

WIPO PATENT REPORT
Statistics on Worldwide Patent Activity
2006 Edition



World Intellectual Property Organization

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A Introduction

The WIPO Patent Report presents an overview of worldwide patenting activity based on statistics up to the end of 2004. The report complements the internet publication of WIPO patent statistics by providing analyses and by highlighting the significant trends in patenting activity.

The report is primarily an overview of the use of the patent system worldwide. To this end, it provides analyses of different aspects of the patent system, cross-country comparisons and special sections on technical features of the patent system such as the Patent Cooperation Treaty and the European Patent Convention.

Because patent systems are not identical in all countries of the world, patent statistics present challenges in interpretation. While there has been increased harmonization across countries due to international agreements and treaties, there remain important differences in the rules and procedures in different countries. Even where there is commonality, the technical features of the patent system can lead to misinterpretation of statistics. To help the reader, the WIPO Patent Report includes a number of interpretive aids that explain important characteristics of the patent system and differences between countries. Further information is also available on the WIPO internet site.

In a broader context, patent statistics are increasingly recognized as useful indicators of inventive activity and of technology flows. Patents are a unique information resource because they contain very detailed, publicly available information about inventions which can be matched with other indicators to provide insight into the evolution of technology. In this first edition, the WIPO Patent Report includes indicators to measure patenting intensity across countries. Three indicators are presented that weight patent filings by measures of country size and economic activity, namely population, GDP and research and development expenditure.

Research into the use and interpretation of patent statistics is an on-going activity at WIPO and other organizations. Future editions of the WIPO Patent Report will reflect improvements in the interpretation and use of patent statistics and their relationship to other indicators, as well as new statistics such as technology indicators.

Highlights

Growth in Patent Activity. Patent filings have grown at an average annual rate of 4.75% over the past ten years, to a total of nearly 1.6 million in 2004. The growth rate is comparable to the overall increase in economic activity as measured by world GDP growth. Patents granted worldwide have also increased at a similar rate, to more than 600,000 in 2004. At the end of 2004, there were more than 5.4 million patents in force worldwide.

Increasing Internationalization. The use of the patent system internationally has increased markedly in recent years. This can be seen in the growth rate of patent filings by non-residents (7.4% average annual increase since 1995) and in the increase in patent filings in countries such as Brazil, China, India, the Republic of Korea and Mexico. However, the use of the patent system remains highly concentrated with only five patent offices (United States of America, Japan, European Patent Office, Republic of Korea and China) accounting for 75% of all patent applications and 74% of all patents granted.

Increased use of the Patent Cooperation Treaty (PCT). The PCT, which provides a simplified system for international patent filing, has become a major route for international patent filing. The number of PCT international applications grew at an average annual rate of 16.8% from 1990 to 2005 and reached 135,000 in 2005. PCT national phase entries account for 47% of all non-resident patent filings.

Data Sources

The statistics in this report are based on information supplied to WIPO by patent offices in annual surveys. Each year, WIPO requests statistics from national patent offices, including the numbers of patents filed, granted and in force broken down by country of origin, date and a number of other criteria. The statistics are provided to WIPO up to six months or more after the end of the year concerned and must then be processed by WIPO and formatted for publication. This means that statistics for 2004 are not able to be published until the end of 2005 at the earliest, although WIPO is making efforts to speed up the process of publication.

Where data is missing for a given office or period of time, WIPO estimates the missing data from the available data. The estimates of individual data items are not published but they are included in aggregate totals.

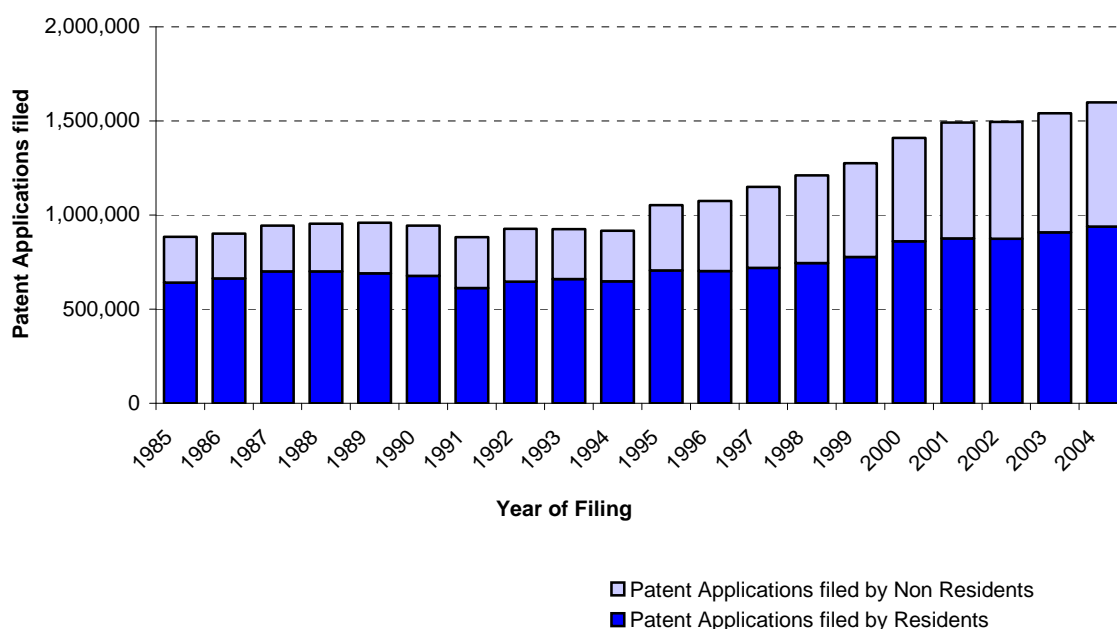
The statistical surveys need to be adjusted over time to reflect changes in the patent system. For example, patent statistics prior to 1995 do not include PCT national phase entries and the collection system was further modified in 2004 to better capture PCT trends.

B Worldwide Patent Filings

This section presents an overview of the trends in worldwide patent filings for the past twenty years. The total number of patent applications filed around the world has increased steadily, in particular since 1995. There has been a continuous increase in the number of filings by patent applicants in their country of residence, but most of the increase in total patent filings is accounted for by non-resident patent filings.

The distribution of patent filings worldwide is very uneven. A small number of countries account for the majority of patent filings, both by residents and by non-residents. Applicants from Japan and the United States of America are the largest filers of patent applications, followed by the large industrialized European states, the Republic of Korea and China. This distribution is changing over time, in particular as the Republic of Korea and China are becoming major industrial economies and the use of the patent system is growing quickly in the north east Asian region.

B.1 Worldwide Patent Filings



Source: WIPO Statistics Database

- The number of patent applications filed worldwide has increased from 884,400 in 1985 to 1,599,000 in 2004.
- The average annual rate of increase in total patent filings since 1995 is 4.75%. During the same period, the average annual growth in world GDP has been approximately 5.6%¹. The increase in the number of patent applications is therefore not unexpected, given the general increase in economic activity in the same period.
- Most of the increase in patenting is in patent filings by non-residents (7.4% average annual increase since 1995) and within the category of non-resident filings, there has been a notable shift to filing via the PCT system (14.7% average annual increase since 1995) as shown later in this report.

¹ Source: World Bank, World Development Indicators. World GDP expressed in constant US dollars at purchasing power parity.

Resident and Non-Resident Patent Filings

The statistics in this report identify patent filings by residents and by non-residents separately.

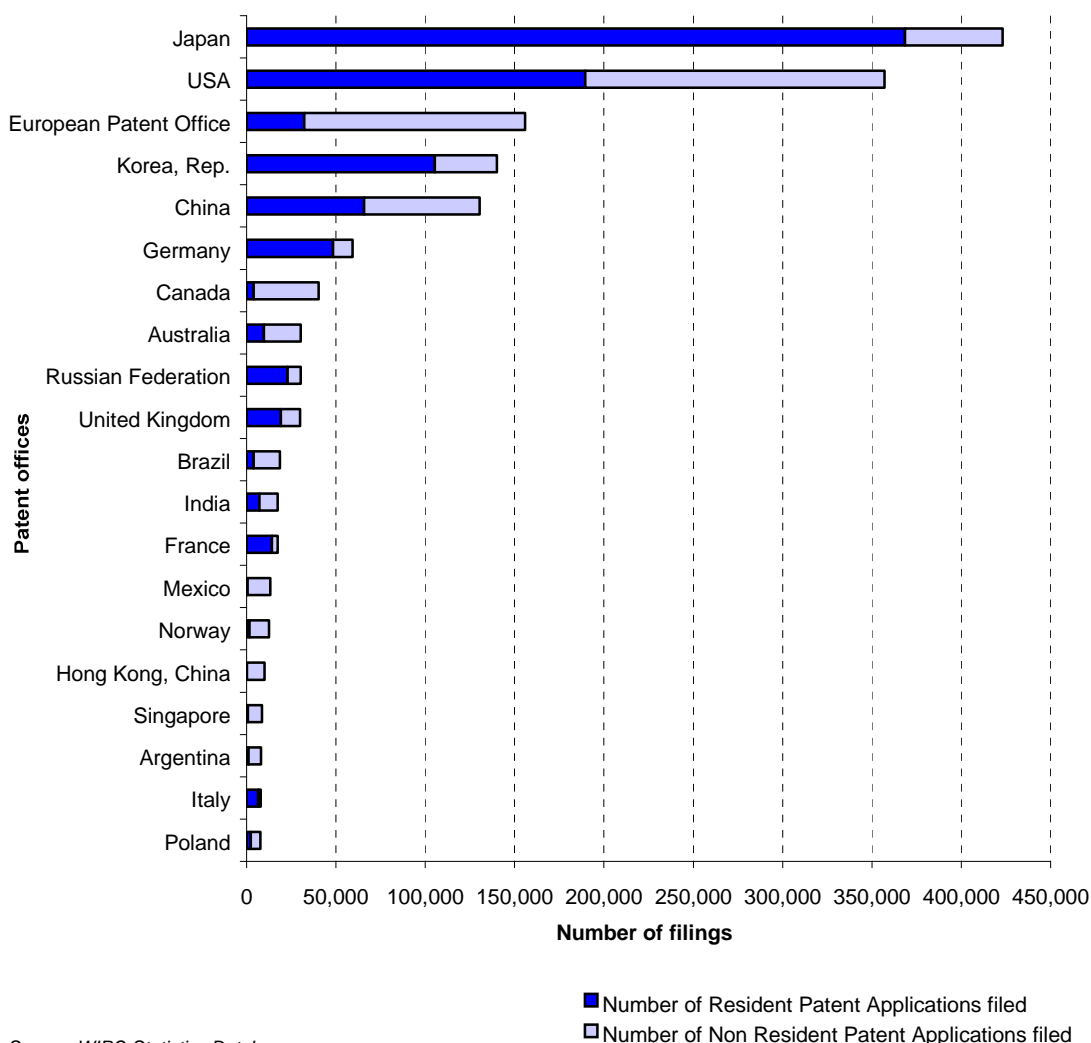
Resident filings are those for which the first-named applicant or assignee is a resident of the state or region concerned.

Non-resident filings are from applicants outside the relevant state or region. In the case of regional offices such as the European Patent Office, a resident is an applicant from any of the member states of the regional patent convention.

Some offices (notably the United States of America) use the residence of the inventor rather than the applicant to classify resident and non-resident filings.

B.2 Top 20 Offices of Filing

The chart shows the top 20 patent offices according to the total number of patent filings in 2004.



- The patent offices of Japan and the United States of America are the largest recipients of patent filings, followed by the European Patent Office, Republic of Korea and China.
- These five patent offices account for 75% of all patents filed in 2004.

The Impact of Differences in Patent Systems

There are notable differences in the numbers of resident patent applications in each office relative to the size of the country, and in the proportion of resident and non-resident patent filings in different offices.

To some degree, the differences reflect the different stages of industrial development in different countries – developed countries tend to have more resident patent applications than developing countries. Differences in the proportion of non-resident applications are partly accounted for by differences in international trade and investment patterns.

However, the legal and administrative differences between national or regional patent systems also have a significant impact on the number of patents filed. Although there is a tendency towards convergence in the different national and regional systems due to international treaties and agreements, there is still flexibility to adjust national systems to national requirements.

To aid the interpretation of patent statistics, WIPO has recently published information on the characteristics of different national patent systems (WIPO Index of Patent Systems, available at: http://www.wipo.int/ipstats/en/resources/patent_systems.html).

The following characteristics are notable:

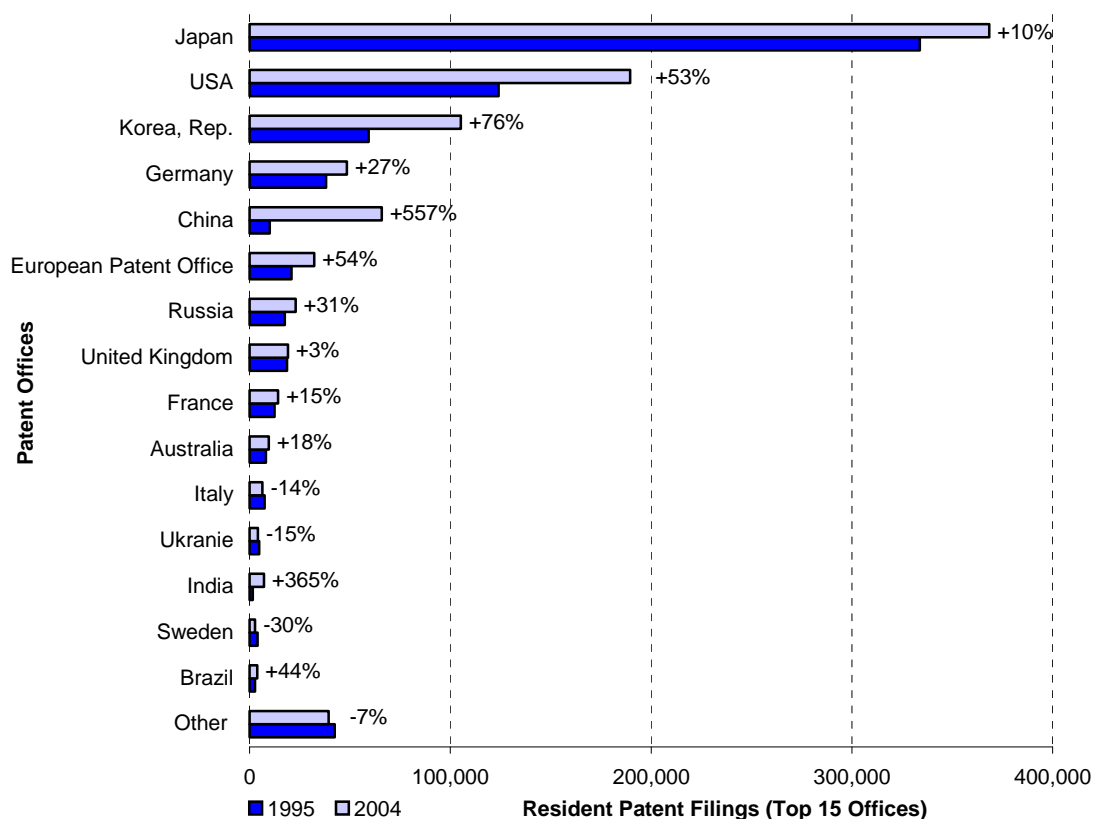
- Alternatives to standard patent applications, such as provisional applications, utility models or design patents, may result in less standard patent applications being filed that would otherwise be the case.
- Although requirements are becoming more harmonized, differences in the rules regarding patent claims mean that the same invention may be drafted as one patent application in one country and two or more patent applications in another country.
- In some cases, a patent application is automatically the subject of search and/or examination, in other cases search and examination are requested separately and several years after the patent application filing. This means that an applicant can file a patent application relatively cheaply at some offices and decide later whether or not to commit the to additional cost of search and examination and eventual granting.
- There are differences in patentable subject matter in different countries. For example, business methods or software are patentable in some countries but not in others.

C Patent Filings by Residents and by Non-Residents

An indicator of the increasing use of the patent system in more countries is the changing proportion of patent applications filed by residents in their home country compared to non-resident filings in foreign countries.

From 1995 to 2004, there was steady growth in patent filings by applicants in their country of residence, but the highest growth rates are in patent filings by non-residents. During this period, the Republic of Korea and China have become major users of the patent system and very high growth rates can be seen in a number of other countries.

C.1 Patent Filings by Residents



Source: WIPO Statistics Database

- Resident patent filings have increased at an average annual rate of 3.4% since 1995.
- Since 1995, there has been a significant increase in the number of patent applications by residents of developing countries, including the Republic of Korea, China, India and Brazil.

Patents as Indicators of Inventive Activity

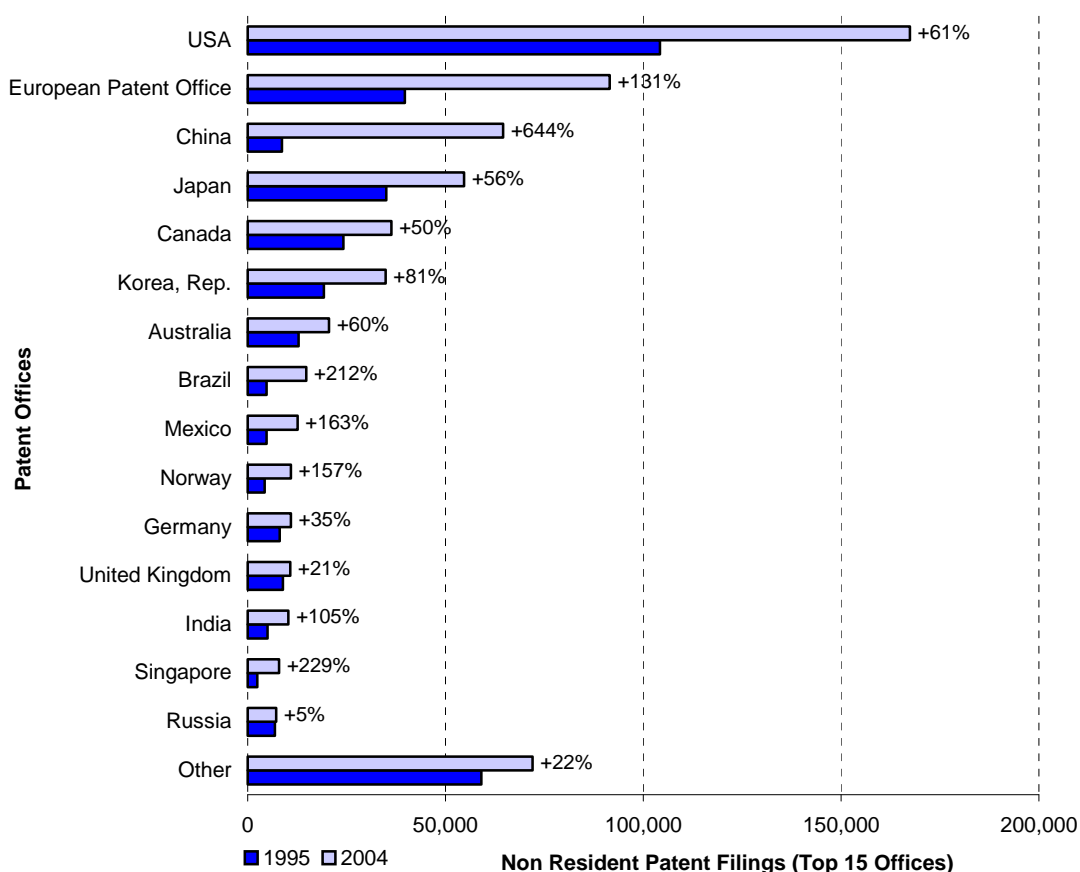
Patent applications by residents in their country of residence often represent the first filing for an invention and so filings by residents are an indicator, although approximate, of domestic innovation. Depending on commercial considerations, applicants later decide whether or not to file a patent application for the same invention in foreign countries. Patent filings by non-residents reflect the internationalization of technology and markets.

Some of the major considerations for measuring inventive activity using patent indicators are outlined below:

- Not all inventions are patented. Companies may choose alternative methods of intellectual property protection such as trade secrecy or marketing techniques. The choice may vary according to the technology in question.
- The number of patent applications can vary between different countries due to the differences in patent systems, some of which are have been described above.
- Since an invention may be the subject of several patent applications in the country of origin and in foreign countries, there can be a multiple-counting of the same invention.
- The place and time of filing of a patent application may not correspond to the inventive activity. Research and development may be conducted in one country and a patent filed in a different country. The patent filing may also take some time after the research and development activity.

Improvements in patent indicators are the subject of ongoing studies by WIPO and other organizations working in the field of patent statistics.

C.2 Patent Filings by Non-Residents



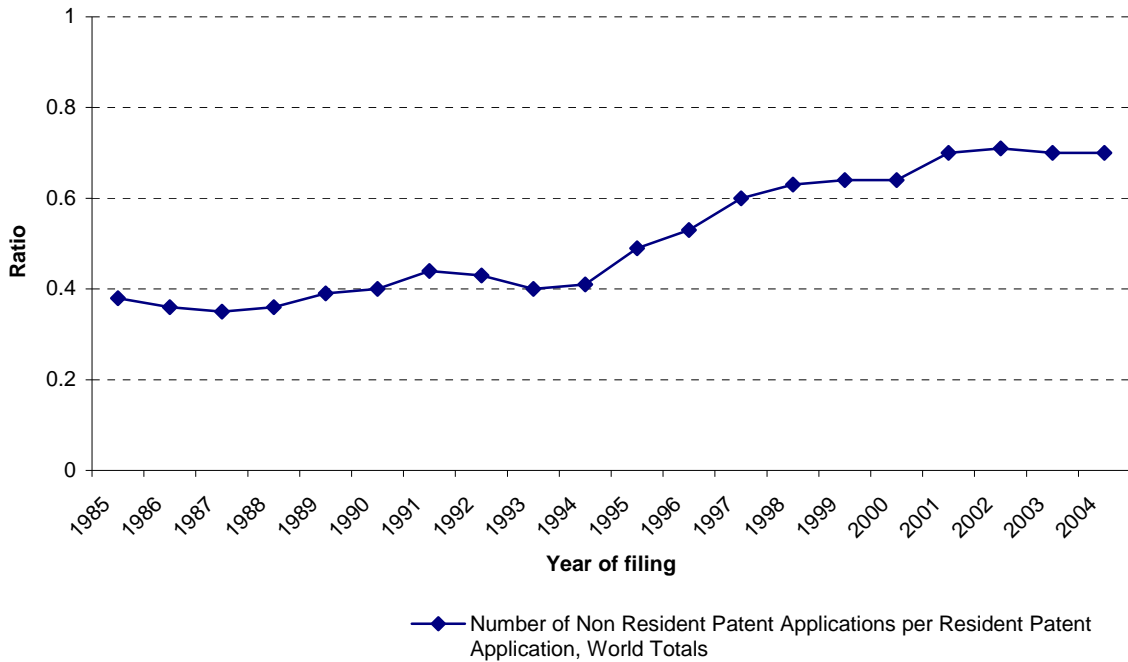
Source: WIPO Statistics Database

While there has been a steady increase in patenting by residents, there has been a larger increase in patenting by non-residents. The increase is significantly higher in some patent offices than in others.

- There has been an annual average increase in non-resident patenting of 7.4% between 1995 and 2004.

- Increases of more than 100% between 1995 and 2004 can be observed in the European Patent Office, China, Brazil, Mexico, India, Norway and Singapore.

C.3 Ratio of Non-Resident to Resident Patent Filings by year of filing

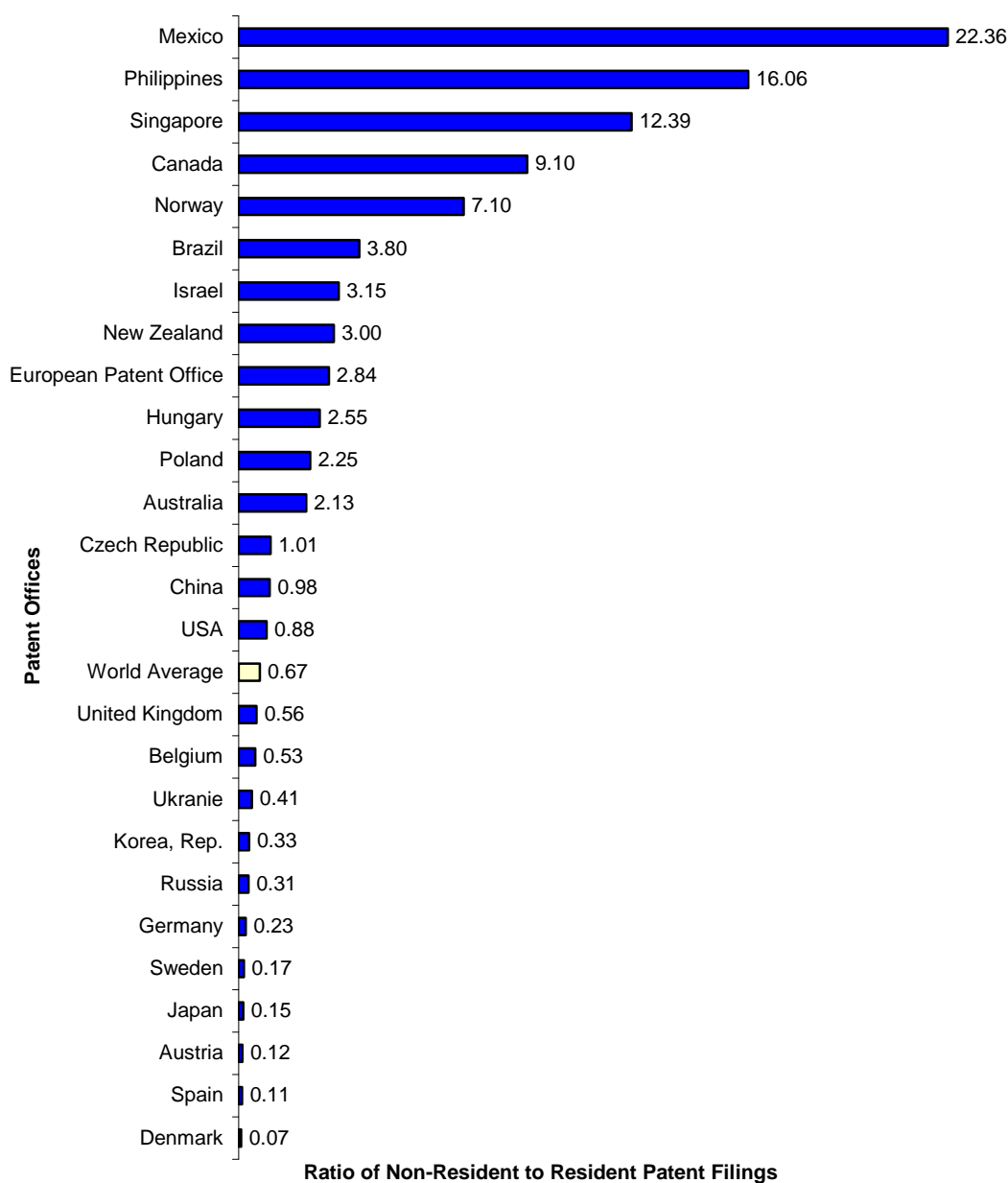


Source: WIPO Statistics Database

The chart shows the worldwide ratio of non-resident patent applications per resident patent application. This reflects a tendency for patent applicants to seek protection in an increasing number of countries.

There has been a period of increase from 1995 to 2001, followed by relative stability from 2001 to 2004.

C.4 Ratio of Non-Resident to Resident Patent Filings by Office



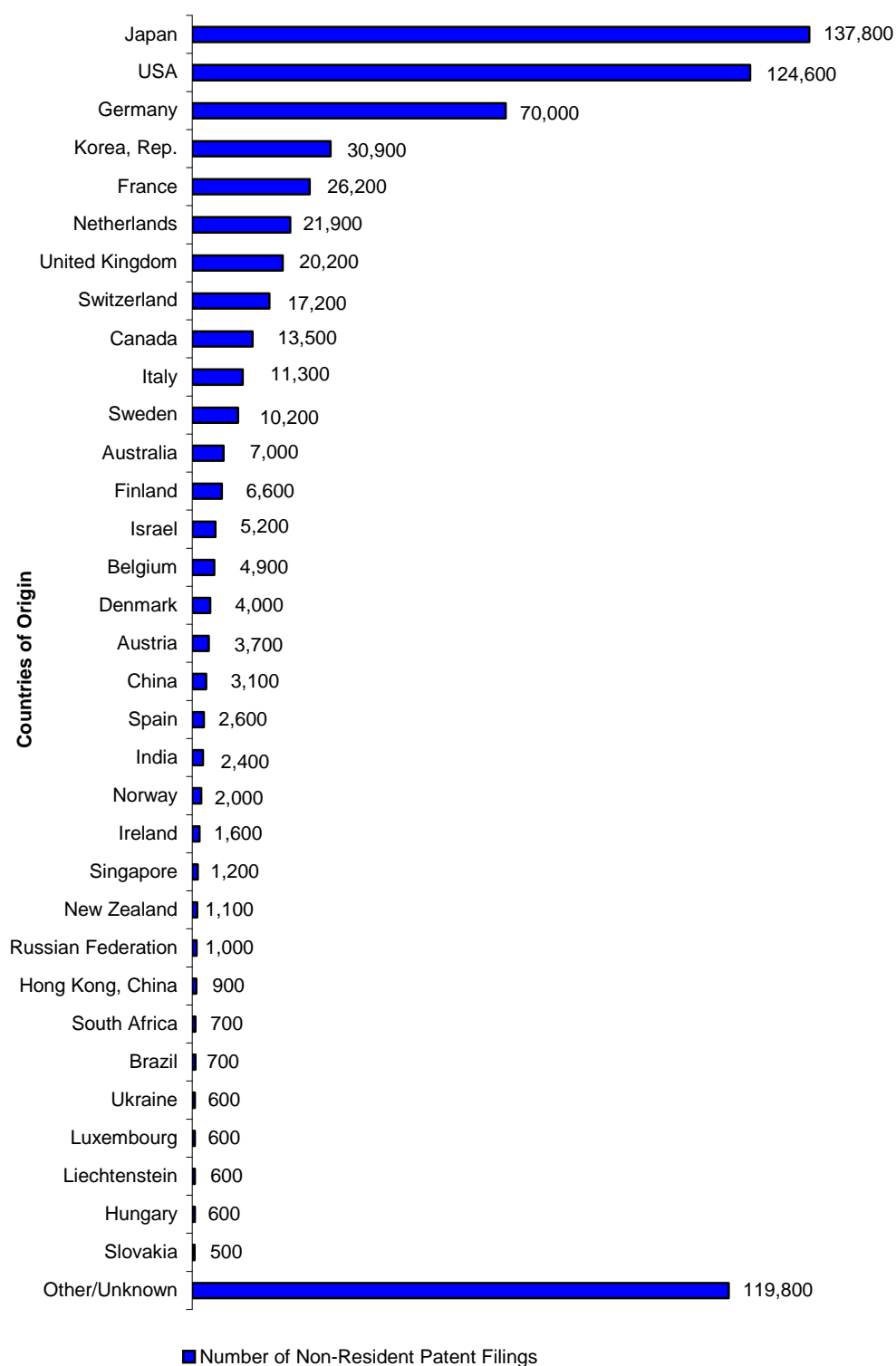
Source: WIPO Statistics Database

There are significant differences in the ratio of resident to non-resident patent applications in different offices.

Note that the European national offices do not have high numbers of non-resident patent applications since many applicants from outside the European region file at the European Patent Office rather than at the European national offices.

C.5 Non-Resident Patent Filings by Country of Origin

The chart shows the number of worldwide non-resident patent filings according to the country of residence of the patent applicants.



Source: WIPO Statistics Database

- Japan (21%), the United States of America (19%) and Germany (11%) are the largest countries of origin of non-resident patent filings. These three countries of origin account for half of worldwide patent filings by non-residents.
- Residents of certain countries tend to file large numbers of patents in their national offices, but file fewer patent applications as non-residents in other countries. This is notable in the case of China, the Russian Federation and India.

D Indicators of Patent Intensity

This section presents a small number of indicators that compare patent filings with other indicators, namely population, research and development expenditure and GDP. This analysis allows for more meaningful cross-country comparisons by weighting the number of patents by different measures of country size and economic activity.

As previously noted, differences in the use of the patent system across countries may account for some of the differences in numbers of patent filings. Therefore, differences in patent filings per population, GDP or research and development expenditure do not necessarily mean that one country is more inventive than another or more efficient in its allocation of expenditure.

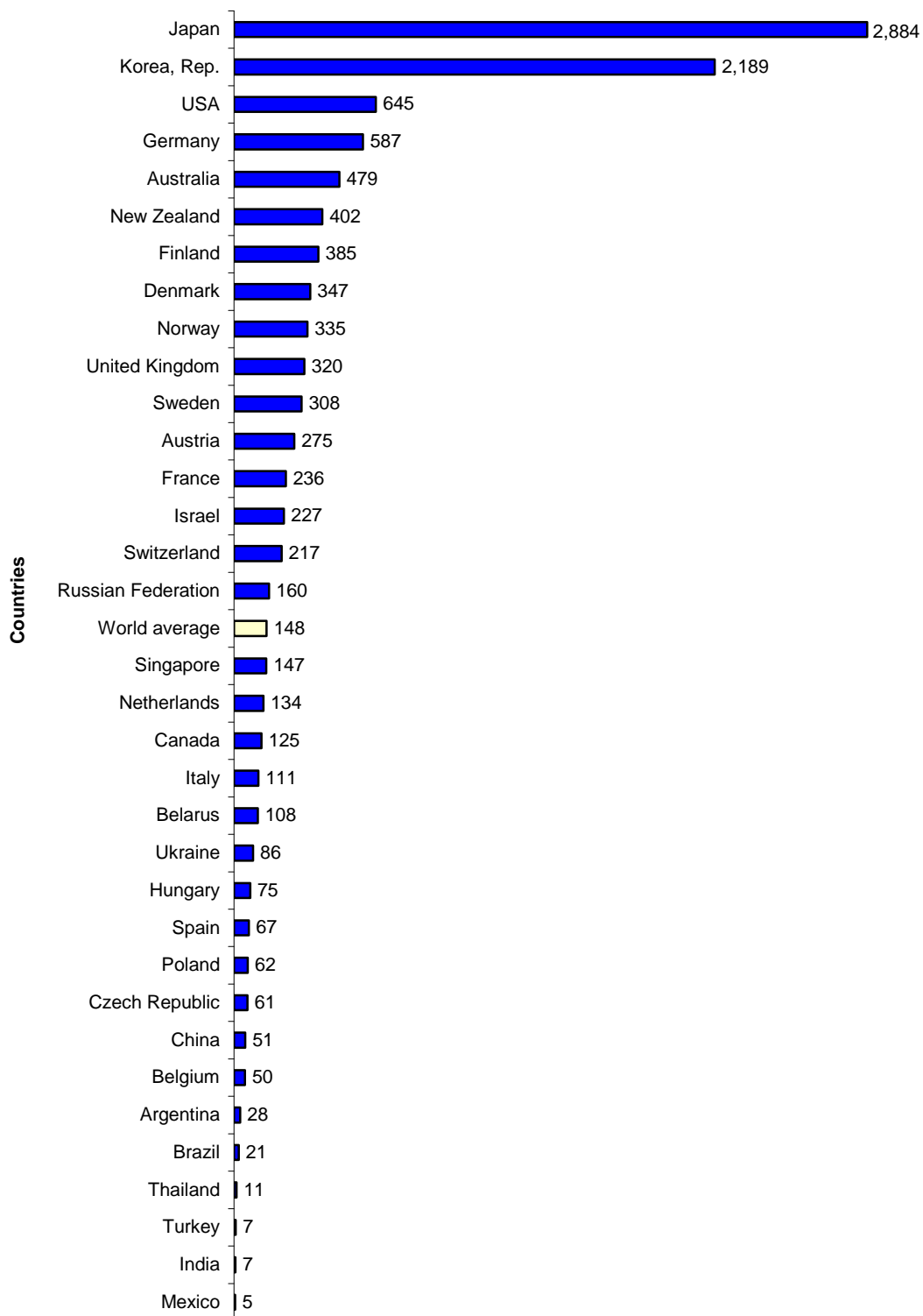
Economic indicators used in this report

This report uses three economic indicators from the World Bank's World Development Indicators series. They are:

1. Population – the total resident population of each country.
2. GDP – the gross domestic product of each country. To make cross-country comparisons more meaningful, we use GDP in constant year 2000 US dollars, adjusted for purchasing power parity. The constant year 2000 figure corrects for the effect of inflation on measures of GDP. The purchasing power parity adjustment takes into consideration the different price levels in different countries that may not be reflected in simple exchange rate differences.
3. Research and Development – total gross spending on research and development (i.e. not separated into government or business spending) in constant year 2000 US dollars at purchasing power parity. In the case of research and development, a one year lag is introduced – i.e. patent filings in 2004 are compared with R&D spending in 2003.

The indicators in this section are not shown for all countries. Where a country is omitted from one of the charts in this section, this is either because the statistics are not available, or because the number of patents is very low and the indicators are therefore not meaningful.

D.1 Resident Patent Filings per Million Population



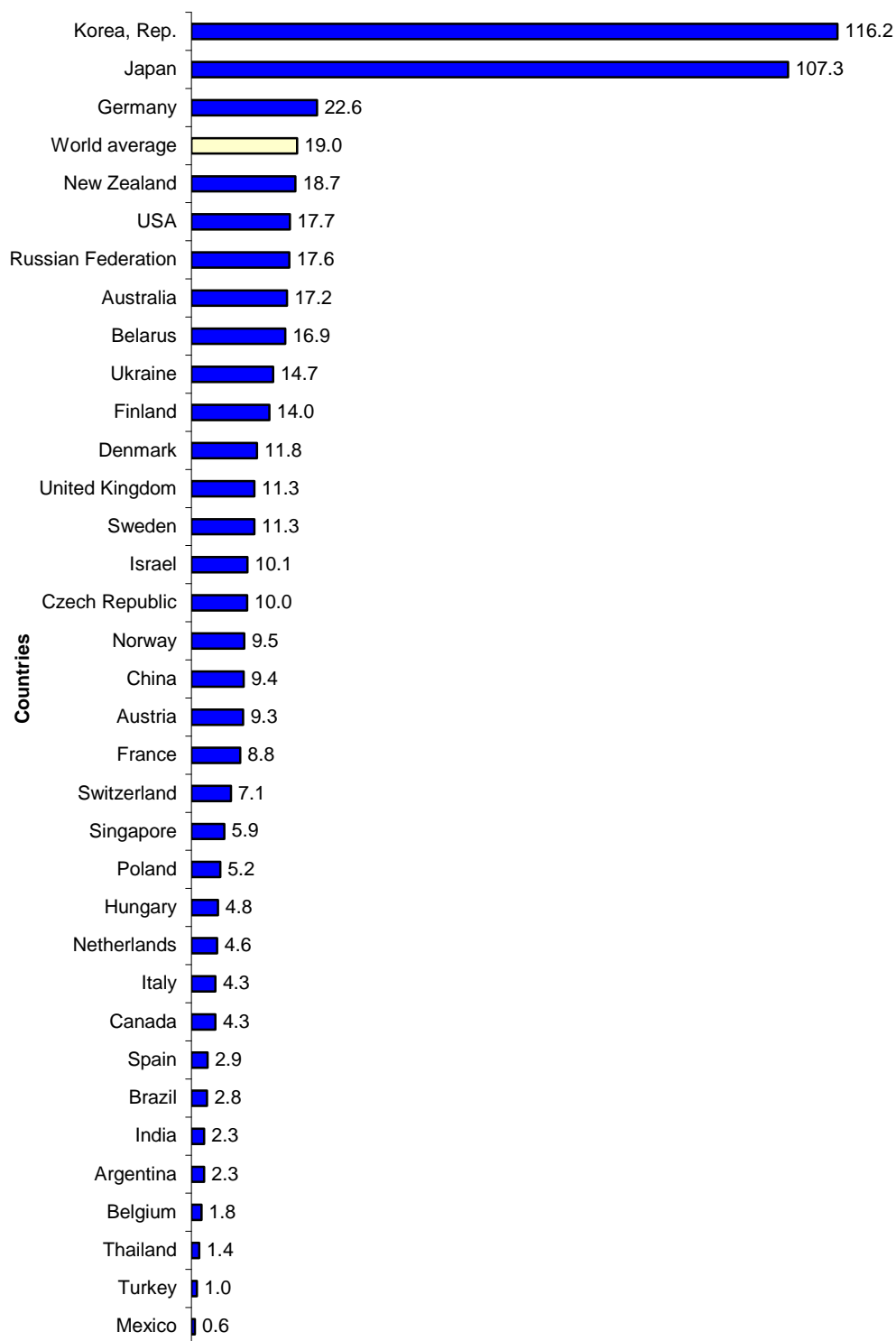
Patent Filings by Residents per Million Population in 2004

Source: WIPO Statistics Database and World Bank -World Development Indicators

- Japan and the Republic of Korea have the highest rate of resident patent applications per head of population at 2,884 and 2,189 patents per million inhabitants.
- The world average number of patent applications per million habitants is 148 (in those countries for which patent statistics are available).

D.2 Resident Patent Filings per Gross Domestic Product

The chart shows the number of resident patent applications per billion dollars of GDP, where GDP is measured in constant year 2000 US dollars at purchasing power parity.



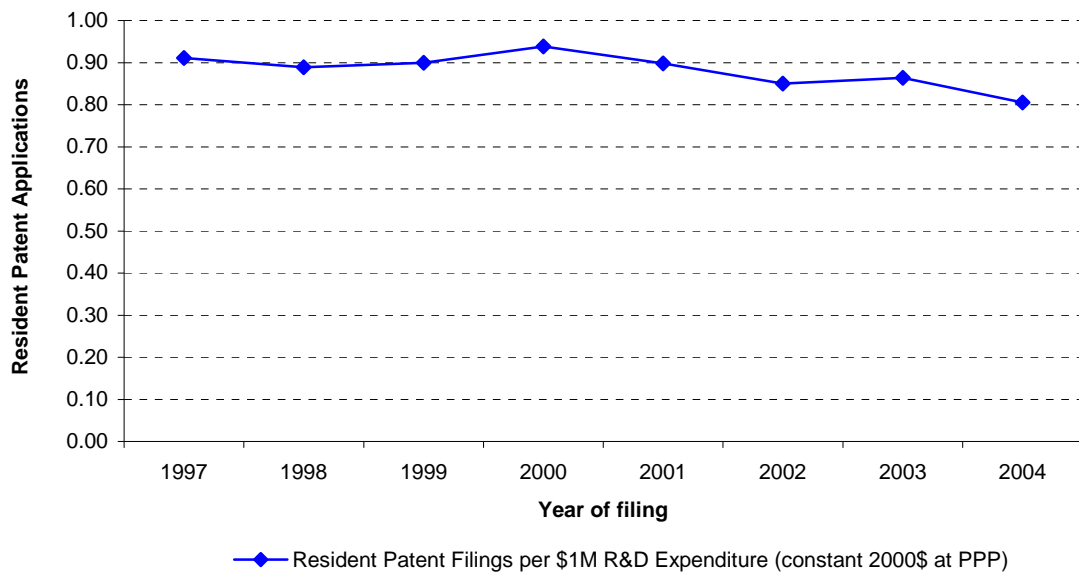
Patent Filings by Residents per Billion \$ GDP in 2004

Source: WIPO Statistics Database and World Bank - World Development Indicators

- The Republic of Korea and Japan have very high rates of resident patent applications per GDP.
- The world average number of patent applications per billion dollars of GDP is 19, in those countries for which patent statistics are available.
- Several emerging economies and countries in transition have high rates of patent filing per GDP. This is notable in the case of Kazakhstan, the Russian Federation, Belarus and Ukraine.

D.3 Residents Patent Filings per Research & Development Expenditure by year

The chart shows the number of resident patent applications per million dollars of research and development expenditure, measured in constant year 2000 US dollars at purchasing power parity.

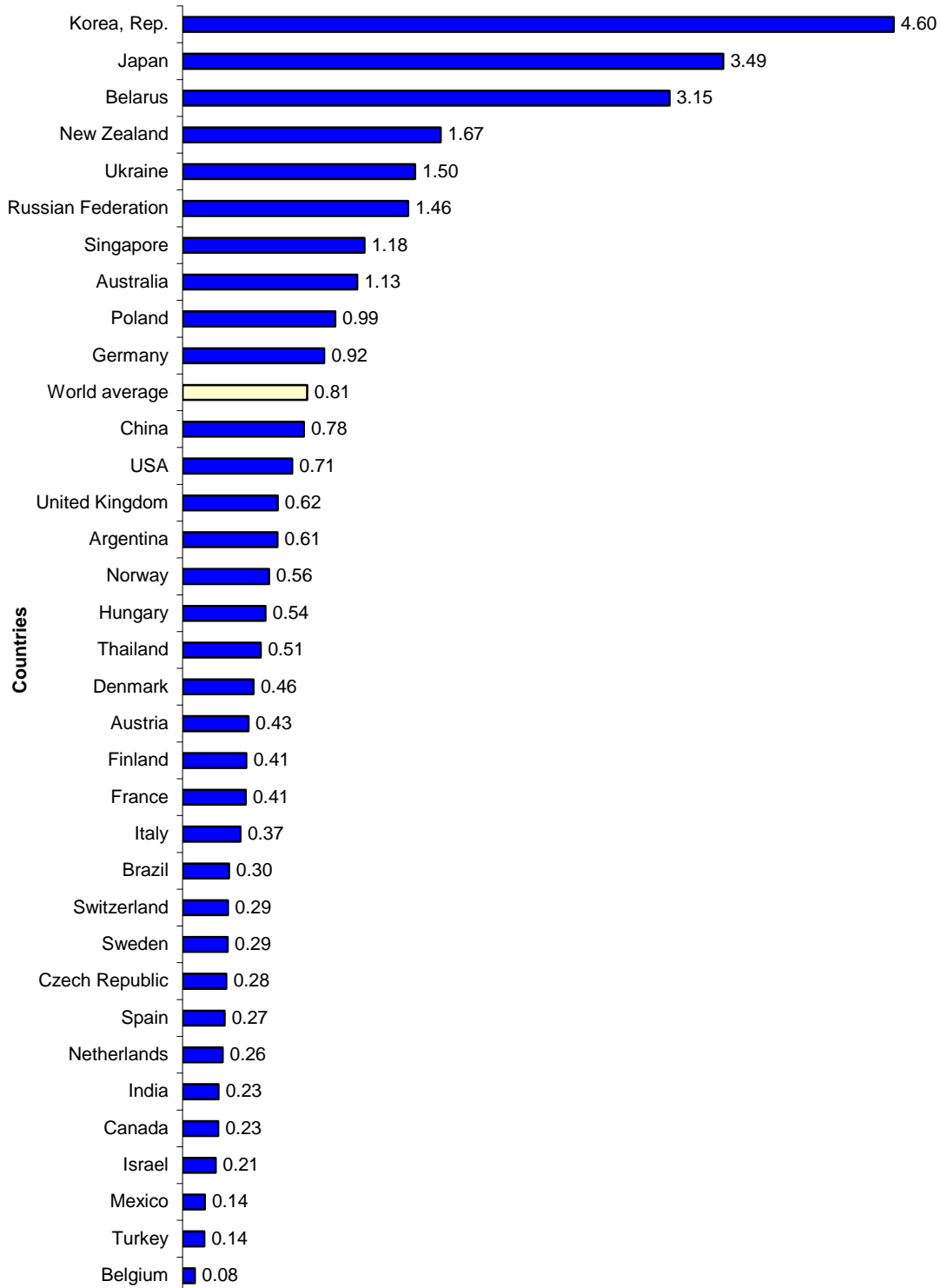


Source: WIPO Statistics Database , World Bank - World Development Indicators, UNESCO Institute for Statistics

- Patent activity has been increasing over time. However, the increases in patent applications closely follow global increases in research and development spending.
- Globally, the number of patent applications by residents per million dollars of research and development expenditure has decreased slightly from 0.91 in 1997 to 0.81 in 2004.

D.4 Residents Patent Filings per Research & Development Expenditure by Country

There are large variations in the output of patent applications relative to research and development spending.



Resident Patent Filings per million \$ R&D Expenditure

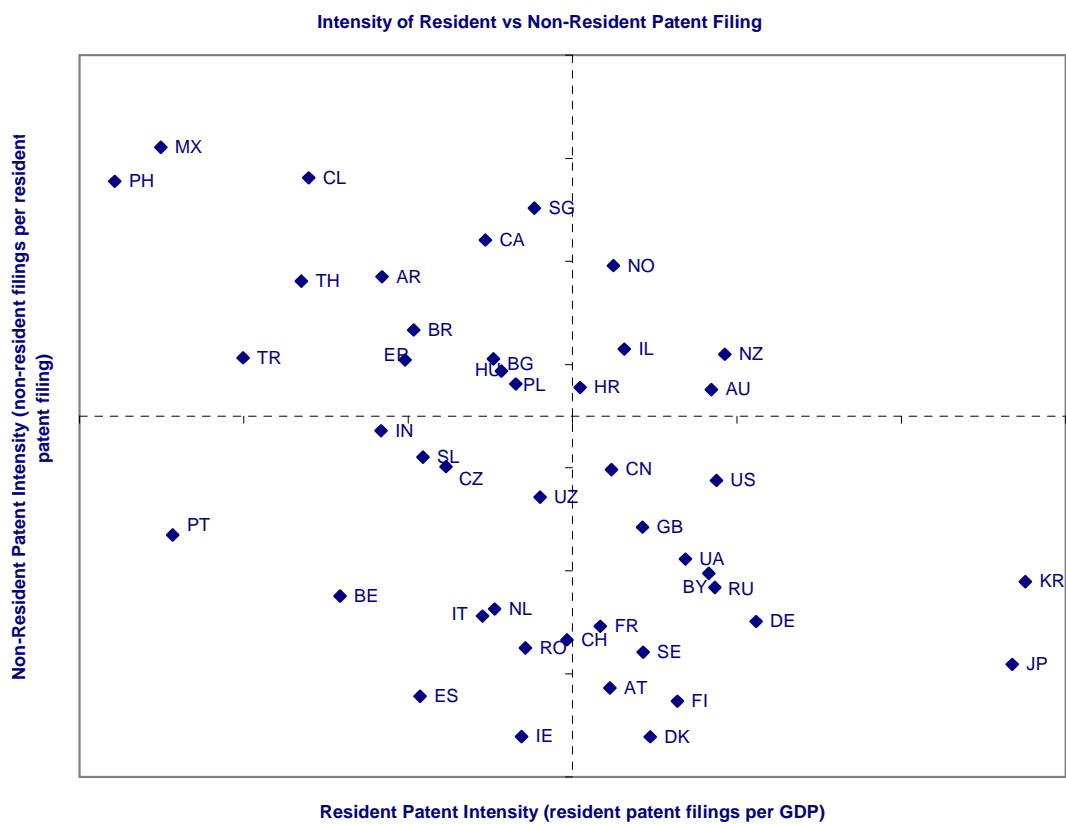
Source: WIPO Statistics Database, World Bank - World Development Indicators, UNESCO Institute for Statistics

- Republic of Korea and Japan have very high rates of patent applications per research and development expenditure.
- They are followed by a group of eight industrialized and emerging countries with above average rates of patenting per research and development expenditure.

D.5 Resident vs Non-Resident Patenting Intensity

The following chart shows the relative intensity of resident vs non-resident patent filings in each patent office, using two indicators developed earlier in this report. Resident patenting intensity is represented by resident patent filings per GDP and non-resident patenting intensity is measured by the ratio of non-resident to resident patent filings in each office.

Note that the European national offices and the European Patent Office (EPO) are shown separately. The European national offices therefore appear to have low levels of non-resident patent filing since most European non-resident patent applications are filed at the EPO.



E Use of the Patent Cooperation Treaty

The Patent Cooperation Treaty (PCT) system for international patent filing has been in place since 1978 and use of the system has increased rapidly since then. During the 1990s, several changes resulted in the maturing of the PCT system as a major route for international patent filing, most notably the expanding geographical coverage of the PCT system, as well as the increasing intensification of international commerce.

- The number of member states of the PCT increased from 43 in January 1990 to 105 in January 2000.
- The number of international patent applications increased from 19,809 in 1990 to 93,237 in 2000, an average annual increase of 16.8%.

The Patent Cooperation Treaty (PCT)

The PCT provides an international system for filing patent applications. The PCT procedure consists of an international phase followed by a national or regional phase.

In the *international phase*, an applicant files an international application and designates the states for which he wishes to eventually seek patent protection. Since 2004, all eligible states are automatically designated in every PCT application. But prior to 2004, more than 80% of applications would already designate all possible states at the time of international filing. In the international phase, the application is searched, published and, optionally, an international preliminary examination is conducted.

In the *national (or regional) phase*, the applicant requests national processing of the PCT application, pays additional fees and initiates the national search, examination and granting procedure. PCT international applications provide only for a national patent grant – there is no international patent.

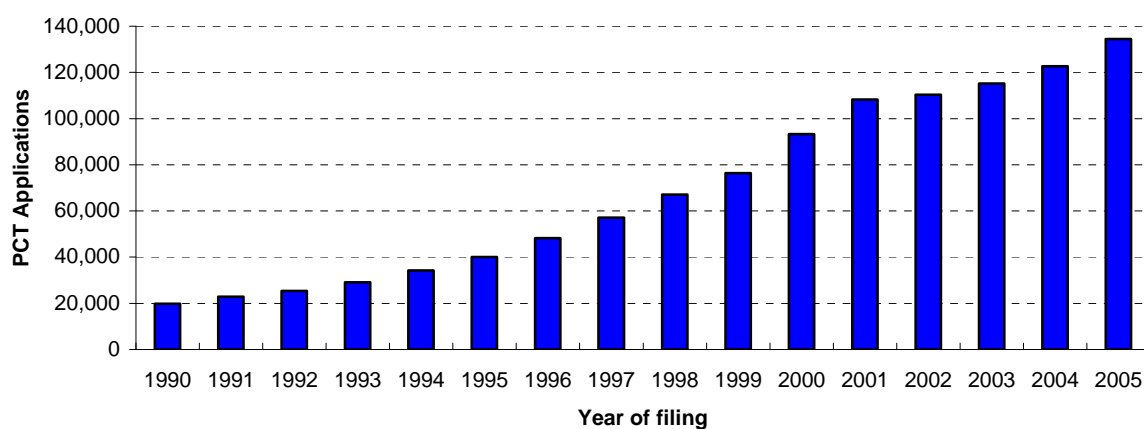
The national/regional phase processing must usually be initiated within 30 months from the priority date although extensions to this time limit are available in many offices.

In this report, PCT national phase entries are used to represent non-resident patent filings via the PCT system, rather than PCT designations or PCT international applications. This is because the national phase filing represents an action on the part of the applicant to actively seek patent protection for a given territory whereas international filings and designations, while they represent a legal right, do not accurately reflect where patent protection is eventually sought.

More information on the PCT procedure is available on the internet at the address <http://www.wipo.int/pct>.

E.1 Growth in PCT International Applications

The chart below shows the total number of PCT international applications filed worldwide from 1990 to 2005.



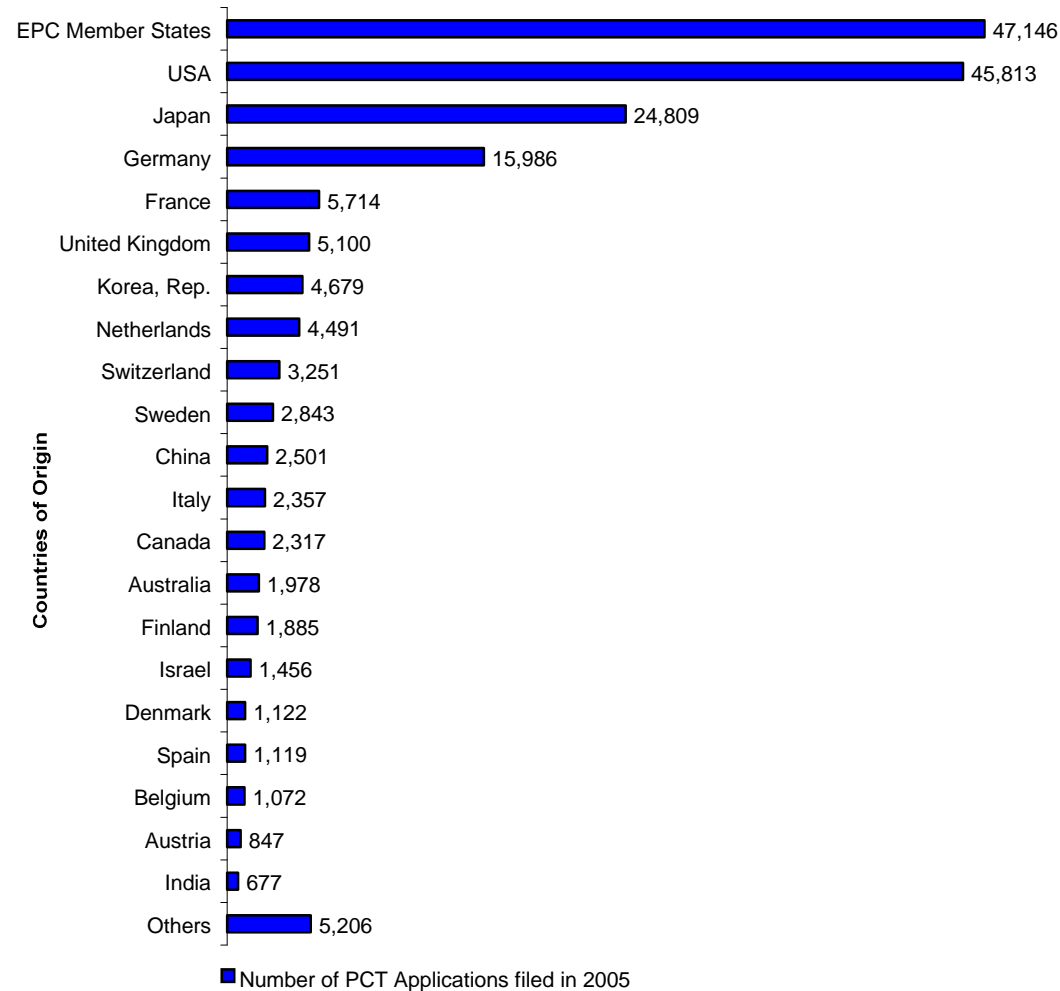
Source: WIPO Statistics Database

- The number of PCT international applications filed per year has grown from 19,809 in 1990 to 135,602 in 2005.
- The average annual growth rate between 1990 and 2000 was 16.8%, and the growth rate has slowed to less than 10% since 2001.

E.2 Country of Origin of PCT International Applications

The chart shows the number of PCT International Applications filed in 2005 according to the country of residence of the first-named applicant or assignee.

Note that filings by residents of European Patent Convention (EPC) member states are shown twice – in the category EPC Member States and in each member state individually.



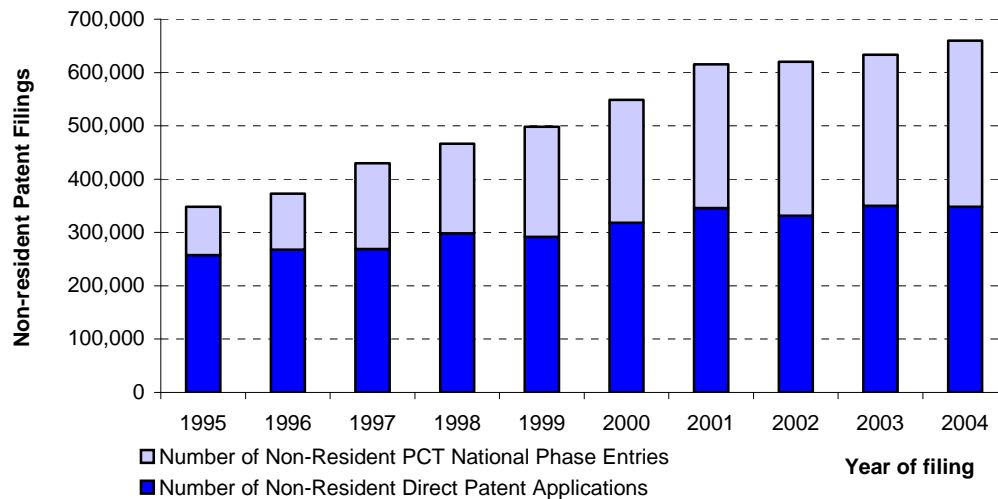
Source: WIPO Statistics Database

- Applicants from the member states of the European Patent Convention are the largest group of filers of PCT international applications, followed by applicants from the United States of America.
- The numbers PCT filings from north east Asian countries are increasing rapidly. Filings from Japan, the Republic of Korea and China, are increasing at 22.4%, 24.4% and 46.8% respectively.

E.3 Use of the PCT Procedure for Non-Resident Patent Filings

Patent applicants have a choice between two procedures for filing patent applications outside their country of residence. They can file an application directly with the foreign patent office, claiming priority of their earlier application according to the criteria of the Paris Convention. Or, they can file a PCT international application, also claiming priority, and then later request national or regional phase processing of the PCT international application.

The chart shows the number of non-resident patent filings worldwide. Patent applications filed directly with national or regional patent offices are compared to those filed as PCT national or regional phase entries via the PCT system.

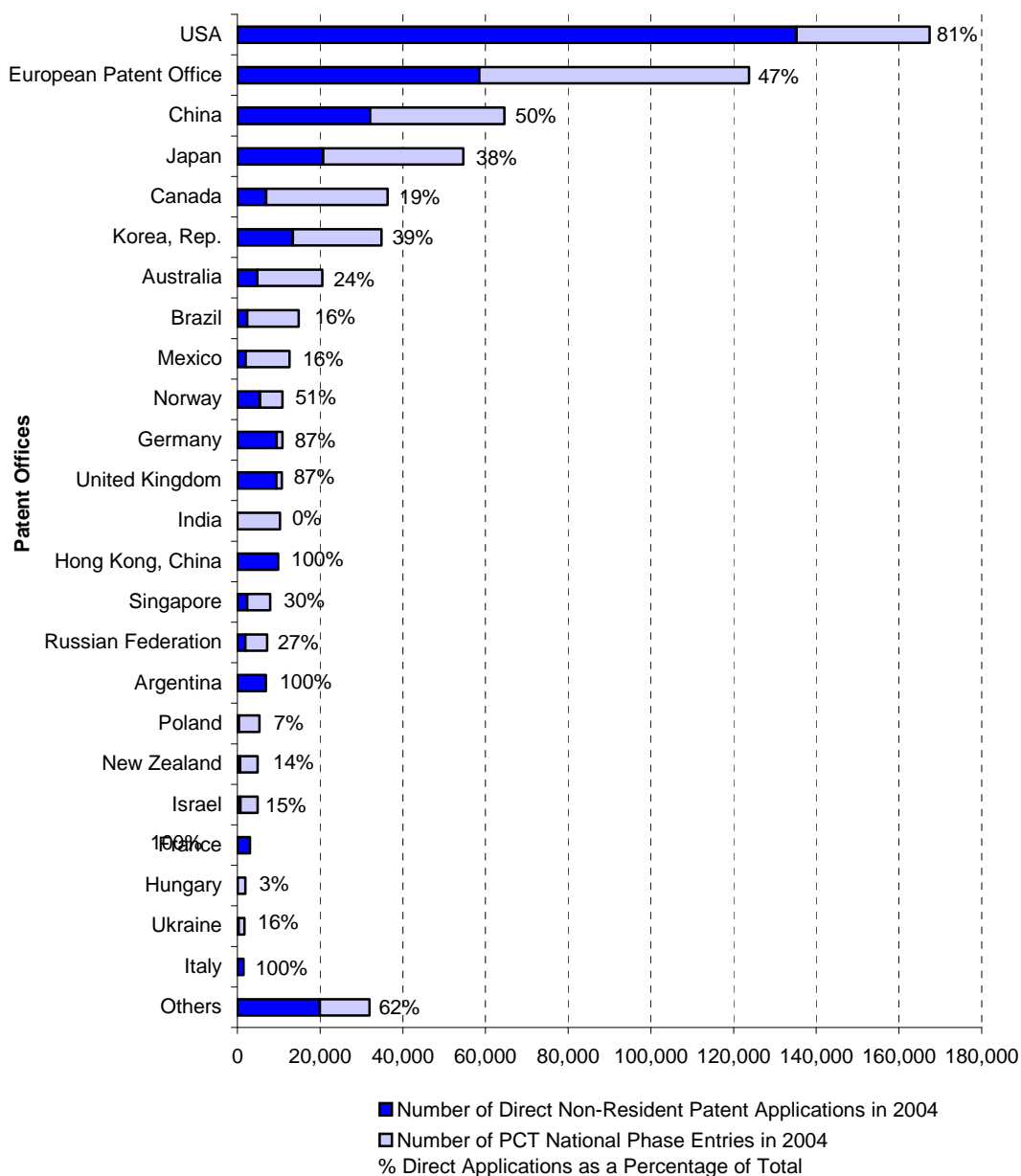


Source: WIPO Statistics Database

- The proportion of non-resident patent filings using the PCT route increased from 26% in 1995 to 47.2% in 2004.
- The number of worldwide PCT national phase entries increased at an average annual rate of 14.7% between 1995 and 2004.
- The number of non-resident patent filings filed directly with national or regional offices increased at an average annual rate of 3.2%.

E.4 Non-Resident Patent Filings and PCT National Phase Entries

The chart shows the number of non-resident patent filings filed directly with each office, and the number of PCT national or regional phase entries via the PCT system at each office.



Source: WIPO Statistics Database

The proportion of PCT national phase filings relative to direct non-resident filings is markedly different in different offices. While some offices such as Australia, Brazil, Canada, Japan, Republic of Korea or Mexico receive the majority of their non-resident filings via the PCT system, others such as the United States of America and certain European offices receive more direct international filings than PCT national phase entries.

F Patent Filing in the European Region

A complete measure of patent filings in the European region needs to take into account the European Patent Convention (EPC) and the fact that patent protection can be sought by filing either at the national offices of the EPC member states or at the European Patent Office (EPO).

Other factors influencing patent activity in Europe are the European common market and common currency which are leading to a high degree of integration in the European economies. This creates an incentive for European patent applicants to seek patent protection in multiple EPC member states, and so non-resident patent filings by Europeans in other EPC member state offices and at the EPO have become common.

This section presents several statistics to show the patterns of filing in the European region. There are three different categories of patent filings in this section:

1. Patent filings by residents of EPC member states at the national office of their state of residence.
2. Intra-regional filings, including filings by residents of EPC member states in other EPC member state offices and at the EPO.
3. Filings in EPC member state offices, including the EPO, by residents of countries outside the EPC member states (non-resident filings).

Patent Filings in the European Patent Convention Region

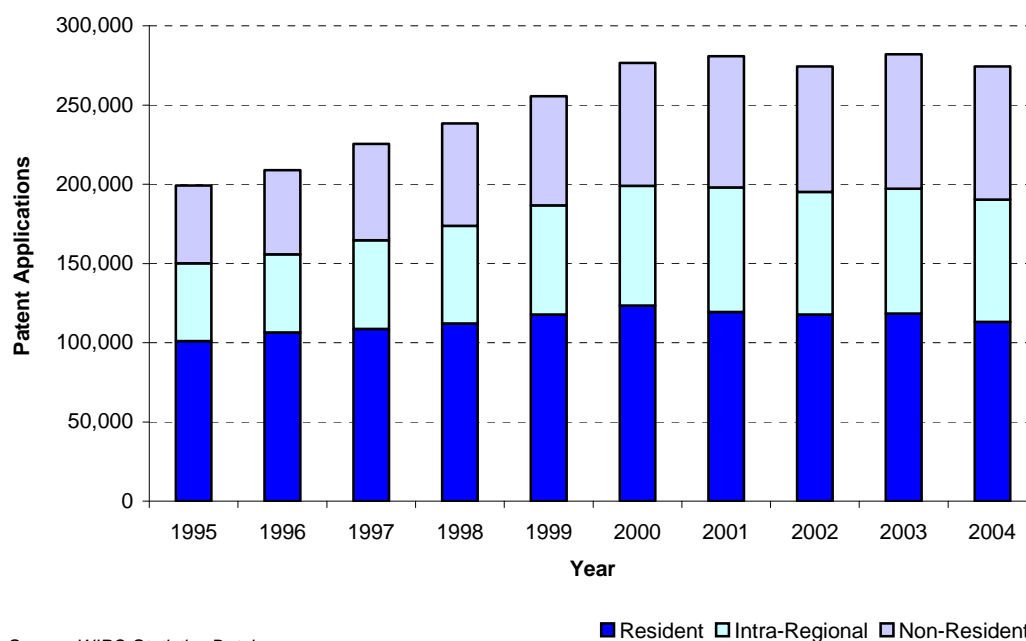
To seek patent protection in the European region, patent applicants have a choice of two routes: they may apply for patents at the national offices of each European state, or they may apply for a European patent via the European Patent Office (EPO). The EPO grants patents on behalf of the member states of the European Patent Convention (EPC), the membership of which is larger than that of the European Union as some EPC member states are not members of the European Union.

A European patent application can designate one or more EPC member states and, once granted by the EPO, must be separately validated in each of those states.

This dual system means that patent applications with effect in Europe may be filed at the national office or the EPO and explains why the number of filings at some European national offices are lower than might otherwise be expected.

The statistics in this report show activity in the European Patent Office (code EP) and the offices of member states separately. For the purposes of this report, the European region refers to the member states of the European Patent Convention, not the European Union.

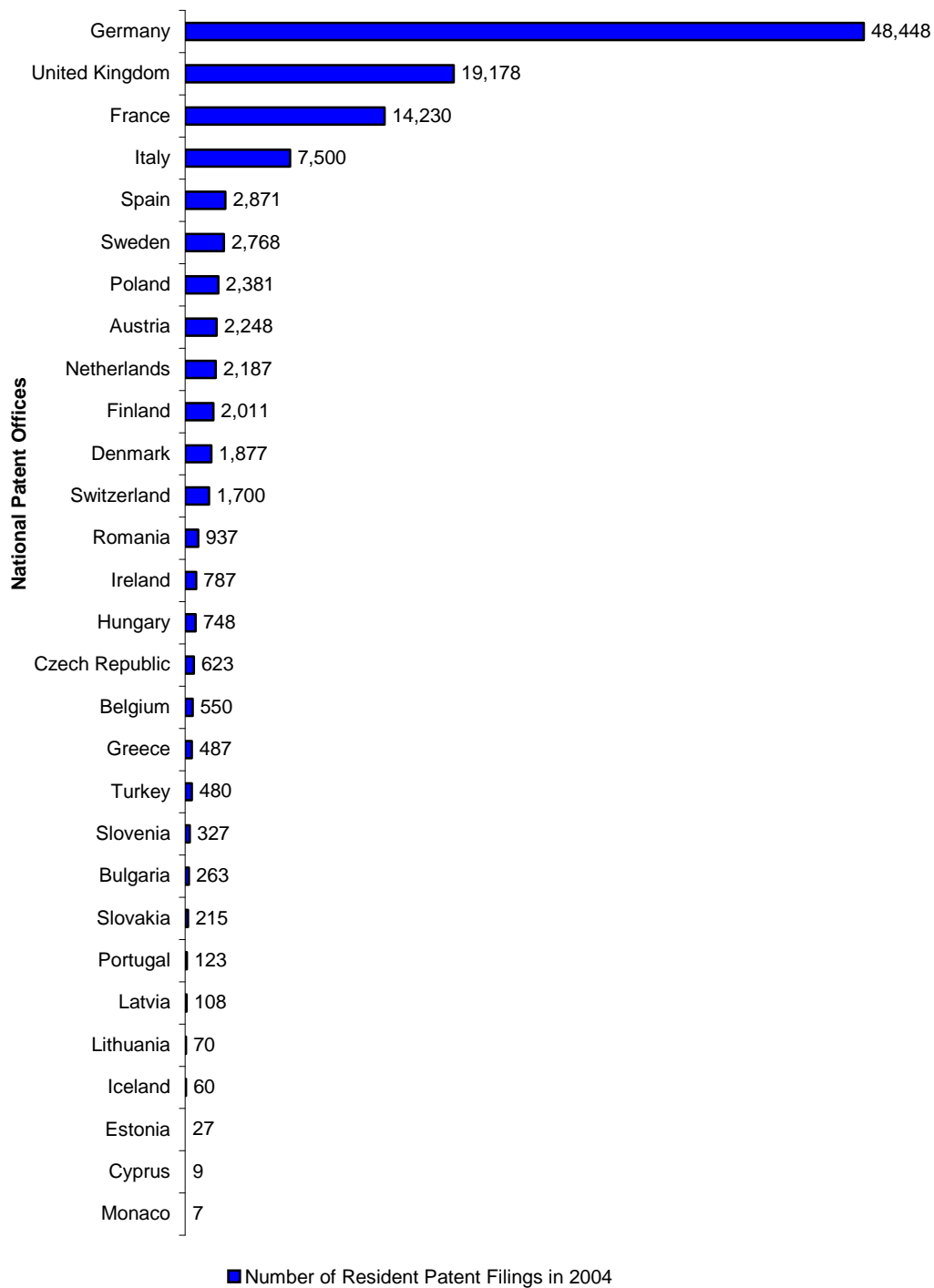
F.1 Patent Filings in the European Region



The chart shows the total number of patent applications in all EPC member states, broken down into resident applications (European residents in their home offices), intra-regional applications (European residents in other EPC member state offices and at the EPO) and non-resident applications (from applicants resident in countries outside the EPC member states).

- The number of resident patent filings in the European region has been relatively static since 1995 whereas intra-regional filings have grown at an average annual rate of 5% and filings from applicants outside the European region have grown at an average annual rate of 6%.
- Filings in all three categories have been relatively static since 2000.
- Resident patent filings make up 41% of patent filings in the European region in 2004, intra-regional filings 28% and non-resident filings from outside the region account for 31%.

F.2 Resident Patent Filings in European National Offices

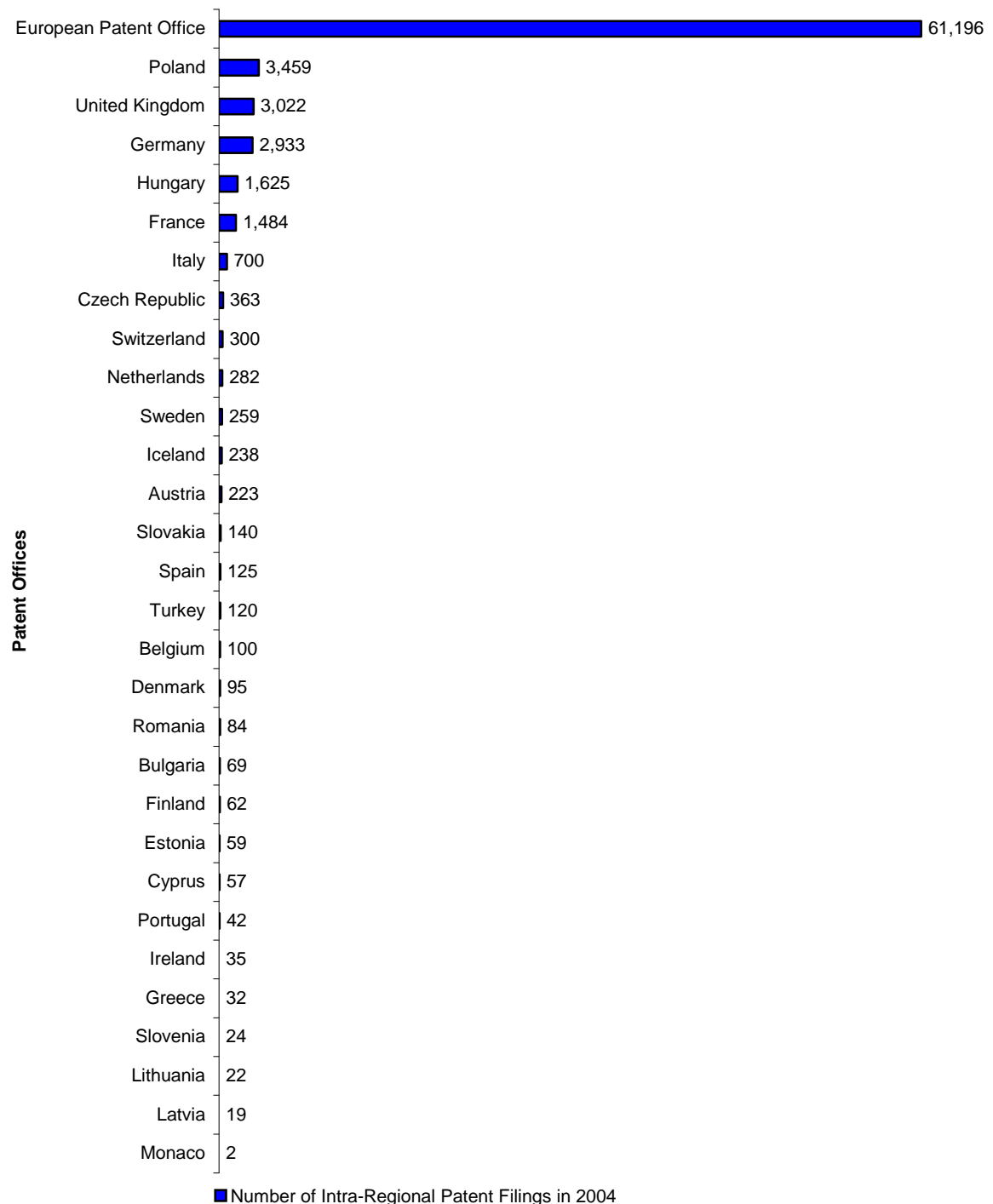


Source: WIPO Statistics Database

- Residents of Germany are the biggest filers of patent applications at their national patent office, followed by the United Kingdom, France and Italy.

F.3 European Intra-Regional Patent Filings by Office

The chart shows the number of intra-regional patent filings by residents of EPC member states at other EPC member state offices and at the EPO.



Source: WIPO Statistics Database

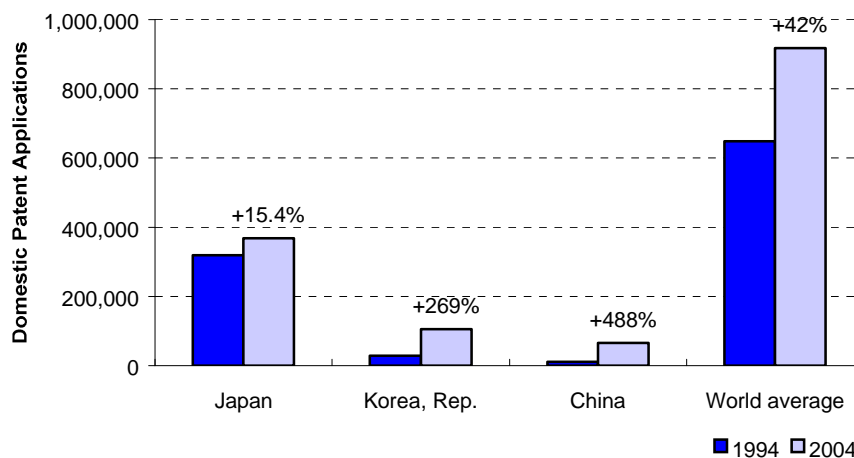
- The EPO accounts for 79% of intra-regional patent applications.
- Most European national offices receive relatively few patent applications from residents of other EPC member states. The exceptions are the large industrialized countries and the states which have recently acceded to the European Patent Convention.

- Note that the PCT national phase route is closed for France, Italy, the Netherlands and several other EPC member states. A PCT applicant seeking protection in those countries must do so by designating the EPO and entering the PCT regional phase at the EPO. This partially accounts for relatively low numbers of non-resident filings at the above-mentioned patent offices.

G Patent Filing in the North East Asian Region

In the past decade, the north east Asian region has significantly increased its share of worldwide patenting, both as a source of patent applications and as a target of non-resident patent applications from outside the region.

G.1 Resident Patent Applications in North East Asia

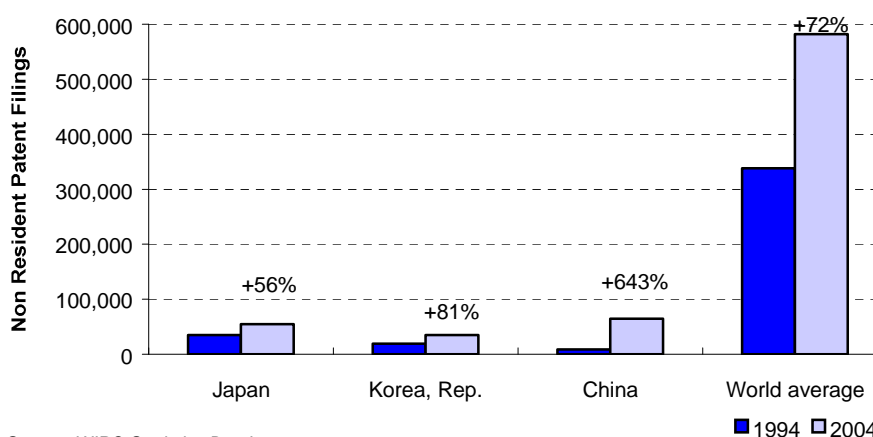


Source: WIPO Statistics Database

Although Japan is a well-established user of the patent system, it has recently been joined by the Republic of Korea and China, making the north east Asian region a major source of patent applications and major users of the patent system.

- Patent filings by residents increased by more than three times in the Republic of Korea and more than five times in China between 1994 and 2004.

G.2 Non-Resident Patent Filings in North East Asia



Source: WIPO Statistics Database

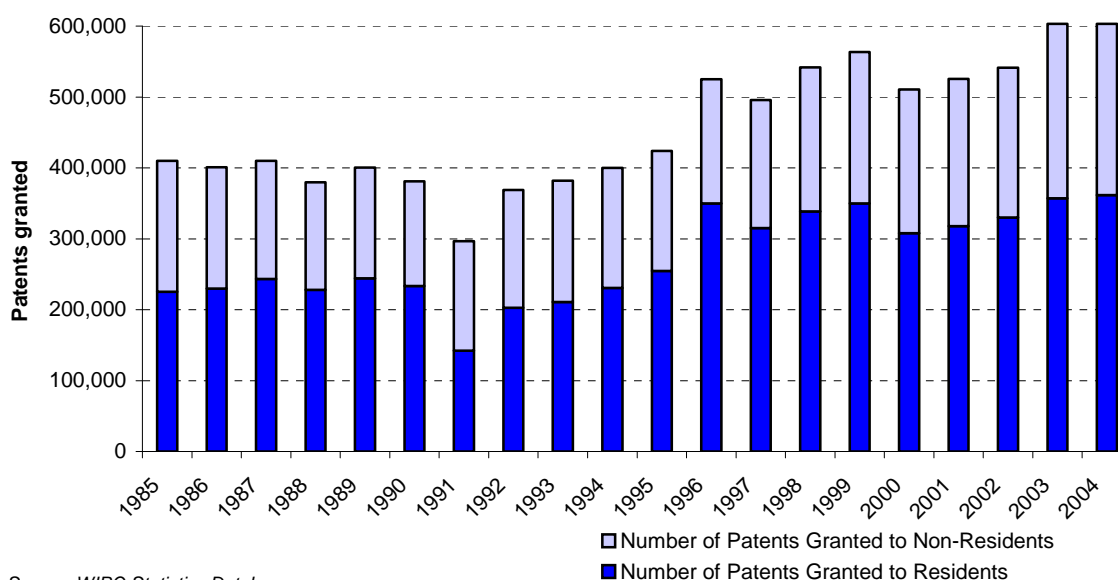
In parallel with the increase in patent filings by residents, the north east Asian offices have experienced large increases in patent filings by non-residents.

H Patents Granted

After filing, a patent application is subject to search and/or examination procedure at the patent office. The patent application is usually published before granting and third parties may have the opportunity to file oppositions to the patent before or after granting. The search and examination procedure usually starts soon after filing, but in some offices search and examination are requested separately from the patent application and may be delayed until several years after the application. In some cases, applications may be abandoned by the applicant before they are examined or granted.

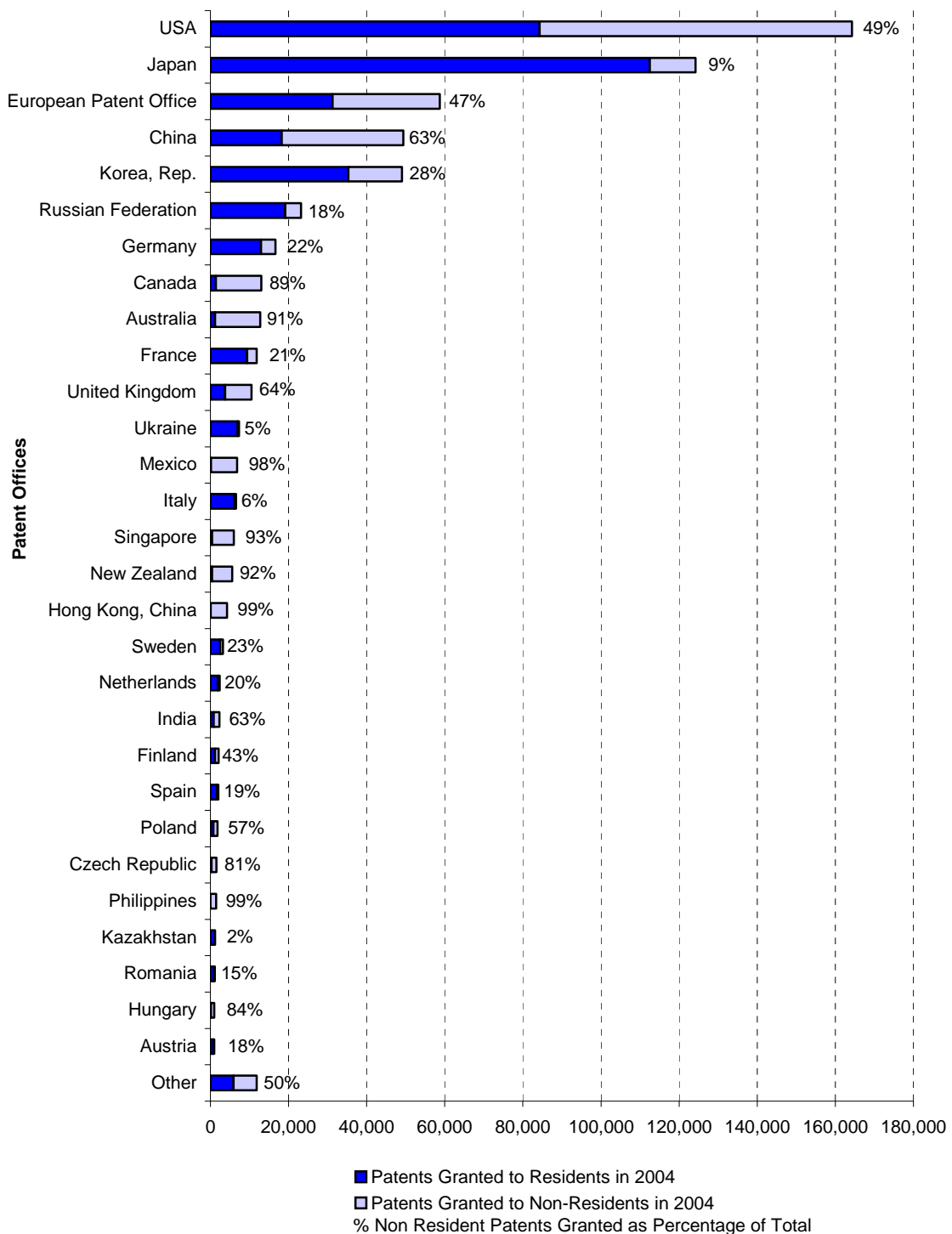
The number of patents granted therefore represents the number of patent rights established each year. However, the timing of the patent grant and the success rate at different offices can vary widely and therefore comparisons over time need to be made with caution. In particular, changes in the number of patents granted can be due to the changing capacity of patent offices to examine and grant patents, or to changes in time limits or examination practices, rather than an underlying trend in inventive activity.

H.1 Patents Granted Worldwide



- The number of patents granted worldwide has increased steadily to more than 600,000 in 2004.
- The average annual growth rate of patents granted between 1995 and 2005 has been 4%. However the growth rate has been very uneven and there have been periods of negative growth.

H.2 Patents Granted by Office

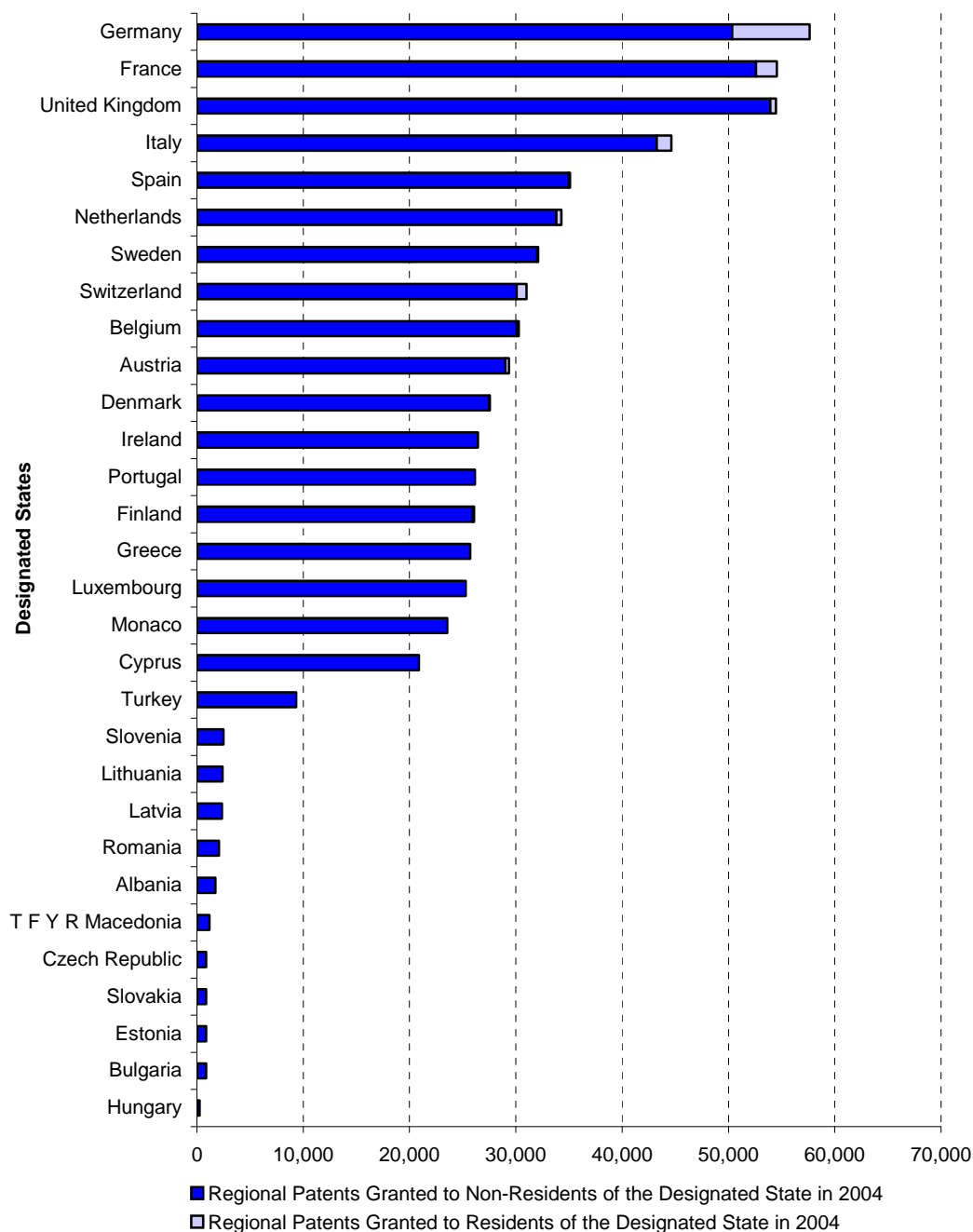


- The largest number of patents granted is at the United States Patent Office, followed by Japan, the EPO, China and the Republic of Korea.
- These five offices account for 74% of patents granted worldwide in 2004.
- There are significant differences in the proportions of patents granted to residents and non-residents in different offices.

H.3 Regional Patent Grants

Patents granted by the European Patent Office² designate one or more of the member states of the European Patent Convention (EPC) and, subject to validation in each of those designated states, enter into force in those states. The total number of patents granted for a member of the EPC is therefore the sum of the patents granted by the national office and the patents granted by the EPO.

The following chart shows the number of patents granted by the EPO in 2004 in each designated state. Note, as above, that these patents are subject to the validation procedure in each member state after granting by the EPO.



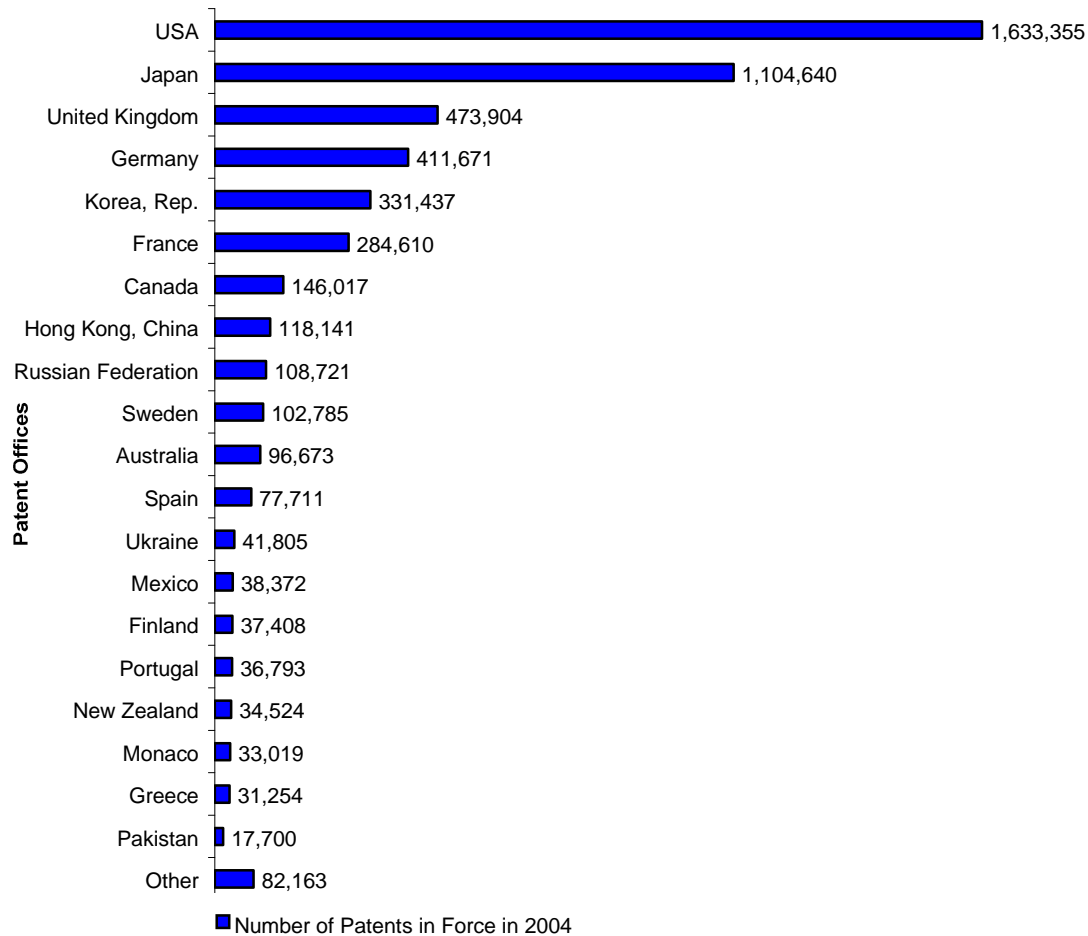
² Detailed statistics for other regional offices were not available for the production of this report.

I Patents In Force

I.1 Patents in Force by Office

The standard international rule provides that a patent may remain in force for up to twenty years, although extensions beyond twenty years are possible in some circumstances. Most offices require the payment of regular maintenance fees in order to maintain the validity of a patent and many patents are maintained for less than the maximum twenty-year period.

The chart shows the total number of patents in force in each office in 2004.

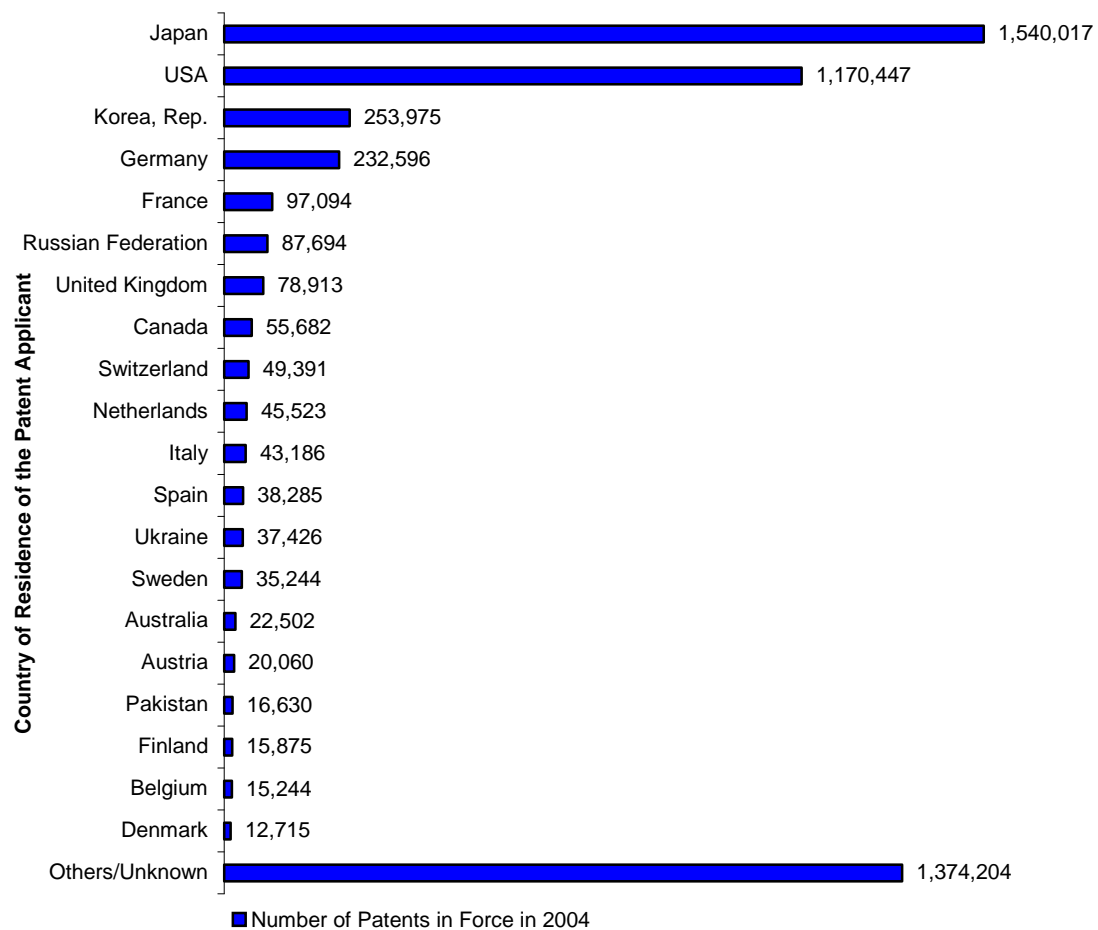


Source: WIPO Statistics Database

- There were a total of 5.4 million patents in force worldwide in 2004.
- Of this total, 81% are accounted for by six offices: the United States of America, Japan, the United Kingdom, Germany, Republic of Korea and France.
- Note that information on patents in force is not available for several offices that have relatively high numbers of patent applications, notably Argentina, Brazil, China, India and some European offices.

I.2 Patents in Force by Country of Residence

The chart shows the number of patents in force worldwide in 2004, according to the country of residence of the patent applicant.

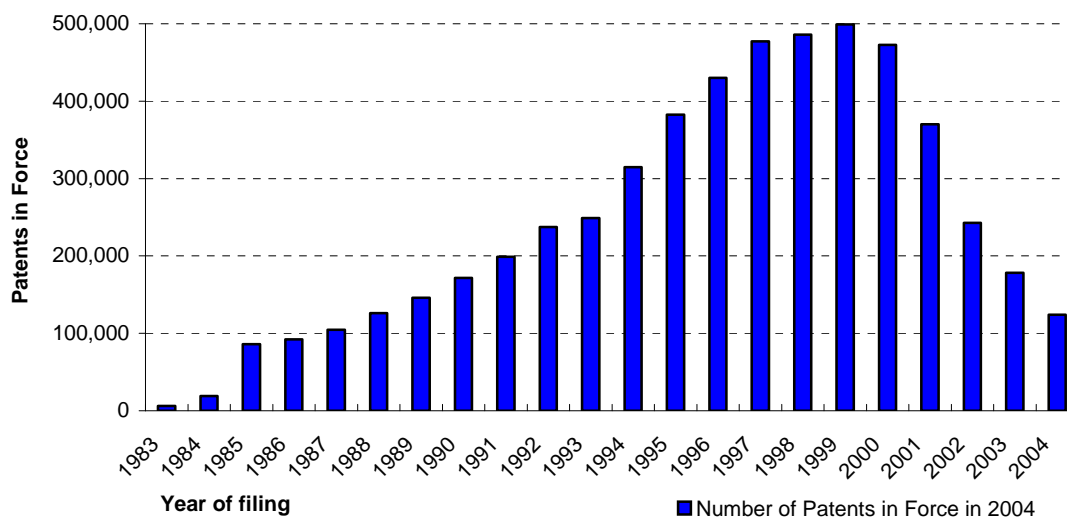


Source: WIPO Statistics Database

- Applicants from Japan and the United States of America own 29% and 22%, respectively, of patents in force worldwide in 2004.
- Note that statistics on the country of origin are not available for a large proportion of patents in force.

I.3 Age Profile of Patents in Force

The chart shows the number of patents in force in 2004 according to the date of filing of the original patent application. As previously noted, a patent may be maintained in force for up to twenty years from the original filing date, but maintenance is subject to payment of maintenance fees at regular intervals to the patent office.



Source: WIPO Statistics Database

- 53% of patents in force in 2004 were patents filed in 1997 or later.
- Only 22% of the patents in force in 2004 were filed before 1994.

I Statistical Tables

Table 1	Resident Applications 2004*	Non Resident Applications 2004*	PCT National Phase 2004*	PCT International Applications 2005	Grants to Residents 2004*	Grants to Non Residents 2004*
Algeria	58	30	304	4	27	249
Argentina	1,090	6,900		21	230	
ARIPO			410			
Armenia	200	2	4	3	146	13
Australia	9,640	4,855	15,711	1,998	1,177	11,562
Austria	1,965	225	324	852	784	177
Belarus	1,065	99	283	22	748	113
Belgium	540	150		1,073	580	
Bosnia and Herzegovina	50	300	46	7	1	13
Brazil	3,892	2,356	12,444	280	590	
Bulgaria	263	630	128	21	86	213
Canada	3,900	7,000	29,300	2,322	1,425	11,635
Chile	240	39,700		9		
China	65786	32109	32489	2,501	18,241	31,119
Colombia		560		23		
Croatia	385	34	805	71	27	108
Cyprus	9	85		30		120
Czech Republic	623	109	520	117	294	1,220
Denmark	1,877	127	11	1,124	153	631
Ecuador		53	436	1		24
Egypt	157	383	154	51	64	261
Estonia	27	6	91	13	7	191
Eurasian Patent Organization	150	310	1,320			1,800
European Patent Office	32,178	26,296	65,227	21,241	31,248	27,461
Finland	2,011	100	109	1,890	1,179	896
France	14,230	3,060		5,736	9,371	2,470
Georgia	249	10	199	4	151	130
Germany	48,448	9,455	1,450	16,003	12,925	3,736
Greece	487	27		55	319	30
Guatemala		367		1		
Hong Kong, China	127	9,878			38	4,204
Hungary	748	63	1,846	160	158	819
Iceland	70	64	465	43		64
India	7,179		10,287	679	851	1,466
Iran (Islamic Republic of)	360			2		
Ireland	787	58		332	326	170
Israel	1,500	420	4,100	1,458	330	
Italy	6,300	1,500		2,352	6,100	420
Japan	368,416	20,766	33,899	24,820	112,527	11,665
Kazakhstan	1,800			7	1,100	20

Table 1 (continuation)	Resident Applications 2004*	Non Resident Applications 2004*	PCT National Phase 2004*	PCT International Applications 2005	Grants to Residents 2004*	Grants to Non Residents 2004*
Korea, Rep.	105,250	13,428	21,437	4,686	35,284	13,784
Kyrgyzstan	200			1		
Latvia	108	14	29	16	87	48
Lithuania	70	10	34	7	61	37
Luxembourg	20			111		
Macau		22				
Macedonia, TFYR	37	80	335	2	23	83
Madagascar	16	2	20	1	2	24
Malta		471		8		298
Mexico	565	2,010	10,623	141	162	6,677
Moldova, Rep.	297		9	5	242	14
Monaco	7	2		13	6	5
Mongolia	143	2	84		84	81
Netherlands	2,187	556		4,537	1,890	482
New Zealand	1,631	680	4,220	350	419	5,152
Norway	1,500	5,500	5,400	576	450	
Pakistan		1,081				416
Peru	38	785			13	492
Philippines	158	413	2,125	26	16	1,437
Poland	2,381	398	4,961	96	778	1,016
Portugal	123	40	24	53	104	100
Romania	937	37	126	16	937	163
Russian Federation	22,985	1,958	5,247	656	19,123	4,068
Samoa		2		1		
Saudi Arabia		120		38		
Serbia and Montenegro	360	710	800	36	50	
Singapore	641	2,362	5,582	443	400	5,576
Slovakia	215	39	199	33	36	519
Slovenia	327	18	24	86	226	34
Spain	2,871	236	77	1,124	1,647	387
Sweden	2,768	380	82	2,858	2,495	737
Switzerland	1,600	300		3,265	594	
Tajikistan	32	1	1		15	6
Thailand	670	4,100		9		
Turkey	510		1,400	174		
Ukraine	4,090	269	1,419	59	6,700	340
United Kingdom	19,178	9,407	1,369	5,102	3,780	6,761
United States of America	189,536	135,196	32,211	46,107	84,271	80,020
Uruguay	37	514		5	4	82
Uzbekistan	273	11	194	2	88	90
Venezuela		2,200		2		
Viet Nam			1,050			

* Estimated Data in grey

Table 2	Resident Patent Filings per Million Population 2004	Resident Patent Filings per \$Billion GDP 2004	Patent Filings per \$Million R&D Expenditures 2004
Algeria	1.79	0.30	
Argentina	28.41	2.32	0.56
Armenia	66.09	17.53	6.49
Australia	479.34	17.20	1.12
Austria	240.42	8.10	0.42
Belarus	108.40	16.92	2.84
Belgium	51.82	1.81	0.08
Brazil	21.16	2.81	0.29
Bulgaria	33.89	4.56	0.91
Canada	121.97	4.25	0.22
Chile	14.88	1.49	0.25
China	50.75	9.37	0.71
Colombia			
Croatia	86.67	7.74	0.68
Cyprus	10.90	0.52	0.18
Czech Republic	60.98	3.42	0.27
Denmark	347.30	11.84	0.45
Ecuador			
Estonia	20.01	1.50	0.18
European Patent Office	56.82		
Finland	384.65	13.97	0.40
France	235.67	8.75	0.40
Georgia	55.11	21.09	
Germany	587.13	22.57	0.90
Greece	44.05	2.16	0.26
Guatemala			
Hungary	74.01	4.79	0.51
Iceland	239.65	7.89	0.26
India	6.65	2.30	0.22
Iran (Islamic Republic of)	5.37	0.78	
Ireland	193.45	5.42	0.52
Israel	220.66	9.85	0.21
Italy	109.43	4.23	0.37
Japan	2883.56	107.26	3.41
Kazakhstan	120.05	17.56	12.20
Korea, Rep.	2188.96	116.19	4.40

Table 2 (Continuation)	Resident Patent Filings per Million Population 2004	Resident Patent Filings per \$Billion GDP 2004	Patent Filings per \$Million R&D Expenditures 2004
Latvia	46.70	4.36	1.14
Lithuania	20.37	1.69	0.25
Luxembourg	44.12	0.69	0.03
Madagascar	0.88	1.12	19.95
Malta			
Mexico	5.44	0.60	0.14
Monaco	212.12		
Mongolia	56.87	30.10	10.35
Netherlands	134.32	4.60	0.26
New Zealand	401.63	18.66	1.60
Norway	326.72	9.24	0.54
Pakistan			
Peru	1.38	0.26	0.25
Philippines	1.94	0.46	
Poland	62.36	5.23	0.93
Portugal	11.71	0.65	0.07
Romania	43.21	5.54	1.38
Russian Federation	159.78	17.56	1.37
Samoa			
Saudi Arabia			
Singapore	151.17	5.86	0.25
Slovakia	39.94	2.97	0.51
Slovenia	163.75	8.51	0.55
Spain	67.25	2.92	0.26
Sweden	307.83	11.34	0.28
Switzerland	216.52	7.13	0.29
Tajikistan	4.98	4.51	
Thailand	10.52	1.41	0.48
Turkey	7.11	1.00	0.13
Ukraine	86.19	14.67	1.34
United Kingdom	320.34	11.31	0.60
United States of America	645.44	17.70	0.68
Uruguay	10.76	1.24	0.57
Uzbekistan	10.42	6.06	
Venezuela			
Viet Nam			

Table 3	Total Resident Patent Filings	Total Non Resident Direct Patent Applications	PCT National Phase Entries	PCT International Applications Filed	Total Patents Granted to Residents	Total Patents Granted to Non Residents
1995	705,496	257,619	90,391	40,006	254,421	169,658
1996	702,495	267,971	104,886	48,218	349,928	175,070
1997	719,651	269,164	160,509	57,064	315,027	180,832
1998	744,903	298,304	168,032	67,061	338,710	202,968
1999	777,657	291,828	206,562	76,358	349,662	213,598
2000	860,545	318,141	230,520	93,237	307,943	202,593
2001	876,023	345,718	269,476	108,227	317,704	208,016
2002	874,796	331,168	289,010	110,392	330,051	211,454
2003	908,047	349,992	283,572	115,199	357,025	246,323
2004	939,372	348,292	311,311	122,633	361,657	241,372
2005				134,504		

I Glossary

Country of Origin	The country of residence of the first-named applicant or assignee of a patent application. In some cases (notably the USA) the country of residence of the inventor is used rather than the applicant.
Designated Office / State	An office or state which is designated for protection in an international (PCT) patent application or a regional patent application. Also a state which is designated for protection by a regional patent grant. Although an office or state may be designated at the time of filing or grant of a patent, the patent protection is often not pursued in all designated states/offices.
European Patent Convention (EPC)	An international treaty which permits the applicant to file a single application with the European Patent Office (EPO), and to designate any of the participating European countries. The EPO examines and grants patents on behalf of the designated states.
European Patent Office (EPO)	The patent office which searches, examines and grants patents in the context of the European Patent Convention. The EPO also acts as an international searching authority for the PCT and performs searches on behalf of some national offices.
Gross Domestic Product (GDP)	Standard economic measure of total economic output of a country or region. In this report, GDP is measured in constant year 2000 US dollars at purchasing power parity. This is to make cross-country comparisons more meaningful.
Intra-Regional Filings	Patent filings by residents of the member states of a region (such as the EPC) in other offices of the same region.
Maintenance	The process by which patent protection is maintained after granting. Usually this consists of paying maintenance fees to the patent office at regular intervals. If maintenance fees are not paid, then patent protection may lapse.
Non-Resident	An applicant who is a non-resident of the state or region concerned. In patent statistics, the residence of the first applicant or assignee of a patent application is usually used to determine the state of residence. In some cases, notably the USA, the residence of the inventor is used instead of the applicant/assignee.
Paris Convention	International treaty agreed in 1883 which establishes common rules for industrial property rights among the member states. In particular, the Paris Convention establishes the “right of priority” which enables a patent application to claim priority of an application filed up to 12 months earlier in another country.
Patent Filing / Application	The procedure for requesting patent protection at a patent office. A patent application normally consists of a form containing information related to the patent applicant, inventor and the application, and a specification of the invention which must meet certain formal requirements.
Patent Grant	The act of granting or issuing a patent. Once granted, a patent becomes a legal property right, enforceable by law.
Patent In Force	A patent which has been granted and which is still in force. To remain in force, maintenance fees must usually be paid, up to the maximum period of 20 years from the original filing date in most

	countries.
Patent Cooperation Treaty (PCT)	A treaty establishing a system for international patent filing which allows for a single international patent application to have effect in multiple designated states, international search, international publication, and optional preliminary examination. The PCT system is a patent filing system and not an international patent granting system. Patents are granted at the national level.
PCT International Application	An application filed under the Patent Convention Treaty.
PCT National Phase Entry	A PCT international application which has entered the national/regional phase. The national phase must usually be initiated within 30 months from the priority date of the application (longer time periods are allowed in some offices) and usually requires an explicit action from the applicant and/or payment of fees.
Research and Development (R&D)	Standard economic measure of spending on research and development activities. In this report total R&D is measured in constant year 2000 US dollars at purchasing power parity. This is to make cross-country comparisons more meaningful.
Regional Application / Grant	A patent application or granted patent which is filed at or granted by a regional patent office. There are currently four regional patent offices in operation: African Regional Intellectual Property Organization (ARIPO), the Eurasian Patent Office (EAPO), the European Patent Office (EPO), l'Organisation africaine de la propriété intellectuelle (OAPI).
Resident	An applicant who is a resident of the state or region concerned. In patent statistics, the residence of the first applicant or assignee of a patent application is usually used to determine the state of residence. In some cases, notably the USA, the residence of the inventor is used instead of the applicant/assignee.
Validation	Procedure by which patent protection is validated after grant at the offices designated in a EPO patent grant. The procedure is different at different European offices but usually consists of a translation into the national language and/or payment of fees.
World Intellectual Property Organization (WIPO)	The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations. WIPO was established by the WIPO Convention in 1967 with a mandate from its member states to promote the protection of IP throughout the world through co-operation among states and in collaboration with other international organizations.

I WIPO Patent Resources

The following patent resources are available on the WIPO internet.

Statistics on Patents and the PCT System	http://www.wipo.int/ipstats/en/statistics/patents/
PatentScope – WIPO’s portal for information on Patents and the PCT System	http://www.wipo.int/patentscope/en/
Information on the PCT System	http://www.wipo.int/pct/en/
WIPO Index of Patent Systems – A survey of the differences between national patent systems intended to aid in understanding the differences in patent activity across countries.	http://www.wipo.int/ipstats/en/resources/patent_systems.html
Patent Search – Search PCT International Applications and view/download complete patent specifications and related documentation.	http://www.wipo.int/pctdb/en/
Law of Patents , including current and emerging issues related to patents, information on WIPO-administered treaties, access to national/regional patent laws, patent law harmonization.	http://www.wipo.int/patent/law/en/