of industrial property administration
- Project for supporting medium and small company's applications

##### **B. Examination and appeals/trials, etc.**

- Infrastructure improvement for examination and appeals/trials
- Disposition of examination and appeals/trials
- Execution of PCT
- Patented micro organisms deposition organisation

##### **C. Information management**

- Management of information for use in examination and appeals/trials

##### **D. Publication of Patent Gazette, etc.**

##### **E. Computers for patent processing work**

##### **F. Facility improvement**

##### **G. National Center for Industrial Property Information and Training (INPIT) operation**

##### **H. Others**

All other expenses not covered by the above.

## **KIPO EXPENDITURES (Fig. 2.4)**

### **A. Salaries and benefits**

Compensation for the services of employees or the inclusive expenditure of the services of employees: salaries, bonuses and remuneration of temporary staff.

### **B. General operating expenses**

Expenditure on the operation of organisation.

### **C. External support**

Support for promoting activities of private organisations.

### **D. Equipment**

Expenditure on the purchase of property that normally may be expected to have a period of service of a year or more.

### **E. Other expenses**

All other expenses not covered by the above.

## **USPTO EXPENDITURES (Fig. 2.5)**

### **A. Salaries and Benefits:**

Compensation directly related to duties performed for the Government by Federal civilian employees. Also included are benefits for currently employed Federal civilian personnel.

### **B. Rent and Utilities:**

Payments for the use of land, structures, or equipment owned by others and charges for communication and utility services.

### **C. Contracts and Services:**

Services acquired by contract from non-Federal sources (that is, the private sector, foreign governments, State and local governments, Native American/Native Alaskan tribes), as well as, from other units within the Federal Government. This consists of three types of services:

- Management and professional support services.
- Studies, analyses, and evaluations.
- Engineering and technical services.

### **D. Other expenses:**

All other expenses not covered by the above including but not limited to:

Equipment: Property of a durable nature, which is defined as property that normally may be expected to have a period of service of a year or more, after being put into use, without material impairment of its physical condition or functional capacity.

Printing: Printing and reproduction obtained from the private sector, or from other Federal entities.

Supplies and Materials: Commodities that are ordinarily consumed or expended within one year after they are put into use, converted in the process of construction or manufacture, used to form a minor part of equipment or fixed property, or other property of little monetary value that does not meet any of the three criteria listed above, at the option of the agency.

## **Annex 2**

### **DEFINITIONS FOR STATISTICS ON PROCEDURES**

Here are definitions of the terms that appear in Table 4.

#### **EXAMINATION RATE**

This rate shows the proportion of those applications, for which the period to file a request for examination expired in the reporting year, that resulted in a request for examination up to and including the reporting year.

For EPO, the request for examination has to be filed no later than six months after publication of the search. For example the rate for 2010 relates to applications mainly filed in the years 2009 and 2010.

For JPO, the period to file a request for examination is three years from filing date. The rate for 2010 relates mainly to applications filed in the year 2007.

For KIPO, the period to file a request for examination is five years. The rate for 2010 relates mainly to applications filed in the year 2005.

At USPTO, as filing an application implies a request for examination, such a request is made for all applications.

#### **GRANT RATE**

For EPO, this is the number of applications that were granted during the reporting period, divided by the number of disposals in the reporting period (applications granted plus those abandoned or refused).

For JPO, the grant rate is the number of decisions to grant a patent divided by the number of disposals in the reporting year (decisions to grant or to refuse and withdrawals or abandonment after first office action).

For KIPO, the grant rate is the number of patent approvals divided by the number of disposals in the reporting year (sum of the numbers of patent approvals, rejections, and withdrawals after first office action).

For USPTO, an allowance rate is reported, which is based on applications allowed to be granted divided by the number of disposals. This rate includes plant patents and reissue patents in addition to utility patents (utility patents are patents of invention at USPTO). However, since utility patents comprise over 90 percent of patent applications, and over 90 percent of issued patents, this rate is almost identical to a rate based strictly on utility patents.

## **OPPOSITION RATE and MAINTENANCE AFTER OPPOSITION RATE**

These terms apply only to EPO.

The opposition rate for EPO is the number of granted patents for which the opposition period (which is nine months after the date of grant) ended in the reporting year and against which one or more oppositions were filed, divided by the total number of patents for which the opposition period ended in the reporting year.

The maintenance after opposition rate for the EPO is the number of decisions (in the opposition procedure) to maintain, possibly in amended form, a patent during the reporting year, divided by the total number of decisions in the opposition procedure taken during the reporting year.

## **APPEAL RATE**

For EPO, appeal rates are given for examination and opposition, being the numbers of decisions in the examination and opposition procedures respectively, against which an appeal was lodged in the reporting year, divided by the number of all decisions for which the time limit for appeal ended in the reporting year.

The USPTO appeal rate on examination, which includes utility, plant, and reissue categories, captures the number of appeals filed after an examiner's decision to issue a final rejection against a patent application. The rate is the number of examiner answers written during the year in response to appeal briefs divided by the number of final rejections issued that year. This rate includes plant patents and reissue patents in addition to utility patents (see comment above under GRANT RATES).

For all Four Offices, any subsequent litigation proceedings in national courts are not included.

## **PENDENCY / SEARCH**

This only applies to the EPO.

Number of pending applications is the number of applications received up to and including the reporting year for which a search report has not been made by the end of the reporting year.

Pendency time in search is defined as the number of pending applications in search by the end of the reporting year divided by the average monthly number of disposed searches in the reporting year.

### **PENDENCY / EXAMINATION / NUMBER OF APPLICATIONS AWAITING REQUEST FOR EXAMINATION**

This does not apply to USPTO.

This figure indicates the number of filed applications awaiting a request for examination by the applicant: for EPO after publication of the search report; for JPO at any time during three years after filing; for KIPO during five years after filing.

For EPO, this indicates the number of applications for which the search report has been published by the end of the reporting year and for which the prescribed period for the request has not expired (six months after publication of the search).

For JPO and KIPO, numbers of applications awaiting request for examination indicate the number of applications for which no request for examination has been filed by the end of the reporting year, and for which the prescribed period for the request has not expired.

### **PENDENCY / EXAMINATION / NUMBER OF PENDING APPLICATIONS**

For EPO, this is the number of applications filed for which the search was completed and the request for examination was filed, yet they have not received a final decision by the examining division (announcement to grant, to refuse or abandonment) by the end of the reporting year.

For USPTO, pending applications in examination are applications which are waiting for a first action and have not been subject to a final action such as withdrawal or abandonment by the end of the reporting year.

For JPO and KIPO, pending applications in examination are applications for which the requests for examination were filed and which have been waiting for a first action and have not been subject to a final action such as withdrawal or abandonment by the end of the reporting year.

### **PENDENCY / EXAMINATION / PENDENCY TIME TO FIRST OFFICE ACTIONS**

For EPO, this is the average time period, in months, measured from filing at EPO to issue of the first communication in examination. The search report that is sent to the applicant is accompanied by an opinion on patentability. As long as the applicant then makes a request for examination, this opinion is then resent as the first communication in examination. The pendency first office action is the average time measured from the filing at EPO to the issue of this first communication in examination.

For JPO, pendency first office action is the average time period, in months, from the request for examination to first office action in examination.

For KIPO, pendency first office action is the average time period, in months, from the request for examination to first office action in examination as in December of the reporting year.

For USPTO, pendency first office action is the average amount of time, in months, from filing to First office Action On Merits (FAOM). A FAOM is generally defined as the first time an examiner either formally rejects or allows the claims in a patent application.

### **PENDENCY / EXAMINATION / PENDENCY TIME IN EXAMINATION**

For EPO, this is the number of pending applications in examination as of the end of the reporting year, divided by the average monthly number of disposals (decisions to grant or refuse, withdrawals, abandonments) during the reporting year.

For JPO and KIPO, pendencies for examination in months are the total number of months taken for disposing applications as final actions (decisions to grant or to refuse, withdrawals or abandonments) in the reporting year, divided by the number of final actions during the reporting year.

For USPTO, pendency examination in months is calculated by measuring the time from filing to abandonment or issue for all applications that are abandoned or issued during a three month period. The average of these times is the pendency in months. This number includes plant patents and reissue patents in addition to utility patents (see comment above under GRANT RATES).

### **PENDENCY OPPOSITION**

This is only reported for EPO.

Number of pending applications is the number of patents against which one or more oppositions have been filed and for which no decision has been taken by the end of the reporting year.

Pendency time in opposition is the number of pending applications in opposition at the end of the reporting year, divided by the average number of disposals in opposition per month in the reporting year.

## Acronyms

<b>ARIPO</b>	African Regional Intellectual Property Office
<b>DOC</b>	Department Of Commerce (U.S.) [USPTO]
<b>DOCDB</b>	DOCument DataBase [EPO]
<b>EAPO</b>	Eurasian Patent Organisation
<b>EPC</b>	European Patent Convention [EPO]
<b>EPO</b>	European Patent Office
<b>EU</b>	European Union
<b>FAOM</b>	First office Action On Merits [USPTO]
<b>FOSR</b>	Four Office Statistics Report
<b>FY</b>	Fiscal Year
<b>IFRS</b>	International Financial Reporting Standards
<b>IMF</b>	International Monetary Fund
<b>INPIT</b>	National Center for Industrial Property Information and Training [JPO]
<b>IP</b>	Intellectual Property
<b>IPC</b>	International Patent Classification
<b>IPR</b>	Intellectual Property Rights
<b>IPEA</b>	International Preliminary Examination Authority
<b>ISA</b>	International Searching Authority
<b>IT</b>	Information Technology
<b>JPO</b>	Japan Patent Office
<b>KIPO</b>	Korean Intellectual Property Office
<b>OAPI</b>	Organisation Africaine de la Propriété intellectuelle
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PCT</b>	Patent Cooperation Treaty

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Acronyms

<b>PDCA</b>	Plan Do Check and Act [JPO]
<b>PPH</b>	Patent prosecution highway
<b>R. Korea</b>	Republic of Korea
<b>RO</b>	Receiving Office
<b>R&amp;D</b>	Research and Development
<b>SHARE</b>	Strategic Handling of Applications for Rapid Examination [KIPO/USPTO]
<b>TSR</b>	Trilateral Statistical Report
<b>U.S.</b>	United States of America
<b>USG</b>	U.S. Government
<b>USPTO</b>	United States Patent and Trademark Office
<b>WIPO</b>	World Intellectual Property Organisation

European Patent Office (EPO)

80298 Munich

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[www.epo.org](http://www.epo.org)

Japan Patent Office (JPO)

3-4-3 Kasumigaseki, Chiyoda-ku

Tokyo 100-8915

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Korean Intellectual Property Office (KIPO)

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Republic of Korea

[www.kipo.go.kr](http://www.kipo.go.kr)

United States Patent and Trademark Office (USPTO)

P.O. Box 1450

Alexandria, VA 22313

USA

[www.uspto.gov](http://www.uspto.gov)

This report contains statistical information from the four major patent Offices in the world. It gives a description of worldwide patenting activities, as well as detailing and comparing business processes taking place at each Office.

Edited by the JPO, 2011

Jointly produced by the EPO, JPO, KIPO and USPTO.