WIPO Economics & Statistics Series

2013

World Intellectual Property Indicators

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FOREWORD

It has been more than five years that the world economy was hit by a financial crisis. Economic recovery since then has been uneven and has failed to bring down unacceptably high levels of unemployment. As we reported in the previous two editions of our World Intellectual Property Indicators, global intellectual property (IP) filing trends have followed a remarkably different path. While experiencing a decline in 2009 at the height of the crisis, IP filings have sharply rebounded and have even exceeded pre-crisis rates of growth.

This year's Report – presenting data on IP filing activity for 2012 shows that patent filings grew by 9.2 percent on 2011 – the fastest growth over the past 18 years. Similarly, industrial design counts grew by 17 percent – the fastest growth on record. Trademark class counts saw healthy growth of 6.0 percent, even if somewhat below the 2010 and 2011 growth rates.

While sending a positive signal about companies sowing the seeds for future economic growth, the global figures hide marked differences in IP filing trends across different parts of the world. Chiefly, continued rapid filing growth in China – the recipient of most patent, trademark, and industrial design filings – is the principal force driving global IP-filing growth. Indeed, for the first time in 2012, Chinese residents accounted for the largest number of patents filed throughout the world. Patent filings by residents of the United States of America and the Republic of Korea also saw healthy growth, whereas those by European residents stagnated.

World Intellectual Property Indicators 2013 documents many other important trends that are shaping the IP landscape worldwide. As one important methodological change, this year's Report almost entirely reports trademark and industrial design statistics on the basis of class and design counts; this reporting practice enables better comparability of statistics across countries operating different types of filings systems.

Finally, I would like to thank our Member States and national and regional IP offices for sharing their annual statistics with WIPO, and look forward to our continued cooperation.

Francis GURRY
Director General

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HIGHLIGHTS

Intellectual Property (IP) filing activity is extending its run of pre-crisis level growth, with patent filings increasing at their strongest rate in nearly two decades, and industrial designs achieving their best ever growth rate in 2012.

The 2013 edition of the World Intellectual Property Indicators report shows that global IP filing trends have followed a remarkably different path than growth in the global economy, which has suffered as a consequence of the global financial crisis that began in 2008.

While economic recovery since then has been uneven, IP filings sharply rebounded in 2012, following a decrease in 2009, at the height of the financial crisis, and are now even exceeding pre-global economic crisis rates of growth.

Patent filings grew by 9.2% in 2012, representing the fastest growth in the past 18 years. Similarly, the number of industrial designs contained in applications grew by 17% – the highest growth on record. The number of classes specified in trademark applications saw healthy growth of 6% in 2012.

The global growth figures hide marked variations in IP filing trends across different parts of the world. In particular, continued rapid filing growth in China is the main driver of global growth. Of the top five IP offices worldwide, the State Intellectual Property Office of the People's Republic of China (SIPO) was the only IP office to record double-digit growth for each of the three types of IP mentioned.[1] The IP office of Turkey saw strong growth in filings for trademarks and industrial designs. For each type of IP, the top five IP offices, with the exception of the IP office of France, recorded higher growth in filings in 2012 than in 2011.

In 2012, for the first time, residents of China accounted for the largest numbers of applications filed throughout the world for the four types of IP (patents, utility models, trademarks and industrial designs). SIPO was also the largest recipient of filings for these four types of IP.

The distribution of IP filing activity varied across income groups. The majority of patent filings occurred at the IP offices of high-income countries (64.5%). In contrast, middle- and low-income countries accounted for the bulk of trademark filing activity (52.6%) and industrial design filing activity (64%) worldwide. For the period 2007 to 2012, all these types of IP saw a shift in filing activity from high-income to middle-income countries – above all China.

1 Turkey also recorded double-digit growth between 2011 and 2012 for three types of IP. However, the IP office of Turkey is not one of the top five IP offices for patents.

IP filings at the top five offices, and by income groups

Office/income groups	Growth rates (%), 2011-12			Share in world total (%), 2012		
	Patents	Marks (class count)	Designs (design count)	Patents	Marks (class count)	Designs (design count)
World	9.2	6.0	17.0	100.0	100.0	100.0
China	24.0	16.5	26.1	27.8	25.1	54.0
EPO/OHIM	4.0	3.2	12.0	6.3	4.8	8.0
France	-	-3.5	-	-	4.2	-
Germany	-	-	2.8	-	-	4.6
Japan	0.1	-	-	14.6	-	-
Republic of Korea	5.6	-	11.8	8.0	-	5.4
Turkey	-	24.1	12.4	-	3.5	3.8
United States of America	7.8	4.0	-	23.1	6.5	-
High-income	4.4	1.7	7.4	64.5	47.4	36.0
Upper middle-income	21.5	12.5	24.0	32.1	42.0	60.7
Lower middle-income	2.1	1.3	-2.6	2.9	9.4	3.0
Low-income	6.1	7.9	-0.6	0.4	1.2	0.3

Note: EPO = European Patent Office. OHIM = Office for Harmonization in the Internal Market. Trademark data refer to class counts, i.e., the number of classes specified in applications. Industrial design data refer to design counts, i.e., the number of designs contained in applications. "-" = Data not reported because the IP office was not one of the top five IP offices.

Source: WIPO Statistics Database, October 2013

Patents and utility models

Patent filings grew by 9.2% in 2012 – the fastest growth recorded in the past 18 years

Patent filings worldwide grew by 9.2% in 2012, representing the fastest growth recorded in the past 18 years. Following a 3.9% decrease in 2009, patent filings worldwide have now rebounded strongly, with accelerating growth rates – 7.6% in 2010, 8.1% in 2011 and 9.2% in 2012. This was mainly due to strong growth in filings at SIPO. The estimated 2.35 million patent filings worldwide in 2012 consisted of 1.51 million filed by residents and 0.83 million by non-residents.

16 of the top 20 patent offices reported growth in filings

Among the top 20 IP offices, SIPO (+24%) saw the largest growth in filings in 2012, followed by the offices of New Zealand (+14.3%), Mexico (+9%), the United States Patent and Trademark Office (USPTO, +7.8%) and the IP office of the Russian Federation (+6.8%). Growth in resident filings was the driving force behind the overall increase of filings at SIPO, the Russian Federation and the USPTO, while growth in non-resident filings was primarily responsible for the total growth in filings at the IP offices of Mexico and New Zealand. Several offices of middle-income countries, such as Brazil (+5.1%), India (+3.9%) and South Africa (+2.7%), also reported growth in filings.

Filing behavior in Europe showed mixed trends. For example, the European Patent Office (EPO) and the offices of Germany and the United Kingdom (UK) witnessed growth. In contrast, the offices of France and Italy received fewer applications in 2012 than in 2011.

Robust growth in international patent filings

International patent applications filed through the Patent Cooperation Treaty (PCT) have also rebounded strongly since the global economic crisis, with growth of 5.7% in 2010, 11% in 2011 and 7.1% in 2012. The total number of flings made via the PCT system amounted to 195,308 in 2012, which is more than double the figure recorded in 2000.

For the first time, China holds the top positions for both destination and source of patent filings

In 2012, for the first time, residents of China accounted for the largest number of patents filed throughout the world. In addition, SIPO accounted for the largest number of applications received by any single IP office. Residents of China filed 560,681 patent applications; this compared with those filed by residents of Japan (486,070) and residents of the United States of America (US, 460,276). Similarly, SIPO received 652,777 applications, compared to 542,815 for the USPTO and 342,796 for the Japan Patent Office (JPO).

Strong growth in filings within the food chemistry and digital communication technology fields

The majority of the 35 fields of technology witnessed growth in applications, with food chemistry (+9.2%) and digital communication (+8.4%) exhibiting the highest average annual growth rates between 2007 and 2011.[2] However, the fields of computer technology (134,272) and electrical machinery (122,697) accounted for the largest numbers of applications. The combined share of these two fields increased from 10.3% in 2007 to 14.8% in 2011.

Patent filings by field of technology differ across origins. Residents of Israel and the US filed a high concentration of their applications in the computer and medical technologies fields. Applications filed by residents of Belgium, India and Switzerland were more concentrated in the organic fine chemistry field. In contrast, a higher share of applications filed by residents of Japan, Singapore and the Republic of Korea fell within the field of semiconductors. Residents of European countries such as France, Germany and Sweden focused their filings on transport-related technologies.

Patent filings for energy-related technology grew by 5.3% in 2012. Of the 38,300 patent filings related to energy-related technology, solar energy accounted for 60% of the total; it was followed by fuel cell technology (21.2%) and wind energy (17.4%). Applications filed by residents of China Hong Kong (SAR), Israel and Switzerland were highly concentrated in solar energy, while those of Finland, Japan and the UK had higher shares dedicated to fuel cell technology.

Patents granted worldwide exceeded the one million mark in 2012

In 2012, for the first time, the total number of patent grants issued worldwide exceeded the one million mark, with 694,200 issued to residents and 439,600 to non-residents. The total number of grants worldwide grew over the three-year period from 2010 to 2012, with increases of 12.4% in 2010, 9.7% in 2011 and 13.7% in 2012. The 13.7% growth in 2012 – the highest rate since 2006 – was mainly due to growth in grants issued by the JPO, SIPO and the USPTO. Combined, these three offices accounted for 80% of the 2012 worldwide growth.

More than 8.6 million patents in force worldwide in 2012

An estimated 8.66 million patents were in force worldwide in 2012. This figure is based on data provided by 82 IP offices. The USPTO (2.24 million) continues to be the IP office with the largest number of patents in force, followed by the JPO (1.7 million) and SIPO (0.9 million). In recent years, the gap between the JPO and the USPTO on the one hand, and SIPO on the other, has narrowed due to substantial growth in patents in force at SIPO. In 2012, non-resident holders accounted for a large share of patents in force at SIPO (45.9%) and the USPTO (48.4%). In contrast, only 13.6% of all patents in force at the JPO are owned by non-residents.

2 Patent filing data by field of technology refer to published applications. There is a minimum delay of 18 months between the application and publication dates. For this reason, 2011 is the latest available year for statistics on patents by field of technology.

Average age of patents in force differs across IP offices

Patent rights are generally limited to a period of 20 years, counted from the filing date. Holders must pay maintenance fees in order to maintain validity. At 12.3 years, the IP office of Canada had one of the highest average ages of patents in force in 2012. Other IP offices where the average age of patents in force in 2012 was more than 10 years were the IP offices of Germany (11.3 years), South Africa (11.1 years), India (11 years), Finland (10.7 years) and the US (10.2 years).

Fall in pending applications at the top IP offices

In 2012, the number of potentially pending applications (i.e., unprocessed applications at any stage of the application process) fell at three of the top four IP offices. The JPO and the USPTO saw year-on-year decreases over the 2008-12 period, while the Korean Intellectual Property Office (KIPO) reported an annual decrease only from 2011 to 2012. The EPO has witnessed continuous growth since 2004. Despite the decreases in the numbers of potentially pending applications in recent years, the USPTO (1.2 million) and the JPO (1.1 million) had the largest stock of potentially pending applications in 2012. At 637,823, the EPO saw a 2.9% increase in potentially pending applications from 2011 to 2012.

Persistent and substantial growth in utility model filings

Utility model (UM) applications worldwide grew by double-digit rates for each year between 2008 and 2012. The 23.4% growth in 2012 was lower than the 34.7% growth observed in 2011, but was similar to the 2010 growth rate (+24.7%). The strong growth in UM applications worldwide was mainly due to growth in filings in China. When SIPO data are excluded from world estimates, the growth rate of UM applications worldwide was only around 2.2% in 2012.

SIPO saw a 26.4% increase in UM applications in 2012. In addition to SIPO, several other IP offices exhibited strong growth in filings – notably, Turkey (+15.5%), the Czech Republic (+13.2%), Italy (+11.7%) and Thailand (+10.7%).

Trademarks

Trademark class counts grew by 6% in 2012

The total number of classes specified in trademark applications (i.e., class counts) filed worldwide grew by 6% in 2012; this was lower than the growth rates recorded in 2010 (9%) and in 2011 (9.5%). The strong growth in class counts between 2010 and 2012 was mainly due to a substantial increase in filings in China. In 2012, a total of 6.58 million classes were specified in applications, which comprised of 4.84 million resident application class counts and 1.74 million non-resident class counts.

The majority of the top 20 IP offices saw growth in filings received

The majority of the top 20 IP offices saw growth in class counts in 2012. Among the top 20 offices, the IP offices of two middle-income countries, namely Turkey (+24.1%) and China (+16.5%), reported the fastest growth. Strong growth in filing activity by residents was mainly responsible for the overall growth rates reported by these offices. Mexico (+5.5%) and the Russian Federation (+7.9%) also exhibited strong growth in class counts for 2012. In contrast, the IP offices of European Union (EU) countries recorded fewer application class counts in 2012 than in 2011. For example, Italy reported an 8.3% decrease, while Germany and Spain reported decreases of 6.4% and 5.6%, respectively.

International registrations grew for the third consecutive year

In 2012, international registrations via the Madrid system saw a third year of continued growth, following their decrease recorded in 2009. Registrations through the WIPO-administered Madrid system increased by 3.1% in 2012, when they reached a new record of almost 42,000 international registrations.

Residents of China filed approximately 1.58 million application class counts worldwide

In 2012, residents of China filed, worldwide, applications with approximately 1.58 million class counts; this was significantly higher than the figures for the US (599,896), Germany (387,503) and France (384,665). In many countries, the majority of trademarks were filed by residents with their respective domestic IP offices. However, there were some notable exceptions; a high proportion of total filing activity originating in Austria (49.5%), Switzerland (76.9%) and the US (45%) were filed abroad.

The agriculture and clothing sectors accounted for the largest shares of trademark applications

The agriculture and clothing sectors accounted for the largest shares of trademark filing activity, but varied across origins. For example, it was the agriculture and business sectors that were most popular for applicants from Mexico, Poland and Turkey, whereas the research and technology sector received the most attention by applicants domiciled in Australia and the US. Applications filed by residents of China and the Republic of Korea tended to be concentrated in the agriculture, clothing, and research and technology sectors.

Trademark registrations issued worldwide decreased over two consecutive years

In 2012, a total of 4.4 million classes were specified in trademark registrations worldwide. This represents a 1.5% decrease on 2011, and marks the second consecutive year of a drop in the total number of registration class counts. This decline in registration activity worldwide was mainly due to a decrease in the number of registrations issued by the IP office of China. Despite this development, the IP office of China issued trademark registrations with a total of just over 1 million class counts in 2012. OHIM (276,856) and the USPTO (236,632) also had large numbers of registration class counts in 2012.

Approximately 24 million trademarks in force across the world in 2012

In 2012, approximately 24 million trademarks were in force at 74 IP offices worldwide. China, with 6.4 million trademarks, accounted for the largest number of trademarks in force in 2012. In fact, the number of trademarks in force in China represents a 16.2% increase on the previous year's 5.5 million. The IP offices of Japan (1.78 million) and the US (1.80 million) reported almost equivalent numbers of trademarks in force in 2012, with both offices recording modest growth – 1.2% for Japan and 3.6% for the US – on 2011. Like the IP office of China, Turkey's office (+13.3%) and OHIM (+12.6%) also reported considerable growth in the numbers of trademarks in force over the same period.

The average age of trademarks in force was highest in Hungary

The average age of trademarks in force in 2012 was highest at the IP office of Hungary (15.4 years). This was in contrast to the average age of trademarks in force in Turkey (6.8 years). The average ages of trademarks in force in selected European countries were 11.7 for Austria, 12 for Portugal and 11.3 years for Spain. These countries had higher average ages for trademarks in force than countries such as Australia, the Russian Federation, Mexico and the US, for which the average age was approximately 8 years.

Industrial designs

Industrial design counts grew by 17% – the fastest growth on record

Following a slowdown witnessed in both 2008 and 2009, the numbers of industrial designs contained in applications (i.e., design counts) rebounded strongly, with double-digit growth recorded in each of the three subsequent years 2010, 2011 and 2012. The 2012 growth of 17% was, in fact, the highest since design count records became available in 2004. The high year-on-year growth in design counts was mainly due to sharp increases in the number of applications filed at SIPO. In 2012, applications containing an estimated 1.22 million designs were filed worldwide, comprised of 1.04 million associated with resident filings and 0.17 million associated with non-resident filings.

The IP office of the Russian Federation recorded the fastest growth in industrial design counts

Among the top 20 IP offices, the IP office of the Russian Federation – with 29.5% growth – recorded the fastest growth in design counts in 2012. SIPO (+26.1%), Turkey (+12.4%), the Office for Harmonization in the Internal Market (OHIM, +12%) and KIPO (+11.8%) were the four other offices that experienced double-digit growth from 2011 to 2012. Filing behavior at the IP offices of larger middle-income countries showed mixed trends. Morocco (-14.8%), Brazil (-4%) and Mexico (-0.3%) saw decreases, while India (+4%) and Ukraine (+3.3%) reported growth in design counts over the same period.

Residents of China filed applications containing almost 650,000 industrial designs across the world

Residents of China filed, worldwide, applications containing almost 650,000 industrial designs in 2012. They were followed by residents of Germany (76,369), the Republic of Korea (68,737) and the US (45,245). Residents of China filed applications containing 99% of their industrial designs at SIPO, whereas residents of the US filed applications containing the majority of their designs abroad (58.4%).

More than 2.7 million industrial design registrations in force worldwide

In 2012, an estimated 2.71 million industrial design registrations at 86 offices were in force worldwide. SIPO, which had more than 1.1 million registrations in force, accounted for 41.8% of the world total. The USPTO, KIPO and the JPO each had around 250,000 to 270,000 registrations in force in 2012. SIPO (+22.7%) and the IP offices of Malaysia (+12.7%) and Turkey (+11.5%) saw the fastest growth in their numbers of registrations in force. In contrast, the IP offices of India (-5.7%) and South Africa (-12.5%) recorded the largest decreases in registrations in force. A number of European countries, such as Austria, Germany, Poland and the UK, reported fewer registrations in force in 2012 than in 2011.

Average age of industrial design registrations in force is highest among IP offices of many European countries

Industrial design registrations are generally valid for up to 15 years, but this time period can vary depending on the IP office. The average age of registrations in force is high among the IP offices of many European countries. For example, the average age of registrations in force in 2012 was 10.7 years in Spain, 9.4 years in Austria, 9 years at the Benelux Office for Intellectual Property (BOIP) and 8.5 years at the UK IP Office. In contrast, the average age of registrations in force in 2012 at the IP offices of Canada, China, Ukraine, KIPO and OHIM was less than 5 years.

Plant varieties

There was modest growth in the number of plant variety applications filed worldwide

The total number of plant variety applications reached a new record in 2012 (14,319), but the growth rate of 1.8% in 2012 was modest compared to 2011 (+7.5%). The smaller growth in 2012 was mainly due to a decrease in applications at the European Union's Community Plant Variety Office (CPVO). The majority of plant variety applications filed worldwide were received by offices of high-income countries. Despite the 12.2 percentage point decrease in the high-income countries' share of world filings, this group received 64.6% of total plant variety applications in 2012.

The Community Plant Variety Office received the largest number of applications in 2012

The EU's CPVO (2,868) received the highest number of applications in 2012, followed by the offices of China (1,583) and Ukraine (1,281). Even though applications fell at CPVO by 9.9%, this office received almost twice as many as the office of China.

Residents of the Netherlands filed the largest number of plant variety applications

In 2012, the largest number of plant variety applications originated in the Netherlands (2,560), followed by the US (1,829) and China (1,465). Residents of France, Germany and Japan had similar numbers of applications i.e., approximately 1,000 each. However, twelve of the top 20 origins, including the top two origins, filed fewer applications in 2012 than in 2011.

Plant varieties in force worldwide increased by 7.6% in 2012

There has been a consistent upward trend in the number of plant varieties in force worldwide, with the 7.6% increase in 2012 representing the fastest growth since 2007. The CPVO accounted for approximately 20% of all patent varieties in force worldwide in 2012. The majority of the top 20 offices had more plant varieties in force in 2012 than in 2011. The offices of China (+32.9%), Ukraine (+11.8%), Brazil (+11%) and the Netherlands (+10%) saw double-digit growth over the same period.

DATA DESCRIPTION

Data sources

The IP data published in this report were taken from the WIPO Statistics Database, and are primarily based on WIPO's Annual IP Statistics Survey (see below) and on data compiled by WIPO in the processing of international applications/registrations through the PCT, Madrid and Hague systems. Data are available for download from WIPO's Statistics Data Center at: *www.wipo.int/ipstats/*.

Patent family and technology data are a combination of those taken from the WIPO Statistics Database and the European Patent Office PATSTAT database (using the April 2013 edition of the PATSTAT database).

GDP and population data were obtained from the World Development Indicators Database, which is maintained by the World Bank. R&D expenditure data were sourced from the UNESCO Institute for Statistics.

Patent Prosecution Highway (PPH) data were obtained from the Japan Patent Office.

This report uses the World Bank's income classifications. Economies are divided according to 2012 gross national income per capita, calculated using the World Bank Atlas method. The groups are: low-income (USD 1,035 or less); lower middle-income (USD 1,036 - USD 4,085); upper middle-income (USD 4,086 – USD 12,615); and high-income (USD 12,616 or more).[1]

The report also uses the UN definition of regions and subregions. The geographical terms used by WIPO may differ slightly from those defined by the UN. However, the composition of regions and subregions is identical.[2]

WIPO's annual IP statistics survey

WIPO collects data from national and regional IP offices around the world through annual questionnaires, and it enters these data in the WIPO Statistics Database. In cases where IP offices do not provide data but statistics are published on their websites or in annual reports, these data - where possible - are used to supplement the survey responses. A continuing effort is made to improve the quality and availability of IP statistics and to gather data for as many IP offices and countries as possible. IP offices can download the annual IP questionnaires at: *www.wipo.int/ipstats/en/data_collection/questionnaire/*.[3]

The data are broken down by IP office, origin, applications abroad, resident and non-resident applications, class counts, design counts, etc. Refer to the Glossary for the definitions of key concepts contained in this publication.

Estimation procedure for world totals

World totals for applications and grants/registrations for patents, utility models, trademarks, industrial designs and plant varieties are WIPO estimates. Data are not available for all IP offices for every year. Missing data are estimated using methods such as linear extrapolation and averaging adjacent data points. The estimation method used depends on the year and the office in question. Where an office provides data that are not broken down by origin, WIPO estimates the resident and non-resident counts using the historical shares of that office. Data are available for the majority of the larger offices. Only small shares of world totals are estimated. For example, the estimation for the total number of patent applications worldwide covers 130 offices; data are available for 95 of these offices. These 95 offices accounted for 99% of the estimated world total. The table below shows data availability by IP type and data coverage for application data.

1 For further details on World Bank classification, see *http://data.worldbank.org/about/country-classifications*.

2 For further details on UN classification, see *http://unstats.un.org/unsd/methods/m49/m49regin.htm*.

3 All questionnaires are available in English, French and Spanish.

IP type	World totals estimates based on:	Data available for:	Data coverage (%)
Patents	130 offices	95 offices	99
Utility models	75 offices	56 offices	99
Trademarks	155 offices	102 offices	95
Industrial designs	131 offices	103 offices	98
Plant varieties	66 offices	60 offices	98

Note: Trademark data refer to the number of trademark applications based on class counts (i.e., the number of classes specified in applications). Industrial design data refer to the number of industrial design applications based on design counts (i.e., the number of designs contained in applications).

National and international data

Application and grant/registration data include both direct filings and filings via the international systems (where applicable). This report employs the following terms: patent applications and grants; utility model applications and grants; trademark applications and application class counts, and registrations and registration class counts; industrial design applications and application design counts, and registrations and registration design counts; and plant variety applications and grants. In the case of patents and utility models, data include direct filings at national patent offices as well as PCT national phase entries. For trademarks, data include filings at national and regional offices, and designations received by relevant offices via the Madrid system. Data for industrial designs include national and regional applications combined with designations received by relevant offices via the Hague system.

International comparability of indicators

Every effort has been made to compile IP statistics based on the same definitions and to facilitate international comparability. As mentioned above, the data are collected from offices using WIPO's harmonized annual IP questionnaires. However, it must be kept in mind that national laws and regulations for filing IP applications or for issuing IP rights, as well as statistical reporting practices, may differ across jurisdictions.

Please note that due to the continual updating of data and the revision of historical statistics, data provided in this report may differ from previously published figures and from the data available on WIPO's web pages.

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SPECIAL SECTION THE INTERNATIONAL MOBILITY OF INVENTORS

Introduction

The relationship between migration and innovation has become a major focus of research by academics and policymakers alike. The key factor driving this development is the observation that high-skilled migrants decisively contribute to innovation outcomes, to the international diffusion of knowledge and, ultimately, to the economic growth of nations.

In some of the largest migrant-receiving countries (e.g., the United States of America (US)), immigrants are overrepresented among the most skilled workers. While immigrants account for about 12% of the entire US labor force, they account for 25% of US scientists and engineers, 50% of US PhDs, 60% of post-doctoral students, and 26% of US-based Nobel Laureates (Black and Stephan, 2008; Kerr, 2009). Some anecdotal evidence suggests that this overrepresentation of immigrants among high-skilled workers is not unique to the US, but extends to other countries that receive large numbers of migrants (Fink *et al*, 2013). Thus, an increasing, albeit still limited, number of studies have linked high-skilled immigration to knowledge creation (see Breschi *et al*, 2013; Kerr, 2013, for recent surveys). Given this situation, many countries are currently debating and reforming their immigration policies. A key question governments and policy makers face is how to attract skilled workers who can relieve domestic skills shortages and foster innovation.

This special section discusses the opportunities for using IP data and patent applications, in particular, for migration related research. It does so by describing the main patterns and trends in inventor international migration – data which were elicited from information contained in Patent Cooperation Treaty (PCT) applications. The next section briefly describes the source of the data, while the following sections more extensively analyze aggregated figures on the phenomenon of inventor migration and explore the possibilities of using these data for future research.

What can patent data tell us about skilled migration?

The literature on migration and innovation is limited, mainly due to the relative lack of data that have characterized this research field. In the last 15 years, census-based migration datasets have been the data source most commonly used to conduct research on migration issues as well as to study the migration-innovation nexus. These datasets comprise information on migrants by destination country based on population censuses. Notwithstanding their value for economic research, census-based datasets have certain limitations. For example, the data are only released every 10 years. Moreover, the majority of existing datasets provide a skills breakdown according to three schooling levels: primary, secondary and tertiary, which only offers a rough differentiation of skills.

More recently, information retrieved from patent documents has also been used for the purpose of undertaking innovation-migration research. Broadly speaking, patent applications contain relevant information on the inventors and owners of the patent, including the inventors'/owners' names and addresses, technologies (IPC classifications) and backward citations. Thus, patent data are an unrivalled indicator for studying a number of innovation-related phenomena, such as the mobility of inventors, their social networks and the patterns of knowledge diffusion. The potential benefits of using inventor migration data as captured in patent applications - which this section elucidates - are manifold. First, data are related to one specific class of high-skilled workers that are bound to be more homogenous than the group of tertiary-educated workers as a whole. In addition, inventors arguably have special economic importance, as they create knowledge that is at the genesis of technological and industrial transformation. The use of patent-inventor data for migration analysis implies the direct measurement of migrants, contribution to innovation in their destination countries'. Finally, patent data (and therefore inventor-related information) are collected on a yearly basis, and such data are available for a large number of "sending" and "receiving countries" at a relatively low cost.

Recently, scholars have undertaken studies of migrant inventors using information from patent applications (Breschi *et al*, 2013; Kerr, 2009). In particular, they have sought to identify the likely cultural origin of inventor names disclosed in patent data, which provides important insights. However, the cultural origin of inventor names may not always indicate recent migratory background – for example, Turkish immigrants in Germany.

PCT applications contain information on the nationality of inventors as well as information on their country of residence at (for a detailed description of the data source, see Miguélez and Fink, 2013). This information is available due to one of the requirements under the PCT specifying that only nationals or residents of a PCT contracting state can file PCT applications. To verify that applicants meet at least one of the two eligibility criteria, the PCT application form requires applicants to provide details of both their nationality and their residency. Moreover, it transpires that, until 2012, US patent application procedures have required all inventors in PCT applications to be listed as applicants. Thus, if a given PCT application included the US as a country in which the applicant was considering pursuing a patent – a so-called designated state in the patent application – all inventors were listed as applicants, whereby ensuring that information on their residence and nationality were available. The majority of PCT applicants seek protection in the US, reflecting the popularity of this country as the world's largest market. As a result, these data offer a valuable resource to better understanding high-skilled migration flows and their implications for innovation.[1]

The PCT database comprises more than 6 million names of the inventors detailed in PCT applications. These names include some homonyms which may (or may not) refer to the same inventor. The database does not, however, provide a single identifier for each inventor, which makes it difficult to consolidate inventor names. For example, when two applications contain identical inventor names, it is difficult to distinguish whether they are filed by the same inventor or by two different inventors.

1 Unfortunately, the US enacted changes to its patent laws under the Leahy-Smith America Invents Act (AIA), which effectively removed the requirement that inventors also be named as applicants. Starting on September 16, 2012, PCT applicants (automatically) designating the US became free to list inventors and are no longer obliged to indicate their nationality and residence. As a result, many applicants do not provide such information any longer.

The economic literature has disambiguated individual inventors through their names and surnames as well as through other information contained in patent documents. This section does not attempt to disambiguate inventor names, and it treats each combination of the inventor name with an application number as if it were a different inventor. Although this approach is far from perfect, it enables meaningful analysis on an aggregate level.

Overall, the share of PCT data with information on nationality and residency was very high, i.e., approximately 80% for the 1978-2012 period. However, this coverage was unevenly distributed over time – approximately 60-70% during the 1990s and 70-95% during the 2000s. Coverage was also unevenly distributed across countries: US (66%), Canada (81%), the Netherlands (74%), Germany (95%), the United Kingdom (UK, 92%), France (94%), Switzerland (93%), China (92%) and India (90%), among others.

Using the inventor's nationality information outlined above, the following subsections present several migration-related figures. These figures clearly show that the pattern of inventor's mobility, especially from the perspective of the receiving countries, resembles other high-skilled migration figures, and in particular, what is known about the migration of scientists and engineers based on anecdotal evidence, surveys and media reports.

WHERE DO MIGRANT INVENTORS EMIGRATE TO/COME FROM?

Analysis of all records containing complete information has shown that approximately 5 million, i.e., 9-10% of inventors had a migration background – i.e., their place of residence was different from their nationality. This share has increased over time – it was 7.8% during the 1996-2000 period and 10.1% during the 2006-10 period.

Immigrant inventors were overwhelmingly concentrated in high-income countries, both during the 1996-2000 and 2006-10 periods (see Table 1). North America accounted for the highest concentration of immigrant inventors in high-income economies. During the period 2006-10, 59.1% of immigrant inventors were residing in North America – which is a share that is larger than that recorded during the late 1990s. A total of 31.4% of immigrant inventors lived in Europe over the 2006-10 period, which is lower than its 1996-2000 share. Asia lagged far behind, accounting for 7.5% of all immigrant inventors during the 2006-10 period.

Table 1: Shares of immigrant and emigrant inventors by income group and region: 1996-2000 and 2006-10

Income group / Region	Immigrant inventors (%) 1996-2000	Immigrant inventors (%) 2006-10	Emigrant inventors (%) 1996-2000	Emigrant inventors (%) 2006-10
Income group				
High-income	98.1	97.2	66.9	57.7
Upper middle-income	1.7	2.4	22.2	26.8
Lower middle-income	0.2	0.3	10.4	14.9
Low-income	0.1	0.1	0.5	0.6
Region				
Africa	0.5	0.1	1.8	1.7
Asia	5.0	7.5	31.8	41.9
Europe	39.3	31.4	52.0	41.9
Latin America and the Caribbean	0.7	0.3	2.2	2.7
North America	51.5	59.1	9.7	9.7
Oceania	3.1	1.5	2.5	2.1

Note: Income groups are defined according to the World Bank classification, 2012.

Source: WIPO Statistics Database, October 2013

Table 1 also presents the data from the perspective of the sending countries. The first interesting point to note is that the largest proportion of out-migration of inventors also occurred in high-income countries. However, the share of inventor emigrants from these countries was considerably lower when compared to the share of inventor immigrants. Indeed, middle-income countries accounted for more than 40% of emigrant inventors during the 2006-10 period. Moreover, when the data for the 1996-2000 and 2006-10 time periods are compared, it is possible to see that the contribution of middle-income economies increased considerably – i.e., approximately nine percentage points – while the corresponding share for high-income countries decreased by the same order of magnitude.

Like immigration, emigration was highly concentrated in two world regions, namely, Asia and Europe. Together these two regions accounted for more than 83% of inventor emigrants during the period 2006-10.[2]

Table 2 provides immigrant and emigrant data broken down by country. The majority of immigrant inventors were concentrated in the US, which accounted for 57.1% of all inventors during the 2006-10 period. European countries, such as France, Germany, Switzerland, the Netherlands and the UK, lagged far behind.

As can be observed, other high-income countries also accounted for large numbers of emigrant inventors; indeed, such countries were ranked among the top 20 in terms of having the largest emigrant communities. However, for the 2006-10 period, China and India topped the world ranking, followed by Germany and the UK. When compared with immigration patterns, emigrant inventors were more evenly distributed across countries. On the one hand, the US alone received approximately 57% of all immigrant inventors; on the other, six countries (Canada, China, France, Germany, India and the UK) hosted 57% of all emigrant inventors. Interestingly, countries such as Canada, France, Germany and the UK, despite being critical attractors of talent, saw more inventors emigrating than immigrating.

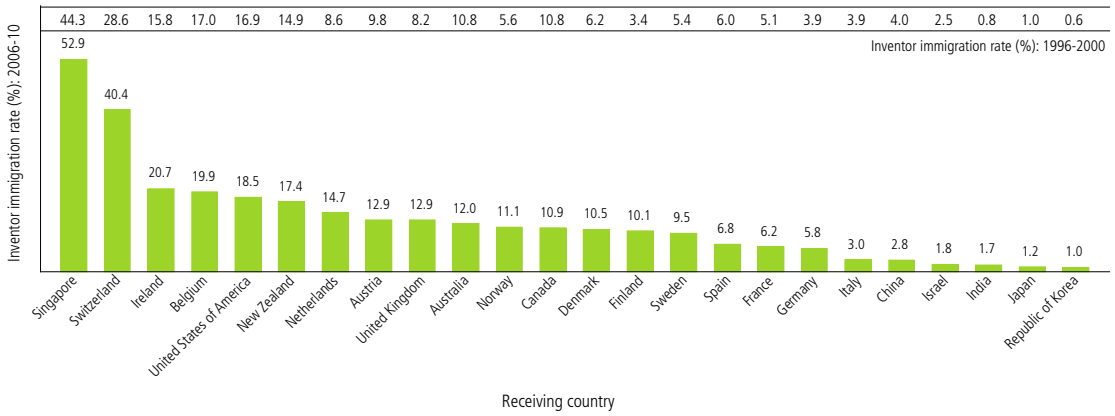
2 It should be noted that from the 1996-2000 period to 2006-10 period, the share of emigrant inventors from Asian countries increased considerably i.e., from 31.8% to 41.9%, while the share of European emigrant inventors decreased by approximately 10 percentage points between the same time periods (see Table 1).

Table 2: Top 20 countries with the largest inventor immigrant and emigrant communities, 2006-10

Country	Immigrants	Share of world total (%)	Country	Emigrants	Share over world total (%)
United States of America	117,244	57.1	China	33,413	16.3
Germany	14,547	7.1	India	24,807	12.1
Switzerland	12,479	6.1	Germany	19,043	9.3
United Kingdom	9,113	4.4	United Kingdom	15,160	7.4
Netherlands	5,565	2.7	Canada	13,056	6.4
France	5,369	2.6	France	11,790	5.7
Singapore	4,334	2.1	United States of America	6,795	3.3
Canada	4,107	2.0	Republic of Korea	6,101	3.0
Japan	4,092	2.0	Italy	6,092	3.0
China	3,289	1.6	Netherlands	5,052	2.5
Sweden	3,204	1.6	Russian Federation	4,404	2.1
Belgium	3,173	1.5	Japan	4,029	2.0
Australia	2,441	1.2	Australia	3,212	1.6
Finland	1,969	1.0	Spain	3,085	1.5
Austria	1,905	0.9	Austria	2,775	1.4
Spain	1,590	0.8	Sweden	2,506	1.2
Denmark	1,520	0.7	Israel	2,252	1.1
Republic of Korea	1,188	0.6	Turkey	2,046	1.0
Italy	1,108	0.5	Belgium	1,932	0.9
Ireland	1,092	0.5	Greece	1,886	0.9
World	**205,446**	**100**	**World**	**205,446**	**100**

Source: WIPO Statistics Database, October 2013

Figure 1: Inventor immigration rates for the largest receiving countries, 2006-10



Source: WIPO Statistics Database, October 2013

The US accounted for not only the largest absolute number of immigrant inventors, but it also had a high immigration rate of inventors, which is defined as total number of immigrant inventors over the total number of inventors (Figure 1). However, during the 2006-10 period, Singapore (52.9%) had the highest immigration rate, followed by Switzerland (40.4%), Ireland (20.7%) and Belgium (19.9%). Figure 1 also shows inventor immigration rates for the 1996-2000 period. Countries such as Denmark, Finland, Germany, Norway, Sweden, Switzerland, the Netherlands, and the UK recorded considerable increases in their immigration rates between the 1996-2000 and the 2006-10 periods.

Who recruits internationally?

In general, inventor immigration rates differ not only across countries, but also across different applicants. For example, Table 3 lists the immigration rates for the top 10 PCT applicants – based on the residence of the first-named applicant for the 2006-10 period for a selection of countries. It shows that the distribution of immigrant inventors was very uneven across applicants, even between enterprises of a relatively similar size. In France, for example, France Telecom's rate of immigrant inventors was between four and five times greater than that of Peugeot-Citroen – an imbalance which cannot be solely attributed to differences across technology fields. In another example, Peugeot-Citroen, had an immigration rate that was more than ten times greater than that of Renault S.A.S.

One interesting aspect of the data highlighted in Table 3 is the role played by universities and public research centers in the recruitment of talent from abroad. The top patenting universities and public research centers feature some of the highest inventor immigration rates among the top PCT applicants. This is the case for the University of California in the US, for example, and also for Cambridge University, Imperial Innovations (Imperial College London), and Isis Innovation (Oxford University) in the UK, among others.

Table 3: Inventor immigration rates for top 10 applicants, selected countries, 2006-10

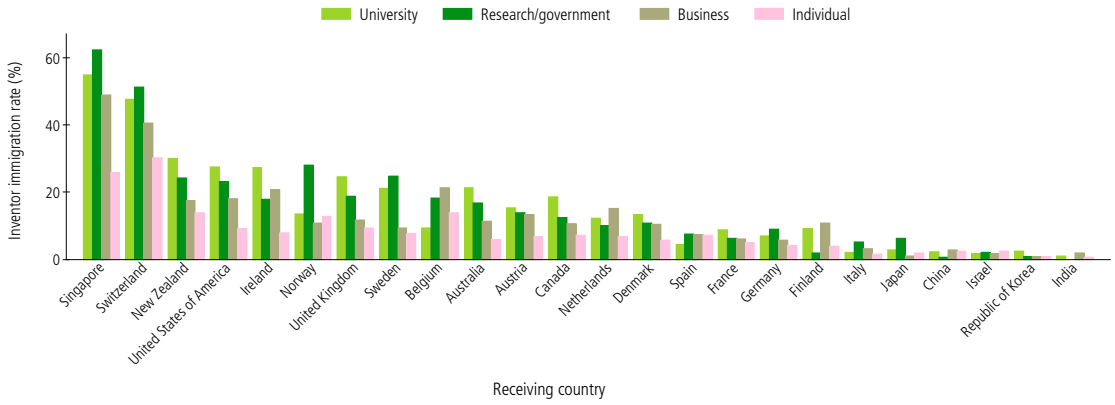
Applicant's name	Immigration rate (%)	Applicant	Inventor
United States of America			
QUALCOMM INCORPORATED	50.8	6,528	19,907
MICROSOFT CORPORATION	57.4	3,020	11,297
3M INNOVATIVE PROPERTIES COMPANY	11	2,577	8,852
HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.	18.6	2,360	6,114
E.I. DUPONT DE NEMOURS AND COMPANY	17	2,118	5,916
INTERNATIONAL BUSINESS MACHINES CORPORATION	21.4	2,006	6,854
UNIVERSITY OF CALIFORNIA	28.2	1,754	5,598
MOTOROLA, INC.	23.4	1,573	4,488
PROCTER & GAMBLE COMPANY	10.2	1,540	4,953
BAKER HUGHES INCORPORATED	12.8	1,461	3,552
Switzerland			
NESTEC S.A.	56.4	619	1,781
F. HOFFMANN-LA ROCHE AG	46.6	564	1,385
NOVARTIS AG	62.6	489	1,179
SYNGENTA PARTICIPATIONS AG	66.6	308	972
ACTELION PHARMACEUTICALS LTD	30.2	272	879
ALSTOM TECHNOLOGY LTD	67.6	212	506
ABB RESEARCH LTD	65	201	529
SWISS FEDERAL INSTITUTE OF TECHNOLOGY	49.2	186	534
SIKA TECHNOLOGY AG	30.4	179	426
INVENTIO AG	23.6	174	338
Singapore			
AGENCY OF SCIENCE, TECHNOLOGY AND RESEARCH	62.2	791	2,690
NATIONAL UNIVERSITY OF SINGAPORE	57.6	213	735
NANYANG TECHNOLOGICAL UNIVERSITY	61.4	148	474
CREATIVE TECHNOLOGY LTD	21.6	88	217
NANYANG POLYTECHNIC	23	74	166
SINGAPORE HEALTH SERVICES PTE LTD	37.4	35	160
TEMASEK LIFE SCIENCES LABORATORY LIMITED	70.6	28	78
RAZER (ASIA-PACIFIC) PTE LTD	4.6	27	44
SIEMENS MEDICAL INSTRUMENTS PTE. LTD.	25	27	76
S*BIO PTE LTD	77.6	17	49
China			
ZTE CORPORATION	0.2	7,551	17,803
HUAWEI TECHNOLOGIES CO., LTD.	0.8	7,277	18,858
HUAWEI DEVICE CO., LTD.	0.2	570	1,372
TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED	0	419	1,014
ALCATEL SHANGHAI BELL CO., LTD.	0.4	380	1,095
CHINA ACADEMY OF TELECOMMUNICATIONS TECHNOLOGY	2	317	1,002
BYD COMPANY LIMITED	0	263	1,015
TSINGHUA UNIVERSITY	0.2	242	1,571
PEKING UNIVERSITY	0.2	215	818
DA TANG MOBILE COMMUNICATIONS EQUIPMENT CO., LTD.	0.6	205	688
Germany			
ROBERT BOSCH CORPORATION	2.8	6,480	17,484
SIEMENS AKTIENGESELLSCHAFT	6.4	4,555	11,753
BASF SE	14.4	3,562	15,427
BOSCH-SIEMENS HAUSGERATE GMBH	3.2	1,679	4,575
FRAUNHOFER-GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	5.4	1,532	5,521
CONTINENTAL AUTOMOTIVE GMBH	8.6	1,337	3,447
HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN	6.4	1,210	4,420
DAIMLER AG	3.8	1,196	3,601
EVONIK DEGUSSA GMBH	5.6	974	4,103
ZF FRIEDRICHSHAFEN AG	2.4	958	2,702
United Kingdom			
UNILEVER PLC	10.4	594	1,536
GLAXO GROUP LIMITED	12.6	409	1,590
BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY	20.2	389	861
BAE SYSTEMS PLC	3.2	305	644
IMPERIAL INNOVATIONS LTD.	29.8	246	648
ISIS INNOVATION LIMITED	29.8	242	618
DYSON TECHNOLOGY LIMITED	10.4	237	579
ASTRAZENECA UK LIMITED	8.2	210	640
CAMBRIDGE UNIVERSITY	36.6	205	572
QINETIQ LIMITED	2.2	185	458
France			
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	8	1,892	7,002
COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	2.6	1,514	4,240
RENAULT S.A.S.	0.2	1,065	2,357
FRANCE TELECOM	11.6	963	2,188
L'OREAL	1.8	849	1,730
PEUGEOT CITROEN AUTOMOBILES SA	2.4	772	1,502
THALES ULTRASONICS SAS	0.4	626	1,473
INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	9.2	517	1,633
ARKEMA	3.4	506	1,279
L AIR LIQUIDE SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE	5	471	1,332
India			
COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH	0	304	1,477
HINDUSTAN UNILEVER LIMITED	1.4	178	602
RANBAXY LABORATORIES LIMITED	1.8	161	793
DR. REDDY'S LABORATORIES LTD.	0.8	134	891
CADILA HEALTHCARE LIMITED	0.8	128	455
LUPIN LIMITED	3.8	117	564
MATRIX LABORATORIES LTD	0	97	535
CIPLA LIMITED	0	87	257
INDIAN INSTITUTE OF TECHNOLOGY	0.6	82	200
WOCKHARDT LIMITED	1	75	323

Source: WIPO Statistics Database, October 2013

What are inventors' preferred entrance routes?

Even if the evidence is only anecdotal, it seems reasonable to argue that universities and public research organizations act as privileged "points of entry" for high-skilled workers from abroad. Figure 2 explores this scenario by depicting inventor immigration rates across countries, broken down by four types of applicants: university; government and research institutions; business, and individuals. Bearing in mind that the business sector accounts for the vast majority (over 80%) of PCT applications (WIPO, 2012) in most of the countries listed in Figure 2, the university and government sectors accounted for the highest immigration rates. In selected cases, the university/government immigration rates were considerably higher than the business immigration rates – in particular, in Australia, Canada, Japan, Norway, Sweden, the Republic of Korea, the UK and the US. Only Belgium, China, Finland, India, Italy, the Netherlands and Spain did not report higher immigration rates for inventors working in academic institutions, as opposed to those working in commercial enterprises.

Figure 2: Immigration rates of inventors by type of applicant: business, university, research/government, and individual, 2006-10



Source: WIPO Statistics Database, October 2013

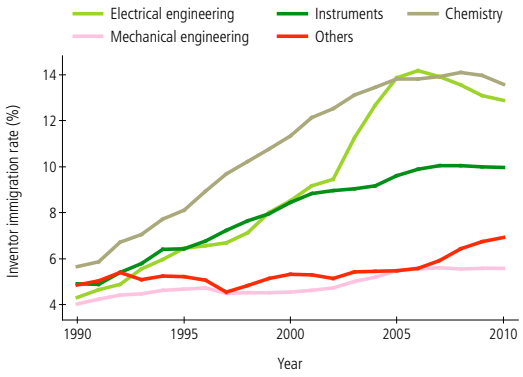
Do inventor immigration rates differ across technological fields?

As is apparent from analysis of applicant-level data, immigrant inventors' contribution to patenting differ markedly across technology fields. For example, inventors may be associated with one or more International Patent Classification (IPC) symbols, which in turn are grouped into 35 technology fields through the concordance table developed by WIPO.[3] It should be noted that when a PCT application relates to multiple fields of technology, the inventor is counted twice. Therefore, adding up the absolute numbers of inventors across the 35 technology fields results in a larger number of inventors than that outlined earlier in this report.

The 35 fields can be divided into broader technology groupings – electrical engineering, instruments, chemistry, mechanical engineering and others. As shown in Figure 3, all technology fields have recorded increases in the rates of immigration during the 1990-2010 period. However, electrical engineering and chemistry emerge as the most attractive sectors for foreign inventors. In contrast, the field of mechanical engineering has remained more or less stable.

3 WIPO has developed a concordance table in order to link IPC symbols to corresponding fields of technology (see *www.wipo.int/ipstats/en*).

Figure 3: Inventor immigration rates over time by field of technology: three-year moving averages



Source: WIPO Statistics Database, October 2013

Table 4 shows inventor immigration rates by field of technology for the 1996-2000 and 2006-10 periods. As can be seen, the differences across technology fields – in terms of how they relied on foreign inventors – were noticeable. Thus, for example, during the 2006-10 period, immigration rates varied from 4.1% (mechanical elements) to 18.3% (micro-structure and nano-technology). Other fields also relied heavily on immigrant inventors; such fields included pharmaceuticals (14.6%), biotechnology (14.6%), digital communication (15.2%), and basic communication processes (16%). The majority of technology fields had a higher inventor immigration rate for the 2006-10 period compared to the 1996-2000 period. Despite a decrease, both analyses of biomaterials and biotechnology fields showed a high inventor immigration rate for both periods.

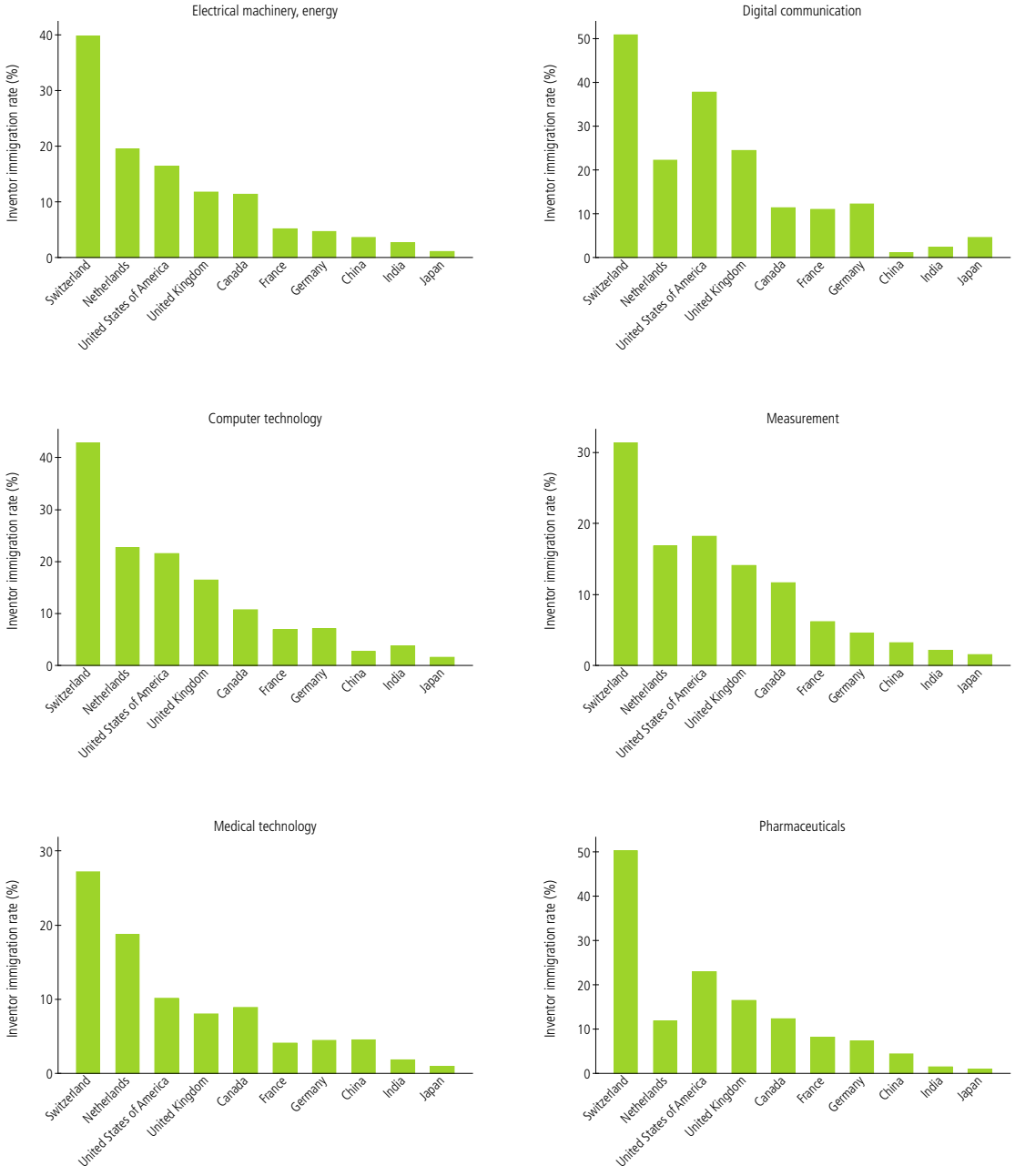
Table 4: Inventor immigration rates by technology field, 2006-10

Field of technology	Immigration rate (%), 1996-2000	Immigration rate (%), 2006-10
Electrical engineering		
Electrical machinery, energy	5.2	7.2
Audio-visual technology	6.2	9.5
Telecommunications	7.5	11.9
Digital communication	9.7	15.2
Basic communication processes	9.2	16.0
Computer technology	9.6	13.4
IT methods for management	8.0	10.5
Semiconductors	7.0	12.1
Instruments		
Optics	6.5	7.9
Measurement	7.0	9.8
Analysis of biological materials	13.9	13.8
Control apparatus	5.3	7.0
Medical technology	6.9	8.3
Chemistry		
Organic fine chemistry	9.3	13.9
Biotechnology	16.5	14.6
Pharmaceuticals	11.3	14.6
Macromolecular chemistry, polymers	7.2	10.2
Food chemistry	7.9	11.2
Basic materials chemistry	7.6	11.4
Materials metallurgy	5.7	7.7
Surface technology, coating	5.9	8.1
Micro-structure and nano-technology	13.0	18.3
Chemical engineering	6.5	9.0
Environmental technology	4.6	7.3
Mechanical engineering		
Handling	4.5	5.1
Machine tools	3.6	4.6
Engines, pumps, turbines	4.4	6.1
Textile and paper	5.1	6.8
Other special machines	5.0	6.4
Thermal processes and apparatus	4.3	5.2
Mechanical elements	3.8	4.1
Transport	3.9	4.3
Other fields		
Furniture, games	4.7	5.0
Other consumer goods	5.4	5.3
Civil engineering	4.4	7.7

Note: The IPC-technology concordance table (available at: *www.wipo.int/ipstats/en*) was used to convert IPC symbols into 35 corresponding fields of technology.

Source: WIPO Statistics Database, October 2013

Figure 4: Inventor immigration rates for selected technology fields and countries, 2006-10



Note: The IPC-technology concordance table (available at: *www.wipo.int/ipstats/en*) was used to convert IPC symbols into 35 corresponding fields of technology.

Source: WIPO Statistics Database, October 2013

Figure 4 reports inventor immigration rates for selected technology fields for a number of countries.[4] Generally, countries such as Switzerland, the Netherlands and the US had high inventor immigration rates in all of the reported fields for the 2006-10 period. In contrast, China, India and Japan reported low inventor immigration rates for the same period. However, across countries and technology fields, there were considerable variations in inventor immigration rates.

Do regions play a role in attracting talent?

One striking aspect of immigration, and particularly skilled immigration, is that migrants tend to concentrate in specific geographical areas within countries. For example, the share of skilled foreign-born individuals in the UK and France in 2000 was estimated at 8.8% and 9.8%, respectively; in contrast, 28% of London residents and 23% of Paris residents were foreign-born (Freeman, 2006). In particular, immigrant inventors appear to cluster in metropolitan areas, thus contributing to the spatial concentration of inventive activity. This issue is analysed by matching PCT applications with the OECD's REGPAT database (Maraut *et al*, 2008; refer to Miguélez and Raffo, 2013, for details of the matching procedure).[5] By linking inventor nationality information with REGPAT, it is possible to study the settlement patterns of immigrant inventors within countries beyond the settlement patterns of native inventors.

Table 5 lists the top 20 European NUTS 2 regions in terms of their inventor immigration rates.[6] It shows that European regions in highly innovative, middle-to-small European countries ranked well above the European average – although it should be noted that a few regions of the UK - a large European country - appear in this list. On the other hand, only six US states ranked above the national average; these six were, however, regarded as the most innovative and dynamic states. In order to compare regions of similar size from Europe and the US, it is worth repeating the analysis of the US data on a more disaggregated level, such as in the Metropolitan Statistical Areas (MSAs). In particular, some of the biggest and most innovative MSAs – San Diego, San Jose-Santa Clara, New York and Boston – appear in the top 20 ranking. When the MSA data are compared with the European NUTS 2 data, one can see that the top four European regions attract more talented individuals (in relative terms) than does San Diego.

However, only few European NUTS2 regions had an inventor immigration rate above 20%, while for the US a larger number of MSAs reported immigration rates greater than 20%. In other words, immigrant inventors' settlement in European regions seemed to be more skewed than was the case in the US.

4 The selection of technology fields was based on the total number of PCT applications filed in 2010.

5 The latest version of REGPAT provides detailed regional information on all EPO and PCT applicants, and information on inventors for all OECD and EU countries, as well as a few other selected countries.

6 NUTS stands for the French acronym "*Nomenclature des unités territoriales statistiques*".

Table 5: Top 20 immigration rates by region, 2006-10

NUTS2 region	Immigration rate (%)	US states	Immigration rate (%)	US MSAs	Immigration rate (%)
NORDWESTSCHWEIZ (CH)	50.7	CALIFORNIA	26.9	San Diego-Carlsbad-San Marcos, CA	36.7
RÉGION LÉMANIQUE (CH)	49.3	NEW JERSEY	24.2	Stockton, CA	33.3
RÉGION DE BRUXELLES (BE)	42.7	MASSACHUSETTS	21.8	Evansville, IN-KY	32.2
ZÜRICH (CH)	42.4	DELAWARE	21.2	Champaign-Urbana, IL	32.0
ZENTRALSCHWEIZ (CH)	36.0	NEW YORK	20.8	San Jose-Sunnyvale-Santa Clara, CA	31.0
LUXEMBOURG (LU)	35.7	TEXAS	18.9	Trenton-Ewing, NJ	30.4
OSTSCHWEIZ (CH)	31.0	MARYLAND	18.2	Albany-Schenectady-Troy, NY	28.5
PROV. BRABANT WALLON (BE)	30.1	CONNECTICUT	17.7	Columbus, IN	28.5
INNER LONDON (UK)	28.0	OREGON	17.4	Lansing-East Lansing, MI	28.3
SOUTHERN AND EASTERN (IE)	22.0	IDAHO	16.4	Athens-Clarke County, GA	28.2
PROV. LUXEMBOURG (BE)	21.5	HAWAII	16.1	Ithaca, NY	28.0
PROV. ANTWERPEN (BE)	19.7	FLORIDA	15.6	Ann Arbor, MI	27.7
OUTER LONDON (UK)	19.4	NEW MEXICO	15.4	Gainesville, FL	27.6
NOORD-BRABANT (NL)	19.3	ARKANSAS	15.1	College Station-Bryan, TX	27.3
ESPACE MITTELLAND (CH)	19.0	ILLINOIS	14.8	New York-Northern New Jersey-Long Island, NY-NJ-PA	24.3
PROV. VLAAMS-BRABANT (BE)	18.8	PENNSYLVANIA	14.6	Santa Barbara-Santa Maria-Goleta, CA	24.0
TICINO (CH)	18.2	GEORGIA	14.3	Ames, IA	23.2
TIROL (AT)	17.8	MICHIGAN	14.2	Dallas-Fort Worth-Arlington, TX	23.1
EAST ANGLIA (UK)	17.4	NORTH CAROLINA	14.1	State College, PA	22.6
PROV. HAINAUT (BE)	17.0	ARIZONA	13.9	Boston-Cambridge-Quincy, MA-NH	22.5
European average	**9.7**	**US average**	**18.5**	**US average**	**18.5**

Note: Only NUTS2 (*Nomenclature des unités territoriales statistiques*) regions with more than 25 native inventors and MSAs with more than 150 native inventors are listed here.

Source: WIPO Statistics Database, October 2013

Table 6: Most populated migration corridors, 2006-10

Largest inventor migration corridors			Largest inventor migration corridors (excluding the US)		
Origin	**Destination**	**Inventors**	**Origin**	**Destination**	**Inventors**
China	United States of America	27,698	Germany	Switzerland	4,949
India	United States of America	21,712	France	Switzerland	1,879
Canada	United States of America	11,363	France	Germany	1,492
United Kingdom	United States of America	8,314	China	Japan	1,462
Germany	United States of America	5,894	Germany	Netherlands	1,332
Germany	Switzerland	4,949	Austria	Germany	1,307
Republic of Korea	United States of America	4,876	France	United Kingdom	1,210
France	United States of America	3,901	China	Singapore	1,149
Japan	United States of America	2,843	Germany	Austria	1,107
Russian Federation	United States of America	2,308	United Kingdom	Germany	1,080
France	Switzerland	1,879	Netherlands	Germany	1,049
Israel	United States of America	1,875	United States of America	China	1,041
Australia	United States of America	1,783	Germany	United Kingdom	969
Netherlands	United States of America	1,670	Italy	Germany	956
Italy	United States of America	1,492	Italy	Switzerland	955
France	Germany	1,492	France	Belgium	934
China	Japan	1,462	Germany	France	916
Germany	Netherlands	1,332	United Kingdom	Switzerland	887
Austria	Germany	1,307	United States of America	Germany	820
Turkey	United States of America	1,233	United States of America	Canada	807

Source: WIPO Statistics Database, October 2013

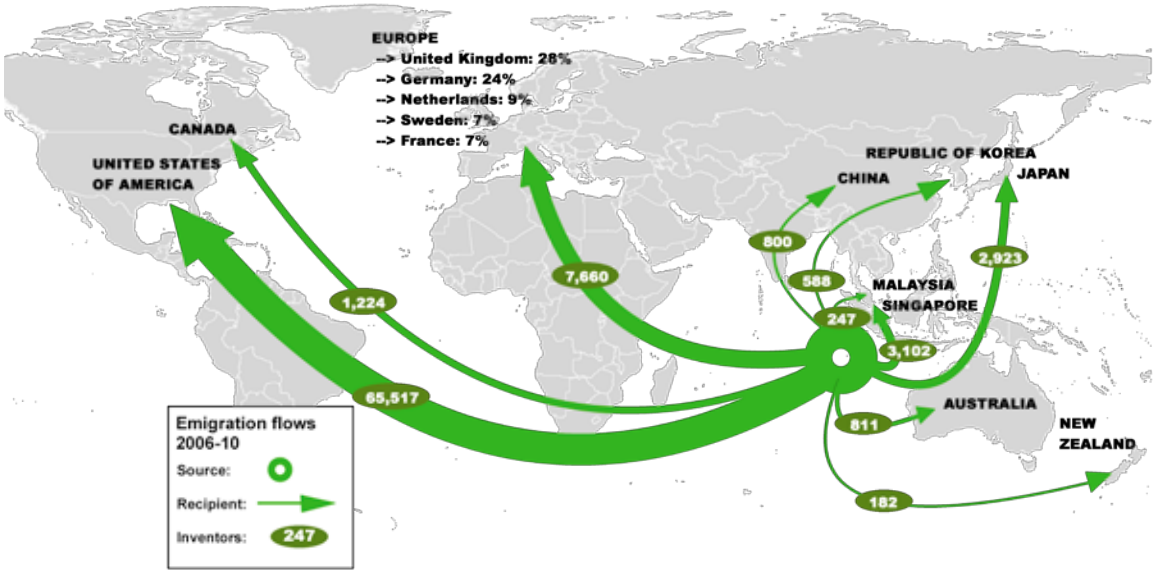
WHICH ARE THE MOST POPULAR INVENTOR MIGRATION CORRIDORS?

Table 6 shows the most populated bilateral corridors during the 2006-10 period. The US emerged as the most frequent destination country. Origin countries belong to the high-income group, except China and India. The top two corridors are China-US (27,698 inventors) and India-US (21,712). In both cases, the high-income country is the destination and the middle-income country is the origin. When the US as a destination country was excluded from the analysis, intra-European flows of inventors dominated the top corridors. There were, however, some interesting exceptions, such as the China-Japan (1,462) corridor and the China-Singapore (1,149) corridor.

Asian countries – and to a lesser extent, countries from Oceania – are important sources of inventors. Figure 5 depicts the top 10 most popular destinations for inventors originating from the Middle East, South Asia, East Asia and Oceania. As can be seen, the proportion of inventors going to the US was greater than that going to other countries. For example, close to nine times as many migrant inventors from these regions as a whole immigrated to the US (65,517) than immigrated to Europe (7,660). They represented 55.9% of all immigrant inventors in the US for the period 2006-10. While China's and India's migration flows to the US were largely responsible for this phenomenon, other countries also played a role. Moreover, countries from the above-mentioned broad geographical region featured among the top 10 destinations for inventors. In particular, Australia, China, Japan, Malaysia, New Zealand, Singapore and the Republic of Korea attracted large numbers of inventors from this collection of geographical regions. In addition, within Europe, the UK received the largest share (28%) of inventors from these regions, followed by Germany (24%).

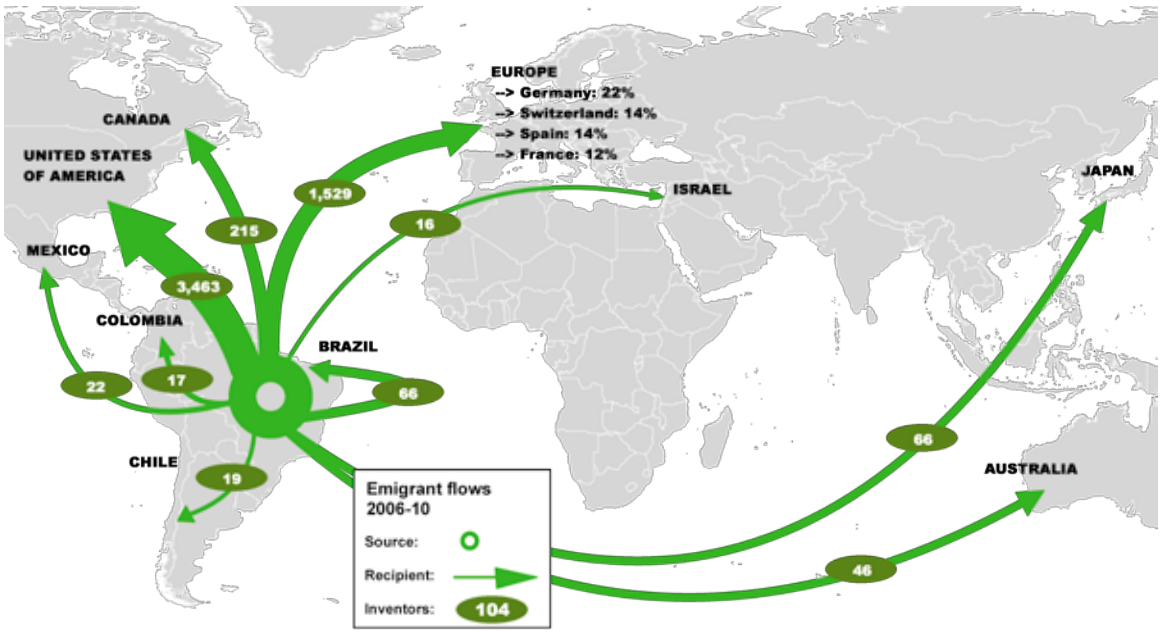
For comparison purposes, Figure 6 depicts the top 10 most popular destinations for inventors from Latin America and the Caribbean (LAC). As Table 1 shows, the absolute number of inventors emigrating from the LAC region was substantially lower when compared with the corresponding figures for Asia. Again, the US topped the ranking of destination countries. In relative terms, LAC inventors accounted for approximately 3% of all immigrants in the US and for approximately 2% of all immigrants in Europe. Within Europe, Germany topped the ranking (22% of all inventor migrants from the LAC region to Europe), and was followed by Switzerland, Spain and France. A shared colonial heritage and a common language explain why Spain attracted considerable talent from LAC countries. The data also show considerable intra-regional mobility of inventors within the LAC region. For example, four LAC countries (Brazil, Chile, Colombia and Mexico) are in the top 10 ranking as destination countries for inventors originating from the LAC region.

Figure 5: Where do inventors from the Middle East, South Asia, East Asia, and Oceania emigrate from?



Source: WIPO Statistics Database, October 2013

Figure 6: Where do LAC inventors emigrate from?



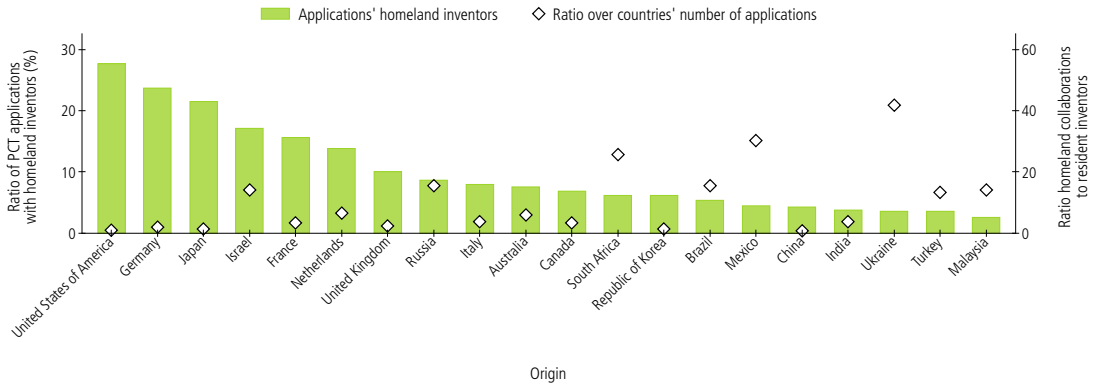
Source: WIPO Statistics Database, October 2013

Do sending countries gain from the brain drain?

Despite the adverse consequences of the brain drain of high-skilled people on a country's potential development, it is also well recognized that emigrants do not necessarily sever their ties with their homelands and, as diasporas, they may constitute a valuable resource in terms of accessing foreign knowledge and technologies. To explore this point further, one can compute the share of patents filed by the emigrant inventors of each country that include at least one inventor residing in the emigrant country of origin. The idea is to analyze the extent to which each country's emigrant inventor community is committed to their country of origin and, as a consequence, the extent of their collaboration with their co-national colleagues at home. As the left axis of Figure 7 shows, the US diaspora seems to be the most committed to their homeland; 27.2% of the PCT applications with US inventor emigrants included US residents among their co-inventors.

However, bearing in mind that the absolute number of US resident inventors accounted for the world's largest number of resident inventors during the 2006-10 timeframe, the probability of collaborating with a US resident inventor was very high, regardless of the commitment of US inventors abroad and the extent of their collaboration with their home country colleagues. In order to illustrate this last point, Figure 7 computes a hypothetical ratio between the share of patents co-invented with nationals of the country of origin and the share of total inventors residing in the country of origin (see black and white diamonds on right axis). The results show that inventors from middle-income countries were actually the most committed to their homelands, in that they collaborated with their national colleagues at home disproportionately more than would have been expected, given their share of total inventors. In fact, the only two countries which had a ratio lower than 1 during this period were China and the US, which indicates that inventors from these countries are less committed to their country of origin than would have been expected, given their share of the total number of inventors.

Figure 7: Share of PCT applications with homeland inventors and its ratio with the share of resident inventors with whom to collaborate: 2006-10



Source: WIPO Statistics Database, October 2013

Conclusion

This special section described a new global dataset on migrant inventors, using information on inventor nationality and residence gleaned from PCT applications. From this analysis, two important facts emerged. First, from a methodological perspective, this section demonstrated that PCT data are meaningful and are useful in analyzing the interplay between migration and innovation. Second, from a more analytical viewpoint, the data reveal a number of interesting findings that are worth highlighting.

From the methodological perspective, use of patent data to map the migratory patterns of high-skilled workers can address some of the limitations associated with existing migration datasets. In particular, this database covers a long time period, provides information on an annual basis, and contains data for a large number of sending and receiving countries. Inventors constitute a group of high-skilled workers of special economic importance who have more homogenous skills than tertiary-educated workers as a whole.

Broadly speaking, the data clearly demonstrate that the pattern of inventors' mobility resembles other high-skilled migration figures, and in particular, what we know about the migration of scientists and engineers based on anecdotal evidence, surveys and media reports. For example, the majority of immigrant inventors in the 2006-10 period were concentrated in the US, whereas European countries lagged behind in this respect. The US not only had the largest absolute number of immigrant inventors during this period, but it also stood out as one of the main receiving countries relative to its total population of inventors.

The data highlight important differences across countries as well as within countries and across different cities, technologies and organizations employing inventors (applicants). In addition, they highlight that during the 2006-10 period, immigration rates were remarkably different across applicant types i.e., university, government and research institutions, business, and individuals. Within these groupings, university/government immigration rates were considerably higher than business sector immigration rates. In relation to data for fields of technology, for example, during the 2006-10 period immigration rates varied from 4.1% (mechanical elements) to 18.3% (micro-structure and nano-technology). Other fields also relied heavily on immigrant inventors; such fields included pharmaceuticals (14.6%), biotechnology (14.6%), digital communication (15.2%) and basic communication processes (16%).

Furthermore, by using unit record data, it becomes possible to link patent-inventor data with citation and co-inventorship information. It also becomes possible to study social relationships between inventors and subsequent knowledge diffusion patterns across countries, regions and technology fields. Additionally, data can also be linked to country-, city- and firm-level information in order to provide new empirical evidence on a broad range of interrelated topics.

From an analytical standpoint, this special section provides new evidence on the migration patterns of knowledge workers which, to date, have probably not received the attention that this subject deserves. As a result, most analysis on the migration patterns of scientists and engineers has exclusively focused on the US experience and its major providers of foreign talent, namely China and India (Breschi *et al*, 2013). However, high-skilled worker migration is a multipolar phenomenon, implying a large number of sending and receiving countries.

Thus, for example, it is possible to observe trends in important talent circulation between Western European countries during the 2006-10 period. It is also possible to observe that the number of non-European countries providing talent to Europe did not necessarily coincide with migration flows to the US – e.g., from African or LAC countries. During this period, European countries also constituted the main providers of talent to the US.

There is large "brain circulation" between Asian economies, with Singapore standing out as a major receiving country. For its part, China is a major provider of talent within its geographical area of influence; however, in recent years, it has also attracted a large number of immigrant inventors, both from Asia and the rest of the world. Finally, albeit to a lesser extent, migrant inventors also originate in other areas of the world, such as LAC countries and Africa.

Of course, using patent data for the purpose of economic analysis does not come without limitations. One important caveat is that one only observes inventors when they seek patent protection. Not all inventions are patented, however, and there is no one-to-one correspondence between the number of patent applications filed and the commercial value of the underlying inventions or their contribution to technological progress. Another limitation is that the PCT dataset does not include inventors with a migratory background who have become a host country national. Unfortunately, the data do not facilitate the assessment of how severe these biases are. In using these data, one should be aware of such limitations, especially when drawing policy conclusions.

Notwithstanding these caveats, this new database meaningfully captures a phenomenon of growing importance. Indeed, the descriptive overview presented in this section suggests that it is consistent with migratory patterns and trends elicited from census data. At the same time, the database opens up new avenues for research and promises to generate fresh empirical insights that can inform both innovation policy and migration policy.

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OVERVIEW OF IP ACTIVITIES

Table 1: Overview of total (resident plus abroad) IP activity by origin, 2012

Origin	Patents	Marks	Designs
China	1	2	1
Germany	5	1	2
United States of America	3	3	5
France (5)(7)	6	5	4
United Kingdom (6)	7	4	6
Italy	11	6	3
Japan (5)(7)	2	10	9
Switzerland	8	8	7
Republic of Korea	4	16	10
Netherlands	10	9	13
Spain	19	7	8
Austria	17	11	12
Sweden	13	15	15
Poland (6)	24	14	11
Turkey	25	13	14
Russian Federation	9	12	31
Belgium	18	18	17
Canada	12	19	23
Finland	15	24	20
India	14	17	29
Denmark	21	23	16
Australia	20	20	21
Brazil	23	21	26
Czech Republic	35	22	19
Luxembourg	32	26	25
Portugal	43	27	18
Norway (5)(6)	26	35	27
China, Hong Kong SAR	39	28	22
Israel (6)	16	49	28
Ireland (5)(6)	28	29	37
Ukraine	29	33	36
Mexico	33	25	46
Romania	41	31	32
Hungary	37	34	33
Bulgaria	56	32	24
New Zealand	30	43	40
Singapore	27	44	45
Greece (5)	44	36	38
South Africa	38	42	41
Thailand	40	40	44
Slovenia (4)(5)(6)	52	45	30
Argentina	45	30	56
Cyprus	54	38	39
Slovakia	58	41	34
Malaysia (2)	34	54	50
Viet Nam	55	37	48
Belarus	31	47	63
Liechtenstein (4)(5)(6)	46	62	35
Chile	48	39	68
Estonia (6)	63	50	43
Croatia (1)	57	61	42
Morocco	69	52	47
Latvia	59	60	54
Malta	65	48	61
Lithuania	70	57	49
United Arab Emirates (4)(5)(6)	68	58	53
Colombia	61	46	74
Philippines	66	53	65
Egypt (5)(6)	47	79	60
Saudi Arabia (1)(3)(5)	42	74	72
Iceland	62	70	62
Republic of Moldova	75	71	52
Monaco	85	55	59
Serbia	67	64	69
Armenia	71	80	51
Pakistan	81	56	66
Bangladesh	88	65	55
Uzbekistan	64	69	75
Algeria	77	77	58
Kazakhstan (1)(5)	36	89	87
Bermuda (4)(5)(6)	84	73	57
Azerbaijan	50	76	94
Barbados	60	91	70
Peru	89	51	84
Bahamas (4)(5)(6)	79	66	82
Costa Rica	97	67	64
Venezuela (1)(2)(6)	87	59	90
Indonesia (1)(5)(6)	51	93	99
Georgia	74	96	78
Jordan	86	75	96
T F Y R of Macedonia (1)(5)	99	84	76
Panama	110	63	86
D.P.R. of Korea (5)(6)	22	137	108
Uruguay	95	68	105
San Marino (4)(5)(6)	112	78	80
Seychelles (2)(4)(6)	81	97	92
Lebanon (4)(5)(6)	104	86	82
Iran (Islamic Republic of)(4)(5)(6)	90	82	100
Kenya (5)	76	119	85
Tunisia (4)(5)(6)	101	99	81
Sri Lanka (4)(5)(6)	109	102	71
Qatar (5)(6)	94	92	98
Yemen (2)(3)	99	85	104
Cuba	73	103	115
Mauritius (4)(5)(6)	96	98	..
Ecuador (4)(5)(6)	126	101	67
Kyrgyzstan	78	125	94
Kuwait (4)(5)(6)	80	106	118
Jamaica (1)(3)(5)	114	94	97
China, Macao SAR	113	100	92

Note: The ranking are based on total number of applications by origin. Patents data refer number of equivalent patent applications. Marks data refer to number of equivalent trademark applications based on class count (i.e. number of classes contained in applications). Designs data refer to number of equivalent industrial design applications based on design count (i.e. number of designs contained in applications). D.P.R. of Korea = Democratic People's Republic of Korea. The table reports origins for which at least two types of IP data are available.

(1) 2011 patent data.
(2) 2011 trademark data.
(3) 2011 industrial design data.
(4) Data on patent applications at the national IP office are not available. However, applications at the regional IP office are included.
(5) Data on trademark applications at the national IP office are not available. However, applications at the regional IP office are included.
(6) Data on industrial design applications at the national IP office are not available. However, applications at the regional IP office are included.
(7) Trademark data are estimated.

Table 2: Overview of resident IP activity by origin, 2012

Origin	Patents	Marks	Designs
China	1	1	1
Japan (5)(7)	2	3	6
Germany	5	5	2
Republic of Korea	4	9	3
France (5)(7)	7	2	7
United States of America	3	4	9
Turkey	15	6	4
Italy	9	12	5
India	10	7	11
United Kingdom (6)	8	11	10
Russian Federation	6	8	15
Spain	16	13	8
Brazil	17	10	14
Switzerland	12	20	12
Netherlands	13	18	18
Poland (6)	18	19	17
Austria	20	26	13
Australia	24	16	20
Ukraine	25	23	16
Sweden	14	28	23
Mexico	31	15	25
Canada	19	14	41
Thailand	36	25	22
Czech Republic	37	22	24
Belgium	23	32	28
Portugal	41	29	19
Denmark	22	43	26
Viet Nam	46	21	29
Finland	21	41	34
Romania	35	30	32
Argentina	39	17	42
New Zealand	29	37	33
Belarus	26	35	48
South Africa	43	31	37
China, Hong Kong SAR	58	27	27
Malaysia (2)	32	42	40
Morocco	55	39	21
Bulgaria	49	40	30
Hungary	38	45	38
Singapore	33	48	45
Israel (6)	30	59	..
Chile	48	24	65
Colombia	53	33	54
Luxembourg	45	51	46
Kazakhstan (1)(5)	28	..	67
Philippines	60	36	47
Slovakia	54	46	44
Saudi Arabia (1)(3)(5)	47	..	50
Croatia (1)	51	54	43
Greece (5)	40	73	36
Uzbekistan	49	50	53
Bangladesh	71	47	35
Ireland (5)(6)	34	62	58
Pakistan	69	38	49
Norway (5)(6)	27	..	77
Republic of Moldova	68	60	31
Algeria	65	58	39
Peru	73	34	62
Latvia	52	61	59
Lithuania	63	56	60
Serbia	55	63	63
Venezuela (1)(2)(6)	83	44	..
Georgia	62	74	56
Kenya (5)	64	..	64
Liechtenstein (4)(5)(6)	55	..	74
Estonia (6)	72	64	61
Azerbaijan	59	57	81
Slovenia (4)(5)(6)	67	80	51
Cyprus	75	71	52
Armenia	61	69	71
Iceland	70	72	69
Jordan	76	65	74
Sudan (4)	..	78	66
Panama	..	52	93
T F Y R of Macedonia (1)(5)	80	..	68
Costa Rica	91	49	82
Kyrgyzstan	66	88	70
Uruguay	87	55	85
Monaco	86	67	78
Malta	85	75	73

Note: The ranking are based on number of resident applications by origins. Patents data refer number of equivalent patent applications. Marks data refer to number of equivalent trademark applications based on class count (i.e. number of classes contained in applications). Designs data refer to number of equivalent industrial design applications based on design count (i.e. number of designs contained in applications). The table reports origins for which at least two types of IP data are available.

(1) 2011 patent data.
(2) 2011 trademark data.
(3) 2011 industrial design data.
(4) Data on patent applications at the national IP office are not available. However, applications at the regional IP office are included.
(5) Data on trademark applications at the national IP office are not available. However, applications at the regional IP office are included.
(6) Data on industrial design applications at the national IP office are not available. However, applications at the regional IP office are included.
(7) Trademark data are estimated.

SECTION A
PATENTS, UTILITY MODELS AND MICROORGANISMS

Over the past two decades, the patent system has undergone important changes worldwide. As a result, patent legislation and patenting behavior have become prominent public policy themes. Similarly, use of the utility model (UM) system for protecting inventions has increased in certain countries.

This section provides an overview of patent and UM activity worldwide, aimed at enabling users to analyze and monitor the latest trends. It presents a wide range of indicators that offer insights into the functioning and use of the patent and UM systems.

Disclosure of an invention is a generally recognized requirement for the granting of a patent. Where an invention involves microorganisms, national laws in many countries require that the applicant deposit a sample at a designated International Depositary Authority (IDA). This section also provides data on microorganisms.

The first subsection on patents begins by describing the trends in patent filing and granting activity worldwide followed by analysis of filings and grants by office and origin, patent families, filings by field of technology, international applications filed through the Patent Cooperation Treaty (PCT), intensity of patent activity, patents in force, pending patents, pendency times and use of patent prosecution highways. The second subsection on UMs explores trends and activity, first worldwide and then at certain patent offices. The microorganisms subsection focuses on global deposits, and is followed by a breakdown of the number of such deposits at a selection of IDAs.

The patent system

A patent is a set of exclusive rights granted to applicants for inventions that meet the standards of novelty, non-obviousness and industrial applicability. The term of protection is generally limited to a period of 20 years counted from the filing date, during which patent holders can exclude others from commercially exploiting their inventions. In return, applicants are obliged to disclose their inventions to the public, so that others, skilled in the art, may replicate them. The patent system is designed to encourage innovation by providing innovators with time-limited exclusive legal rights, thus enabling them to appropriate the returns from their innovative activity.

The procedures for acquiring patent rights are governed by the rules and regulations of national and regional patent offices. These offices are responsible for issuing patents, and the rights are limited to the jurisdiction of the issuing authority. To obtain patent rights, applicants must file an application describing the invention with a national or regional office.

Applicants can also file an “international application” through the Patent Cooperation Treaty (PCT) system, an international treaty administered by WIPO that facilitates the pursuit of patent rights in multiple jurisdictions. The PCT system simplifies the process of multiple national patent filings by delaying the requirement to file a separate pursuit in each jurisdiction in which protection is sought. The decision on whether or not to grant patents remains the prerogative of national or regional patent offices, and patent rights are limited to the jurisdiction of the patent granting authority.

The PCT international application process begins with the international phase, during which an international search is performed and optional preliminary examination and supplementary international search may take place. It concludes with the national phase, during which national (or regional) patent offices decide on the patentability of an invention according to national law. Further details on the PCT system are available at: *www.wipo.int/pct/en/*

The utility model system

Like a patent, a UM confers a set of rights for an invention for a limited period of time, during which UM holders can commercially exploit their inventions on an exclusive basis. The terms and conditions for granting UMs are different from those for granting "traditional" patents. For example, UMs are typically issued for a shorter duration (7 to 10 years) and, at most offices where UMs are available, applications are granted without substantive examination. Like patents, the procedures for granting UM rights are governed by the rules and regulations of national intellectual property (IP) offices, and rights are limited to the jurisdiction of the issuing authority.

Approximately 75 countries provide protection for UMs. In this report, the UM terminology refers to UMs and other types of protection similar to UMs. For example, "innovation patents" in Australia and "short-term patents" in Ireland are considered equivalent to UMs.

Microorganisms under the Budapest Treaty

The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (also administrated by WIPO) plays an important role in the field of biotechnological inventions. Disclosure of an invention is an important requirement for the granting of a patent.

In order to eliminate the necessity to deposit a microorganism in each country in which patent protection is sought, the Budapest Treaty provides that the deposit of a microorganism with any IDA suffices for the purposes of patent procedures at national patent offices of all contracting states, and before any regional patent office that recognizes the effects of the treaty. An IDA is a scientific institution – typically a "culture collection" – capable of storing microorganisms. Currently, there are 42 such IDAs around the world. Further details about the Budapest Treaty are available at: *www.wipo.int/treaties/en/registration/budapest/*

A.1

Patent applications and grants worldwide

A.1.1 Applications worldwide

Figure A.1.1.1 shows the total number of patent applications filed worldwide between 1995 and 2012.[1] The totals for each year are WIPO estimates using data covering 130 offices, and they include direct national and regional applications as well as PCT national phase entries.

The number of patent applications filed worldwide totaled 2.35 million in 2012. This represented growth of 9.2% on 2011 figures – the highest over the past 18 years. The long-term trend shows continuous growth in the numbers of applications filed, with the exception of a slight decrease in 2002 and a more pronounced decrease in 2009. Between 1995 and 2012, total patent applications more than doubled from their 1995 level of 1.05 million.

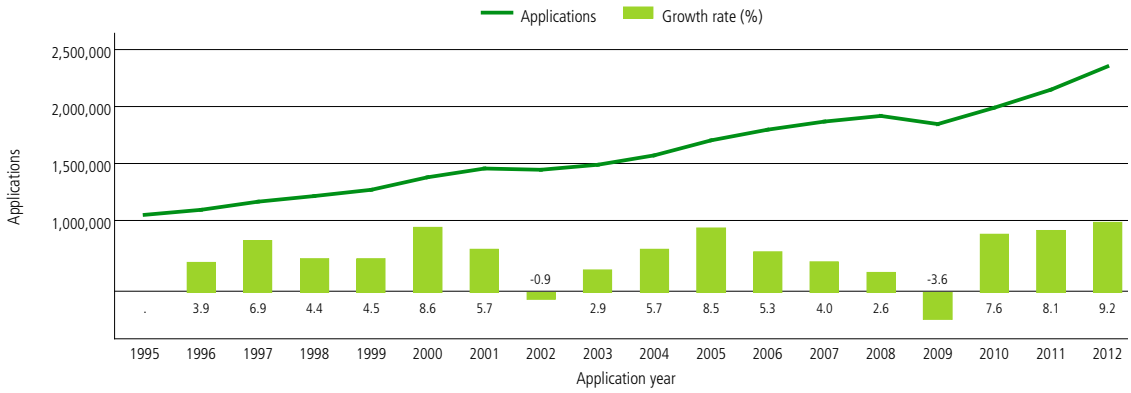
Following a drop in 2009 (-3.6%), patent applications filed worldwide rebounded strongly over the next three years, with accelerating growth rates – 7.6% growth in 2010, followed by 8.1% in 2011 and 9.2% in 2012. This was mostly due to a rapid growth in the number of applications filed in China in recent years. To illustrate this point, Figure A.1.1.2 breaks down application growth by offices for the 2005-07 and 2010-12 periods. It shows individual offices' contribution to the overall growth for each of these two periods.

Between 2010 and 2012, the number of applications filed worldwide increased by 360,100. The State Intellectual Property Office of the People's Republic of China (SIPO) accounted for 72.6% of this total increase. The United States Patent and Trademark Office (USPTO) and the Korean Intellectual Property Office (KIPO) accounted for 14.6% and 5.2% each of this total increase.[2] SIPO (44.2%) also contributed the most to the overall growth (+162,400) over the 2005-07 period. However, when comparing both periods, the contribution of SIPO to overall growth increased, while those of other major offices decreased. This reflects the acceleration of the shift in the geography of where patent applications are filed - from the United States of America (US) and Europe towards China.

1 Throughout this publication, the term "patents" refers to patents for invention.

2 For simplicity, country names rather than office names are used to label graphs. For example, the patent office of China is referred to as "China" rather than the State Intellectual Property Office of the People's Republic of China. Similarly, "United States of America" is used in place of United States Patent and Trademark Office.

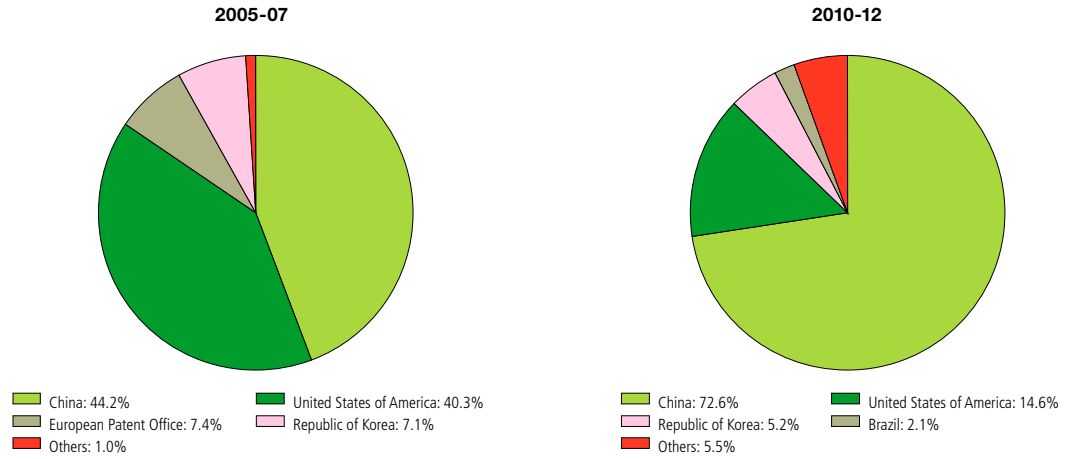
Figure A.1.1.1 Trend in patent applications worldwide



Note: World totals are WIPO estimates using data covering approximately 130 patent offices (see Data Description). These estimates include direct applications and PCT national phase entry data.

Source: WIPO Statistics Database, October 2013

Figure A.1.1.2 Contribution of offices to growth in patent applications worldwide



Source: WIPO Statistics Database, October 2013

Patent applications filed at an office are classified as resident or non-resident applications according to the residency of the first-named applicant. A resident application refers to an application filed with a patent office by an applicant residing in the country over which that office has jurisdiction. For example, an application filed with the Japan Patent Office (JPO) by an applicant residing in Japan is considered a resident application from the perspective of the JPO. Similarly, a non-resident application refers to an application filed with a patent office of a given country by an applicant residing in another country. For example, a patent application filed with the USPTO by an applicant residing in France is a non-resident application from the perspective of the USPTO. An application filed with a regional office is considered a resident application if the applicant is a resident of one of its member states, and is considered a non-resident application if the opposite applies. Resident applications are sometimes referred to as domestic applications. Likewise, non-resident applications are often called foreign applications.

Figure A.1.1.3 Resident and non-resident patent applicants worldwide

Note: World totals are WIPO estimates using data covering approximately 130 patent offices (see Data Description). These estimates include direct applications and PCT national phase entry data.

Source: WIPO Statistics Database, October 2013

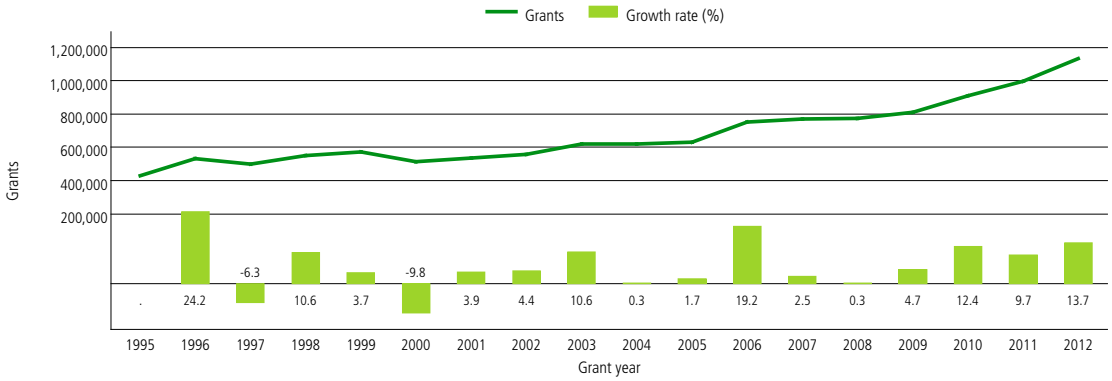
The 2.35 million applications filed in 2012 comprise approximately 1.51 million resident applications and 0.83 million non-resident applications (Figure A.1.1.3).[3] Resident applications grew by a double-digit rate of 10.5% in 2011 and 11.4% in 2012, while non-resident applications grew by 4.3% in 2011 and 5.5% in 2012. The growth in applications filed by residents worldwide was mostly due to substantial increases in resident filings at SIPO. In contrast, growth in applications filed by non-residents worldwide was mainly due to increases in non-resident filings received by SIPO and the USPTO. Between 2010 and 2012, the numbers of resident and non-resident applications filed worldwide increased by 284,300 and 76,100, respectively. SIPO accounted for 85% of the growth in total resident filing activity. In contrast, the USPTO accounted for 33.9% of the growth in total non-resident filing activity, followed by SIPO (25.4%).

From its peak of 40.1% in 2006 and 2007, the non-resident share of total applications decreased to 35.5% in 2012 - a share similar to those witnessed in the mid-1990s. Despite growth in total non-resident applications, SIPO's share has decreased due to the substantial growth in resident applications it received. However, when SIPO data are excluded from world totals, a different trend is observed. For example, the non-resident share, excluding SIPO, has been increasing since the mid-1990s to reach 42.3% in 2012.

Compared to other types of IP rights, patent applications exhibit the highest non-resident share. The 2012 non-resident share for patents was 9.1 percentage points higher than that for trademarks (Figure B.1.1.3), and was 21.2 percentage points higher than the non-resident share for industrial designs (Figure C.1.1.2).

3 The figures do not correspond exactly due to rounding. The estimated number for 2012 is 2.347 million, which comprises 1.513 million resident applications and 0.834 million non-resident applications.

Figure A.1.2.1 Trend in patents granted worldwide



Note: World totals are WIPO estimates using data covering approximately 120 patent offices (see Data Description). These estimates include patent grants based on direct applications and on PCT national phase entry data.

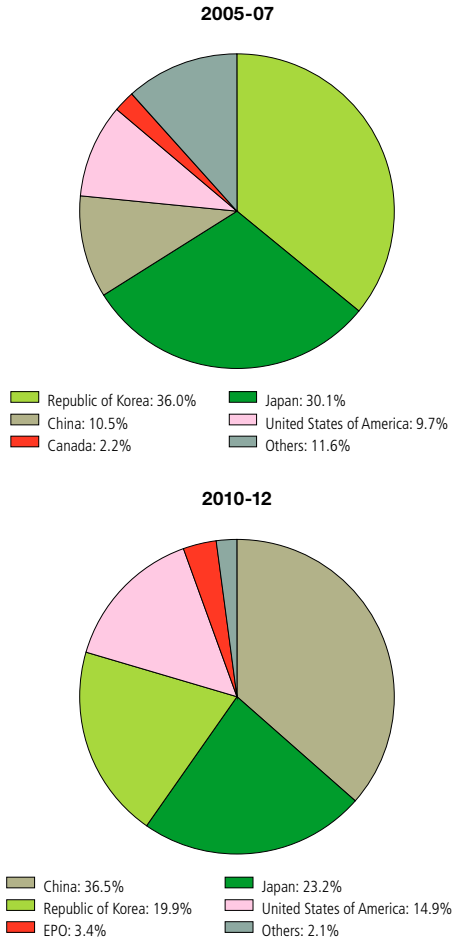
Source: WIPO Statistics Database, October 2013

A.1.2 Grants worldwide

Since 2001, there has been uninterrupted growth in the total number of patents granted worldwide (Figure A.1.2.1). In 2012, for the first time, the total number of grants issued worldwide exceeded the one million mark, with 694,200 resident grants and 439,600 non-resident grants. As was the case for applications, total grants have also grown strongly since 2010. The 13.7% growth recorded in 2012 was the highest since 2006.

To identify the sources of growth in total grants issued worldwide, Figure A.1.2.2 breaks down growth by office for the 2005-07 and 2010-12 periods. It shows individual offices' contribution to the overall growth over these two periods. Between 2010 and 2012, the number of grants worldwide increased by 224,600. SIPO accounted for 36.5% of the total growth, followed by the JPO (23.2%), KIPO (19.9%) and the USPTO (14.9%). The contribution of SIPO to the overall growth of grants (36.5%) is considerably lower than its contribution to the overall growth of applications (see Figure A.1.1.2). The JPO and KIPO accounted for nearly two-thirds of the growth in total grants issued between 2005 and 2007. When both periods (2005-07 and 2010-12) are compared, the figures show that the contributions of SIPO and the USPTO to overall growth increased, while those of the JPO and KIPO decreased.

Figure A.1.2.2 Contribution of offices to growth in patents granted worldwide



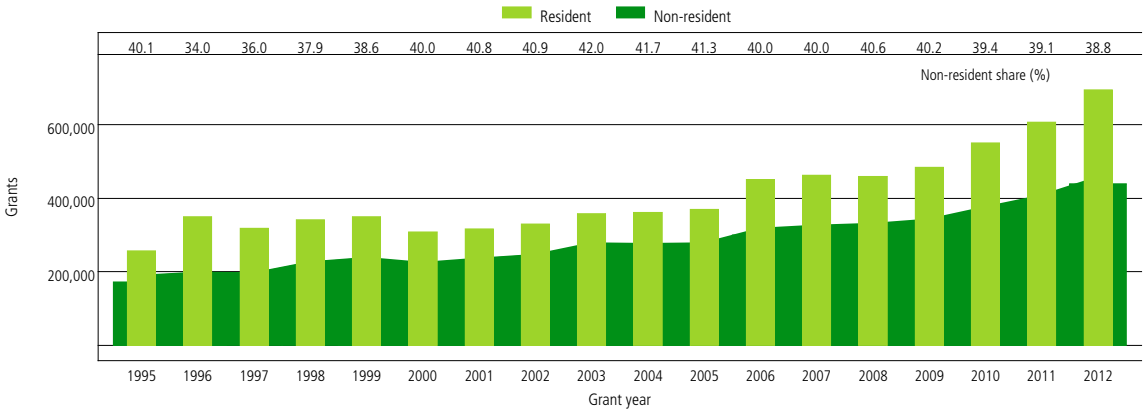
Source: WIPO Statistics Database, October 2013

Since 2010, there has been considerable growth in both resident grants and non-resident grants issued worldwide. Year-on-year growth shows that resident grants grew by 13.8% in 2010, 10.2% in 2011 and 14.4% in 2012. Likewise, non-resident grants grew by 10.4% (2010), 8.8% (2011) and 12.7% (2012). Between 2010 and 2012, grants issued to residents by SIPO contributed to 44% of the growth in total resident grants worldwide, followed by the JPO (26.3%) and KIPO (22.8%). The contribution of SIPO to the growth in total resident grants was considerably lower than its contribution to the growth in total resident applications worldwide.

As for the growth in non-resident grants issued worldwide, the USPTO accounted for approximately a quarter of overall growth, followed by SIPO (22.1%), the JPO (17.8%) and KIPO (14.8%).

Since 2010, the non-resident share of total grants has been approximately 39%, which is three percentage points lower than its peak of 42% in 2003 (Figure A.1.2.3). The non-resident share of total patent grants is slightly higher than the non-resident share of total applications (Figure A.1.1.3).

Figure A.1.2.3 Resident and non-resident patent grants worldwide



Note: World totals are WIPO estimates using data covering approximately 120 patent offices (see Data Description). These estimates include patent grants based on direct applications and on PCT national phase entry data.

Source: WIPO Statistics Database, October 2013

A.2

Patent applications and grants by office

This subsection provides detailed data on patent applications and grants by office – national or regional.

A.2.1 Applications by office

Patent offices in high-income countries received the majority of applications filed worldwide in 2012 (Table A.2.1.1). However, their combined share has decreased from 78.5% in 2007 to 64.5% in 2012. In contrast, the share held by the offices of upper middle-income countries has increased from 17.7% in 2007 to 32.1% in 2012. This was mainly due to the considerable growth in applications filed with SIPO. Offices located in lower middle-income countries accounted for 2.9% of total applications filed, and those of low-income countries accounted for 0.4% of the world total in 2012.

The distribution of resident and non-resident applications across income groups differs considerably. In 2012, resident applications accounted for approximately three-fifths of all applications filed at the offices of high-income countries, while the share of resident applications was approximately 22% at the offices of lower middle-income countries. The shares of resident applications are high for the upper middle-income and low-income countries; however, their shares are distorted by the high number of resident applications filed in China and in the Democratic People's Republic of Korea. The share of resident filings by the upper middle-income countries, excluding China, was approximately 26%, and the share held by low-income countries excluding the Democratic Republic of Korea was approximately 22%.

The table below also shows low growth in applications filed in high-income countries between 2007 and 2012, but higher growth among the other income groups.

Figure A.2.1.2 shows the long-term trend in the numbers of applications filed with the top five offices. These offices were selected according to their 2012 totals. Application numbers were stable until the early 1970s, after which the JPO began to see rapid growth in the number of applications received, a pattern that was also observed by the USPTO from the 1980s onwards. From 1883 to 1967, the USPTO was the leading office in the world in terms of filings. The JPO surpassed the USPTO in 1968 and maintained the top position until 2005. However, since 2005, the number of applications received by the JPO has followed a downward trend.

Both the European Patent Office (EPO) and KIPO have seen increases each year in the numbers of applications received since the early 1980s. The volumes received by these offices are of similar magnitude, but are far below those of the JPO and the USPTO. SIPO has seen rapid growth in applications since 2001, to such an extent that it surpassed both the EPO and KIPO in 2005, the JPO in 2010, and the USPTO in 2011 – thus becoming the largest patent office in the world in terms of filings. Since 2001, SIPO has recorded double-digit growth in applications each year, except in 2009 when the number of applications received by this office grew by 8.5%. The growth in applications received by SIPO was due to growth in resident applications – non-resident applications have remained more or less stable.

Since the early 2000s, the combined share of the top five offices in the world total has increased – from approximately 70% in 2000 to approximately 80% in 2012. There has also been a considerable shift in the shares held among the top five offices. SIPO's share increased from 3.8% in 2000 to 27.8% in 2012, while over the same period that of the JPO halved from 30.5% to 14.6%. The respective shares held by the EPO, KIPO and the USPTO have remained more or less constant.

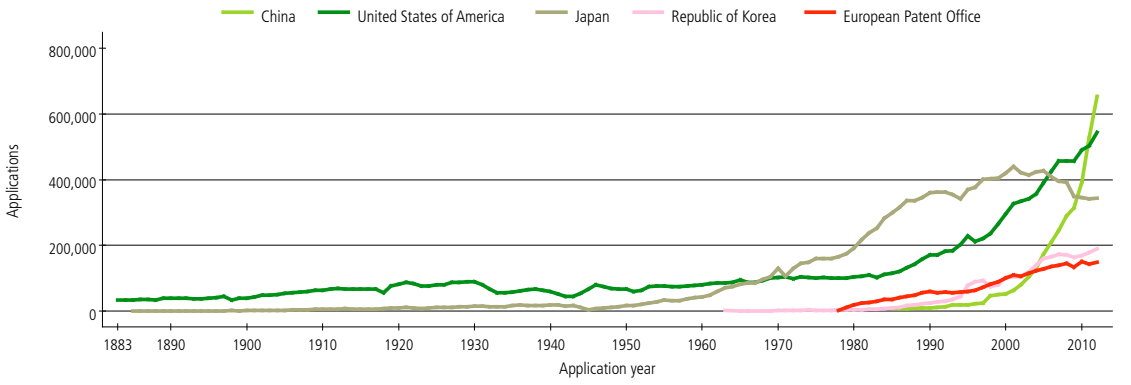
Table A.2.1.1 Patent applications by income group

Income group	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
	2007	2012	2007	2012	2007	2012	2007-12
High-income	1,465,300	1,513,500	63.1	61.3	78.5	64.5	0.6
Upper middle-income	331,100	754,700	52.1	74.4	17.7	32.1	17.9
...Upper middle-income excluding China	*85,900*	*101,900*	*22.6*	*25.8*	*4.6*	*4.3*	*3.5*
Lower middle-income	60,900	69,000	20.8	22.1	3.3	2.9	2.5
Low-income	8,700	10,500	83.2	84.1	0.5	0.4	3.8
World	**1,866,000**	**2,347,700**	**59.9**	**64.5**	**100**	**100**	**4.7**

Note: Totals by income group are WIPO estimates using data covering 130 offices. Each category includes the following number of countries: high-income countries (50), upper middle-income (39), lower middle-income (23) and low-income (18). European Patent Office (EPO) data are allocated to the high-income group, as the majority of its member states are high-income countries. For the same reason, data for the African Regional Intellectual Property Organization and for the African Intellectual Property Organization data are allocated to the low-income group, while those for the Eurasian Patent Organization are allocated to the lower middle-income group.

Source: WIPO Statistics Database, October 2013

Figure A.2.1.2 Trend in patent applications for the top five offices



Note: The top five offices were selected based on their 2012 totals.

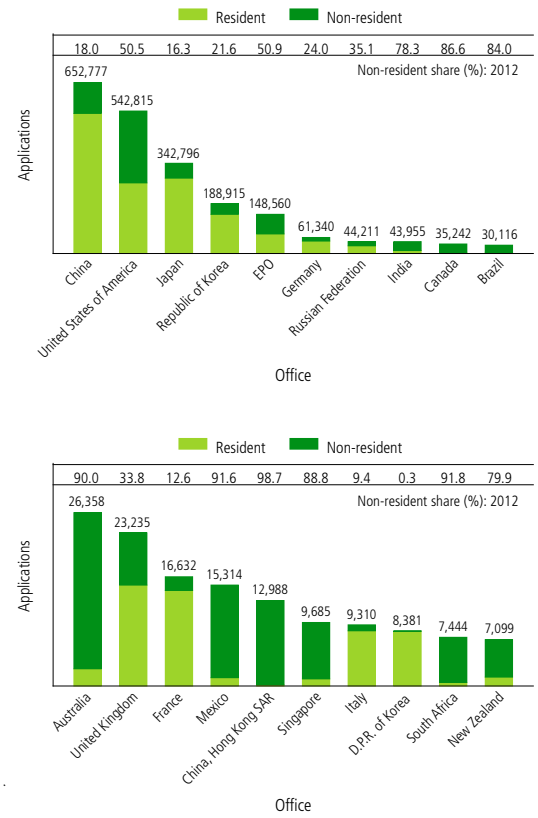
Source: WIPO Statistics Database, October 2013

Figure A.2.1.3 shows the numbers of patent applications received and their resident and non-resident shares for the top 20 offices worldwide. In 2012, SIPO received the largest number of applications, which was due to substantial growth in resident applications. The USPTO (542,815) is the only other office that received more than half a million applications in 2012. The JPO (342,796), KIPO (188,915) and the EPO (148,560) also received high numbers of applications. The gap between SIPO and the other offices has increased considerably since 2010.

While the top 20 list includes patent offices from 15 high-income countries, large middle-income countries such as Brazil, India, Mexico and South Africa also appear in this list. The rankings of the top 20 offices in 2012 are identical to that in 2011, except for those of Brazil, the Russian Federation and New Zealand. These three offices each moved up one place in their respective rankings.

Globally, approximately 35.5% of applications are considered to be non-resident applications. However, the resident and non-resident distribution differs significantly among offices. In 2012, the non-resident share ranged from 98.7% (China, Hong Kong SAR) to 0.3% (Democratic People's Republic of Korea). Non-resident applications accounted for more than three-quarters of total applications at 9 of the top 20 offices. In contrast, the non-resident share was below 33% for seven offices. The EPO and the USPTO have equal distributions of resident and non-resident applications. For the majority of the top 20 offices, the 2012 non-resident share is similar to that for 2011, except for New Zealand (+4 percentage points), Germany (+3 percentage points) and China (-3 percentage points).

Figure A.2.1.3 Patent applications for the top 20 offices, 2012



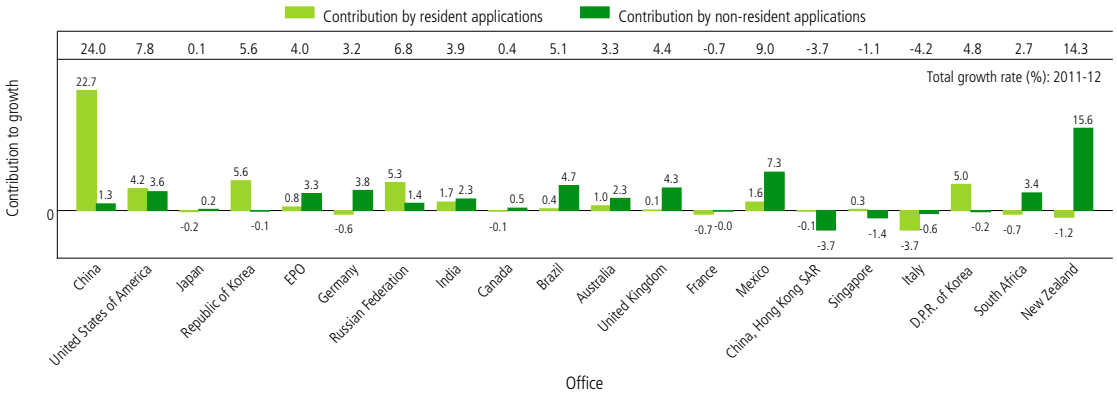
Note: D.P.R. of Korea = Democratic People's Republic of Korea

Source: WIPO Statistics Database, October 2013

Figure A.2.1.4 shows the contribution of resident and non-resident applications to total growth for the top 20 offices. All offices, except those of China Hong Kong (SAR), France, Italy and Singapore, received more applications in 2012 than in 2011. China (+24%) and New Zealand (+14.3%) were the only two offices that recorded double-digit growth in applications between 2011 and 2012. However, the source of growth in applications for these two offices differs. Growth in resident applications accounted for 22.7 percentage points of the total growth (+24%) in China, while growth in non-resident applications (+15.6 percentage points) accounted for all growth in applications in New Zealand (+14.3%) by offsetting the fall in resident applications filed at its office. Mexico (+9%), the US (+7.8%) and the Russian Federation (+6.8%) also saw considerable growth in applications in 2012. The source of this growth differed among offices. For a number of them (e.g., Brazil, Germany, Mexico and the UK), growth in non-resident applications was the main contributor to overall growth.

The list of the top 20 offices comprises 15 high-income countries (Figure A.2.1.3). However, a considerable amount of IP activity also takes place in the offices of middle- and low-income countries. Figure A.2.1.5 shows patent application data for selected middle- and low-income countries (selected offices are from different world regions and income groups). The patent offices of Malaysia (6,940) and Thailand (6,746) each received close to 7,000 applications in 2012, which is similar to the number of applications received by New Zealand. Ukraine, Argentina and Turkey also received large numbers of applications. Non-resident applications accounted for the bulk of total applications received by the majority of offices listed in Figure A.2.1.5. For example, non-resident applications accounted for almost all applications received by the offices of Guatemala and Honduras.

Figure A.2.1.4 Contribution of resident and non-resident applications to total growth for the top 20 offices, 2011-12

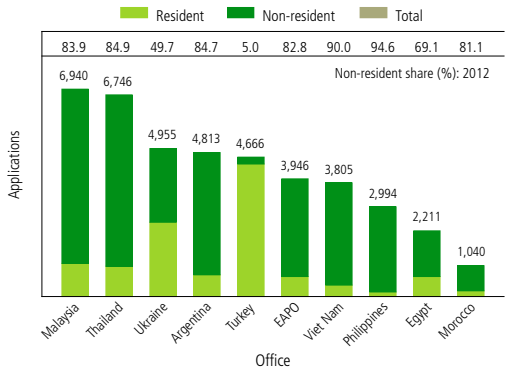


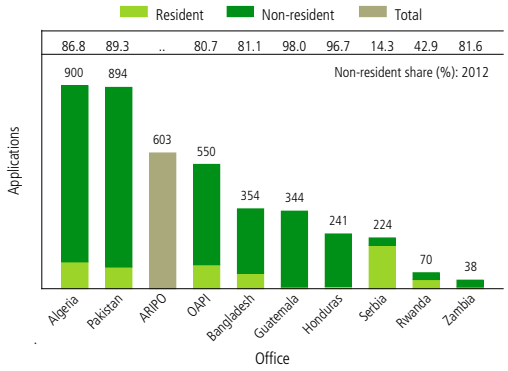
Note: D.P.R. of Korea = Democratic People's Republic of Korea

Source: WIPO Statistics Database, October 2013

More than half of these offices of middle- and low-income countries saw growth in the number of applications received in 2012, of which six saw double-digit growth (Figure A.2.1.6). Growth in non-resident applications was the main contributor to overall growth at the majority of these offices. However, for a number of them, the contribution of resident applications to overall growth outweighed the non-resident component. For example, growth in resident applications was responsible for nearly all growth at the office of Turkey. The Thai office had the highest growth in the number of applications between 2011 and 2012. This could be due in part to the accession of Thailand to the PCT system in December 2009.

Figure A.2.1.5 Patent applications for offices of selected middle- and low-income countries, 2012

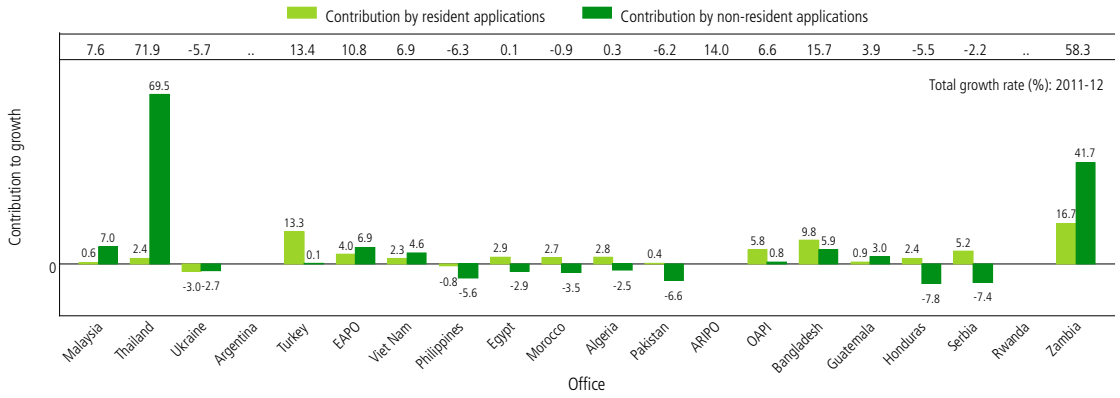




Note: The selected offices are from different world regions and income groups (upper middle-income, lower-middle income and low- income). Data for all available offices are presented in the statistical annex. ARIPO = African Regional Intellectual Property Organization; OAPI = African Intellectual Property Organization and EAPO = Eurasian Patent Organization.

Source: WIPO Statistics Database, October 2013

A.2.1.6 Contribution of resident and non-resident applications to total growth for offices of selected middle- and low-income countries, 2011-12



Note: ".." = not available. The selected offices are from different world regions and income groups (upper middle-income, lower-middle income and low income). All available office data are presented in the statistical annex. ARIPO = African Regional Intellectual Property Organization; OAPI = African Intellectual Property Organization and EAPO = Eurasian Patent Organization.

Source: WIPO Statistics Database, October 2013

A.2.2 Grants by office

This subsection focuses on patent grants by office. The procedure for issuing patents varies across offices, and differences in the numbers of patent grants among offices depend on several factors, such as the examination capacity of offices.

Figure A.2.2.1 shows the numbers of resident and non-resident grants for the top 20 offices. Since 2007, the JPO has issued the largest numbers of patent grants. In 2012, the JPO was followed by the USPTO and SIPO (A.2.2.1) – all of which granting more than 200,000 patents. The number of grants issued by offices ranked from 12th to 20th ranged from approximately 3,400 to 6,900. The lists of the top 20 offices for applications (A.2.1.3) and grants (A.2.2.1) are almost identical, except for Brazil and Ukraine. The office of Brazil is ranked among the top 20 offices for applications but not for grants, while Ukraine appears in the top 20 list for grants, but not for applications.

The combined shares of the top five offices for applications and grants worldwide were of similar magnitude – approximately 80%. However, there are considerable differences between the JPO and SIPO shares. SIPO accounted for a higher share of applications filed worldwide (27.8%) than for grants issued worldwide (19.1%), whereas the opposite was the case for the JPO – a higher grant share (24.2%) than that for applications (14.6%). The majority of the top 20 offices held similar shares of world totals for both applications and grants.

At the global level, non-resident grants accounted for 38.8% of total grants issued in 2012. However, there is considerable variation in non-resident shares across offices. Non-resident grants accounted for almost all grants issued by the offices of China Hong Kong (SAR) and Mexico. Other offices with high non-resident grants were Australia, Canada, New Zealand, Singapore and South Africa. In contrast, resident grants accounted for almost all patents issued by the Democratic People's Republic of Korea.

Between 2011 and 2012, the office of New Zealand (+30.6%) witnessed the highest growth in patent grants, followed by France (+26.4%) and China (+26.1%). However, in absolute numbers, China (+44,992) and Japan (+36,468) saw the largest increases in grants. The offices of India (-16.3%), Ukraine (-16.2%) and Italy (-11.8%) saw considerable decreases in the number of grants issued.

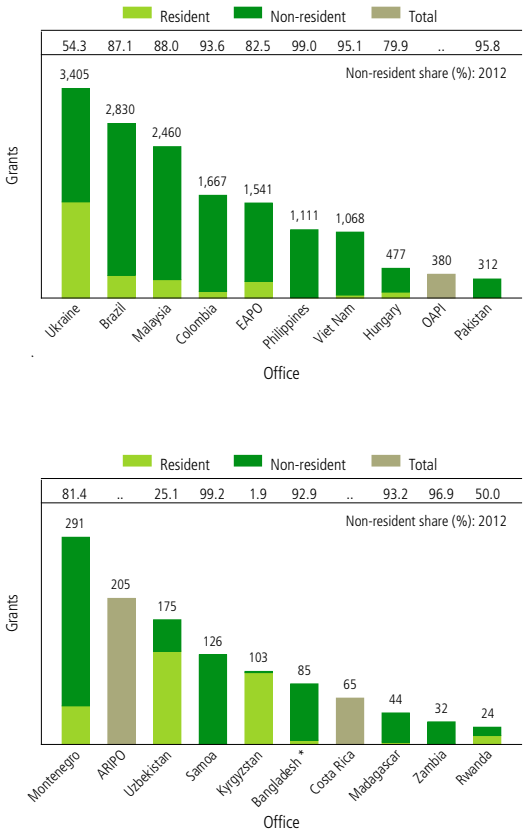
Figure A.2.2.1 Patent grants for the top 20 offices, 2012

Note: D.P.R. of Korea = Democratic People's Republic of Korea

Source: WIPO Statistics Database, October 2013

Figure A.2.2.2 focuses on patents granted by offices of selected middle- and low-income countries (selected offices are from different world regions and income groups). Among these countries, Ukraine (3,405) issued the largest number of patents, followed by Brazil (2,830) and Malaysia (2,460). Bangladesh, Costa Rica, Madagascar, Rwanda and Zambia each granted fewer than 100 patents. Non-resident grants accounted for the largest share of total grants for all offices with the exception of the offices of Uzbekistan and Kyrgyzstan. The office of Colombia showed the largest increase in patent grants in 2012 (+1,050 compared to 2011), while those of Viet Nam (-776), Ukraine (-656) and Brazil (-609) saw the largest decreases.

Figure A.2.2.2 Patent grants for offices of selected middle- and low-income countries, 2012



Note: *2011 data, ".." = not available. The selected offices are from different world regions and income groups (upper middle-income, lower-middle income and low-income). Data for all available offices are presented in the statistical annex. ARIPO = African Regional Intellectual Property Organization; OAPI = African Intellectual Property Organization and EAPO = Eurasian Patent Organization.

Source: WIPO Statistics Database, October 2013

A.3

Patent applications and grants by origin

Patent application counts based on the applicant's origin complement the picture of patent activity worldwide. Patent activity by origin includes resident applications and applications filed abroad. The origin of a patent application is determined by the residence of the first-named applicant. As some offices do not provide data broken down by the applicant's origin, the numbers of applications and grants by origin reported here are likely to be lower than their actual numbers. In 2012, the origins of approximately 65,000 applications (2.8% of applications worldwide) were unknown.

Applications filed at regional offices are considered equivalent to multiple applications in the respective states member to these offices. This subsection reports figures based on an equivalent applications or grants concept. For instance, in order to calculate the number of equivalent applications or grants for the Eurasian Patent Organization (EAPO) or the African Intellectual Property Organization (OAPI), each application is multiplied by the corresponding number of member states. By contrast, the EPO and ARIPO do not issue patents with automatic region-wide applicability. Thus, for these two offices, each application is counted as one application abroad if the applicant does not reside in a member state; alternatively, the application is counted as one resident application and one application abroad if the applicant resides in a member state. The use of this method might result in underestimating the number of applications and grants at the EPO or ARIPO, as the granting of patents on the basis of applications received by these offices may lead to patent protection in more than one jurisdiction. Uncertainty and lack of data on designations or validations in member states are the main reasons for limiting the number of applications abroad to just a single application in the case of the EPO and ARIPO.

A.3.1 Applications and grants by origin

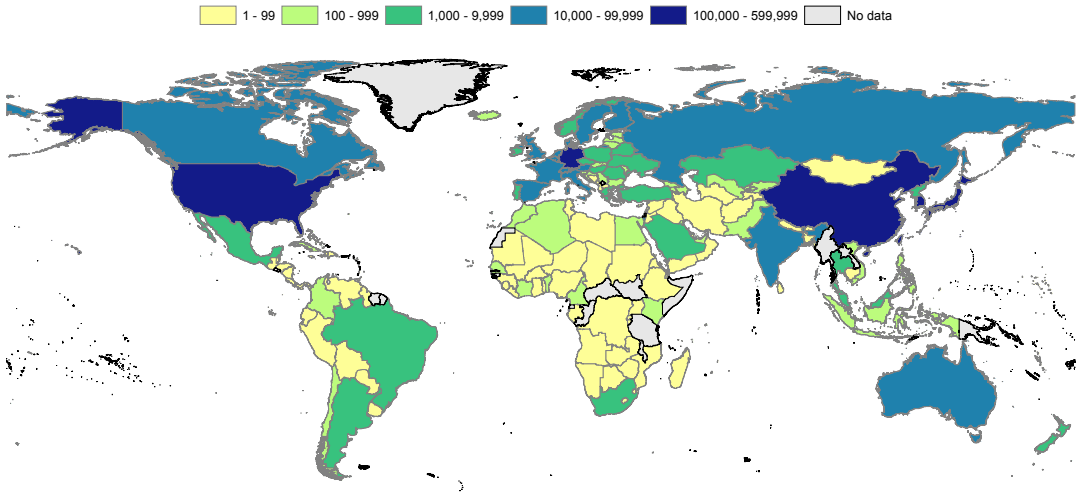
Figure A.3.1.1 shows the equivalent patent application data for all available origins for 2012. As depicted in the map, patent applications are concentrated among just a few origins, namely China, Germany, Japan, the Republic of Korea and the US. Most countries located in Africa, the Middle East and portions of Latin America exhibit low patent filing volumes. However, this could be partly due to missing data, as some offices do not provide statistics broken down by origin.

Figure A.3.1.2 presents equivalent patent application data for the top 20 origins. In 2012, China overtook both Japan and the US to become the origin of the largest number of patent applications. In 2012, China for the first time held the top positions both for the number of applications filed in China (A.2.1.3) as well as for the number of applications filed by Chinese applicants worldwide (A.3.1.2.). This was mainly due to the substantial growth in resident applications.

In general, European countries, such as Germany and France, are ranked higher in terms of origin data than they are for office data. In contrast, a number of middle-income countries, such as Brazil and India, are ranked higher in terms of office data than they are for origin data. This is due to differences between the numbers of applications filed abroad by residents of European countries compared to those filed by residents of middle-income countries. This is illustrated by the fact that Brazil, Mexico and South Africa are in the list of top 20 offices, but not in the list for the top 20 origins. In fact, China and India are the only other middle-income countries in the list of top 20 origins.

Applications abroad constitute the largest share of total applications for 14 of the top 20 origins, with Israel (89.2%) and Canada (82.2%) having the highest abroad share of total applications. Only a small portion of total applications originating in China, the Republic of Korea and the Russian Federation are filed abroad.

Figure A.3.1.1 Equivalent patent applications by origin, 2012



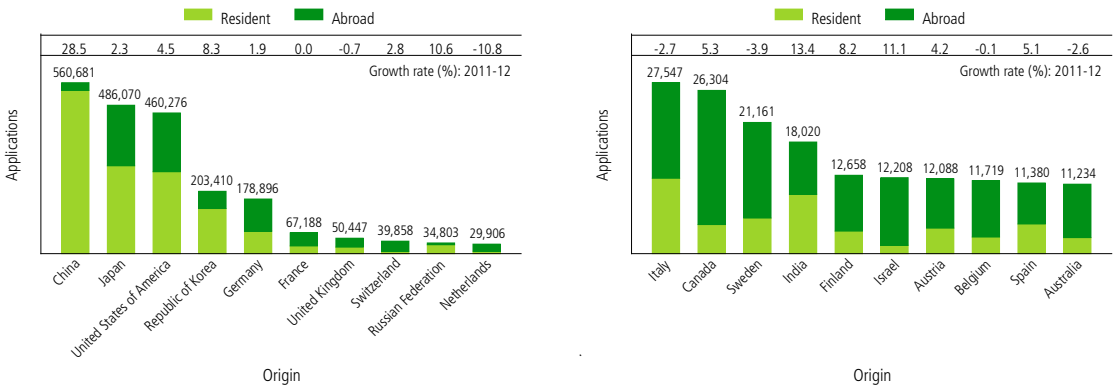
Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than their actual numbers.

Source: WIPO Statistics Database, October 2013

When compared with figures for 2011, the majority of the top 20 origins saw growth in applications in 2012. China, India, Israel and the Russian Federation showed strong growth in total applications. Growth in resident applications was the main contributor to the overall growth reported for China and the Russian Federation.

In the case of India and Israel, growth in applications filed abroad was the key factor driving total growth. The Netherlands saw a 10.8% decrease in total applications, which was due to a drop in both resident applications and those filed abroad.

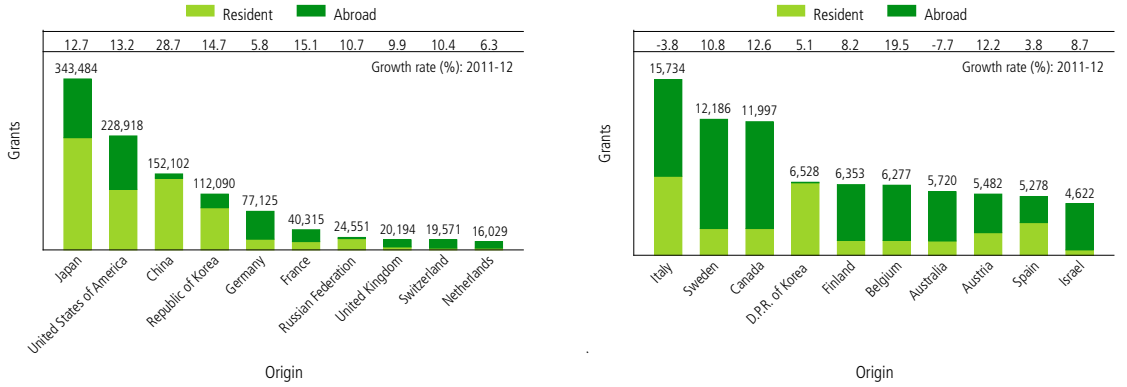
Figure A.3.1.2 Equivalent patent applications for the top 20 origins, 2012



Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than their actual numbers.

Source: WIPO Statistics Database, October 2013

Figure A.3.1.3 Equivalent patent grants for the top 20 origins, 2012



Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than their actual numbers. D.P.R. of Korea = Democratic People's Republic of Korea

Source: WIPO Statistics Database, October 2013

For the majority of origins, equivalent patent grants (Figure A.3.1.3) share similarities with equivalent applications (Figure A.3.1.2). However, there are some differences. For example, the application and grant profiles of the top three origins differ significantly. China ranked in first position for applications (Figure A.3.1.2) but in third position for grants. Japan and the US recorded similar volumes of applications, but reported considerable differences for grants. India, one of the top 20 offices for applications, does not feature in the list of top 20 origins. However, care should be taken when comparing application and grant data, as applications require processing times of up to several years. Furthermore, in recent years there has been substantial growth in the number of applications filed by residents of China. Once these applications are processed, China's total grants will increase.

Grants abroad accounted for less than 10% of total grants for China, the Democratic People's Republic of Korea and the Russian Federation. In contrast, applicants domiciled in Sweden and Switzerland received more than four-fifths of their total grants from offices other than their respective national/regional offices.

With the exception of Australia and Italy, the other top 20 origins received more grants in 2012 than in 2011. China (+28.7%) saw the largest growth in grants, followed by Belgium (+19.5%), France (+15.1%) and the Republic of Korea (+14.7%). Growth in resident grants was the main factor influencing the overall growth in grants for China and the Republic of Korea. In contrast, an increase in grants abroad accounted for three-quarters of the total growth for Belgium.

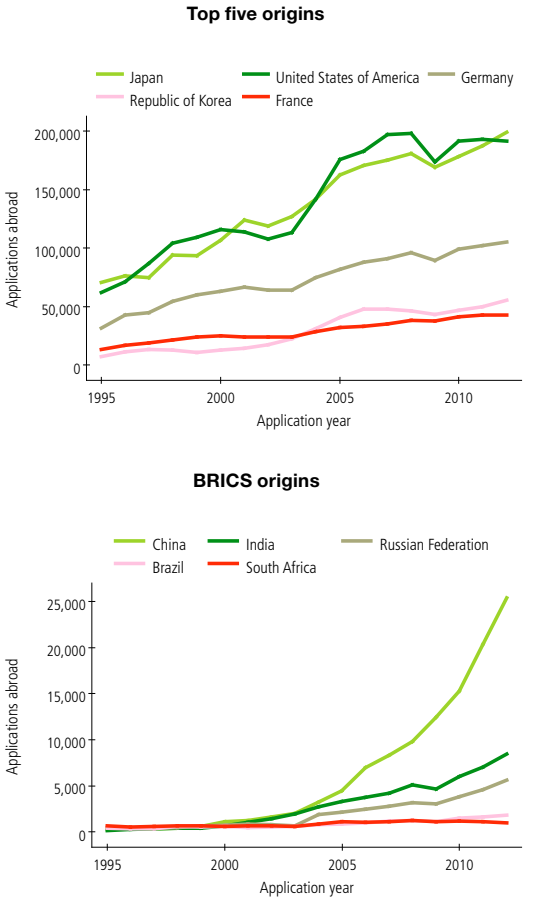
A.3.2 Applications filed abroad by origin

The volume of filings abroad reflects, to some extent, the impact of globalization on IP protection strategies. Companies that expand their operations to foreign countries may have a business imperative to seek IP protection in those countries.[4] Consequently, patent applications filed abroad provide some indication of how companies are expanding their IP rights in relation with their businesses into overseas markets. As shown in Figure A.3.2.1, Japan with approximately 200,000 applications, filed the largest number applications abroad in 2012, followed closely by the US with its approximately 191,550 applications. Germany accounted for over 100,000 applications, while France and the Republic of Korea each had approximately 50,000.

Brazil, the Russian Federation, India, China and South Africa (the so-called BRICS countries) had similar volumes of applications abroad in the mid-1990s. However, the numbers of applications of Chinese origin filed abroad increased considerably. For example, by 2012 they had increased from approximately 300 to over 25,000 applications, while those of Indian origin had increased from approximately 160 to approximately 8,500.

In 2009 during the global economic crisis, the numbers of applications filed abroad for all reported origins except China decreased. US applicants filed approximately 25,000 fewer applications abroad in 2009 than in 2008. Similarly, applicants resident in Japan filed close to 12,000 fewer applications abroad. The volumes of applications filed abroad have returned to the pre-crisis levels of 2008 for all reported origins, except for the US and South Africa.

Figure A.3.2.1 Trends in applications filed abroad for the top five origins and BRICS origins



Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than their actual numbers. BRICS = Brazil, the Russian Federation, India, China and South Africa.

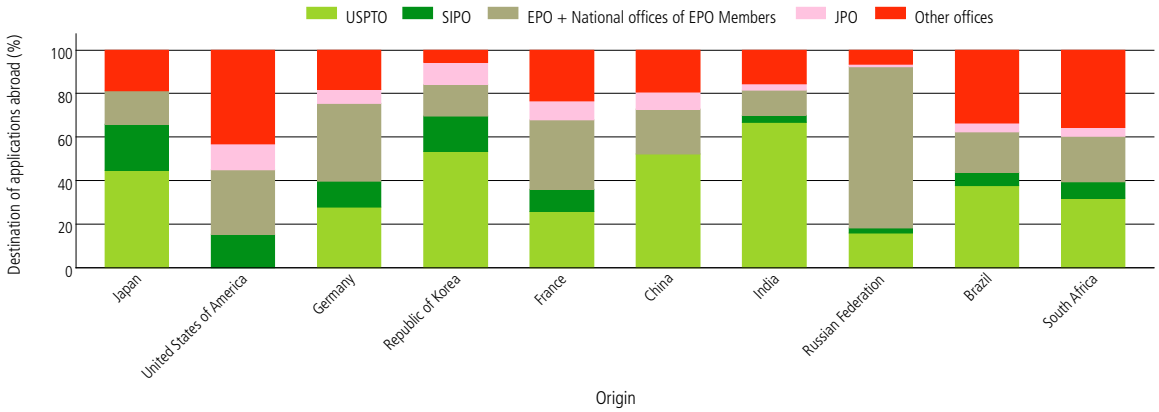
Source: WIPO Statistics Database, October 2013

To provide a detailed picture of patent flows across countries, Figure A.3.2.2 presents a breakdown of patent data by origin and destination office for 2012. For example, residents of Japan filed 199,057 applications abroad in 2012; of these applications, 44.6% were destined for the USPTO, 21.2% for SIPO, 15.6% for Europe and 18.6% for other offices.[5]

4 It goes without saying that expanding operations abroad does not necessarily mean that companies will seek additional patent rights. For example, companies might rely on other types of IP protection, or IP protection might not be necessary at all due to the nature of the business activity.

5 Europe = offices of all European countries, including the EPO and not limited to the EU.

Figure A.3.2.2 Destination of applications abroad for the top five origins and BRICS origins, 2012



Note: BRICS = Brazil, the Russian Federation, India, China and South Africa.

Source: WIPO Statistics Database, October 2013

The USPTO received the largest number of applications (i.e., excluding those of US origin) from Japan. However, 67% of total applications filed abroad by residents of India (8,467) were destined for the USPTO. Similarly, the bulk of all applications filed abroad by residents of China (52.3%) and the Republic of Korea (53.3%) were destined for the USPTO. The EPO and offices of EPO member states are a popular destination for applications filed by residents of the Russian Federation and the US. The share of applications received by SIPO from Japan (21.2%), the Republic of Korea (16.3%), the US (15.4%) and Germany (12.1%) are more evenly distributed.

A.4

Patent families

Applicants often file patent applications in multiple jurisdictions, thus resulting in some inventions being recorded more than once. In order to take this factor into account, WIPO has developed indicators related to so-called patent families, which are defined as a set of patent applications interlinked by – or by a combination of – priority claim, PCT national phase entry, continuation, continuation-in-part, internal priority, addition or division.[6] A special subset of patent families comprises foreign-oriented patent families, which include only those patent families which have at least one filing office that is different from the office of the applicant's country of origin.[7] By contrast, domestic patent families are patent families that have only one filing office that is the same as the office of the first-named applicant's country of origin.

Figure A.4.1 shows the number of patent families worldwide for 1995-2010.[8] The trend in patent families is similar to that of patent applications (Figure A.1.1.1). The total number of patent families grew continuously until 2009 and, following a sharp decrease in 2009, rebounded strongly with 4.9% growth in 2010. In 2010, the number of patent families across the world totaled approximately 1 million, which is equivalent to 50% of the total number of patent applications filed worldwide in 2010. In other words, one-half of all patent applications worldwide are first filings and the other half comprise subsequent applications.

Figure A.4.2 presents the number of patent families broken down by domestic and foreign-oriented families for the top 20 origins. Between 2008 and 2010, Japan had the largest number of patent families, followed by the US and China. The rankings of the top five origins for patent families and patent applications are identical for each year over the same period. All reported origins, except Brazil and China, are high-income countries.

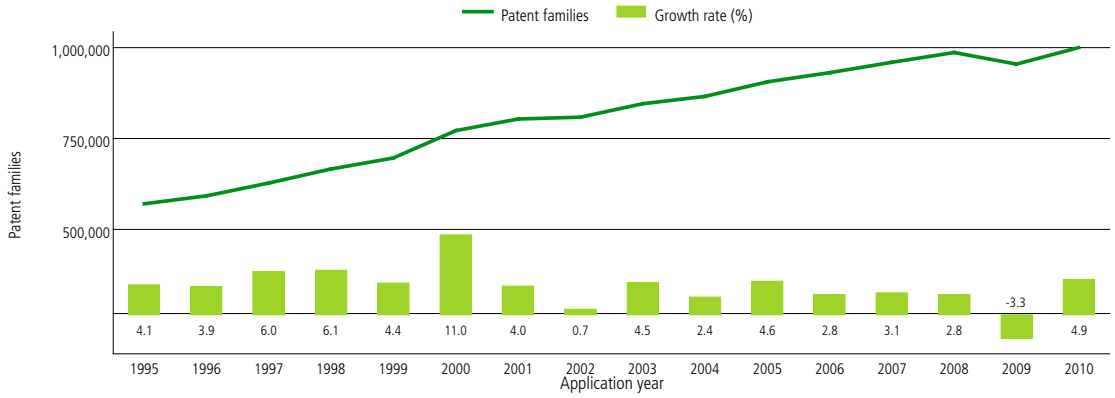
The distribution of domestic and foreign-oriented patent families differed considerably. Foreign-oriented patent families accounted for less than a tenth of total patent families in the case of China, Poland and the Russian Federation. In contrast, Canada, the other European countries, Israel and the US had a high share of foreign-oriented patent families.

6 In this publication, patent families include only those families associated with patent applications for inventions and exclude patent families associated with utility model applications.

7 Some foreign-related patent families include only one filing office, as applicants may choose to file directly with a foreign office. For example, if a Canadian applicant files a patent application directly with the USPTO (without previously filing with the patent office of Canada), that application, and applications filed subsequently with the USPTO, form a foreign-oriented patent family.

8 Patent family data are based on published applications. There is a minimum delay of 18 months between the application date and the publication date. For this reason, 2010 is the latest available year for which complete patent family data exist.

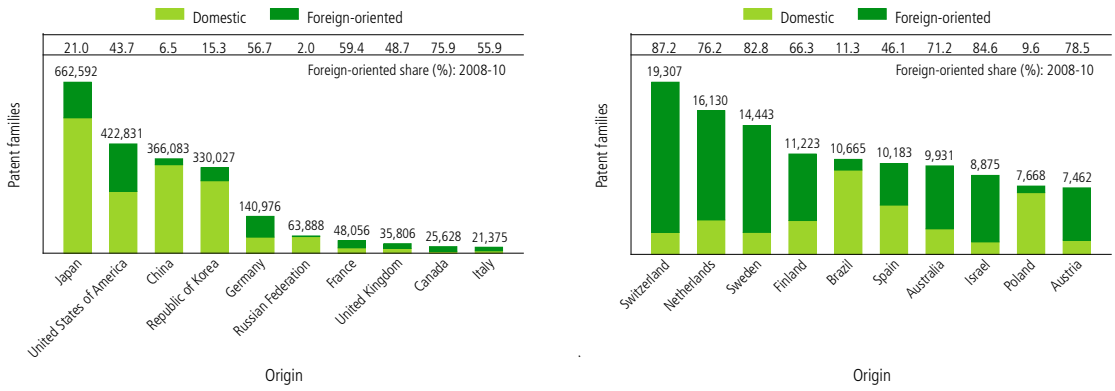
Figure A.4.1 Trend in patent families



Note: The patent family dataset includes only published patent applications. "Patent family" is defined as a set of patent applications interlinked by – or by a combination of – priority claim, PCT national phase entry, continuation, continuation-in-part, addition or division. "Foreign-oriented patent family" is defined as a patent family having at least one filing office that is different from the office of the first-named applicant's country of origin.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

Figure A.4.2 Domestic and foreign-oriented patent families for the top origins, 2008-10



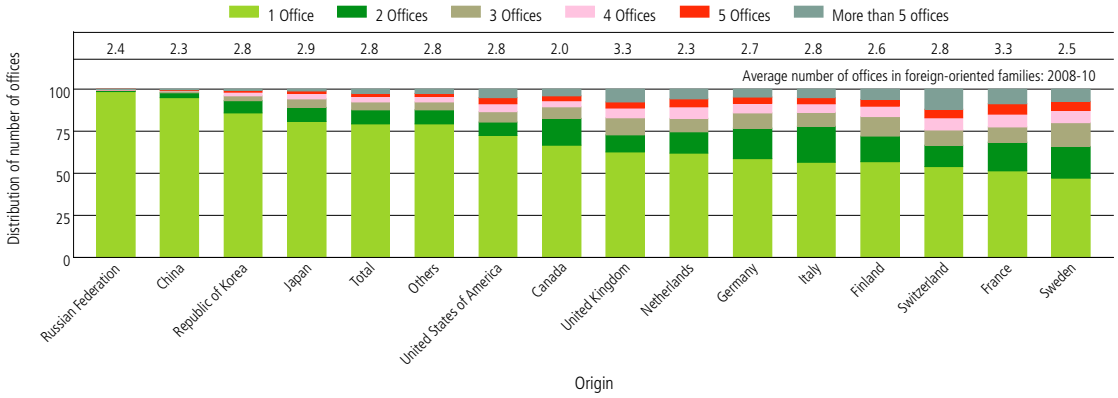
Note: The patent family dataset includes published patent applications only. "Patent family" is defined as a set of patent applications interlinked by – or by a combination of – priority claim, PCT national phase entry, continuation, continuation-in-part, addition or division. "Foreign-oriented patent family" is defined as a patent family having at least one filing office that is different from the office of the first-named applicant's country of origin.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

Figure A.4.3 shows the distribution of total patent families by the number of offices at which they exist for selected origins. The majority of patent families are single-office families, most often the national patent office of the applicant. On average, 21.6% of patent families created worldwide between 2008 and 2010 included at least two patent offices. However, there was considerable variation among the top origins. A small fraction of total patent families originating in the Russian Federation (1.6%) and China (5.9%) included at least two patent offices. In contrast, large shares of patent families originating in EU countries, such as France (49.1%) and Sweden (56.5%), included at least two patent offices.

The average number of offices per foreign-oriented patent family ranged from 2 offices for Canada to 3.3 offices for France and the UK. This ratio has remained more or less stable in recent years.

Figure A.4.3 Distribution of total patent families by number of offices, 2008-10



Note: The patent family dataset includes only published patent applications. "Patent family" is defined as a set of patent applications interlinked by – or by a combination of – priority claim, PCT national phase entry, continuation, continuation-in-part, addition or division. "Foreign-oriented patent family" is defined as a patent family having at least one filing office that is different from the office of the first-named applicant's country of origin.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

Table A.4.4 illustrates the flow of foreign-oriented patent filings from source countries to destination offices. Numbers reported in this table are lower than those for applications abroad reported in subsection A.3 due to data consolidation – i.e., repeated filings at the same office within the same patent family are counted only once.

The USPTO is the most popular destination for foreign-oriented patent families. Approximately 67% of foreign-oriented patent families, excluding those of US origin, included at least one filing at the USPTO.[9] In contrast, approximately 38% of foreign-oriented patent families, excluding those of Chinese origin, included at least one filing at SIPO. The share for the JPO was approximately 31%.

A high proportion of foreign-oriented patent families originating in the Republic of Korea (83%), Israel (79%), Japan (79%) and China (77%) included filings at the USPTO. In contrast, for a number of European countries (Austria, Belgium, Italy and Spain), their respective shares of foreign-oriented patent families that included filings at the USPTO were below 50%. However, residents of many European origins have a high tendency to file at the EPO. For example, more than 80% of foreign-oriented patent families originating in France and Italy included filings at the EPO. A high share of foreign-oriented families originating in Japan (48%), the US (40%) and the Republic of Korea (36%) included filings at SIPO.

9 The ratio is calculated as follows: the total number of foreign-oriented patent families including at least one filing at the USPTO, excluding those of US origin (504,621 minus 91,222 = 413,399) divided by the total number of foreign-oriented patent families, excluding those of US origin (801,686 minus 184,832 = 616,854).

Table A.4.4 Foreign-oriented patent families for selected offices and origins, 2008-10

Origin	Office															
	United States of America	European Patent Office	Japan	China	Republic of Korea	Canada	Germany	Australia	Russian Federation	United Kingdom	Mexico	France	Israel	Argentina	Singapore	Foreign-oriented families
United States of America	91,222	83,193	63,286	74,049	39,598	43,140	9,542	23,298	8,414	8,937	13,946	889	5,925	4,210	3,461	184,832
Japan	109,471	36,987	125,060	66,488	24,052	3,034	5,275	2,534	2,136	991	702	566	188	331	1,103	139,188
Germany	37,028	57,014	14,075	23,807	8,074	5,780	46,722	2,684	4,560	990	1,946	1,477	865	783	604	79,880
Republic of Korea	42,295	11,727	12,553	18,164	45,340	897	1,567	753	777	387	374	110	36	29	163	50,654
France	15,490	22,941	7,763	9,001	4,060	4,637	521	1,564	2,166	351	1,160	19,035	838	593	480	28,540
China	18,544	7,137	3,550	17,709	1,853	868	312	657	780	366	300	199	99	31	191	23,945
Canada	14,173	5,752	1,916	3,001	1,800	7,049	84	1,213	411	558	631	30	239	131	144	19,457
United Kingdom	12,017	11,523	4,093	4,604	1,809	3,373	232	2,564	916	11,008	835	121	627	376	430	17,423
Switzerland	7,149	10,105	4,037	4,789	2,738	2,737	2,224	1,804	1,324	614	1,351	198	707	624	393	16,838
Netherlands	6,234	6,516	2,930	3,486	1,642	1,015	261	648	886	436	281	50	163	162	144	12,290
Sweden	6,773	7,474	2,565	3,488	1,640	1,131	605	749	741	263	401	63	258	276	134	11,963
Italy	5,055	9,781	1,515	2,612	872	1,249	267	594	865	120	448	100	249	164	105	11,953
Israel	5,916	2,805	1,110	1,233	910	936	61	656	192	257	191	7	1,882	45	76	7,508
Finland	4,432	4,414	811	2,523	1,018	799	297	409	606	180	152	21	74	66	57	7,445
Australia	4,384	2,346	1,066	1,571	940	1,357	25	2,580	201	292	272	5	183	88	140	7,068
Austria	2,056	3,841	677	1,205	426	523	1,888	294	382	49	131	51	65	48	43	5,860
Belgium	1,942	3,042	828	1,022	592	754	131	504	276	643	250	153	175	154	77	4,745
Spain	1,911	3,444	551	833	258	552	98	301	309	99	358	140	159	295	58	4,692
Singapore	2,592	765	637	1,279	355	144	380	165	41	162	48		31	12	611	4,025
Others	115,937	76,053	81,200	69,201	34,138	14,943	4,213	9,896	9,354	4,165	5,417	1,399	3,312	3,264	2,986	163,380
Total families	**504,621**	**366,860**	**330,223**	**310,065**	**172,115**	**94,918**	**74,705**	**53,867**	**35,337**	**30,868**	**29,194**	**24,614**	**16,075**	**11,682**	**11,400**	**801,686**

Note: The patent family dataset includes only published patent applications. “Patent family” is defined as a set of patent applications interlinked by – or by a combination of – priority claim, PCT national phase entry, continuation, continuation-in-part, addition or division. “Foreign-oriented patent family” is defined as a patent family having at least one filing office that is different from the patent office of the first-named applicant’s country of origin.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

A.5

Patents by field of technology

Patent applications span a wide range of technologies. Furthermore, the tendency to file patent applications differs across technologies, as some technologies depend more heavily on the patent system than do others. In order to understand activity patterns and trends across technologies, this section presents data by field of technology.

Every patent application is assigned one or more International Patent Classification (IPC) symbols in offices that use the IPC. WIPO has developed a concordance table to link these IPC symbols to corresponding field(s) of technology (see *www.wipo.int/ipstats/en*). The data presented here are based on this concordance table. Where a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (so-called "fractional counting"). Applications with no IPC symbol are not considered. All data reported in this subsection relate to published patent applications. There is a minimum delay of 18 months between the application date and the publication date. For this reason, 2011 is the latest available year for which statistics on patents by technology field are available.

Table A.5.1 shows the number of published patent applications worldwide by field of technology.[10] In 2011, computer technology (134,272) and electrical machinery (122,697) accounted for the largest numbers of applications. These top two fields accounted for 14.8% of total published applications in 2011, which is considerably higher than their share in 1995 (10.3%).

The majority of fields experienced growth in applications, with food chemistry (+9.2%) and digital communication (+8.4%) exhibiting some of the highest average annual growth rates between 2007 and 2011.[11] Applications in the fields of telecommunications, optics and audio-visual technology dropped sharply over the same period.

10 Approximately 7% of total published applications were missing IPC codes. Therefore, they could not be allocated to fields of technology.

11 The micro-structural and nano-technology field showed the second highest growth (8.6%) in 2011, but accounted for only a small number of applications.

Table A.5.1 Patent applications worldwide by field of technology

Field of technology	Publication year					Growth rate
	2007	2008	2009	2010	2011	2007-11 (%)
Electrical engineering						
Electrical machinery, apparatus, energy	101,013	105,591	111,876	116,009	122,697	5.0
Audio-visual technology	92,978	91,258	85,411	80,607	75,881	-5.0
Telecommunications	68,915	69,804	60,808	56,417	49,533	-7.9
Digital communication	57,696	64,237	69,191	74,389	79,726	8.4
Basic communication processes	17,208	17,734	17,164	16,515	15,554	-2.5
Computer technology	123,504	134,493	133,072	130,052	134,272	2.1
IT methods for management	19,370	21,684	25,022	23,261	23,532	5.0
Semiconductors	76,617	81,238	78,685	77,547	80,049	1.1
Instruments						
Optics	75,328	74,435	69,346	64,099	61,438	-5.0
Measurement	65,895	71,762	76,263	76,742	76,730	3.9
Analysis of biological materials	11,218	11,345	11,778	11,390	11,694	1.0
Control	27,357	28,617	29,024	28,662	27,635	0.3
Medical technology	74,172	77,069	77,741	77,466	78,765	1.5
Chemistry						
Organic fine chemistry	52,609	53,873	53,009	52,559	51,271	-0.6
Biotechnology	33,929	35,654	37,652	38,423	40,849	4.7
Pharmaceuticals	73,345	73,769	72,126	69,258	69,311	-1.4
Macromolecular chemistry, polymers	27,627	28,345	28,800	28,683	28,748	1.0
Food chemistry	21,690	23,582	27,245	27,889	30,858	9.2
Basic materials chemistry	38,920	41,085	42,322	43,795	45,115	3.8
Materials, metallurgy	30,200	33,775	34,968	36,988	38,542	6.3
Surface technology, coating	29,348	30,732	32,792	33,215	33,954	3.7
Micro-structural and nano-technology	2,302	2,478	2,829	3,094	3,203	8.6
Chemical engineering	33,263	35,087	35,766	36,618	37,991	3.4
Environmental technology	21,688	22,605	24,333	25,572	26,324	5.0
Mechanical engineering						
Handling	42,764	42,783	42,764	42,414	44,344	0.9
Machine tools	36,607	38,315	40,585	43,242	46,363	6.1
Engines, pumps, turbines	41,891	43,573	48,156	48,372	48,423	3.7
Textile and paper machines	35,815	33,681	32,251	30,633	30,364	-4.0
Other special machines	44,008	45,912	47,541	49,011	50,981	3.7
Thermal processes and apparatus	25,280	25,699	27,259	29,382	29,855	4.2
Mechanical elements	43,957	47,513	47,286	46,405	46,913	1.6
Transport	65,237	67,717	70,542	67,015	65,439	0.1
Other fields						
Furniture, games	44,201	44,837	43,666	42,564	42,031	-1.3
Other consumer goods	31,831	31,974	32,119	32,172	33,306	1.1
Civil engineering	52,704	52,495	54,835	56,067	57,414	2.2

Note: The IPC-technology concordance table (available at: *www.wipo.int/ipstats/en*) was used to convert IPC symbols into 35 corresponding fields of technology. The data refer to published patent applications.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

Table A.5.2 Patent applications by field of technology and for the top origins, 2007-2011

Field of technology	Origin															
	Australia	Canada	China	Finland	France	Germany	Italy	Japan	Netherlands	Republic of Korea	Russian Federation	Sweden	Switzerland	United Kingdom	United States of America	Others
Electrical engineering																
Electrical machinery, apparatus, energy	1,091	3,814	42,219	1,960	17,004	61,905	4,766	197,827	9,567	61,109	4,067	2,445	8,865	8,307	82,461	20,060
Audio-visual technology	912	2,771	25,561	2,441	12,583	14,462	904	179,123	12,840	65,266	870	2,976	2,522	4,742	57,935	11,774
Telecommunications	889	5,074	29,704	6,049	9,406	11,010	1,164	88,238	3,809	49,319	1,378	9,255	1,304	4,447	67,291	7,930
Digital communication	631	9,449	72,161	12,196	16,215	14,332	1,629	54,972	5,752	35,513	450	17,069	1,596	5,782	88,706	7,694
Basic communication processes	96	910	4,367	636	2,775	5,228	341	26,542	2,532	7,450	967	1,199	748	1,326	21,004	3,284
Computer technology	2,920	10,417	45,047	6,572	15,946	26,782	2,208	160,422	11,819	60,955	1,519	6,410	4,359	10,327	231,206	21,514
IT methods for management	1,267	2,149	4,454	657	1,881	3,213	382	17,336	764	20,015	306	753	1,126	2,066	44,905	5,022
Semiconductors	454	839	16,275	500	6,644	20,779	1,148	153,940	7,105	75,733	828	574	1,587	2,246	67,591	8,964
Instruments																
Optics	688	1,195	15,372	609	5,614	13,964	975	185,947	7,593	42,440	894	1,060	1,936	3,041	39,464	6,376
Measurement	1,835	3,979	37,530	2,031	14,023	45,541	3,214	97,013	9,976	20,510	8,247	3,616	11,337	9,570	74,063	17,627
Analysis of biological materials	695	1,094	3,596	347	2,975	5,624	625	7,649	1,535	2,523	1,947	1,083	2,427	2,769	19,921	5,259
Control	1,092	1,592	12,432	581	4,605	15,000	1,637	37,437	1,957	10,135	1,647	1,365	2,370	3,514	33,085	7,644
Medical technology	4,558	4,584	13,394	1,036	11,413	36,343	4,989	54,919	9,809	15,918	9,496	7,048	16,787	11,722	156,990	32,418
Chemistry																
Organic fine chemistry	1,164	2,798	18,900	539	20,317	38,897	4,436	38,136	6,148	10,424	2,185	5,375	17,365	12,314	75,204	30,237
Biotechnology	2,592	3,432	17,402	804	8,107	16,915	2,306	20,814	5,500	9,165	1,822	1,765	7,316	7,058	67,521	21,840
Pharmaceuticals	3,647	6,297	38,194	958	18,328	31,204	7,370	28,798	6,362	10,514	5,692	7,748	23,615	15,563	123,173	50,208
Macromolecular chemistry, polymers	382	816	11,135	2,173	4,439	20,009	2,446	45,323	4,576	7,906	935	325	3,439	1,714	31,810	7,538
Food chemistry	875	1,122	19,191	428	2,595	5,330	1,070	13,272	6,409	12,111	17,015	337	4,744	2,464	19,963	11,149
Basic materials chemistry	1,002	1,992	24,266	901	6,012	35,527	1,536	42,724	7,038	11,113	3,343	690	6,970	6,340	51,100	13,535
Materials, metallurgy	1,697	1,569	30,285	1,729	6,697	17,150	1,480	43,685	1,846	12,235	8,359	1,514	2,186	2,422	20,753	12,182
Surface technology, coating	670	1,386	11,959	1,185	4,907	15,954	1,642	52,591	1,933	10,246	1,779	1,200	2,604	2,498	36,858	7,336
Micro-structural and nano-technology	116	96	1,710	124	606	1,371	94	2,405	254	2,579	587	134	153	158	2,486	683
Chemical engineering	1,479	2,235	16,952	1,840	7,352	25,809	2,846	32,504	4,788	13,354	4,426	2,422	4,287	5,490	40,121	13,512
Environmental technology	762	1,514	13,620	855	5,042	13,594	1,481	27,259	2,533	12,888	2,303	1,116	1,765	2,719	20,263	8,002
Mechanical engineering																
Handling	1,797	2,408	9,631	2,806	8,760	28,312	7,386	57,829	4,521	12,958	1,664	2,352	10,832	5,998	42,214	15,734
Machine tools	1,077	1,962	19,041	977	5,633	34,126	3,830	47,492	1,507	14,407	4,251	3,640	3,590	2,958	34,039	11,867
Engines, pumps, turbines	1,088	2,608	12,220	587	13,365	45,511	3,158	67,102	1,390	14,451	4,935	2,546	3,338	6,053	41,745	15,425
Textile and paper machines	2,469	613	10,516	2,764	3,018	20,824	2,643	69,579	2,369	8,618	637	1,013	4,453	2,065	21,310	6,620
Other special machines	1,945	4,010	18,176	1,474	9,894	29,522	5,623	51,267	5,897	18,865	6,705	2,578	4,611	4,813	43,166	19,475
Thermal processes and apparatus	786	1,391	15,072	999	4,560	16,775	2,801	36,403	1,569	18,904	2,358	1,763	2,087	2,213	16,026	10,488
Mechanical elements	1,570	2,153	13,024	826	10,531	55,018	4,082	60,806	2,280	13,535	3,314	4,280	3,326	5,830	41,299	13,114
Transport	1,460	3,683	13,686	807	27,909	72,762	5,980	95,703	3,153	32,986	4,663	6,594	2,861	6,782	49,750	17,211
Other fields																
Furniture, games	2,601	2,885	10,631	396	5,976	15,876	4,310	49,227	3,346	20,680	1,070	1,982	4,159	6,863	45,442	14,695
Other consumer goods	1,335	1,773	10,968	416	6,878	18,753	3,944	29,623	2,220	25,420	2,035	1,199	4,533	5,489	30,029	12,701
Civil engineering	3,943	6,582	22,049	1,924	11,532	29,818	5,638	39,426	6,981	33,014	7,908	3,991	3,730	9,597	48,726	28,220

Note: The IPC-technology concordance table (available at: *www.wipo.int/ipstats/en*) was used to convert IPC symbols into 35 corresponding fields of technology. The data refer to published patent applications.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

The aggregate data reported in Table A.5.1 provide an overview of applications by field of technology. However, they do not provide any insight into the innovative strength of countries in relation to different technology fields. Table A.5.2 reports patent application data by field of technology for the top origins, thereby showing how they differ across origins. For example, digital communications accounted for the largest share of total applications for China, Finland and Sweden – one-fifth of all applications from Finland belong to this field. China and Finland also exhibit large numbers of applications in the computer technology field. Computer technology accounted for the largest share of applications originating in Canada and the US. Switzerland and the UK tended to file large numbers of applications for pharmaceuticals. In the case of France and Germany, transport accounted for the largest share of total applications. Japan filed the largest number of applications in electrical machinery, while for the Netherlands, audio-visual technology accounted for the largest share.

Patent applications originating in Finland, the Russian Federation, Sweden and Switzerland are concentrated in a just a few fields, while applications originating in France, Germany, Italy, the Netherlands and the UK are spread across a wide range of fields. The combined share of the top five fields for each origin (top five fields vary across origins) ranged from 49.7% for Finland to 31.8% for France and the UK.

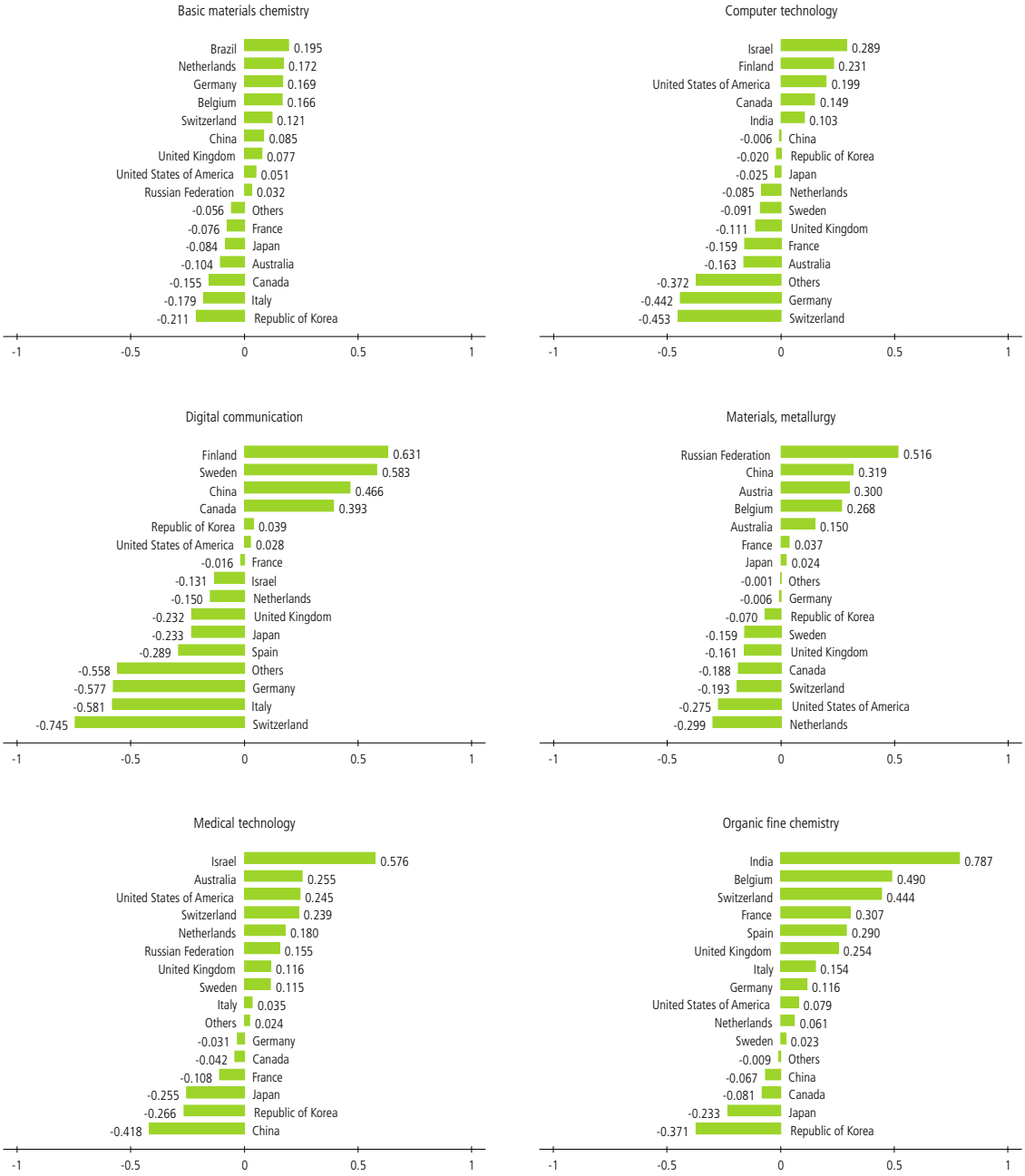
Another way to measure innovative strength is to calculate a country's relative specialization index (RSI). The RSI corrects for the effects of country size and focuses on the concentration in specific technology fields; in particular, it seeks to capture whether a given country tends to have a lower or a higher propensity to file in certain technology fields. The RSI is calculated using the following formula:

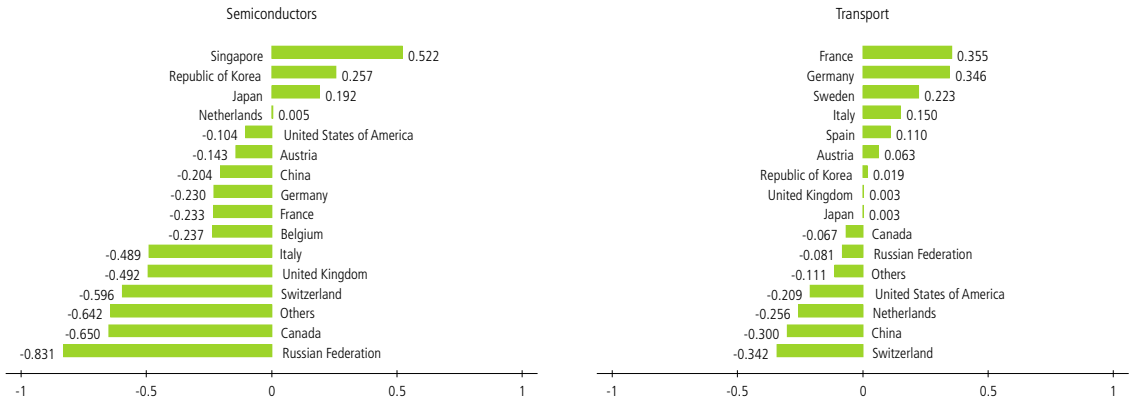
$$RSI = Log\left(\frac{F_{CT}\sum F_{CT}}{\sum F_C \sum F_T}\right)$$

whereby FC and FT denote applications from country C and in technological field T, respectively.

A positive RSI value for a technology indicates that a particular country has a relatively high share of patent filings related to that field of technology. Figure A.5.3 shows the 2011 RSI for selected fields of technology. It shows that RSI values differ across origins and technology. Brazil, the Netherlands, Germany, Belgium and Switzerland have a high concentration of applications in basic materials chemistry. Israel had the highest RSI value for computer technology and medical technology. Austria, Belgium, China and the Russian Federation have an above-average concentration of applications in materials, metallurgy technology. European countries such as France, Germany, Sweden, Italy and Spain have higher shares of applications in transport-related technology. Japan, the Republic of Korea and Singapore have the highest RSI value for semiconductors. The majority of the reported origins have positive RSI values for organic fine chemistry, with India showing the highest value. The distribution of RSI value differs across technology. RSI values for digital communications and semiconductors are skewed toward just a few origins, whereas RSI values for basic materials chemistry and materials metallurgy are more evenly distributed.

Figure A.5.3 Relative specialization index for patent applications for selected fields of technology, 2011

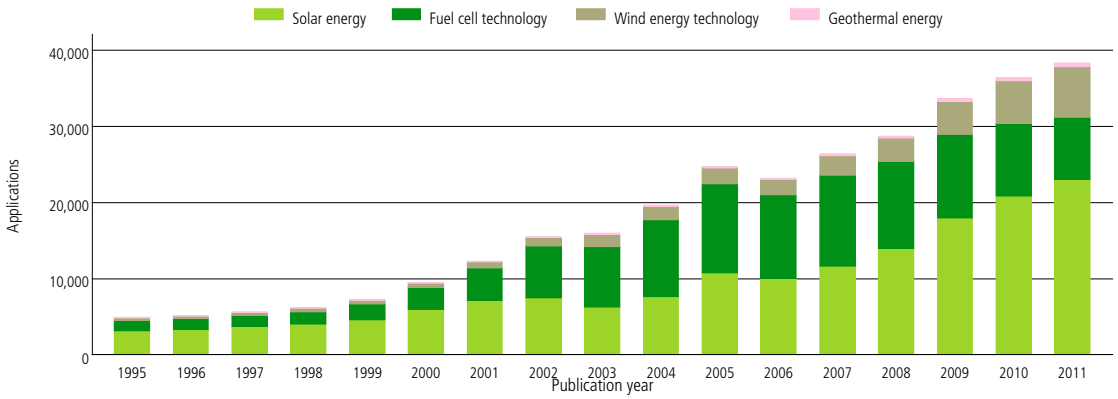




Note: The IPC-technology concordance table (available at: *www.wipo.int/ipstats/en*) was used to convert IPC symbols into 35 corresponding fields of technology. The data refer to published patent applications.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

Figure A.5.4 Trend in patent applications in energy-related technologies



Note: For definitions of the technologies, refer to Annex A.

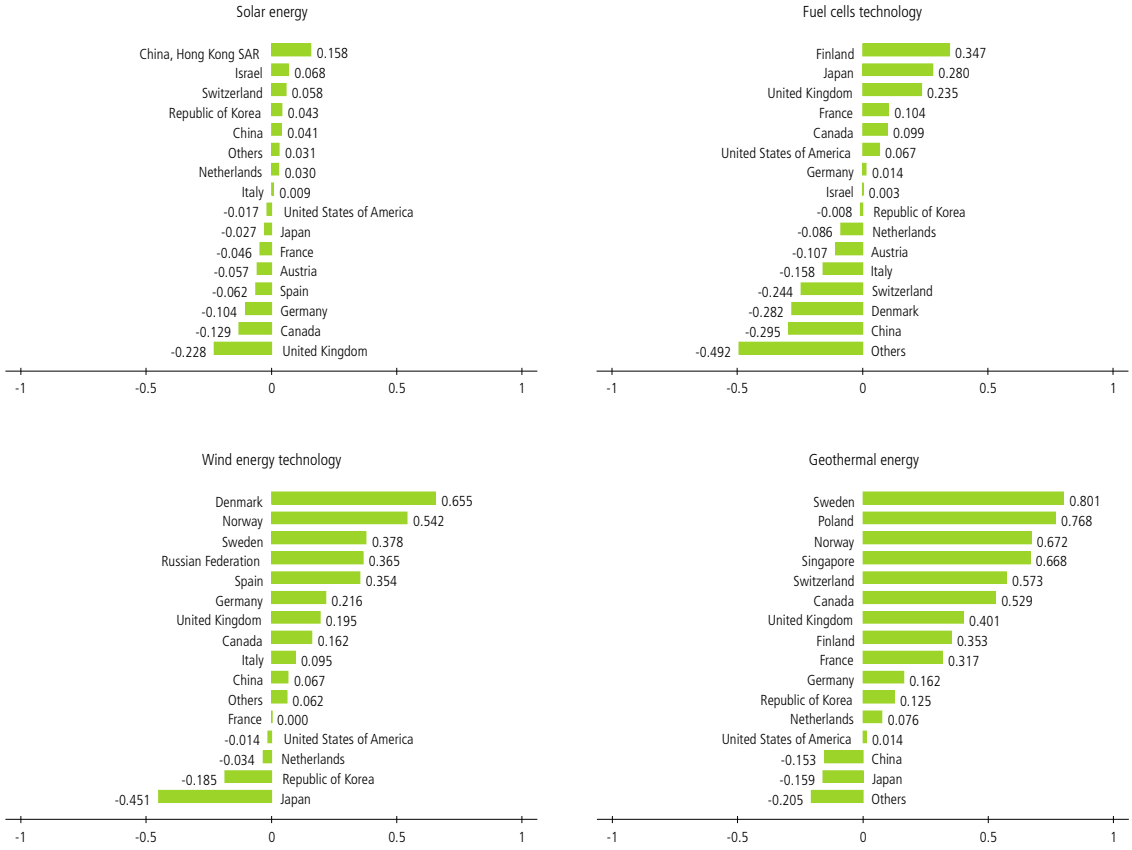
Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

The development of energy-related technologies, such as those associated with renewable energy, plays an important role in tackling climate change. Figures A.5.4 and A.5.5 present patent application data for selected energy-related technologies – namely, fuel cells, geothermal, solar and wind energy. Annex A provides definitions of these technologies according to IPC symbols.[12]

The total number of patent applications in the four energy-related fields grew continuously between 1995 and 2011, with the exception of 2006, when a small decrease was recorded. Since the early 2000s, the numbers of applications related to solar energy and wind energy have followed an upward trend, while those for fuel cell technology grew until 2007, after which a continuous downward trend insued.

12 The correspondence between IPC symbols and technology fields is not always clear-cut (i.e., there is no one-to-one relationship). It is therefore difficult to capture all patents in a specific technology field. Nonetheless, the IPC-based definitions of the four energy-related technologies employed here are likely to capture the vast majority of patent applications in these areas.

Figure A.5.5 Relative specialization index for patent applications in selected energy-related technologies for the top origins, 2011



Note: For definitions of the technologies, refer to Annex A.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

In 2011, the total number of patent applications for these four categories amounted to approximately 38,300, representing a 5.3% increase on 2010. Applications related to solar energy accounted for the largest share (60%), followed by fuel cell technology (21.2%) and wind energy (17.4%). The number of geothermal energy-related patent applications was low.

Figure A.5.5 presents the RSI values in each of the four energy-related technology fields for the top origins. China Hong Kong (SAR), Israel and Switzerland each show a high concentration of applications in the solar energy technology field. Finland, Japan and the UK have an above average concentration of applications in the fuel cell technology field. The majority of the reported origins have a positive RSI value in both wind energy and geothermal energy, with Denmark and Norway showing the highest value in wind energy, and Sweden and Poland having the highest value in geothermal energy.

A.6

Patent applications filed through the Patent Cooperation Treaty (PCT) system

The PCT, an international treaty administered by WIPO, offers applicants an advantageous route for additional or seeking patent protection internationally. It serves as an additional or alternative route to the Paris Convention for the Protection of Industrial Property (the Paris Convention) for pursuing the acquisition of patent rights in different countries. The main advantages of the PCT system are that applicants and patent offices of PCT contracting states benefit from uniform formality requirements, international search, optional supplementary international search and preliminary examination reports, and centralized international publication. This can lead to time and cost savings for applicants. The PCT, which had only 18 members in 1978, had 146 members in 2012.

The PCT application data presented in section A.6.1 refer to the international phase of the PCT procedure, while the data presented in A.6.2 refer to PCT national phase entries.

A.6.1 PCT applications

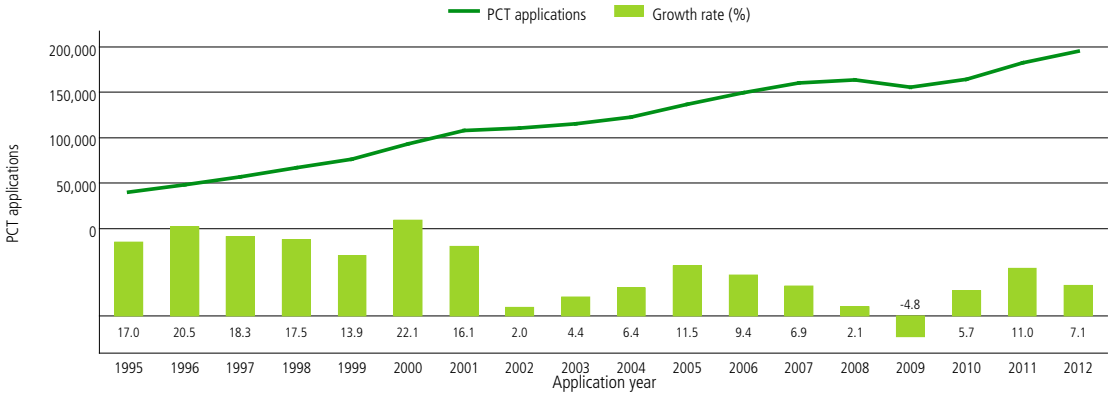
After the decrease in the number of PCT applications witnessed in 2009, filing activity has since rebounded strongly, with 5.7%, 11% and 7.1% growth in 2010, 2011 and 2012, respectively (Figure A.6.1.1).[13] Between 2010 and 2012, the number of PCT applications grew by 30,968, for which Japan was responsible for 37% of the total increase, while China and the US accounted for 21% each.

In 2012, a total of 195,308 applications were filed under the PCT system, which is more than double that recorded in 2000. The long-term trend shows that the number of PCT applications grew at double-digit rates between 1995 and 2001, followed by a slowdown in growth between 2002 and 2004.

Figure A.6.1.2 describes the trend in PCT filings for the top five origins. In 2012, the US, with 51,643 filings remained the largest user of the PCT system. However, its share of total PCT applications has decreased since the mid-1990s, while Japan saw considerable increases in its share over the same period. China has also increased its share of the world total since the mid-2000s. The combined share of the top five origins increased from 63.3% in 1995 to 74% in 2012. The concentration in filings among the top five origins was, in 2012, the highest recorded over the past two decades.

13 Since the PCT system was established, 2009 was the only year which saw a decrease in the number of applications.

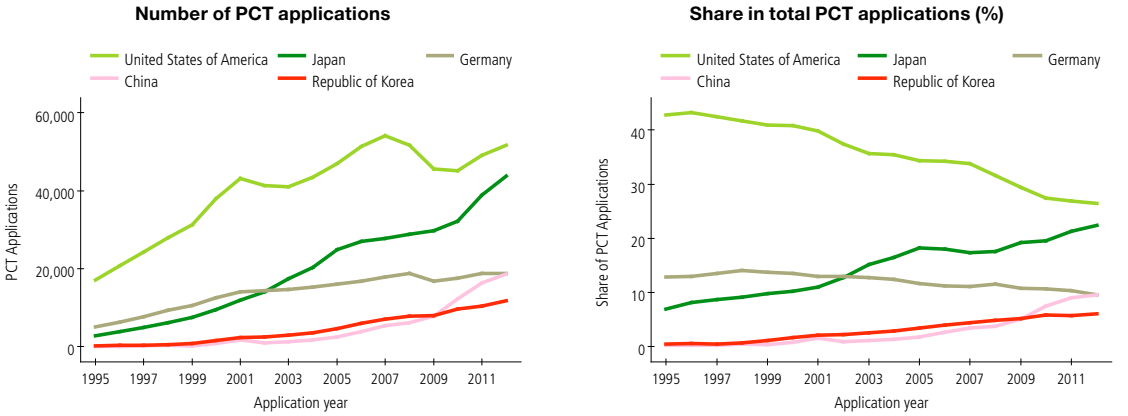
Figure A.6.1.1 Trend in PCT applications



Note: Data refer to the international phase of the PCT system. Counts are based on the international application date.

Source: WIPO Statistics Database, October 2013

Figure A.6.1.2 Trend in PCT applications for the top five origins



Note: Data refer to the international phase of the PCT system. Counts are based on the residency of the first-named applicant and the international application date.

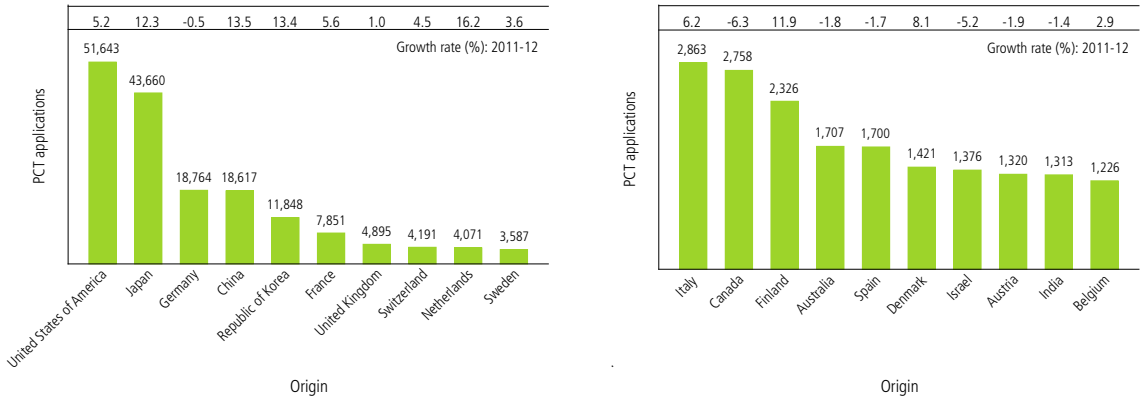
Source: WIPO Statistics Database, October 2013

The list of top 20 origins consists mostly of high-income countries – China and India being the exceptions (Figure A.6.1.3).[14] The order of ranking in 2012 is similar to that of 2011. The US, with 51,643 applications, was the largest user of the PCT system in 2012, followed by Japan (43,660), Germany (18,764) and China (18,617). The numbers of applications originating in the US have returned to their pre-economic crisis levels. The US and Japan each had more than twice as many applications as Germany or China.

For the top 20 origins, the Netherlands (+16.2%) saw the fastest growth in applications in 2012 after having witnessed two consecutive years of decline from 2009 to 2011. China, Finland, Japan and the Republic of Korea also saw double-digit growth. The 13.5% increase in applications experienced by China represents a significantly slower growth rate when compared with its previous three year-on-year growth rates. A number of origins saw decreases in PCT applications in 2012, most notably Canada (-6.3%) and Israel (-5.2%).

14 The share of high-income countries in total PCT applications was approximately 88% in 2012.

Figure A.6.1.3 PCT applications for the top 20 origins, 2012



Note: Data refer to the international phase of the PCT system. Counts are based on the residency of the first-named applicant and the international application date.

Source: WIPO Statistics Database, October 2013

Table A.6.1.4 lists the top 50 PCT applicants based on the residency of the first-named applicant and on the publication date of the application. It shows that ZTE Corporation of China remained the top applicant in 2012, with 3,906 published applications, followed by Panasonic Corporation (2,951) and Sharp Kabushiki (2,001) - the two other applicants with more than 2,000 published applications. Between 2010 and 2012, applications from ZTE Corporation increased twofold. Most of the top applicants reported growth in published applications in 2012 compared to 2011. The top two applicants also reported the strongest increases in published applications, with an additional 1,080 and 488 more applications, respectively. Of the countries on the top 50 list, Japan, with 20 different applicants had the most.

A.6.2 PCT national phase entries

The PCT application process begins with the international phase and concludes with the national phase. The national or regional patent office at which the applicant enters the PCT national phase initiates the granting procedure according to prevailing national law. PCT national phase entry (NPE) statistics shed light on international patenting strategies. The NPE data presented here refer only to non-resident applications. In other words, resident application data for the national phase are excluded. For example, if a PCT application filed by a resident of China enters the national phase procedure at SIPO, it is excluded from the statistics reported here.

In 2012, the number of non-resident PCT NPEs was estimated at around 458,800, representing a 6.2% increase on 2011 (Figure A.6.2.1).[15] The growth in non-resident NPEs at the USPTO and SIPO accounted for 60% of the growth in NPEs worldwide. Although not shown in the graph, the USPTO was the most preferred office by destination in 2012, receiving 20% of all non-resident PCT NPEs, followed by SIPO (14.7%) and the EPO (10.7%).

15 The total number of PCT NPEs in 2012 was estimated at approximately 540,200 and comprised 15% resident NPEs and 85% non-resident NPEs.

The long-term trend shows strong year-on-year growth in non-resident NPEs for all years except 2003 and 2009. Growth in NPEs partly reflects the increasing trend of protecting inventions abroad as well as increasing PCT membership, which has made the PCT system more attractive to its users.

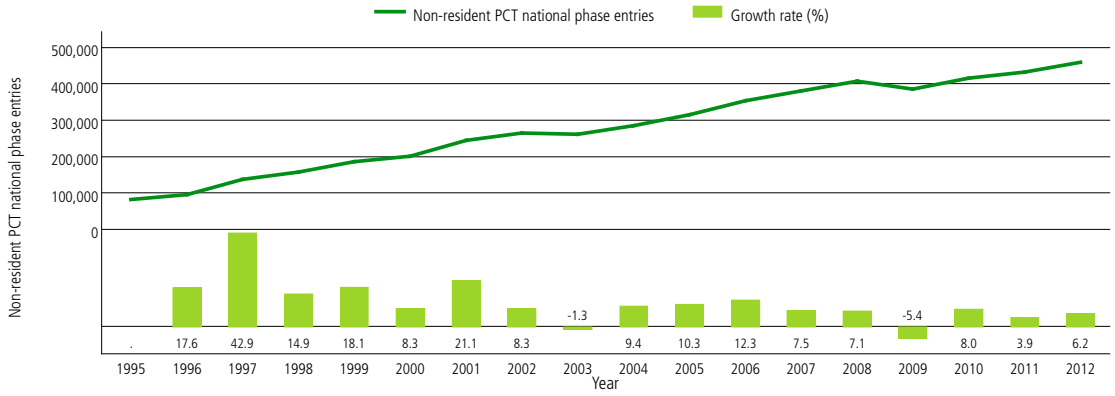
Table A.6.1.4 Top PCT applicants

Ranking	Applicant's name	Origin	PCT applications			Change compared to 2011
			2010	2011	2012	
1	ZTE CORPORATION	China	1,868	2,826	3,906	1,080
2	PANASONIC CORPORATION	Japan	2,153	2,463	2,951	488
3	SHARP KABUSHIKI KAISHA	Japan	1,286	1,755	2,001	246
4	HUAWEI TECHNOLOGIES CO., LTD.	China	1,527	1,831	1,801	-30
5	ROBERT BOSCH CORPORATION	Germany	1,302	1,518	1,775	257
6	TOYOTA JIDOSHA KABUSHIKI KAISHA	Japan	1,095	1,417	1,652	235
7	QUALCOMM INCORPORATED	United States of America	1,675	1,494	1,305	-189
8	SIEMENS AKTIENGESELLSCHAFT	Germany	830	1,039	1,272	233
9	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	1,433	1,148	1,230	82
10	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	1,147	1,116	1,197	81
11	LG ELECTRONICS INC.	Republic of Korea	1,297	1,336	1,094	-242
12	MITSUBISHI ELECTRIC CORPORATION	Japan	726	834	1,042	208
13	NEC CORPORATION	Japan	1,106	1,056	999	-57
14	FUJIFILM CORPORATION	Japan	275	414	891	477
15	HITACHI, LTD.	Japan	372	547	745	198
16	SAMSUNG ELECTRONICS CO., LTD.	Republic of Korea	574	757	683	-74
17	FUJITSU LIMITED	Japan	475	494	671	177
18	NOKIA CORPORATION	Finland	632	698	670	-28
19	BASF SE	Germany	817	773	644	-129
20	INTEL CORPORATION	United States of America	201	309	640	331
21	HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.	United States of America	564	591	620	29
22	3M INNOVATIVE PROPERTIES COMPANY	United States of America	586	563	586	23
23	SONY CORPORATION	Japan	347	471	578	107
24	MITSUBISHI HEAVY INDUSTRIES, LTD.	Japan	391	480	566	86
25	SUMITOMO CHEMICAL COMPANY, LIMITED	Japan	323	446	558	112
26	SANYO ELECTRIC CO., LTD.	Japan	129	285	537	252
27	MICROSOFT CORPORATION	United States of America	470	446	531	85
28	INTERNATIONAL BUSINESS MACHINES CORPORATION	United States of America	416	661	528	-133
29	CANON KABUSHIKI KAISHA	Japan	379	499	480	-19
30	MURATA MANUFACTURING CO., LTD.	Japan	305	318	462	144
31	E.I. DUPONT DE NEMOURS AND COMPANY	United States of America	452	424	457	33
32	BOSCH-SIEMENS HAUSGERATE GMBH	Germany	371	421	448	27
33	GOOGLE, INC.	United States of America	171	224	421	197
34	PROCTER & GAMBLE COMPANY	United States of America	359	488	413	-75
35	YAZAKI CORPORATION	Japan	76	205	402	197
36	KABUSHIKI KAISHA TOSHIBA	Japan	319	517	397	-120
37	BAKER HUGHES INCORPORATED	United States of America	307	336	396	60
38	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	308	371	391	20
39	APPLE COMPUTER, INC.	United States of America	182	269	388	119
40	KYOCERA CORPORATION	Japan	279	356	353	-3
41	LG CHEM, LTD.	Republic of Korea	203	214	352	138
42	UNIVERSITY OF CALIFORNIA	United States of America	304	277	351	74
43	SCHAEFFLER TECHNOLOGIES AG & CO. KG	Germany			347	347
44	ALCATEL LUCENT	France	275	287	346	59
45	HONDA MOTOR CO., LTD.	Japan	309	418	341	-77
46	NOKIA SIEMENS NETWORKS OY	Finland	345	332	326	-6
47	GENERAL ELECTRIC COMPANY	United States of America	274	291	320	29
48	DOW GLOBAL TECHNOLOGIES INC.	United States of America	288	399	317	-82
49	NISSAN MOTOR CO., LTD.	Japan	113	174	308	134
50	NITTO DENKO CORPORATION	Japan	128	195	306	111

Note: Data refer to the international phase of the PCT system. Due to confidentiality requirements, counts are based on publication date. Top applicants were selected according to their 2012 totals.

Source: WIPO Statistics Database, October 2013

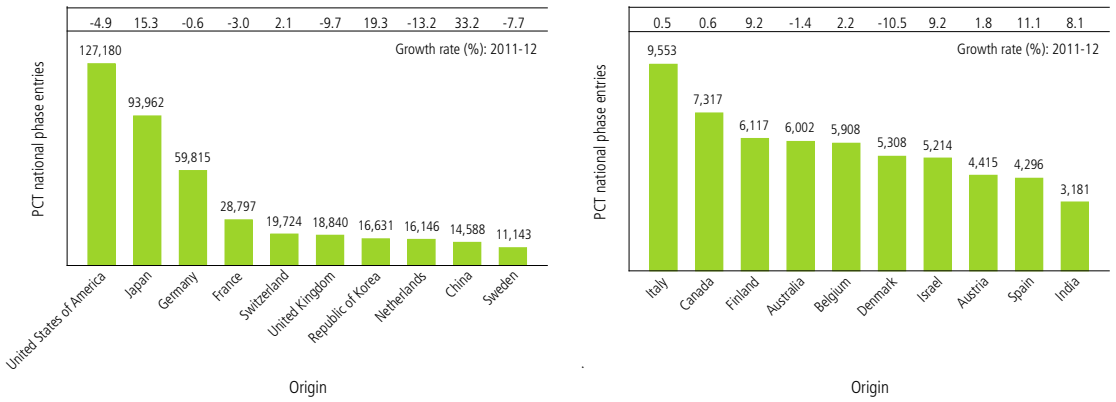
Figure A.6.2.1 Trend in non-resident PCT national phase entries



Note: Total non-resident NPEs are WIPO estimates covering 90 offices.

Source: WIPO Statistics Database, October 2013

Figure A.6.2.2 PCT national phase entries abroad for the top 20 origins, 2012



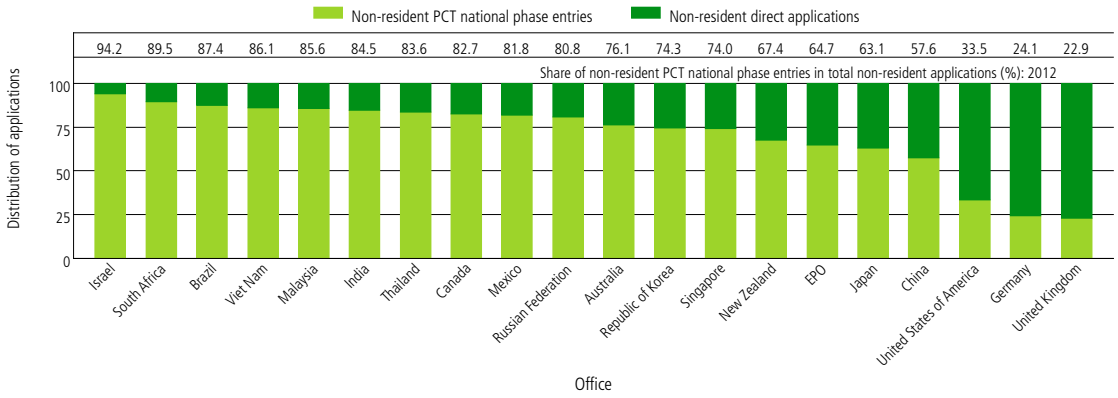
Note: Data refer to the national phase of the PCT system. Counts are based on the first-named applicant.

Source: WIPO Statistics Database, October 2013

Figure A.6.2.2 reports data on PCT NPEs abroad for the top 20 origins. The list of the top 20 origins mainly comprises high-income countries – China and India being the exceptions. The list of the top 20 origins for PCT international applications and PCT NPEs abroad are identical. The US was the largest user of the PCT system, filing 127,180 PCT NPEs in offices other than the USPTO. However, this represents a 4.9% reduction compared to 2011, whereas the consistent growth for Japan appears to be closing the gap between the two largest users of the PCT system.

For the top 20 origins, China (+33.2%) saw the fastest growth in the number of PCT NPEs abroad between 2011 and 2012. This period also saw considerable growth in PCT NPE filings originating in the Republic of Korea (+19.3%) and Japan (+15.3%). The Netherlands (-13.2%) and Denmark (-10.5%) each recorded sharp decreases in the number of filings between 2011 and 2012.

Figure A.6.2.3 Share of PCT non-resident national phase entries in total non-resident applications for selected offices, 2012

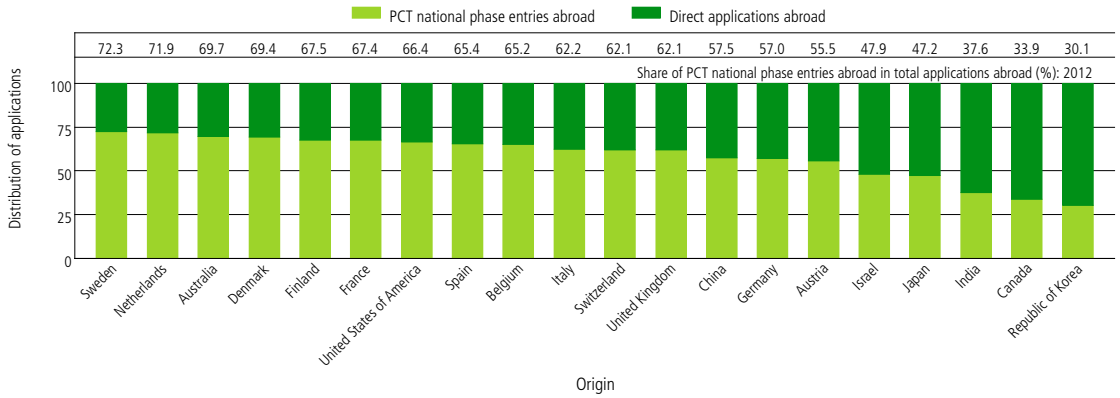


Source: WIPO Statistics Database, October 2013

A patent office may receive patent applications filed either directly (Paris route) with the office or through the PCT system (PCT NPEs). Figure A.6.2.3 shows the distribution of non-resident applications filed at selected offices, and comprises both direct filings and PCT NPEs. At the global level, the share of PCT NPEs in total non-resident applications was approximately 55%, but this share varies across individual offices. Use of the PCT system is popular for filing applications in the patent offices of middle-income countries. For example, the PCT NPE shares at the patent offices of Brazil, Israel, Malaysia, South Africa and Viet Nam were above 85%. In contrast, several offices of high-income countries – Germany (24.1%), the UK (22.9%) and the US (33.5%) – exhibited the lowest PCT NPE shares.

Among the top five offices in terms of PCT NPEs filings (i.e., the EPO, the JPO, KIPO, SIPO and the USPTO), PCT NPEs accounted for the bulk of non-resident applications received by four offices – the USPTO being the exception. In addition, the shares of PCT NPEs at the top five offices have increased over time. For example, at the EPO, the PCT NPE share increased from 50.3% to 64.7% between 2000 and 2012.

Figure A.6.2.4 PCT non-resident national phase entries abroad in total applications abroad for selected origins, 2012



Source: WIPO Statistics Database, October 2013

Figure A.6.2.3 provides information on the use of the PCT system from the perspective of the patent office, while Figure A.6.2.4 presents data based on origin. It shows the distribution of total applications abroad for selected origins. Just as the numbers of applications filed varies across patent offices, the same applies to origin data. For the reported origins, the share of PCT NPEs in total applications abroad ranged from 72.3% for Sweden to 30.1% for the Republic of Korea. A third of the reported 20 origins filed more than two-thirds of their applications abroad using the PCT system. Most of the reported origins have increasingly been using the PCT system for filings abroad. For example, the share of PCT NPEs in total filings abroad for China and Japan increased from 37.5% and 33.1% in 2007 to 57.5% and 47.2%, respectively in 2012.

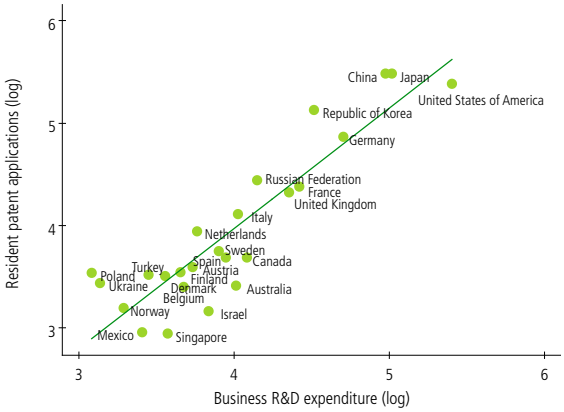
A.7

Patents per GDP, R&D expenditure and population

Differences in patent activity across economies reflect both the size and the level of development in those countries. For the purposes of cross-country comparison it is instructive to express the number of resident patent applications relative to GDP, population and research and development (R&D) expenditure.[16] These factors are frequently referred to as "patent activity intensity" indicators.

Figure A.7.1 shows the relationship between R&D expenditure and resident patent applications for the top origins in terms of patent applications. By examining the data highlighted here, one can see that countries with a high R&D expenditure, such as China, Japan, Germany, the Republic of Korea and the US, are also associated with large numbers of resident patent applications.

Figure A.7.1 Resident patent applications and business sector R&D expenditure, 2007-12



Note: Business sector R&D expenditure is in constant 2005 purchasing power parity (PPP) US dollars, and R&D data lag by one year in order to derive the patent-to-R&D dollar ratio.

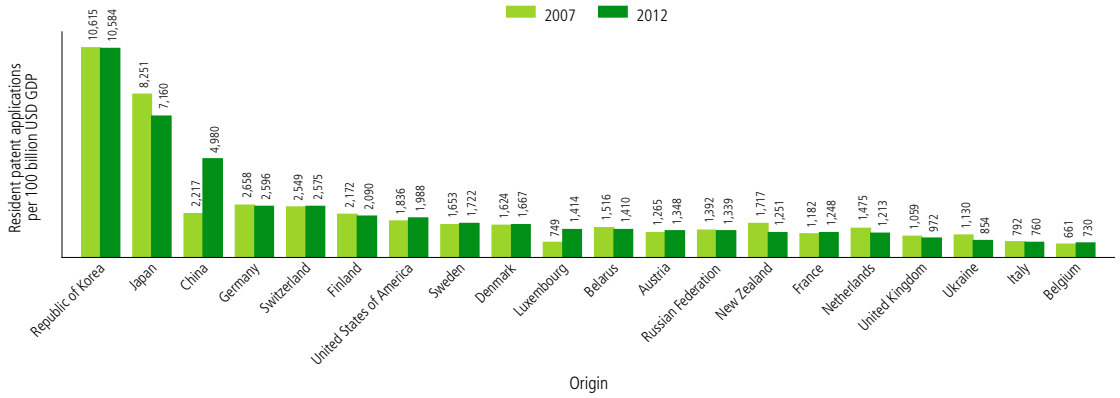
Sources: WIPO Statistics Database and UNESCO Institute for Statistics, October 2013

The global resident patent applications per GDP ratio (2,211) masks considerable variations across origins. For the top 20 origins, the number of resident applications relative to GDP varied from 10,584 for the Republic of Korea to 730 for Belgium (Figure A.7.2).[17] Resident applications-to-GDP ratios for China, Japan and the Republic of Korea are far higher than those for European countries and the US. In 2012, China ranked number one in terms of resident patent applications, but its applications-to-GDP ratio is considerably lower than that of the Republic of Korea. Similarly, the US, which was ranked third for resident patent applications, had a lower resident applications-to-GDP ratio than Finland, Germany and Switzerland. For 11 of the 20 reported origins, applications-to-GDP ratios for 2012 were lower than those for 2007. China, on the other hand, saw its applications-to-GDP ratio more than double from 2,217 in 2007 to 4,980 in 2012. This increase was due to China's resident patent applications growing faster than its GDP. The fall in the applications-to-GDP ratio reported for Japan was mainly due to a decrease in the number of its resident patent applications.

16 GDP and R&D expenditure are in constant 2005 PPP US dollars.

17 The global resident applications-to-GDP ratio is based on data from 110 origins.

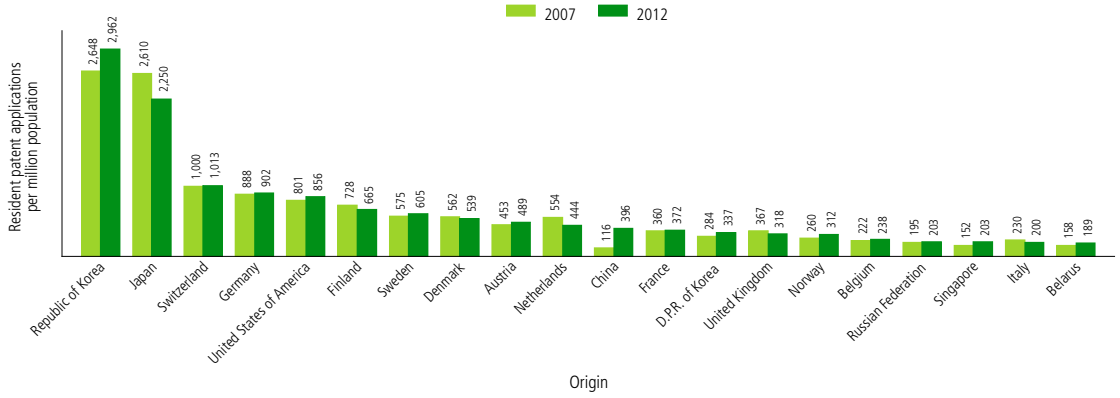
Figure A.7.2 Resident patent applications per GDP for the top 20 origins



Note: GDP data are in constant 2005 PPP US dollars. For the resident patent-per-GDP indicator, countries were selected if they had a GDP greater than 25 billion PPP US dollars and more than 100 resident patent applications. However, due to space constraints only the top 20 origins that fulfill these criteria are included in the graphs.

Sources: WIPO Statistics Database and World Bank, October 2013

Figure A.7.3 Resident patent applications per million population for the top 20 origins



Note: For the resident patent applications-per-population indicator, countries of origin were included if they had a population greater than 5 million and if they had more than 100 resident patent applications. However, due to space constraints only the top 20 origins that fulfill these criteria are included in the graphs.

Sources: WIPO Statistics Database and World Bank, October 2013

At the global level, approximately 245 resident patents per million population were filed in 2012. However, for the top 20 origins, the ratio varied from 2,962 for the Republic of Korea to 189 for Belarus (Figure A.7.3). China – the origin with the most resident patent applications – is ranked in 11th position, which is considerably lower than its ranking for the resident applications-to-GDP ratio. The majority of these reported origins saw increases in their applications-to-population ratios between 2007 and 2012. China and the Republic of Korea saw the most notable increases, while Japan and the Netherlands reported the steepest decreases.

A.8

PATENTS IN FORCE

Patent rights are granted for a limited period – generally 20 years from the date of filing subject to the payment of maintenance fees. Patents in force indicators provide information on the volume of patents currently valid, as well as the historical "patent life cycle".

The estimated number of patents in force worldwide increased from 8.03 million in 2011 to 8.66 million in 2012. This estimate is based on data from 82 offices, including all of the top 20 offices, with the exception of the patent offices in the Democratic People's Republic of Korea and Singapore.[18]

Figure A.8.1 shows the number of patents in force by patent office for the top 20 offices. The USPTO had the largest number of patents in force – approximately 2.24 million patents or 26% of the world total. The JPO also had a substantial number of patents in force equal to 1.69 million or 20% of the world total.

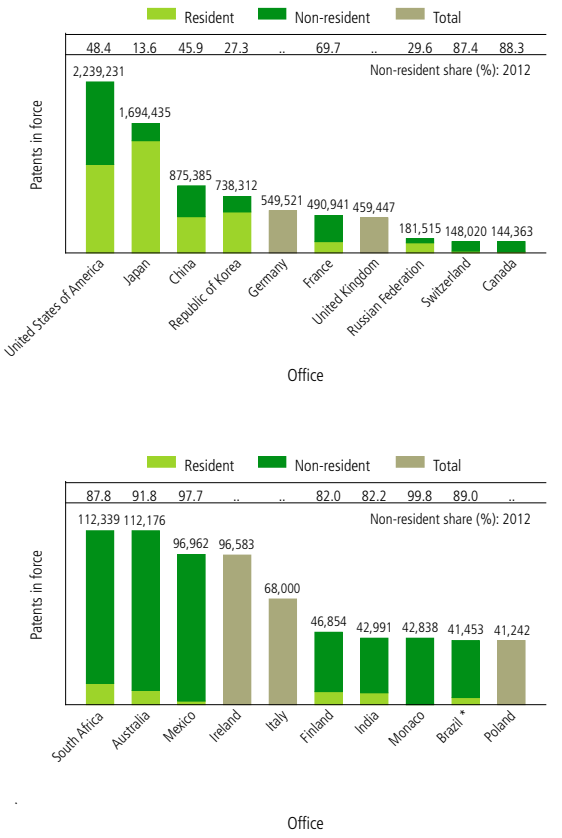
The number of patents in force at SIPO was considerably below that of the JPO and the USPTO. This is due to the low number of patent grants issued by SIPO during the early 2000s. However, in recent years the number of patents granted by SIPO has greatly increased, resulting in substantial growth in the number of patents in force at this office. For example, patents in force at SIPO increased from approximately 272,000 in 2007 to approximately 875,000 in 2012.

18 The term "top 20 offices" refers to offices that granted the largest numbers of patents in 2012, as reported in Figure A.2.2.1.

Among the top four offices, SIPO (54% resident share) and the USPTO (52%) reported an almost equal distribution among their respective resident and non-resident patent holders, whereas at KIPO (73%) and the JPO (86%), the distribution was skewed towards resident holders. In the case of all other patent offices referred to in Figure A.8.1, except the Russian Federation office, non-resident patent holders accounted for the bulk of patents in force.

With the exception of Monaco, all offices referred to in Figure A.8.1 had higher numbers of patents in force in 2012 than in 2011. The patent offices of China, Italy and Poland saw the most notable growth.

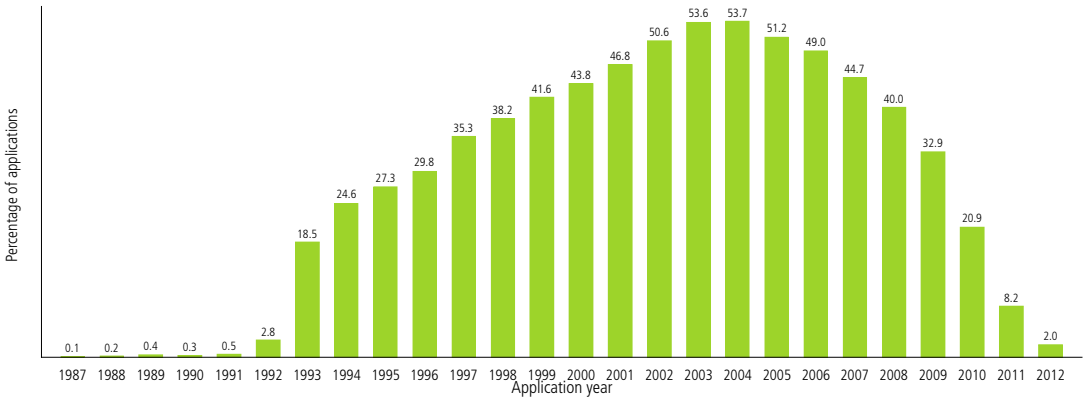
Figure A.8.1 Patents in force by office for the top 20 offices, 2012



Note: *2011 data and growth rate refers to 2010-2011; ".." = not available.

Source: WIPO Statistics Database, October 2012

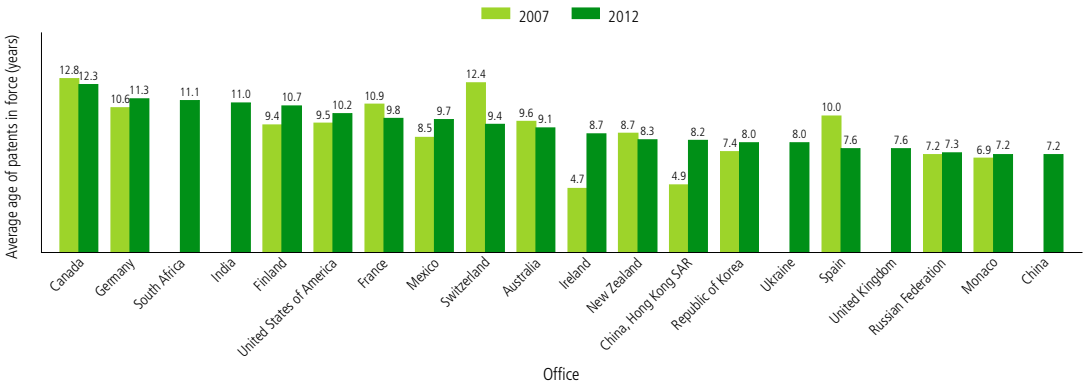
Figure A.8.2 Patents in force in 2012 as a percentage of total applications



Note: Percentages are calculated as follows: the number of patent applications filed in year t and in force in 2012 divided by the total number of patent applications filed in year *t*. The graph is based on data from 68 offices.

Source: WIPO Statistics Database, October 2013

Figure A.8.3 Average age of patents in force at selected patent offices, 2012



Source: WIPO Statistics Database, October 2013

Patent holders must pay maintenance fees in order to maintain the validity of their patents. Depending on technological and commercial considerations, patent holders may opt to let a patent lapse before the end of the full protection term. Figure A.8.2 shows the distribution of patents in force in 2012 as a percentage of total applications in the year of filing. Unfortunately, not all offices provide these data. However, the available data show that more than half of the applications for which patents were eventually granted remained in force for at least eight years after the application date. Approximately 18.5% of these patents lasted the full 20-year patent term. The distribution has remained stable over the past few years.

Figure A.8.3 shows the average age of patents in force at selected patent offices. The average age of all patents in force in Canada in 2012 was approximately 12.3 years. In contrast, the average age of patents in force in 2012 at the offices of China, Monaco, the Russian Federation, Spain and the UK was below eight years. The low average age of patents in China is partly due to the fact that the majority of patents in force at SIPO were granted in recent years. India and South Africa each have a higher average patent age compared to a number of European countries and the US.

A.9

Pending patent applications and pendency time

The processing of patents is both time consuming and resource intensive. Patent offices must carefully assess whether the inventions as claimed in patent applications meet the standards of novelty, non-obviousness and industrial applicability, as set out in national laws. For operational planning purposes, and also in order to assess the effectiveness of the patent system more broadly, it is important to know how many patent applications are pending.

Unfortunately, differences in procedures across patent offices complicate the measurement of pending applications. In some offices, such as the USPTO, patent applications automatically proceed to the examination stage unless applicants withdraw them. In contrast, patent applications filed at other offices do not proceed to the examination stage unless applicants file a separate request for examination. For example, in the case of the JPO, applicants have up to three years to file such a request.

For offices that automatically examine all patent applications, it seems appropriate to count as pending all applications that are awaiting a final decision. However, where offices require separate examination requests, it may be more fitting to consider pending applications to be those for which the applicant has requested examination. In order to take account of this procedural difference, pending application data for both definitions of pendency are presented in this subsection. In particular, statistics on potentially pending applications include all patent applications, at any stage in the process, that are awaiting a final decision by a patent office, including those applications for which applicants have not filed a request for examination (where applicable). Statistics on pending patent applications undergoing examination include only those applications for which the applicant has requested examination (where such separate requests are necessary).

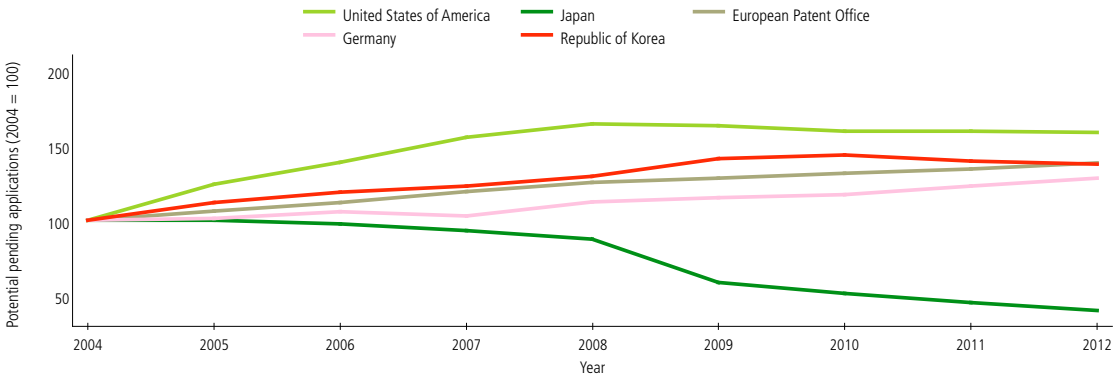
A.9.1 Pending applications

Since the mid-2000s, a number of offices have seen a rise in the number of pending applications. However, growth in the number of pending applications has varied across offices. Figure A.9.1.1 presents data on growth in pending applications for selected offices.[19] The USPTO saw the fastest growth in potentially pending applications until 2008. However, potentially pending applications have decreased in recent years. The EPO, the German office and KIPO witnessed upward trends over the same period, which were in sharp contrast to the substantial decrease in pending applications at the JPO.

The total number of applications that were potentially pending across the world in 2012 is estimated at approximately 5 million, which represents a considerable decrease from their 2009 level (5.5 million). However, this figure would be higher if data from SIPO – the largest patent office in the world in terms of applications filed – were taken into account. The world total is based on data from 81 patent offices, which include the top 20 offices, with the exception of SIPO and the office of the Democratic People's Republic of Korea.

19 SIPO, the largest office in terms of patent applications, is not included due to unavailability of data.

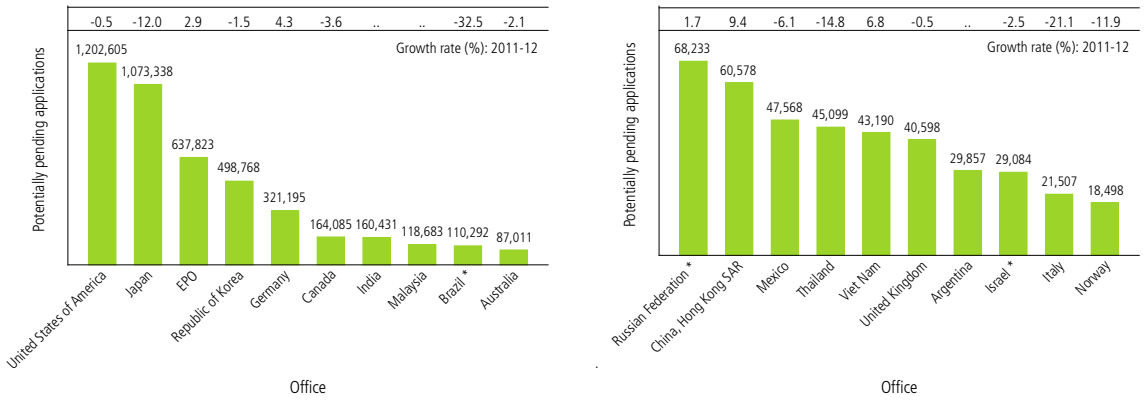
Figure A.9.1.1 Trend in potentially pending applications for selected offices, 2004 = 100



Note: Potentially pending applications include all patent applications, at any stage in the process, awaiting a final decision by a patent office, including those applications for which applicants have not filed a request for examination (where applicable). Data for SIPO, the largest office in terms of patent applications, were unavailable.

Source: WIPO Statistics Database, October 2013

Figure A.9.1.2 Potentially pending applications, 2012



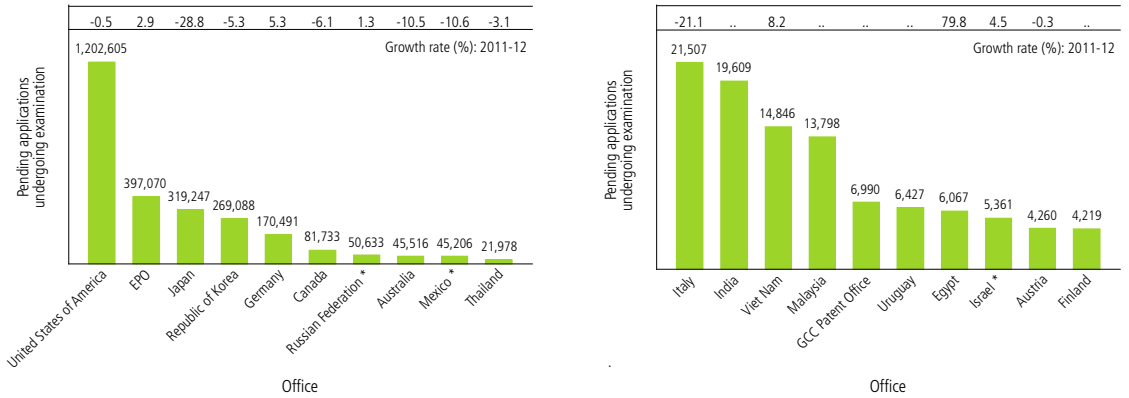
Note: *2011 data; growth rate refers to 2010-2011; ".." = not available. Potentially pending applications include all patent applications, at any stage in the process, awaiting a final decision by a patent office, including those applications for which applicants have not filed a request for examination (where applicable).

Source: WIPO Statistics Database, October 2013

In absolute terms, the USPTO had the largest number of potentially pending applications in 2012 (Figure A.9.1.2). The JPO has seen a continuous decrease in potentially pending applications since 2004. However, despite this substantial decrease, it still had more than 1 million in 2012. A number of offices of large middle-income countries had substantial numbers of pending applications. For example, Brazil, India and Malaysia each had more than 100,000 in 2012. Furthermore, these offices had high numbers of pending applications relative to their incoming patent applications. This was also the case for the offices of Thailand and Viet Nam.

Three of the top four offices (the JPO, KIPO and the USPTO) had fewer potentially pending applications in 2012 than in 2011, with the EPO being the exception.

Figure A.9.1.3 Pending applications undergoing examination, 2012



Note: *2011 data; growth rate refers to 2010-2011; ".." = not available. GCC Patent Office = The Patent Office of the Cooperation Council for the Arab States of the Gulf

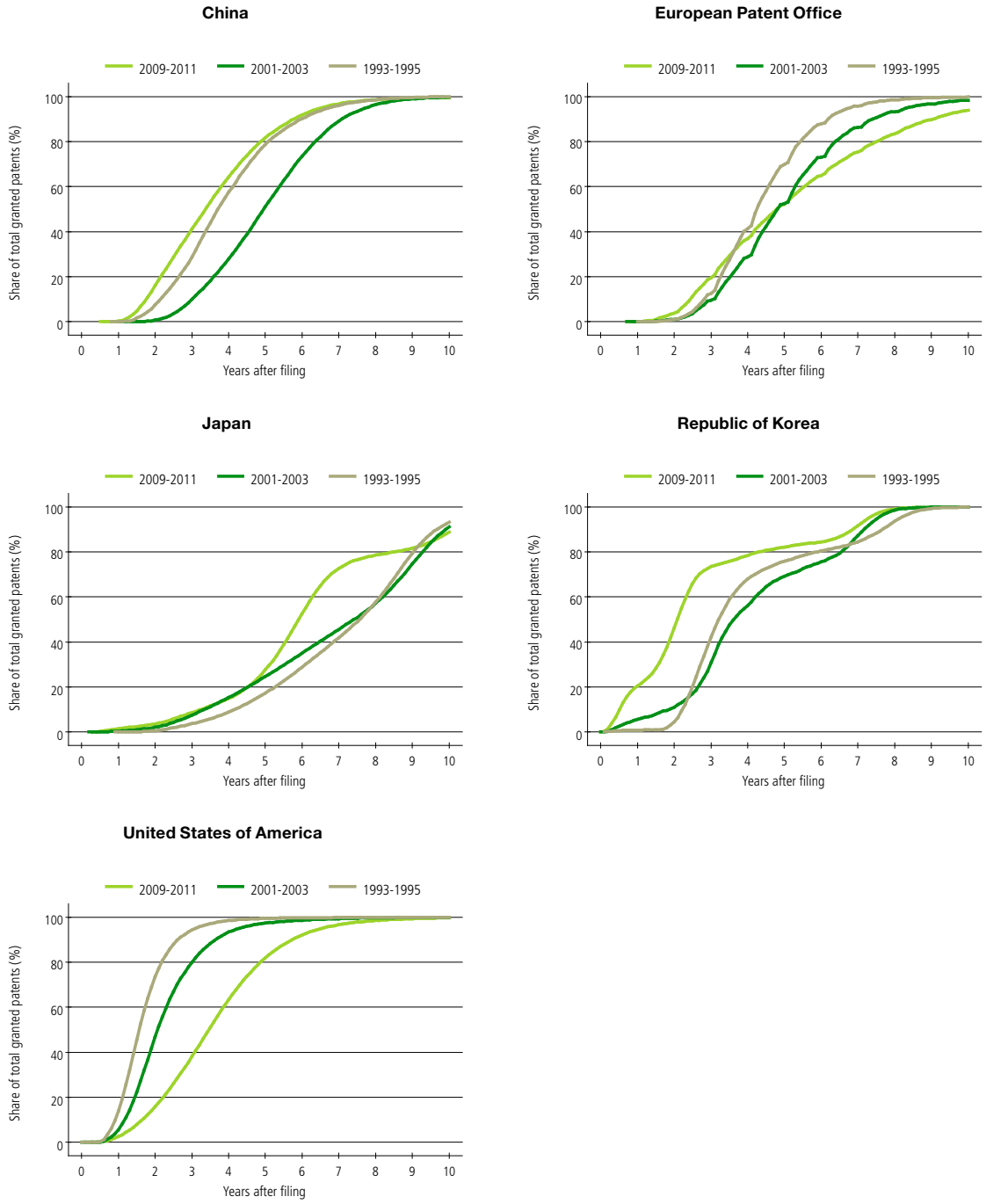
Source: WIPO Statistics Database, October 2013

Figure A.9.1.3 shows the number of pending applications undergoing examination. The USPTO had the largest number of pending applications undergoing examination, followed by the EPO, the JPO and KIPO. The majority of these reported offices had fewer pending applications undergoing examination in 2012 than in 2011. In contrast, Egypt saw considerable growth over the same period.

A.9.2 Pendency time

Along with the growing number of pending applications, a number of offices have witnessed increases in pendency time (i.e., the time it takes an office to process an application and decide whether to reject it or grant a patent). Few offices report pendency time indicators. And, as no standard methodology to calculate such indicators exists, it is difficult to compare pendency time across offices. In order to measure pendency time at a given office, it is possible to construct a proxy for pendency time using patent application and grant dates from the EPO PATSTAT Database. However, one drawback of this approach is that pendency time is calculated for granted patents only. Pendency time for patents that have been withdrawn, abandoned or refused are not included.

Figure A.9.2 Distribution of pendency time for the top five offices



Note: Pendency time here is defined as the difference between the application date and the grant date. Pendency time can vary between offices for a number of reasons. Therefore, pendency time should be compared across time at individual offices and not across offices.

Sources: WIPO Statistics Database and EPO PATSTAT Database, October 2013

As outlined above, pendency time here is defined as the difference between the application date and the grant date. It would be more meaningful to compute the pendency time indicator as the difference between the date of the request for examination and the date of the final decision issued by the patent office. Unfortunately, such detailed data are not available. Pendency time can vary among offices for a number of reasons; for example, an applicant may file an application and then decide to delay the request for examination – where such a system exists.[20] Consequently, comparison of pendency time between offices can be misleading. In order to create a meaningful comparison, pendency time indicators reported here should be compared across time at individual offices.

Figure A.9.2 shows the distribution of pendency time to grant patents for the top five offices. The three lines represent average pendency time for 1993-95, 2001-03 and 2009-11. The JPO, KIPO and SIPO showed improvements in pendency time for granted patents between 2001-03 and 2009-11. For example, at SIPO, the share of total grants within five years from the application date increased from approximately 50% in 2001-03 to approximately 80% in 2009-11. Similarly, at KIPO, 80% of all patent grants occurred within 4.4 years in 2009-11, compared to 6.6 years in 2001-03.

In contrast, the EPO and the USPTO saw increases in pendency time for granted patents. For example, at the USPTO, 80% of all grants were issued within three years from the application filing date in 2001-03, compared to approximately five years in 2009-11.

20 For example, at the USPTO, patent applications automatically proceed to examination. In contrast, at the JPO, applicants are required to request an examination, and this request may be delayed for up to three years from the filing date.

A.10

Patent prosecution highway

As described earlier, there has been an increase in the number of cross-border applications i.e., a patent application for the same invention filed in multiple jurisdictions. In such situations, the same application is examined multiple times by different patent offices. Although there are substantial differences between certain national patent laws, the criteria for granting patents are similar: novelty, inventive step and industrial applicability. Therefore, the same set of questions is asked multiple times: Is the claimed invention new? Is it is obvious? Can one make industrial use of it?

Due to the increasing number of applications, coupled with limited patent office resources, offices may find it difficult to process applications in a timely manner. This is reflected by the large stock of pending applications across the world (See A.9).

In order to avoid unnecessary duplication of work and to improve the efficiency of the examination process, patent offices increasingly seek to make use of the search and examination results of other offices. The so-called Patent Prosecution Highways (PPHs) have institutionalized such cooperation between offices. A PPH refers to a bilateral agreement between two offices that enables applicants to request a fast-track examination procedure whereby patent examiners can make use of the work of the other office. This includes positive search and examination results from the office of first filing. It can also include the positive results of a written opinion by the International Searching Authority (ISA), the written opinion of the International Preliminary Examining Authority (IPEA) or the international preliminary examination report issued within the framework of the PCT – a practice referred to as PCT-PPH. Since offices handling subsequent filings would use the work done earlier by other offices, they can shorten processing time and contribute to better examination quality.

Table A.10.1 Number of PPH requests, cumulative total up to the end of June 2013

Office of first filing	Australia	Austria	Canada	China	Colombia	Czech Republic	Denmark	Eurasian Patent Organization	European Patent Office	Finland	Germany	Hungary	Iceland	Indonesia	Israel	Japan	Mexico	Norway	Philippines	Poland	Portugal	Republic of Korea	Russian Federation	Singapore	Spain	United Kingdom	United States of America	Others	Total
	Office of subsequent filing																												
Australia	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	228	-	**228**
Austria	-	n/a	-	0	-	-	-	-	-	0	-	0	-	-	-	3	-	-	-	-	-	0	-	-	-	-	2	-	**5**
Canada	-	-	n/a	-	-	-	0	-	-	1	0	-	-	-	0	13	-	-	-	-	-	6	-	-	0	0	228	-	**248**
China	-	0	-	n/a	-	-	0	-	-	0	6	-	-	-	-	19	0	-	-	-	-	7	5	-	-	-	124	-	**161**
Colombia	-	-	-	-	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	**0**
Czech Republic	-	-	-	-	-	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	**0**
Denmark	-	-	2	0	-	-	n/a	-	-	-	-	-	-	-	0	14	-	-	-	-	-	12	0	-	-	-	132	-	**160**
Eurasian Patent Organization	-	-	-	-	-	-	-	n/a	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	**0**
European Patent Office	-	-	-	-	-	-	-	-	n/a	-	-	-	-	-	-	192	-	-	-	-	-	-	-	-	-	-	534	-	**726**
Finland	-	0	6	0	-	-	-	-	-	n/a	-	0	-	-	0	8	-	-	-	-	-	4	1	-	0	-	38	-	**57**
Germany	-	-	48	18	-	-	-	-	-	-	n/a	-	-	-	-	128	-	-	-	-	-	24	-	-	-	4	126	-	**348**
Hungary	-	0	-	-	-	-	-	-	-	0	-	n/a	-	-	-	2	-	-	-	-	-	0	-	-	-	-	4	-	**6**
Iceland	-	-	-	-	-	-	-	-	-	-	-	-	n/a	-	-	0	-	-	-	-	-	-	-	-	-	-	1	-	**1**
Indonesia	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	-	0	-	-	-	-	-	-	-	-	-	-	0	-	**0**
Israel	-	-	1	-	-	-	0	-	-	0	-	-	-	-	n/a	0	-	-	-	-	-	-	-	-	-	-	9	-	**10**
Japan	-	0	180	1,770	-	-	3	0	1,174	2	929	0	0	0	0	n/a	40	2	0	0	0	2,228	104	17	0	36	7,488	429	**14,400**
Mexico	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	n/a	-	-	-	-	0	-	-	0	-	6	-	**6**
Norway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	n/a	-	-	-	-	-	-	-	-	8	-	**8**
Philippines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	n/a	-	-	-	-	-	-	-	0	-	**0**
Poland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	n/a	-	-	-	-	-	-	-	-	**0**
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	n/a	-	-	-	0	-	-	-	**0**
Republic of Korea	-	0	8	61	-	-	0	-	-	0	9	0	-	-	-	263	0	-	-	-	-	n/a	11	2	2	6	1,198	-	**1,560**
Russian Federation	-	-	-	2	-	-	0	-	-	0	-	-	-	-	-	6	-	-	-	-	-	2	n/a	-	0	-	22	-	**32**
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	0	-	n/a	-	-	4	-	**5**
Spain	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	0	0	-	-	-	0	0	0	-	n/a	-	0	-	**0**
United Kingdom	-	-	24	-	-	-	-	-	-	-	2	-	-	-	-	106	-	-	-	-	-	45	-	-	-	n/a	440	-	**617**
United States of America	451	0	3,283	1,102	1	0	10	-	747	3	169	2	0	-	11	2,490	109	18	0	-	0	1,033	66	13	1	87	n/a	416	**10,012**
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	8	n/a	**10**
Total	**451**	**0**	**3,552**	**2,953**	**1**	**0**	**13**	**0**	**1,921**	**6**	**1,115**	**2**	**0**	**0**	**11**	**3,247**	**149**	**20**	**0**	**0**	**0**	**3,361**	**185**	**32**	**3**	**133**	**10,600**	**845**	**28,600**

Note: A definition of PPH statistics is available at: *www.jpo.go.jp/ppph-portal/statistics.htm*

Source: WIPO, based on data from the JPO, October 2013

Table A.10.2 Number of PCT-PPH requests, cumulative total up to the end of June 2013

		Office of filing																							
		Australia	Austria	Canada	China	Czech Republic	Denmark	Eurasian Patent Organization	European Patent Office	Finland	Iceland	Indonesia	Israel	Japan	Mexico	Norway	Philippines	Poland	Portugal	Republic of Korea	Russian Federation	Spain	Sweden	United States of America	Total
ISA or IPEA	Australia	27																						257	**284**
	Austria									0										0				25	**25**
	Canada			123																				9	**132**
	China		0				0			0				27	0					7	2			386	**422**
	European Patent Office													639										2,017	**2,656**
	Finland		0		0								0	0							1	0		50	**51**
	Israel						0			0				0										6	**6**
	Japan				519		0	0	475	0	0	0	0	2,004	6	0	17	0	0	198	0	1	5	1,314	**4,539**
	Nordic Patent Institute													7										63	**70**
	Republic of Korea		0		364									32						79				2,531	**3,006**
	Russian Federation				5		0			0				0								0		35	**40**
	Spain									0				2	1				0		1			9	**13**
	Sweden													18									1	94	**113**
	United States of America	15	0	6	26	0	0		48	0	0		0	23		0	1		0	34	11	1	0	352	**517**
	Total	42	0	129	914	0	0	0	523	0	0	0	0	2,752	7	0	18	0	0	318	15	2	6	7,148	**11,874**

Note: The following offices are party to PPH agreements, but are not listed in the table because they did not receive any PCT-PPH requests in their capacity as an office of filing: the Czech Republic, Denmark, the Eurasian Patent Organization, Iceland, Indonesia, Norway, Poland and Portugal. A definition of PPH statistics is available at: *www.jpo.go.jp/ppph-portal/statistics.htm*

Source: WIPO, based on data from the JPO, October 2013

This section presents statistics relating to the use of the PPH system at several offices.[21] Table A.10.1 shows the number of PPH requests made up to the end of June 2013 (the cumulative total from the date on which the PPH became operational).[22]

The offices listed in Table A.10.1 received 28,600 patent applications for which applicants subsequently filed PPH requests. However, distribution among offices is skewed towards just a few of them. For example, the JPO and the USPTO accounted for 85% of total applications for which applicants subsequently filed PPH requests. Similarly, five offices (Canada, the JPO, KIPO, SIPO and the USPTO) accounted for 83% of all PPH requests.

The JPO received 14,400 applications that resulted in subsequent PPH requests. The USPTO (as an office of subsequent filing) received the largest share of PPH requests (52%) for the JPO applications, followed by KIPO (15.5%) and SIPO (12.3%). In the case of applications filed at the USPTO, the Canadian patent office received the largest share of PPH requests (32.8%), followed by the JPO (24.9%), SIPO (11%) and KIPO (10.3%).

Table A.10.2 presents data on PCT-PPH requests. Similar trends can be seen for both PCT-PPH and PPH. The JPO and the USPTO received 83% of applications that resulted in PCT-PPH requests. In the case of ISA/IPEA for PCT-PPH requests, Japan accounted for the largest share (38%), while the Republic of Korea accounted for 25% and the EPO accounted for 22%.[23]

21 Further information and a definition of PPH statistics are available at: *www.jpo.go.jp/ppph-portal/statistics.htm*

22 Cumulative total data are reported here due to a lack of available data by calendar year. As the duration of agreements between offices differs, care should be taken when making comparisons across offices.

23 ISA = International Searching Authority. IPEA = International Preliminary Examining Authority.

A.11

Utility model applications

This subsection reports utility model (UM) application data by office and origin. Data for UM grants are not reported, as the grant profiles by office and origin are similar to those for applications. Data for applications and grants are similar due to the examination procedure for UMs, which is less extensive than that for patents. UM grants are available through WIPO's IP Statistics Data Center (*www.wipo.int/ipstats/en/*).

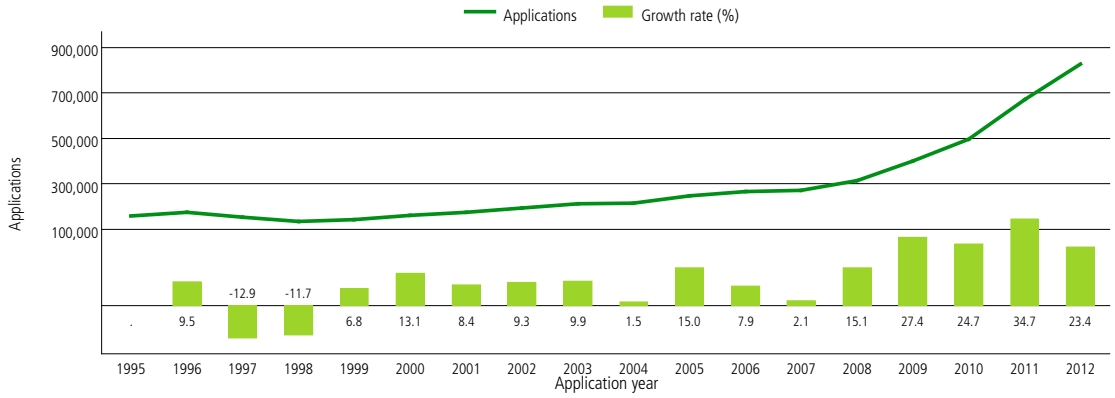
Figure A.11.1 presents the number of UM applications filed worldwide between 1995 and 2012. Since 1995, the numbers of UM filings have increased continuously, with the exception of 1997 and 1998, when applications worldwide decreased by 12.9% and 11.7%, respectively. This was due to a sharp drop in applications at KIPO i.e., from approximately 69,000 in 1996 to 29,000 in 1998. The continued and solid growth in filings at SIPO explains the sharp increase in UM filings observed over the past five years. In fact, since 2003 the majority of applications filed across the world have originated in China. The SIPO share of world filings has increased, on average, by 4.2 percentage points per year since 2003, reaching 89.5% of total filings worldwide in 2012. An estimated 827,500 UM applications were filed worldwide in 2012, representing an increase of 23.4% on 2011 figures. When SIPO data are excluded from the world estimate, the total number of UMs filed in 2012 was 87,200, corresponding to an increase of 2.2% in UM filings worldwide when compared with figures for 2011.

Figure A.11.2 shows the number of UM applications broken down by resident and non-resident filings for the top 20 offices. In 2012, SIPO received 740,290 applications, followed by the offices of Germany, the Russian Federation, the Republic of Korea and Ukraine – each of which receiving between 10,000 and 16,000 UM filings.

Analysis of UM application data for the top 20 offices show that the UM system is mainly used by residents. In 2012, resident applicants accounted for 98.1% of total applications filed worldwide. The share of non-resident applications at SIPO (0.8%) was the lowest among these top 20 offices. However, in absolute terms, with 5,853 applications, SIPO received the largest number of non-resident applications, followed by the offices of Germany (3,551) and the Russian Federation (1,820). In relative terms, with 35.1% of total filings, Australia had the largest non-resident share among these offices, followed by China Hong Kong SAR (31.3%), Austria (26.9%), Germany (22.9%) and Japan (22.4%).

With a 26.4% increase, SIPO saw the fastest growth in UM applications in 2012. It received almost 155,000 more applications than in 2011. Four other offices saw double-digit growth, namely Turkey (+15.5%), the Czech Republic (+13.2%), Italy (+11.7%) and Thailand (+10.7%). By contrast, several offices experienced decreases in applications, the sharpest of which occurring at the offices of Austria (-12.4%) and Germany (-3.3%).

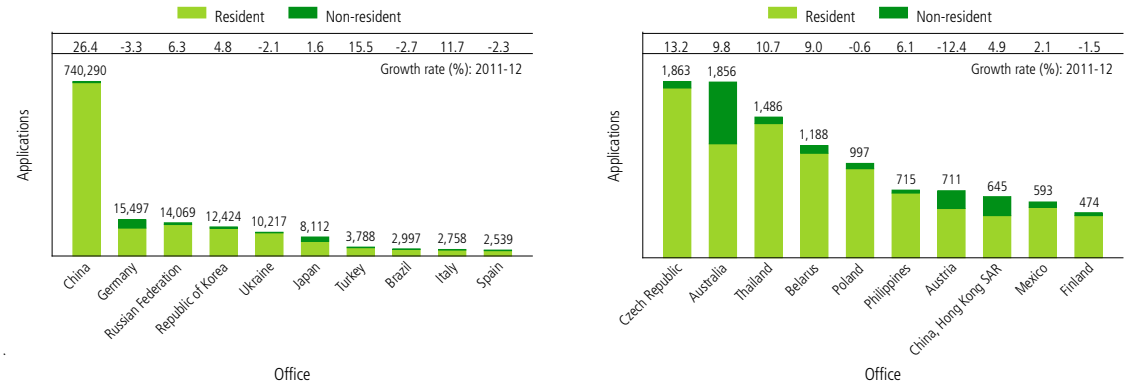
Figure A.11.1 Trend in utility model applications worldwide



Note: World totals are WIPO estimates covering approximately 75 patent offices (see Data Description). These estimates include direct applications and PCT national phase entries.

Source: WIPO Statistics Database, October 2013

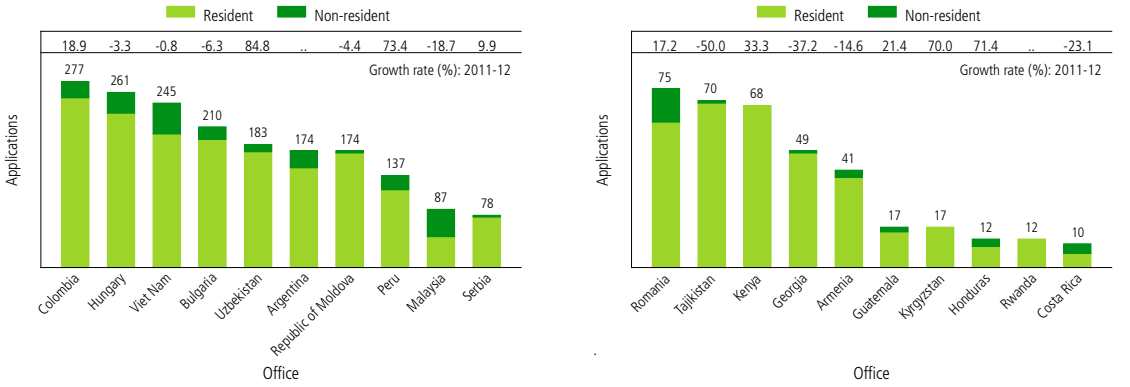
Figure A.11.2 Utility model applications for the top 20 offices, 2012



Source: WIPO Statistics Database, October 2013

Figure A.11.3 shows the numbers of UM applications received by offices of selected middle- and low-income countries. Similar to the trend observed for the top 20 offices (Figure A.11.2), resident applications accounted for the largest share of total applications. The resident shares ranged from 52.9% in Malaysia to 100% in Kenya, Kyrgyzstan and Rwanda. Growth rates varied across offices, with some offices receiving more applications in 2012 than in 2011, and others fewer.

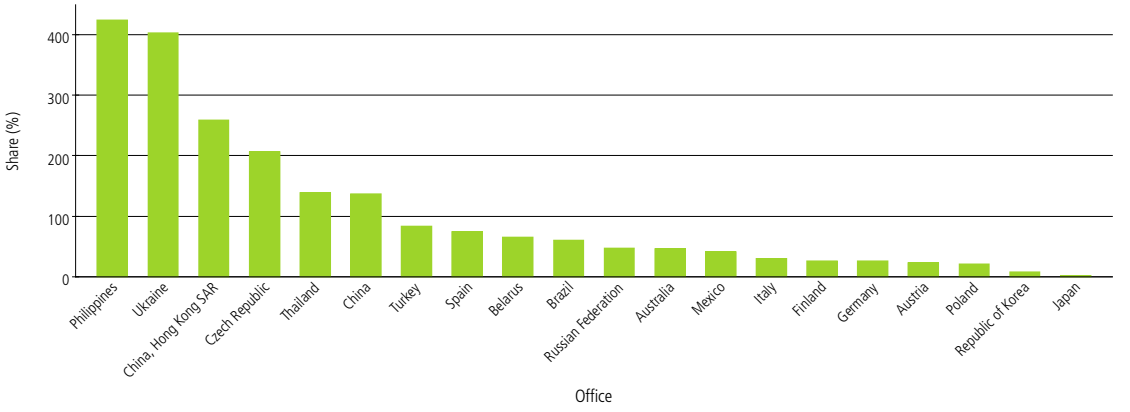
Figure A.11.3 Utility model applications for offices of selected middle- and low-income countries, 2012



Note: ".." = not available.

Source: WIPO Statistics Database, October 2013

Figure A.11.4 Resident utility model applications as a percentage of resident patent applications, 2012

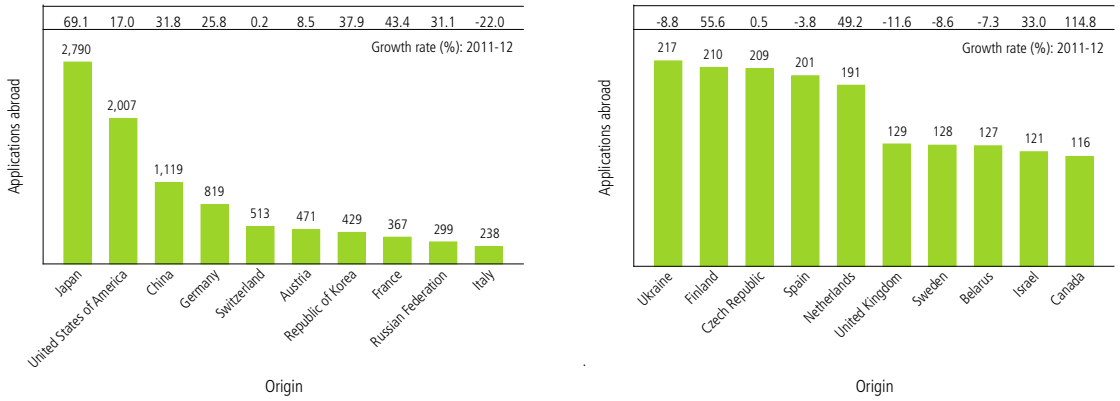


Source: WIPO Statistics Database, October 2013

In order to better illustrate the use of the UM system, Figure A.11.4 shows resident UM applications relative to resident patent applications. Compared to the patent system, the UM system is used intensively by residents of China, China Hong Kong (SAR), the Czech Republic, the Philippines, Thailand and Ukraine. For example, in 2012, residents of the Philippines filed over four times more UM applications than patent applications. Residents of middle-income countries tend to use the UM system more intensively than the patent system. In contrast, residents of high-income countries, such as Germany, Japan and the Republic of Korea, use the patent system more frequently.

In general, the UM system is mostly used by residents to seek protection within their own country, however, it is also used to protect inventions abroad. Figure A.11.5 presents data on applications filed abroad for the top 20 origins. Applicants from Japan (2,790), the US (2,007) and China (1,119) filed the largest numbers of UM applications abroad in 2012. These were the only three origins from which more than a thousand UM applications were filed abroad.

Figure A.11.5 Utility model applications filed abroad for top 20 origins, 2012



Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than their actual numbers.

Source: WIPO Statistics Database, October 2013

In 2012, a large proportion (39.9%) of total UMs filed abroad were destined for SIPO. For several origins, SIPO was the destination for the vast majority of applications abroad. For example, residents of Japan filed 93% of their total applications abroad at SIPO. Residents of France (67%), Germany (63.6%), the US (62.8%) and the Republic of Korea (56.2%) also filed mostly at SIPO when seeking protection abroad. Apart from these examples, residents of China filed half of their applications abroad at two foreign offices, with Australia recording 27.5% of such filings, and Germany recording 22.9%.

The top four origins experienced double-digit growth in 2012. Residents of Japan increased their filings abroad by 69.1% when compared with 2011 figures. They were followed by residents of China (+31.8%), Germany (+25.8%) and the US (+17%). Several other origins, such as Finland (+55.6%) and the Netherlands (+49.2%) saw substantial growth, albeit from a low base. By contrast, Italy (-22%), the UK (-11.6%) and Ukraine (-8.8%) experienced the sharpest decreases on 2011 figures.

A.12

Microorganisms

In 2012, there were a total of 78 contracting parties (i.e. countries) to the Budapest Treaty, in which 41 International Depositary Authorities (IDAs) were located. During 2012, Bahrain, Brunei Darussalam and Panama signed the treaty, and the Colección Chilena de Recursos Genéticos Microbianos (CChRGM) of Chile became an IDA.

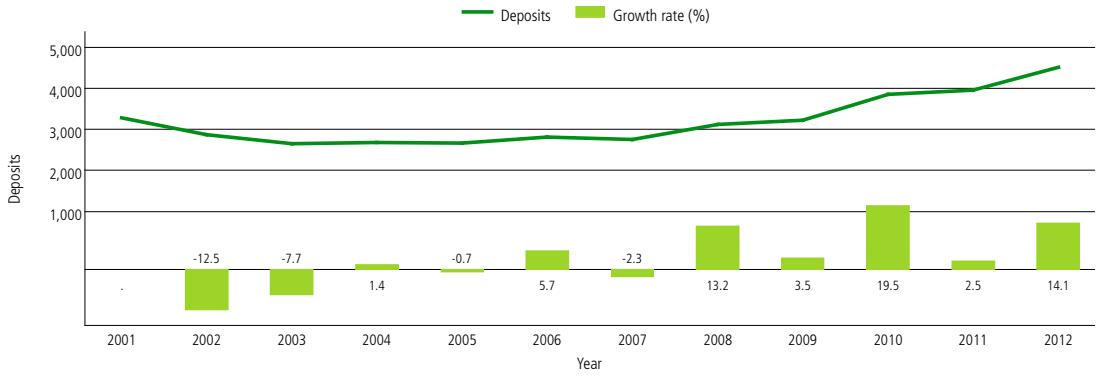
Figure A.12.1 shows the long-term trend of total deposits made with all IDAs that receive and store microorganisms. The number of deposits fell from 3,279 in 2001 to 2,667 in 2005. They then gradually increased – apart from in 2007 – until 2012, when they reached their highest level recorded of 4,510 deposits. The high growth of 14.1% in 2012 can be attributed to increases in the numbers of deposits made at the top three IDAs: the China General Microbiological Culture Collection Center (CGMCC), the China Center for Type Culture Collection (CCTCC), and the American Type Culture Collection (ATCC) of the US. Together, these three IDAs accounted for more than 98% of total growth.

Figure A.12.2 shows deposits for the top 10 IDAs, which were selected on the basis of total deposits made at IDAs in 2012. One of these IDAs, CGMCC, which is located in China, recorded the highest number of deposits (1,387), followed by ATCC in the US (891) and CCTCC, also located in China (781). These three authorities each recorded the largest shares of total deposits among all IDAs. Together, they accounted for 67.8% of all deposits, up from a combined share of 60.7% in 2011. Germany's Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ, 5.9%) had the next largest share, followed by the Korean Culture Center of Microorganisms (KCTC, 5%). The shares held by these IDAs in terms of total deposits has remained stable since 2001.

Nearly all of the top 10 IDAs showed substantial growth in deposits. The most prolific three – India's Microbial Type Culture Collection and Gene Bank (MTCC, +47.9%) and the two US authorities – ATCC (+42.6%) and Agricultural Research Service Culture Collection (NRRL, +31.3%) – each had growth exceeding 30%. After a one-off sharp decrease in deposits made at ATCC (-30.6%) in 2011, the high growth achieved in 2012 resulted in a return to its 2010 level. By contrast, deposits at France's Collection Nationale de Cultures de Micro-organismes (CNCM) fell by 33.7%, while at the Republic of Korea's KCTC, deposits fell by 15%.

From a long-term growth perspective, China's CGMCC and CCTCC as well as India's MTCC had the highest five-year average annual growth rates among the top 10 IDAs between 2008 and 2012, with growth of 27.2%, 21.5% and 26.5%, respectively. By contrast, CNCM has shown long-term average annual decreases of 15% over the past five years.

Figure A.12.1 Trend in microorganism deposits worldwide



Source: WIPO Statistics Database, October 2013

Figure A.12.2 Deposits for the top 10 IDAs

Note: ATCC (American Type Culture Collection, United States of America), CCTCC (China Center for Type Culture Collection), CGMCC (China General Microbiological Culture Collection Center), CNCM (Collection Nationale de Cultures de Micro-organismes, France), Leibniz-Institut DSMZ (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Germany), KCCM (Korean Culture Center of Microorganisms, Republic of Korea), KCTC (Korean Collection for Type Cultures, Republic of Korea), MTCC (Microbial Type Culture Collection and Gene Bank, India), NPMD (National Institute of Technology and Evaluation, Patent Microorganisms Depositary, Japan) and NRRL (Agricultural Research Service Culture Collection, United States of America)

Source: WIPO Statistics Database, October 2013

SECTION B
TRADEMARKS

This section provides an overview of trademark activity worldwide for both goods and services by using a range of indicators covering the following areas: a) trademark applications, b) trademark registrations, c) trademark applications by class and industry sector, d) international registrations through the WIPO-administered Madrid System for the International Registration of Marks (Madrid system), e) trademark filing intensity – trademark applications relative to gross domestic product (GDP) and million population – and, f) trademarks in force.

The statistics presented in this section cover those reported by national and regional intellectual property (IP) offices around the world, as well as those relating to the use of the Madrid system. In order to make better international comparisons of trademark application and registration activity across IP offices, this section takes into account differences in these offices' filing systems. To this end, the authors of this publication have used the number of classes specified in applications and registrations (class counts) as a common denominator among all IP offices.

THE TRADEMARK SYSTEM

A trademark is a distinctive sign that identifies certain goods or services as those produced or provided by a specific person or enterprise. Trademarks can be registered for goods and services. In the latter case, the term "service mark" is sometimes used. For the sake of simplicity, the term trademark is used in this publication regardless of whether or not the registration concerns goods or services. The holder of a registered trademark has the right to exclusively use the mark in relation to the products or services for which it is registered. The owner can prevent unauthorized use of the trademark, or a confusingly similar mark, so as to prevent consumers from being misled. Unlike patents, trademark registrations can be maintained indefinitely provided that the trademark holder pays the required renewal fees.

The procedures for registering trademarks are governed by the rules and regulations of national and regional IP offices. Trademark rights are limited to the jurisdiction of the authority in which a trademark is registered or deemed to have effect. Trademark applicants can file an application with the relevant national or regional IP office(s), or an international application through the Madrid system. However, even in the latter case, the decision to grant trademark protection remains the prerogative of the national or regional IP office concerned, and trademark rights remain limited to the jurisdiction of the authority in question.

The Madrid system, established in 1891, is legally governed by the Madrid Agreement (1891) and the Madrid Protocol (1989), and is administered by WIPO. This system makes it possible for an applicant to apply for a trademark in a large number of countries by filing a single application via a national or regional IP office that is party to the Madrid system. It simplifies the process of multinational trademark registration by eliminating the requirement to file an individual application in each jurisdiction in which protection is sought. The system also simplifies the subsequent management of the mark, since it is possible to centrally request and record further changes, or to renew the registration, through a single procedural step. A registration recorded in the International Register produces the same effect as a registration made directly with each designated contracting party (Madrid member) if no refusal was made by the competent authority of that jurisdiction within a specified time limit. Further details on the Madrid system are available at: *www.wipo.int/madrid/en/*

B.1

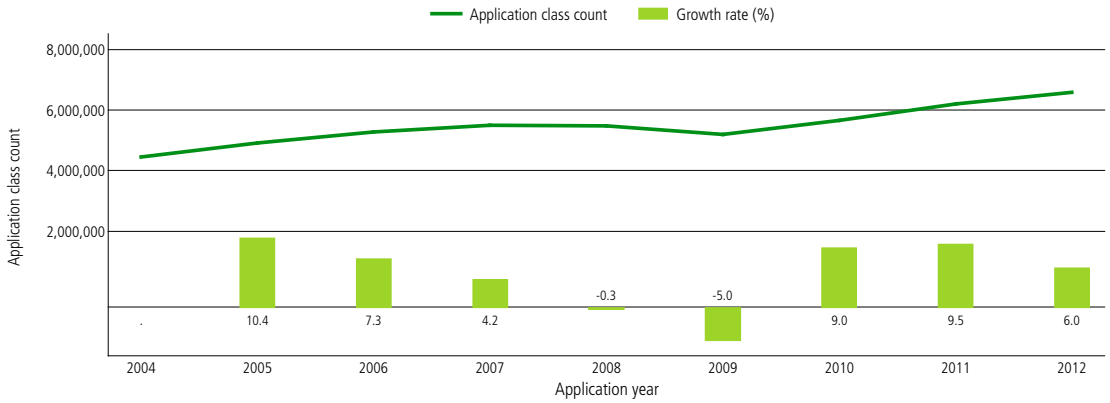
TRADEMARK APPLICATIONS AND REGISTRATIONS WORLDWIDE

B.1.1 Application class counts worldwide

A trademark application may refer to a number of different goods or services classes to which a mark applies and is classified. Within the international trademark system, many offices have adopted the Nice Classification (NCL), an international classification of goods and services applied for the registration of trademarks and service marks. Applications received by these offices are classified according to one or more of the 45 Nice classes (see *www.wipo.int/classifications/nice/en/*).

Some IP offices have a single-class filing system, which requires applicants to file a separate application for each class in which the goods or services to which the mark is applied are classified. Other offices follow a multi-class filing system, which enables applicants to file a single application in which goods or services belonging to a number of classes can be specified. In order to make better international comparisons between numbers of applications received, it is important to compare class counts across IP offices. For example, the offices of Brazil, China and South Africa follow a single-class filing system. However, the offices of Chile, Japan and the US, as well as many European offices, operate multi-class filing systems. With the exception of only a few indicators (B.2.1.2 and B.7), this section of the report employs class counts as the common denominator for reporting trademark application and registration activity. Statistics on the numbers of trademark applications filed at and registered by offices are available for download from the WIPO IP Statistics Data Center.

Figure B.1.1.1 Trend in trademark application class counts worldwide



Note: World totals are WIPO estimates using data covering 155 IP offices (see Data Description). These totals include class counts in applications filed directly with national and regional offices (Paris route) and class counts in designations received by offices via the Madrid system (where applicable).

Source: WIPO Statistics Database, October 2013

Figure B.1.1.1 shows the total number of classes specified in trademark applications – referred to as "class counts" hereafter – filed worldwide between 2004 and 2012. Totals are WIPO estimates using data covering 155 offices, which include class counts in applications received directly by national and regional IP offices (Paris route), combined with the numbers of class counts in designations received by 88 of these offices via the WIPO-administered Madrid system.

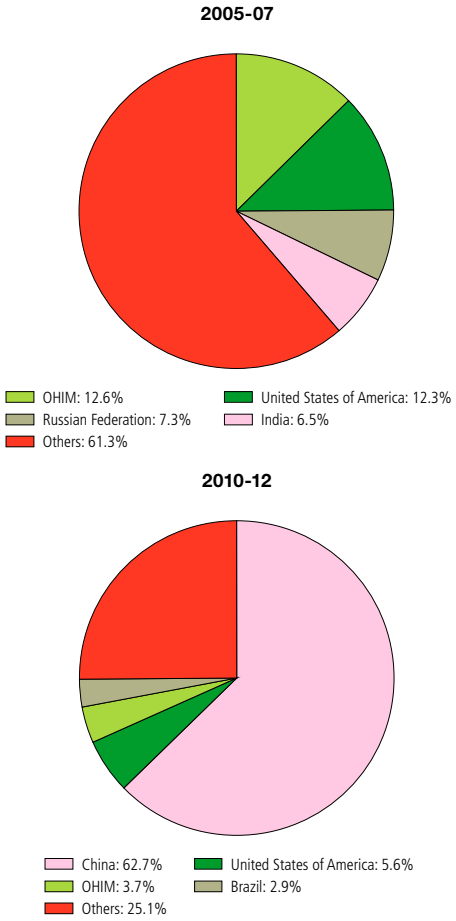
In 2012, a total of almost 6.58 million classes were specified in applications worldwide, representing a nearly 50% increase on the 4.45 million application class count recorded in 2004, the first year for which class count data were available. The growth since 2010 follows the 2008 and 2009 decreases that were associated with the global economic crisis.

The 6% increase in 2012 on the previous year's application class count is lower than the higher growth rates of 9% in 2010 and 9.5% in 2011 that resulted from a strong rebound following the nascent recovery from the global economic crisis.

In order to better understand the different components of the growth in total applications, it is necessary to look at individual offices' contribution to the increases (Figure B.1.1.2). Application class count data between 2005 and 2007 show that the Office for Harmonization in the Internal Market (OHIM, 12.6%) and the United States Patent and Trademark Office (USPTO, 12.3%) accounted for the largest and nearly equivalent contributions to overall growth over this period. The Russian Federation's office (7.3%) and that of India (6.5%) were also main contributors to overall growth.

The 2010-12 period, however, shows a much different picture, in that China's office was responsible for 62.7% of total growth. This single office's contribution to growth was more than ten times that recorded between 2005 and 2007, whereby reducing the contributions to growth by the US (5.6%) and OHIM (3.7%) from their higher levels recorded over that period. The office of Brazil became the fourth largest contributor to growth in global trademark filing activity from 2010 to 2012.

Figure B.1.1.2 Contribution of offices to growth in application class counts worldwide



Note: OHIM = Office for Harmonization in the Internal Market

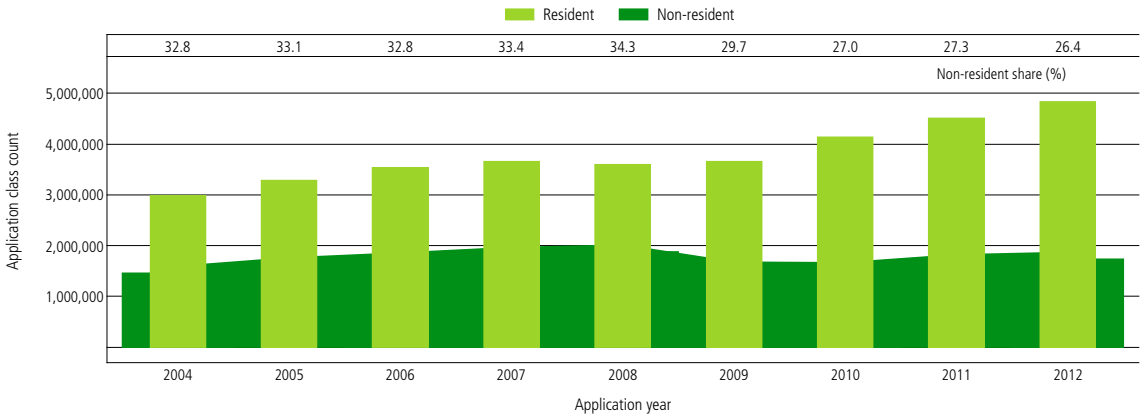
Source: WIPO Statistics Database, October 2013

Resident applications refer to applications filed by applicants with their relevant national or regional IP office. For example, an application filed by an applicant residing in the US with the USPTO is considered a resident application from the perspective of the USPTO. Similarly, non-resident applications refer to applications filed by applicants at a foreign IP office. For example, an application filed with the IP office of Turkey by an applicant residing in the US is considered a non-resident application from the perspective of the office of Turkey. Trademark applications filed by residents of European Union (EU) countries with OHIM, a regional office, are considered resident trademark applications for OHIM. This is also the case for residents of Belgium, Luxembourg and the Netherlands who file their applications with the Benelux Office for Intellectual Property (BOIP). Conversely, an application received by a regional office is considered a non-resident application if the applicant is not a resident of one of its member states.

Of the 6.58 million total trademark application class counts in 2012, approximately 4.84 million were attributed to residents and almost 1.74 million to non-residents. Since 2004, resident application class counts have increased for all years except 2008, during which they fell modestly i.e., by less than 2%. Non-resident class counts, however, showed more volatility over the 2004-12 period, during which they fell by almost 18% in 2009. Following this sharp decrease, they have since rebounded to their level recorded in 2006.

Figure B.1.1.3 shows that in 2012, 26.4% of all trademark application class counts were associated with applications filed by non-residents. Due to the increasingly large number of resident trademark applications in China, the non-resident share has decreased steadily from its peak of 34.3% in 2008.

Figure B.1.1.3 Resident and non-resident trademark application class counts worldwide



Note: World totals are WIPO estimates using data covering 155 IP offices (see Data Description). These totals include class counts in applications filed directly with national and regional offices (Paris route) and class counts in designations received by offices via the Madrid system (where applicable).

Source: WIPO Statistics Database, October 2013

B.1.2 Registration class counts worldwide

On the basis of an examination, a registration may be issued for a trademark application. Unlike for applications, the numbers of registrations issued may fluctuate greatly from one year to the next. This can be attributed in part to the amount of resources that IP offices allocate to the hiring and training of examiners for processing pending applications.

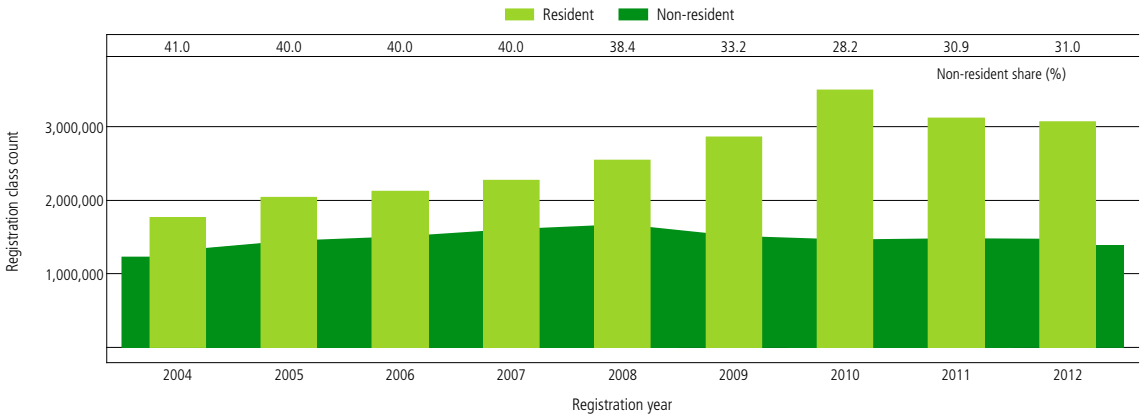
Similar to Figure B.1.1.1, Figure B.1.2.1 uses class counts for rendering trademark registration activity internationally comparable. In 2012, a total of 4.4 million classes were specified in trademark registrations issued worldwide. This represents a 1.5% decrease on the previous year and marks the second consecutive year of a drop in the total registration class count.

Figure B.1.2.1 Trend in trademark registration class counts worldwide

Note: World totals are WIPO estimates using data covering 155 IP offices (see Data Description). These totals include class counts in registrations issued by national and regional offices for applications filed directly with offices (Paris route) and for designations received by offices via the Madrid system (where applicable).

Source: WIPO Statistics Database, October 2013

Figure B.1.2.2 Resident and non-resident trademark registration class counts worldwide



Note: World totals are WIPO estimates using data covering 155 IP offices (see Data Description). These totals include class counts in registrations issued by national and regional offices for applications filed directly with offices (Paris route) and for designations received by offices via the Madrid system (where applicable).

Source: WIPO Statistics Database, October 2013

In contrast to application class counts, total trademark registration class counts showed positive year-on-year growth for all years between 2004 and 2010. This was due to the high growth in registration activity at a number of IP offices, such as those of China and OHIM. However, the estimated 4.5 million class counts in registrations issued worldwide in 2011 represented a decrease of 7.4% on figures for the previous year. This was largely due to a decrease of approximately 25% in registrations issued by the IP office of China. For each year since 2009, the IP office of China has accounted for at least 20% of all class counts in trademark registrations issued worldwide. Therefore, a significant change in registrations issued by this office has a large impact on the world total growth rate. If China were excluded from the overall totals, class counts in registrations issued worldwide in 2010 would have increased by a modest 2.1% compared to the 13.7% depicted in the graph.

Following the same logic for applications, resident registrations refer to registrations issued by a national or regional IP office to applicants domiciled within the jurisdiction covered by that office. Non-resident registrations refer to those issued by an office to applicants domiciled outside that office's jurisdiction.

Figure B.1.2.2 shows that in 2012, 31% of total class counts were specified in trademark registrations issued to non-residents. This is virtually the same share as that reported in 2011, but is much lower than the approximately 40% for the years 2004 to 2007. The reason for the decrease in the non-resident share can be explained by the large numbers of registrations issued by the IP office of China to entities domiciled in China. Since 2009, resident registration class counts for this office have been more than four times the amount in registrations issued by the next largest office (USPTO), thus resulting in an increasing overall share of trademarks issued to residents.

B.2

TRADEMARK APPLICATIONS AND REGISTRATIONS BY OFFICE

B.2.1 Application class counts by office

This subsection provides detailed information on the number of classes specified in applications received by IP offices. The information is first grouped by income groups showing their respective filing volumes, then by application and registration activity at a selection of offices.

Total application class counts at offices of high-income countries fell slightly (-0.7%) between 2007 and 2012 (Table B.2.1.1). However, they increased for all other income groups. Filing activity at offices located in upper middle-income countries was about half that of offices in high-income countries in 2007, but this gap was reduced to almost 10% in 2012, due primarily to intense filing activity in China. This resulted in a 10.7% average yearly growth over this six-year period and accounted for 42% of total filing activity in 2012. Because China's high application class count distorts the total numbers for the upper-middle income country group, it is useful to examine the figures for the upper-middle income group while excluding those for the Chinese office. This results in a more modest average yearly growth for the upper-middle income group of 3.1%, which is of similar magnitude to the growth rates for the lower-middle income (+2.7%) and low-income (+3.9%) groups. Moreover, when the figures for China are excluded, the remaining upper-middle income groups accounted for about 17% of total trademark filing activity worldwide in both 2007 and 2012. The shares of the total for these two years were virtually unchanged for both the lower middle-income and the low-income groups.

Within each income group, the share of filing activity by residents increased between 2007 and 2012, showing an increased demand for protecting marks domestically as opposed to internationally. This is particularly noticeable in the lower-middle and low-income groups, where the share of total application class counts attributed to resident filings increased by 7.4 and 9.8 percentage points, respectively.

Figure B.2.1.2 shows the long-term trend of the five largest IP offices in 2012 in terms of simple trademark application counts. Caution should be exercised when comparing the data for these offices, as the numbers of applications received by each office have not been corrected to take into account the number of classes specified in applications – as applied in the case of the other trademark indicators (except those for trademarks in force). This graph simply shows how, historically, trademark filing volumes at these offices were relatively low, whereby increasing slowly between 1883 and the mid-1980s, when filing activity began to grow significantly. In the case of China, growth became exponential in the 1990s. Since the mid-1990s, the US has doubled its filing activity in terms of the numbers of applications it

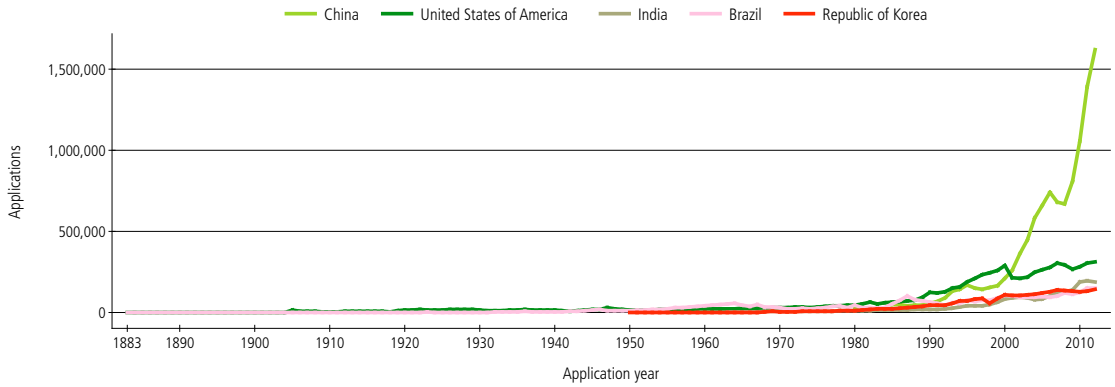
Table B.2.1.1 Trademark applications class counts by income group

Income group	Application class counts		Resident share (%)		Share in world total (%)		Average growth (%)
	2007	2012	2007	2012	2007	2012	2007-2012
High-income	3,222,000	3,116,000	67.9	70.7	58.7	47.4	-0.7
Upper middle-income	1,661,000	2,763,000	68.9	80.1	30.3	42.0	10.7
...Upper middle-income without China	*953,000*	*1,112,000*	*56.7*	*64.0*	*17.4*	*16.9*	*3.1*
Lower middle-income	540,000	617,000	57.1	64.5	9.8	9.4	2.7
Low-income	66,000	80,000	21.4	31.2	1.2	1.2	3.9
World	**5,490,000**	**6,577,000**	**66.6**	**73.6**	**100.0**	**100.0**	**3.7**

Note: Total by income groups are WIPO estimates using data covering 155 IP offices. Each category includes the following number of offices: high-income (54), upper middle-income (44), lower middle-income (31) and low income (26). OHIM data are allocated to the high-income group, as the majority of EU member states are high-income countries. For the same reason, African Regional Intellectual Property Organization (ARIPO) and African Intellectual Property Organization (OAPI) data are allocated to the low-income group.

Source: WIPO Statistics Database, October 2013

Figure B.2.1.2 Trend in trademark applications for the top five offices



Note: Data are based on application counts, i.e., differences between single-class and multi-class filing systems across IP offices are not taken into account. The top five offices were selected according to their 2012 totals.

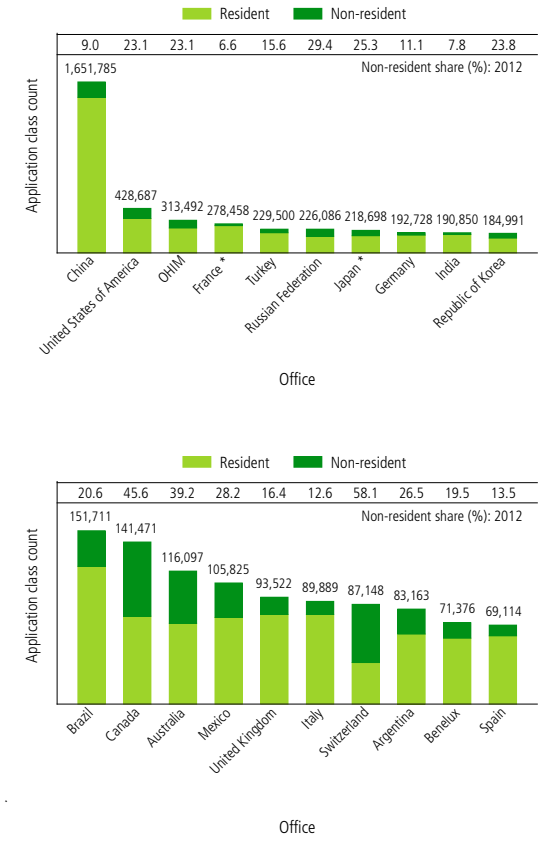
Source: WIPO Statistics Database, October 2013

received. This was despite decreases witnessed at the end of the dot-com era in 2001 and 2002 and the global economic crisis in 2008 and 2009. In fact, apart from India, all of these top offices saw decreases at some point over these two periods, reflecting the negative impact of global events across offices.

Unlike the previous indicator, which simply presents numbers of applications filed, Figure B.2.1.3 shows the ranking of the top 20 offices in terms of internationally comparable application class counts. In 2012, China and the US had the highest filing activity in terms of class counts. The ranking of these two offices has not changed since 2004, when class count data were first collected. However, since 2004, China's class count has grown from being nearly twice to almost four times that of the US in 2012. The ranking of the remaining top 20 offices was fairly similar to that in 2011; however, having achieved 24% growth, the ranking of Turkey's office changed in 2012, moving from ninth to fifth position. The ranking of India's office also changed in 2012, following a 4% decrease, thus moving from seventh to ninth position. Resulting from a 6.4% decrease, Germany moved from sixth to eighth position in 2012.

Filing patterns of applicants domiciled in (residents) or outside (non-residents) their respective jurisdictions varies. Of the top 20 offices, 9 had less than 20% of their filing activity attributed to non-residents, of which China, France and India had fewer than 10%. Canada (45.6%) and Switzerland (58.1%) both had the highest non-resident shares within this list. A number of offices, including OHIM and the IP offices of Argentina, Brazil, Japan, Mexico, the Republic of Korea, the Russian Federation and the US received between 20% and 30% of their filing volumes from non-residents.

Figure B.2.1.3 Trademark application class counts for the top 20 offices, 2012



Note: *Resident applications are an estimate of direct application class count; OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

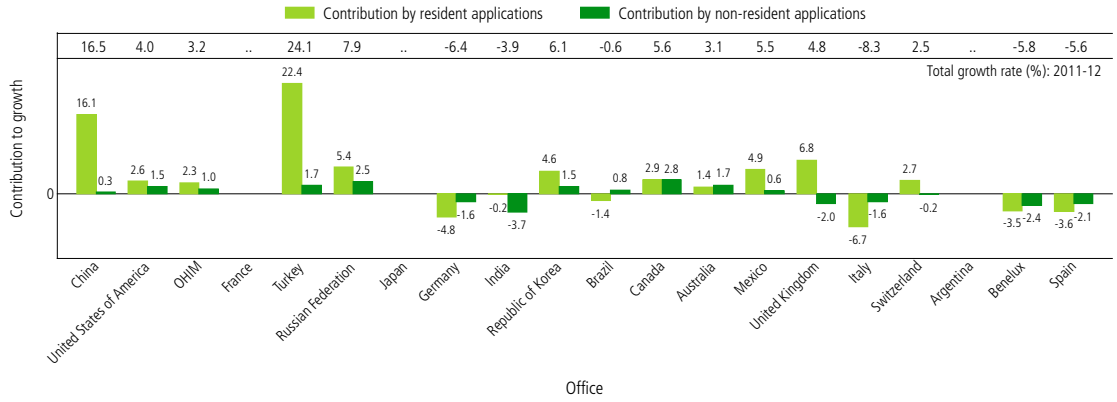
About half of the offices presented in Figure B.2.1.4 reported growth in 2012. Of these, the offices of China (+16.5%) and Turkey (+24.1%) reported double-digit growth. Many others showed more modest growth in 2012 compared to 2011. For example, OHIM, Switzerland, the UK and the US all had growth of between 2% and 5%, which is less than half the growth rate they each experienced in the previous year.

For the second consecutive year, the offices of Germany and Spain saw decreases in filing activity. In fact, many offices of EU countries – including the BOIP – have witnessed decreases in filing activity in recent years. This is partly due to residents of EU countries opting to file with OHIM rather than with their respective national office, in order to seek protection for trademarks not only within their own country but in the EU as a whole.

The office of India reported a decrease of 3.9%, of which 3.7 percentage points were due to a fall in class counts in applications received from non-residents. Brazil, however, presents a mixed picture. While its resident activity decreased by a 1.4 percentage point, demand for trademark protection by non-residents slightly increased by a 0.8 percentage point resulting in a net decrease (-0.6%).

The driver of one-year growth – whether resident or non-resident – differs for each of the top 20 offices. For example, application class counts in applications received by the IP office of Turkey grew from almost 185,000 in 2011 to approximately 230,000 in 2012, which was largely a result of the nearly 194,000 class count attributed to applicants domiciled in Turkey and which contributed 22.4 percentage points to this office's total growth of 24.1%. Only a 1.7 percentage point of Turkey's application growth was associated with filings from outside Turkey. Residents of China also contributed significantly to the increase in the application class count at their national IP office. In fact, growth at many of these offices was primarily driven by resident applications. However, the share of filing activity by residents and non-residents at the offices of Australia and Canada were fairly evenly balanced.

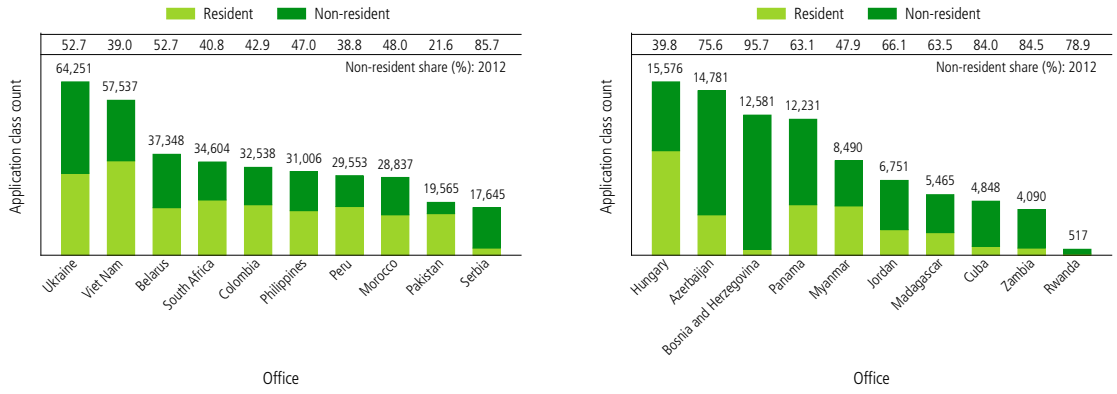
Figure B.2.1.4 Contribution of resident and non-resident application class counts to total growth for the top 20 offices, 2011-12



Note: ".." = not available; OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

Figure B.2.1.5 Trademark application class counts for offices of selected middle- and low-income countries, 2012



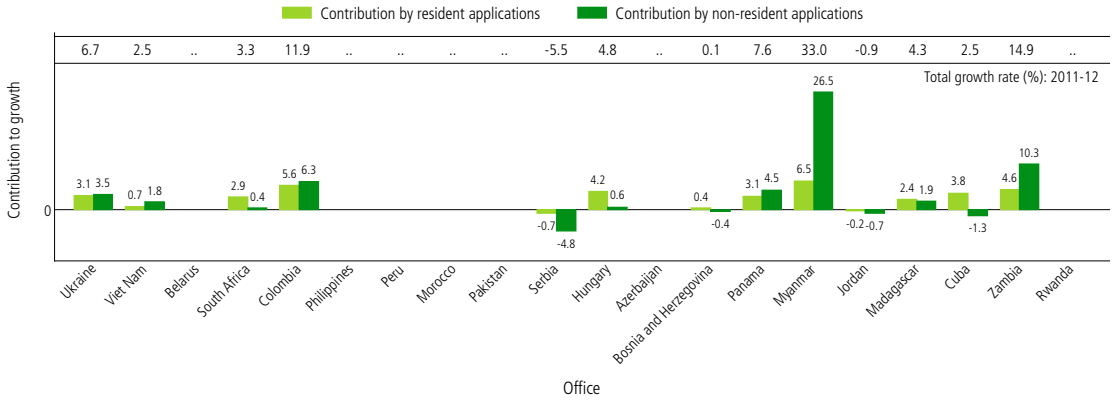
Note: The selected offices are from different world regions and income groups (upper middle-income, lower-middle income and low-income). Data for all available offices are presented in the statistical annex.

Source: WIPO Statistics Database, October 2013

More than half (52.6%) of global trademark filing activity in 2012 was accounted for by the IP offices of middle- and low-income countries, as shown in Table B.2.1.1. Figure B.2.1.5 presents a selection of offices from these income groups, as well as their varying compositions of non-resident shares of total filing volumes. For a total of 11 of these 20 selected offices, non-residents accounted for over half of the application activity, with the offices of some countries such as Azerbaijan, Bosnia and Herzegovina, Cuba, Rwanda, Serbia and Zambia accounting for more than 75% of all application class counts.

Residents, however, accounted for more than 60% of filing activity in Hungary, Peru and Viet Nam. Of these selected offices, Pakistan had the highest percentage (78%) of filing activity by residents.

Figure B.2.1.6 Contribution of resident and non-resident application class counts to total growth for offices of selected middle- and low-income countries, 2011-12



Note: ".." = not available. The selected offices are from different world regions and income groups (upper middle-income, lower-middle income and low-income). Data for all available offices are presented in the statistical annex.

Source: WIPO Statistics Database, October 2013

Figure B.2.1.6 shows the total one-year growth, where available, for the IP offices listed in B.2.1.5 as well as the share of this growth that was due to filing activity by residents and non-residents. Myanmar reported the highest growth (+33%), of which 26.5 percentage points were due to non-resident filing activity and 6.5 percentage points were due to domestic filings. Zambia also reported double-digit growth (+14.9%), which was also driven by demand for trademark protection from abroad. Growth in Colombia, Madagascar and Ukraine were each attributed in more or less equal measure to residents and non-residents.

B.2.2 Registration class counts by office

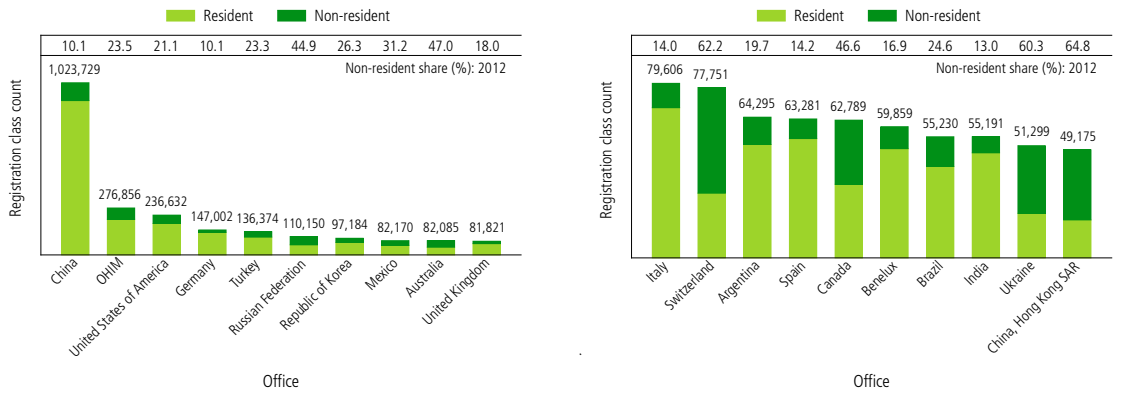
This subsection considers IP office registration volumes across the top offices by using class counts compared in the same manner as were application volumes. Figure B.2.2.1 shows that, in 2012, the IP office of China issued registrations with a class count of just over 1 million, which is approximately 600,000 fewer than its application class count in the same year. The registration class count at the USPTO was close to half that of its application class count. This partly reflects the fact that not every application received by an office results in a registration. However, other factors, such as examination pendency, also influence these differences.

Similar to the results reported in 2011, the IP office of China accounted for about 23% of all trademark registration activity (i.e., class counts in registrations) worldwide in 2012. When totaled, the top 10 offices accounted for more than half (51%) of total class counts in registrations issued worldwide, with the top 20 accounting for 65%.

At the global level, 31% of all registration class counts in 2012 were attributed to non-residents. However, more than half of the top 20 offices reported lower percentages, most notably China, Germany, India and Italy – all with between 10% and 14% of their total registration activity attributed to non-residents. China Hong Kong (SAR), Switzerland and Ukraine, on the other hand, had more than 60% of their total class counts in registrations issued to non-residents.

The majority of offices reported in Figure B.2.2.1 had higher non-resident shares for registration class counts than those for applications. The differences were most marked for Australia, which had a 7.8 percentage point higher non-resident share for registration class counts, and for the Russian Federation, which had a 15.5 percentage point higher share.

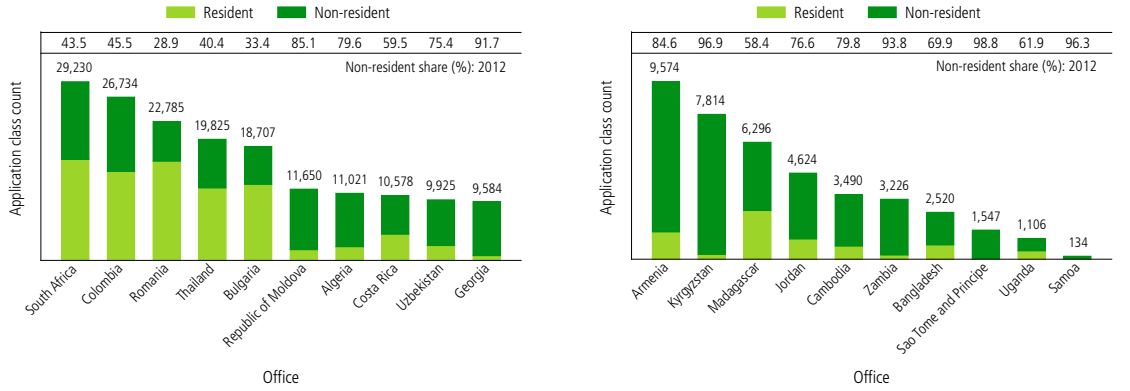
Figure B.2.2.1 Trademark registration class counts for the top 20 offices, 2012



Note: OHIM = Office for Harmonization in the Internal Market; figures for France and Japan are not presented here, as these data were not available.

Source: WIPO Statistics Database, October 2013

Figure B.2.2.2 Trademark registration class counts for offices of selected middle- and low-income countries, 2012



Note: The selected offices are from different world regions and income groups (upper middle-income, lower-middle income and low-income). Data for all available offices are presented in the statistical annex.

Source: WIPO Statistics Database, October 2013

Figure B.2.2.2 presents registration class counts for selected offices of middle- and low-income countries. The registration class counts for these offices were generally lower than their application class counts (Figure B.2.1.5). As was the case for the IP offices of China and the US, this was partly due to the fact that not every application received by an office resulted in a registration. However, other factors, such as examination pendency, also influence these differences.

Consistent with their application class counts, most of these offices' registration class counts were largely attributed to non-residents, with many exhibiting even higher non-resident shares. The offices of Algeria, Costa Rica and the Republic of Moldova had similar registration class counts i.e., between 10,500 and 11,700. Costa Rica, however, had a lower share of its total registration class counts (59.5%) associated with non-residents, compared to the 80% and higher share reported by the offices of Algeria and the Republic of Moldova.

Almost all registration activity in Kyrgyzstan, Samoa, Sao Tome and Principe, and Zambia can be attributed to non-residents.

B.3

Trademark applications by origin

B.3.1 Application class counts by origin

This subsection provides detailed data on trademark applications by the origin of applicants. The map in Figure B.3.1.1 shows equivalent trademark application class counts for all available origins in 2012. Applicants residing in China, France, Germany, the UK and the US accounted for the largest volumes of filing activity with more than 1 million application class counts contained in their respective applications filed both domestically and abroad. Japan, Poland, the Russian Federation, Turkey and a number of Western European countries are origins of considerable trademark filing activity, comprising between 200,000 and 999,999 application class counts. The third group of origins with the next highest level of filing activity included three large Latin American origins – Argentina, Brazil and Mexico – along with Australia, Canada, India and a number of European countries – Ireland, Bulgaria, Portugal and Switzerland, to name a few. Applicants domiciled in several Central and South American countries, as well as those located in many African, Central and South-East Asian countries accounted for the lowest trademark filing activity in 2012. However, the picture is incomplete, as data for a number of these origins were not available.

Trademark application counts based on the applicant's origin complement the picture of global trademark activity worldwide. Trademark activity by origin includes class counts in resident trademark applications and in trademark applications abroad.[1] The origin of a trademark application is determined by the domicile of the applicant. The class counts in applications abroad presented here are likely to be lower than the actual numbers, as some offices did not report detailed statistics pertaining to the origin of the applicant.

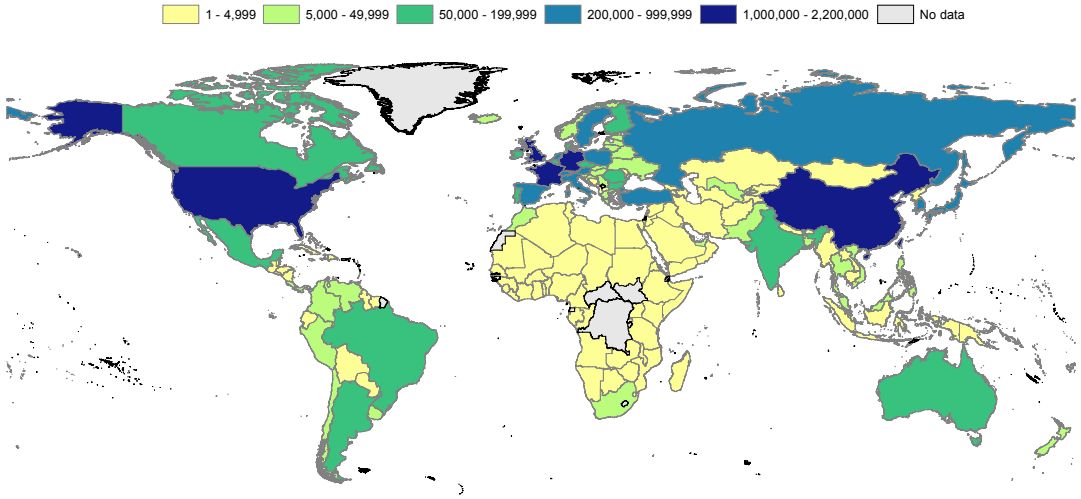
1 See Glossary for definitions of resident application and application abroad.

Applications at regional IP offices are equivalent to multiple applications in the countries that are members of the organizations establishing these offices. This subsection reports figures based on the concepts of absolute count and equivalent count. For example, in order to calculate the number of equivalent applications for OHIM or the BOIP, each application is multiplied by the corresponding number of member states. Thus, an application filed with OHIM by an applicant residing outside the EU was counted as 27 applications abroad i.e., equivalent to the membership of the EU which, in 2012, numbered 27 countries. An application filed with OHIM by an applicant residing in an EU country is counted as 1 resident application and 26 applications abroad. The same multiplier is applied to the classes specified in these applications.

Using simple absolute counts, applicants from China are often ranked number one by origin due to high resident filing activity at their national office (Figure B.3.1.2). Of the 1,575,370 application class counts, only 4.6% were in applications filed abroad. This was also the case for applicants residing in Brazil and India, with more than 95% of application class counts in applications filed in the applicant's respective country of residence. Virtually all of the top 20 origins listed had less than half of their total trademark application class counts abroad; the exception to this was Switzerland, which had 76.9% associated with filings abroad.

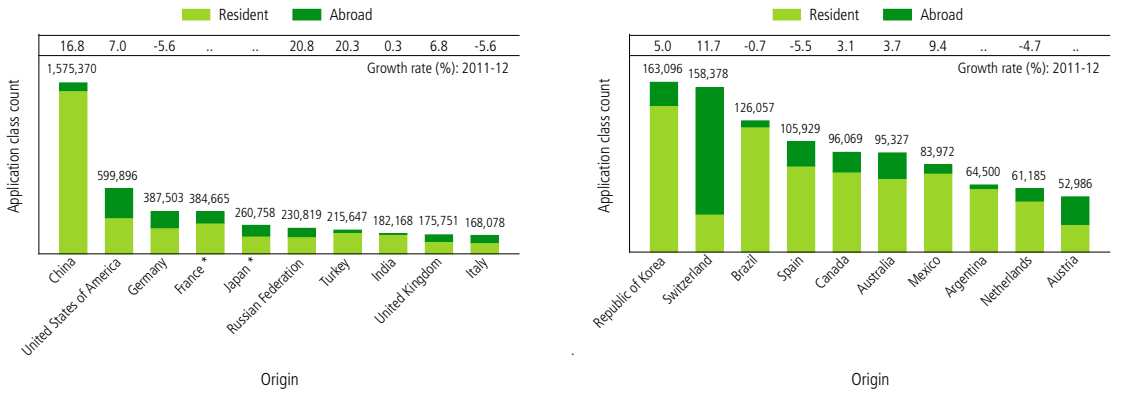
Filing activity by applicants from China (+16.8%) and Turkey (+20.3%) exhibited substantial growth in 2012 compared to 2011. Most of the 2012 growth can be attributed to increases in resident applications. Filing activity by applicants domiciled in the Russian Federation (+20.8%) and Switzerland (+11.7%) also saw high year-on-year growth, but this was mainly due to increases in applications filed abroad. The decreases seen in Italy (-5.6%) and Spain (-5.5%) can be attributed to decreases in resident application class counts, whereas Germany's decrease (-5.6%) largely reflects a decrease in filings abroad.

Figure B.3.1.1 Trademark application class counts by origin



Source: WIPO Statistics Database, October 2013

Figure B.3.1.2 Trademark application class counts for the top 20 origins, 2012



Note: ".." = not available; *resident data are an estimate of direct application class count.

Source: WIPO Statistics Database, October 2013

In order to provide a broader view of global trademark application activity, Figure B.3.1.3 shows the filing activity for selected applicants residing in middle- and low-income countries. Similar to the data presented in Figure B.3.1.2, for almost all of the listed origins, the majority of class counts were in applications filed in their respective country of origin. The only exception to this was Serbia, where just under half (46.3%) of application class counts were attributed to residents. In 2012, total class counts in applications filed by residents of Bulgaria (26,025) and Romania (23,596) were similar. However, residents of Bulgaria had a much higher proportion of their application class counts in applications filed abroad, namely 42.4%, compared to 3.9% for Romania. Between 2011 and 2012, most of these origins showed growth in application class counts, with the exception of Bangladesh, Bulgaria, Costa Rica, Romania and Serbia.

Figure B.3.1.3 Trademark application class counts for selected middle- and low-income origins, 2012

Note: ".." = not available

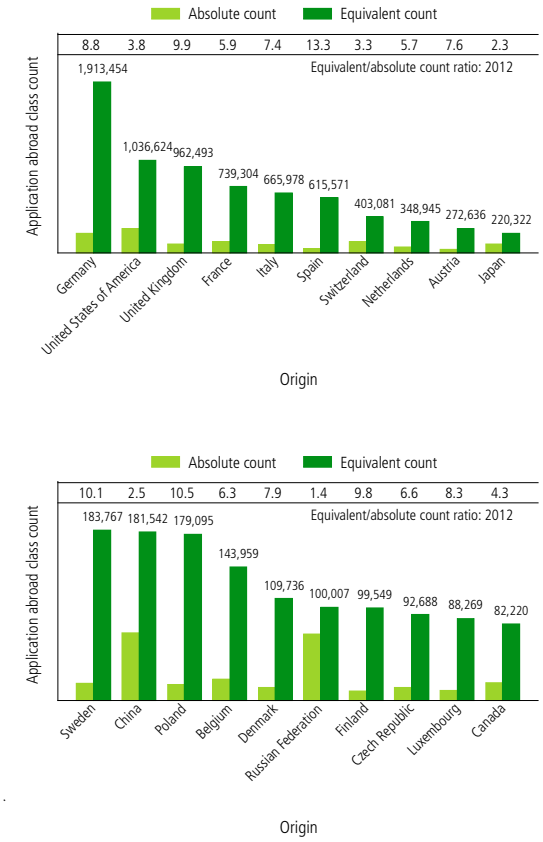
Source: WIPO Statistics Database, October 2013

B.3.2 Application class counts abroad for the top 20 origins

Looking more specifically at class counts in applications filed abroad, Figure B.3.2 distinguishes between absolute counts and equivalent counts. Using equivalent application class counts, applicants from Germany had the highest level of trademark filing activity worldwide. This was due not only to their high application class counts at the German office and at numerous offices abroad, but also to their frequent use of OHIM – with its multiplying effect – in order to seek trademark protection within the entire EU. These factors together yielded over 1.9 million equivalent class counts for applications of German origin filed abroad in 2012. For the same reasons that apply to the high filing volume of German origin, application class counts are also high for other EU origins, as are their respective filings abroad. In fact, only three non-EU states, the US (1,036,624), Switzerland (403,081), and Japan (220,322) were in the top 10 origins; they were ranked at second, seventh and tenth position, respectively.

EU member states also have much higher ratios (greater than 5) of equivalent to absolute counts. Spain, for example, had the highest ratio, with 1 absolute count representing 13.3 equivalent counts on average. Poland (10.5), Sweden (10.1) and the UK (9.9) also had high ratios. Interestingly, the six non-EU countries – Canada (4.3), China (2.5), Japan (2.3), the Russian Federation (1.4), Switzerland (3.3) and the US (3.8) – all ranked in the lowest positions in terms of ratios, each scoring fewer than five equivalent counts to each one absolute count, thereby indicating that a higher share of their application filing activity was occurring at offices other than regional offices such as OHIM.

Figure B.3.2 Trademark application class counts abroad for the top 20 origins, 2012



Source: WIPO Statistics Database, October 2013

B.3.3 Application class counts by office and origin

In order to establish a detailed picture of trademark flows across countries, this subsection presents a breakdown of application class count data by origin (source) and office (destination). Data are reported for 15 offices based on their application class count volumes, geographical location and data availability. Similar to the situation that applies to patents, when deciding where to seek trademark protection, applicants consider such factors as market size and geographical proximity.

Table B.3.3 shows application class counts by origins and offices, whereas Table B.3.4 presents the same flows expressed in percentage shares.[2] The highest percentage in each column represents the share of all application class counts received by a particular office from residents of the same country of origin (if presented). This figure varies from 41.9% for the IP office of Switzerland to approximately 92.2% for the office of India. Twelve of the fifteen offices listed received over 70% of all application class counts from domestic applicants. However, applicants from Canada and Switzerland filed the largest shares of their applications abroad.

Application class counts of US origin accounted for the largest proportion of foreign class counts in applications received by the offices of neighboring Canada (23.6%) and Mexico (12.1%), percentages that varied only slightly from 2011. In fact, for most of the 15 offices, the US accounted for the highest number of class counts in non-resident applications received. For those IP offices whose non-resident applications were not primarily attributed to the US, a high share of their non-resident filing activity was mainly attributed to applications of German origin. At the office of Switzerland for example, 15.1% of applications originated in Germany. The offices of Turkey and the Russian Federation also received their highest percentages of non-resident application class counts from Germany, although the shares were quite low (i.e., 2.7% and 3.4%, respectively).

2 "Origin data" refers to absolute application count rather than equivalent application count as presented in Figure B.3.1.2.

Table B.3.3 Trademark application class counts by office and origin: selected offices and origins, 2012

Origin	Office														
	CN	US	TR	RU	DE	IN	KR	BR	CA	AU	MX	GB	IT	CH	AR
Argentina	139	292	1	38	1	6	9	389	35	7	268	17	7	3	61,165
Australia	3,184	3,683	190	372	105	236	582	266	1,393	70,585	152	779	60	332	136
Austria	1,102	1,069	841	1,114	1,610	72	272	224	453	350	178	217	581	2,290	190
Brazil	491	644	24	91	64	30	89	120,530	145	122	281	72	71	73	739
Canada	1,536	10,284	60	243	22	130	291	259	77,015	675	414	227	6	164	197
China	1,502,540	4,048	1,061	2,120	1,391	845	2,514	1,018	1,888	1,866	697	1,150	1,154	905	499
France	9,096	6,580	2,464	4,393	1,377	739	2,820	2,291	3,408	2,182	1,410	1,260	1,356	6,049	1,433
Germany	11,541	9,168	6,302	7,664	171,274	989	3,787	2,638	3,899	3,355	2,109	1,042	1,001	13,160	1,728
India	642	660	57	243	22	176,044	48	85	190	137	167	137	4	47	57
Italy	6,788	4,514	2,154	3,889	503	508	1,927	1,470	1,424	1,539	798	352	78,523	2,730	689
Japan	24,918	6,084	1,117	2,245	516	1,163	7,906	1,715	2,354	2,360	1,188	553	359	1,130	981
Mexico	373	2,022	18	87	7	37	69	430	318	78	76,010	19	1	40	472
Netherlands	1,101	813	269	440	275	308	96	768	952	220	513	262	86	158	541
Republic of Korea	6,787	2,628	382	673	222	285	140,908	484	510	531	370	223	122	123	186
Russian Federation	2,364	1,454	959	159,542	1,703	38	410	73	174	324	73	1,124	1,271	841	38
Spain	2,267	1,764	422	738	191	156	345	867	507	387	1,420	172	130	451	712
Switzerland	5,592	5,168	2,712	3,986	3,077	667	2,665	2,301	2,329	2,397	1,821	1,156	1,534	36,537	1,707
Turkey	710	689	193,749	1,077	588	105	156	95	174	188	55	361	368	261	47
United Kingdom	7,515	10,377	1,272	2,240	906	935	1,639	1,598	4,117	3,481	1,326	78,188	262	1,372	955
United States of America	29,077	329,828	4,451	8,250	1,380	4,804	9,649	9,446	33,366	12,592	12,849	2,515	729	5,446	7,446
Others/ Unknown	34,022	26,918	10,995	26,641	7,494	2,753	8,809	4,764	6,820	12,721	3,726	3,696	2,264	15,036	3,245
Total	**1,651,785**	**428,687**	**229,500**	**226,086**	**192,728**	**190,850**	**184,991**	**151,711**	**141,471**	**116,097**	**105,825**	**93,522**	**89,889**	**87,148**	**83,163**

Note: CN (China), US (United States of America), TR (Turkey), RU (Russian Federation), DE (Germany), IN (India), KR (Republic of Korea), BR (Brazil), CA (Canada), AU (Australia), MX (Mexico), GB (United Kingdom), IT (Italy), CH (Switzerland), AR (Argentina)

Source: WIPO Statistics Database, October 2013

Table B.3.4 Distribution of trademark application class counts by office and origin: selected offices and origins, 2012 (%)

Origin	Office														
	CN	US	TR	RU	DE	IN	KR	BR	CA	AU	MX	GB	IT	CH	AR
Argentina	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	73.5
Australia	0.2	0.9	0.1	0.2	0.1	0.1	0.3	0.2	1.0	60.8	0.1	0.8	0.1	0.4	0.2
Austria	0.1	0.2	0.4	0.5	0.8	0.0	0.1	0.1	0.3	0.3	0.2	0.2	0.6	2.6	0.2
Brazil	0.0	0.2	0.0	0.0	0.0	0.0	0.0	79.4	0.1	0.1	0.3	0.1	0.1	0.1	0.9
Canada	0.1	2.4	0.0	0.1	0.0	0.1	0.2	0.2	54.4	0.6	0.4	0.2	0.0	0.2	0.2
China	91.0	0.9	0.5	0.9	0.7	0.4	1.4	0.7	1.3	1.6	0.7	1.2	1.3	1.0	0.6
France	0.6	1.5	1.1	1.9	0.7	0.4	1.5	1.5	2.4	1.9	1.3	1.3	1.5	6.9	1.7
Germany	0.7	2.1	2.7	3.4	88.9	0.5	2.0	1.7	2.8	2.9	2.0	1.1	1.1	15.1	2.1
India	0.0	0.2	0.0	0.1	0.0	92.2	0.0	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1
Italy	0.4	1.1	0.9	1.7	0.3	0.3	1.0	1.0	1.0	1.3	0.8	0.4	87.4	3.1	0.8
Japan	1.5	1.4	0.5	1.0	0.3	0.6	4.3	1.1	1.7	2.0	1.1	0.6	0.4	1.3	1.2
Mexico	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.1	71.8	0.0	0.0	0.0	0.6
Netherlands	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.5	0.7	0.2	0.5	0.3	0.1	0.2	0.7
Republic of Korea	0.4	0.6	0.2	0.3	0.1	0.1	76.2	0.3	0.4	0.5	0.3	0.2	0.1	0.1	0.2
Russian Federation	0.1	0.3	0.4	70.6	0.9	0.0	0.2	0.0	0.1	0.3	0.1	1.2	1.4	1.0	0.0
Spain	0.1	0.4	0.2	0.3	0.1	0.1	0.2	0.6	0.4	0.3	1.3	0.2	0.1	0.5	0.9
Switzerland	0.3	1.2	1.2	1.8	1.6	0.3	1.4	1.5	1.6	2.1	1.7	1.2	1.7	41.9	2.1
Turkey	0.0	0.2	84.4	0.5	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.4	0.4	0.3	0.1
United Kingdom	0.5	2.4	0.6	1.0	0.5	0.5	0.9	1.1	2.9	3.0	1.3	83.6	0.3	1.6	1.1
United States of America	1.8	76.9	1.9	3.6	0.7	2.5	5.2	6.2	23.6	10.8	12.1	2.7	0.8	6.2	9.0
Others/ Unknown	2.1	6.3	4.8	11.8	3.9	1.4	4.8	3.1	4.8	11.0	3.5	4.0	2.5	17.3	3.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: CN (China), US (United States of America), TR (Turkey), RU (Russian Federation), DE (Germany), IN (India), KR (Republic of Korea), BR (Brazil), CA (Canada), AU (Australia), MX (Mexico), GB (United Kingdom), IT (Italy), CH (Switzerland), AR (Argentina)

Source: WIPO Statistics Database, October 2013

B.4

Trademark applications by Nice class and industry sector

B.4.1 Applications by Nice class and industry sector

Many offices use the NCL to classify trademark applications into one or more of its 45 classes. The breakdown of applications by class offers insights into the relative importance of trademarks for different goods and services. The first 34 of the 45 classes indicate goods and the remaining 11 refer to services. At the 113 offices for which direct application and/or Madrid designation statistics broken down by class were available for 2012, the top 10 classes accounted for just over half (51.3%) of all classes specified in trademark applications (Table B.4.1.1). The top five classes combined accounted for 33% of the total. Four of the top 10 classes related to services and comprised 22% of all filings. Service class 35 (advertising, business management, business administration, and office functions) has occupied or shared the number one position since 2004, when class data first became available. The highest ranked classes indicating goods were Class 25 (Clothing, footwear, headgear) and Class 9 (which includes, among other things, scientific, photographic, measuring instruments, recording equipment, computers and software). Class rankings differ across individual offices.

As outlined earlier, the 45 NCL classes comprise those relating to either goods or services. Together, the 11 service-related classes accounted for slightly more than one-third (34.2%) of all classes specified in applications filed in 2012 (Figure B.4.1.4). This is roughly equal to the service class share for 2007, thus demonstrating the continued importance that applicants place on protecting their brands in service-oriented industries.

Table B.4.1.1 Distribution of trademark applications by top Nice classes, 2012

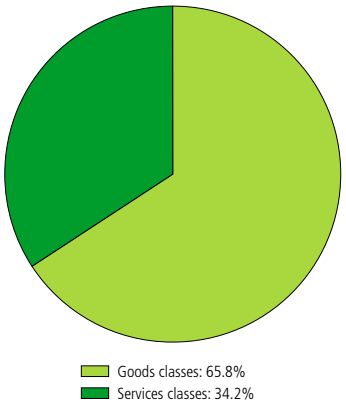
Rank	Class*		Class share (%)
1	35	Advertising and business management	9.4
2	25	Clothing	7.0
3	9	Scientific, photographic, measuring instruments; recording equipment; computers and software	6.7
4	41	Education, entertainment, and sporting activities	5.6
5	5	Pharmaceutical preparations, baby food, dietary supplements for humans and animals, disinfectants, fungicides and herbicides	4.6
6	30	Coffee, tea, cocoa, rice, flour, bread, pastry and confectionery, sugar, honey, yeast, salt, mustard; vinegar, sauces (condiments) and spices	4.1
7	42	Scientific and technological services, design and development of computer hardware and software	4.0
8	3	Bleaching preparations and other substances for laundry use; cleaning and abrasive preparations; soaps, perfumery and cosmetics	3.5
9	16	Paper, cardboard and goods made from these materials; printed matter, photographs, artists' materials, typewriters, and plastic materials for packaging	3.2
10	43	Services for providing food and drink; temporary accommodation	3.0
		Remaining classes	48.7

Note: These figures were based on direct filing data from 81 IP offices – which included, for example, OHIM and the offices of Australia, China, France and the US – and on Madrid designation data from 87 offices, resulting in data from a total of 113 offices.

* Some classes listed are abbreviated. See Annex B for full definitions.

Source: WIPO Statistics Database, October 2013

Figure B.4.1.2 Trademark applications by goods and services classes, 2012



Source: WIPO Statistics Database, October 2013

It is useful to analyze class data by grouping the NCL classes into different industry sectors. In particular, the 45 NCL classes can be grouped into 10 categories or groups (see Annex B for full definitions). Table B.4.1.3 presents these categories or groups for 113 IP offices worldwide. These categories were developed by Edital, a company specializing in trademark information. The class groups do not always contain the same number of classes. In addition, some class numbers could have been associated with several categories but, for the sake of simplicity, they have been assigned to only one. The class groups may comprise both goods and services classes.

This table depicts the distribution of trademark applications across various sectors of the economy. No specific category seems to largely dominate for trademark applications; however, there are a few, such as "chemicals" and "transportation and logistics", for which trademark protection is sought less frequently. Six of the ten groups each comprise more than 10% of the total share of classes specified in applications, with agricultural products and services accounting for the highest share (16%) of the aggregated total as well as the highest percentage point change between 2007 and 2012. The distribution of trademark applications across industries has remained stable between 2004 and 2012. Like class rankings, the shares of class groups differ across offices.

Table B.4.1.3 Trademark applications by industry sector

Industry sector	Share (%)		
	2007	2012	Change
Agricultural products and services	14.5	16.0	1.6
Textiles - Clothing and Accessories	12.9	14.1	1.2
Scientific research, Information technology, Communications	14.6	13.8	-0.8
Management, Communications, Real estate and Financial Services	11.4	11.8	0.4
Pharmaceuticals, Health, Cosmetics	11.4	11.1	-0.3
Leisure, Education, Training	12.3	11.0	-1.3
Construction, Infrastructure	7.6	6.9	-0.6
Household equipment	6.3	6.5	0.3
Transportation and Logistics	6.0	5.6	-0.3
Chemicals	3.1	2.9	-0.2

Note: For definitions of the class groups, see Annex B for a complete list of the Nice Classification.

Source: WIPO Statistics Database and Edital®, October 2013

B.4.2 Applications by industry sector and office

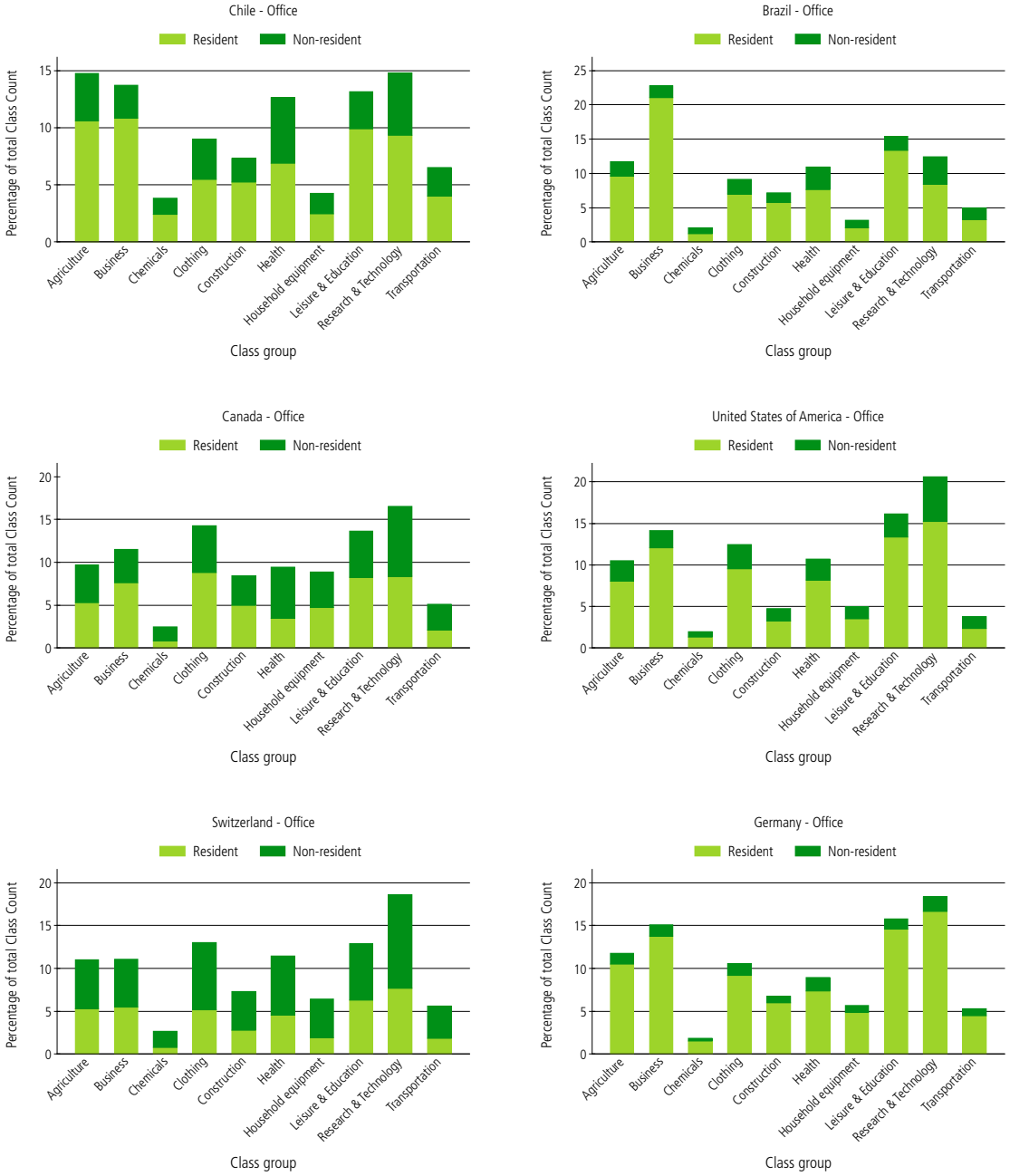
The resulting indicators by class group for selected offices show the share of filings attributed to non-residents for each group, and how the concentration of filing within these categories differs across offices.

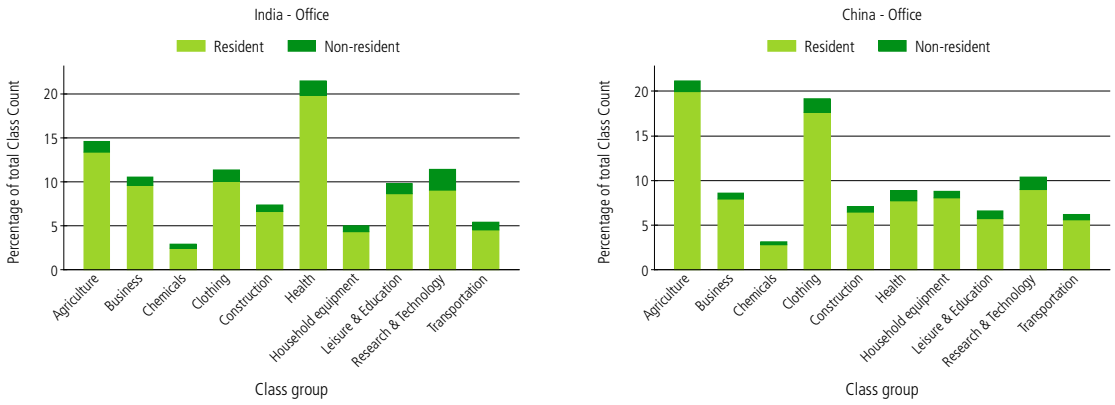
For example, in 2012, the IP office of Chile received its highest shares of trademark applications associated with the agricultural sector and the research and technology sector - approximately 15% from each. In contrast, the office of Brazil received its largest share of applications (over 20%) associated with the business sector.

In China, trademarks associated with the agricultural sector outpaced those associated with the second highest ranked sector (clothing), whereas India reported a higher concentration of trademarks in the health sector.

Canada and the US exhibited similar distributions of trademark filings across sectors, each having a higher proportion of filings in the areas of research and technology, and leisure and education, although Canada's shares of trademark filings attributed to non-resident applicants were higher.

Figure B.4.2.1 Trademark applications by industry sector for selected offices, 2012





Note: Class groups are those defined by Edital®. For definitions of the class groups, see Annex B for a complete list of the Nice Classification.

Agriculture = Agricultural products and services; Business = Management, Communications, Real estate and Financial services; Chemicals = Chemicals; Clothing = Textiles - Clothing and Accessories; Construction = Construction, Infrastructure; Health = Pharmaceuticals, Health, Cosmetics; Household equipment = Household equipment; Leisure & Education = Leisure, Education, Training; Research & Technology = Scientific research, Information and Communication technology; Transportation = Transportation and Logistics

Sources: WIPO Statistics Database and Edital®, October 2013

Consistent with Table B.4.1.3, most of these offices had lower shares of applications filed in the fields of chemicals and transportation. In Brazil, Chile and India, there were even fewer trademarks filed for household equipment than for products and services in the transportation sector. Finally, the sectorial breakdown of the data for the IP offices for Germany and Switzerland shows marked similarities, albeit with much different shares attributed to non-resident filings.

In Figure B.4.1.2, the shares of goods and services classes specified in trademark applications worldwide for 2012 were 65.8% and 34.2%, respectively. However, these shares differed considerably across offices (Figure B.4.2.2). The services classes shares of 40% and higher at more than over half the offices listed reflected applicants' demand for protecting marks in the service industry in different markets. Some 40-45% of trademark filing activity in Argentina, Australia, Mexico, Turkey, the UK and the US was focused on the service sectors in these countries. The offices of France and Germany received more than 45% of their applications for service classes. In the case of the BOIP (Benelux) and the offices of Brazil and Spain, services accounted for the majority of all filing activity.

Conversely, China (76.4%) had the highest percentage of applications falling into the goods classes, with the Asian offices of China Hong Kong (SAR), India and the Republic of Korea also displaying higher goods class shares. Almost two-thirds (66.4%) of all applications filed in the Russian Federation related to trademark protection sought for goods rather than for services.

Figure B.4.2.2 Distribution of trademark applications by goods and services classes for selected offices, 2012

Source: WIPO Statistics Database, October 2013

B.4.3 Applications by industry sector and origin

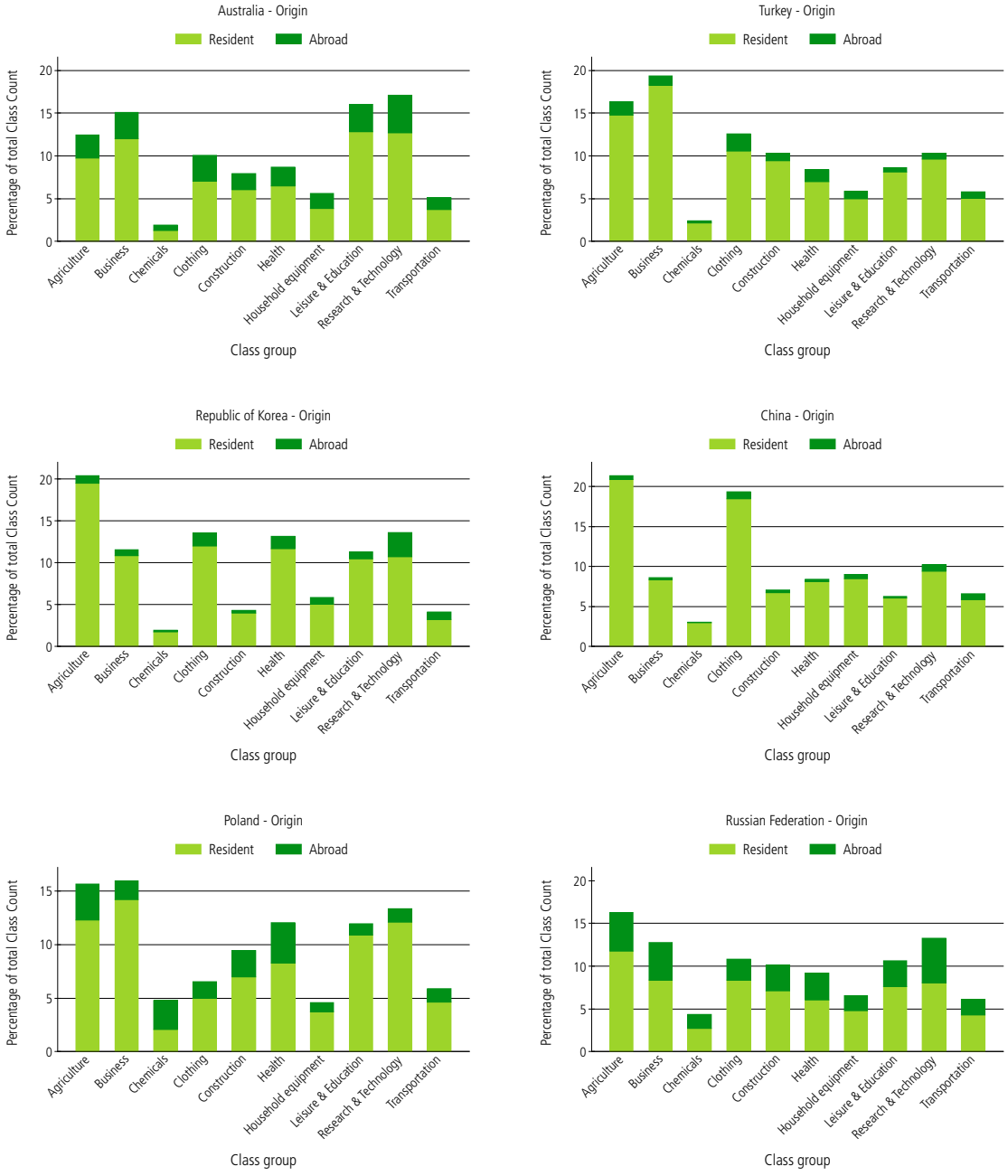
Like B.4.2.1, this subsection analyzes class data by grouping the classes into different industry sectors or class groups (see Annex B for full definitions). However, it breaks down the application data by origin rather than by office. The resulting indicators show trademark filing activity in various sectors by origin, including shares for class counts in resident applications and in filings abroad.

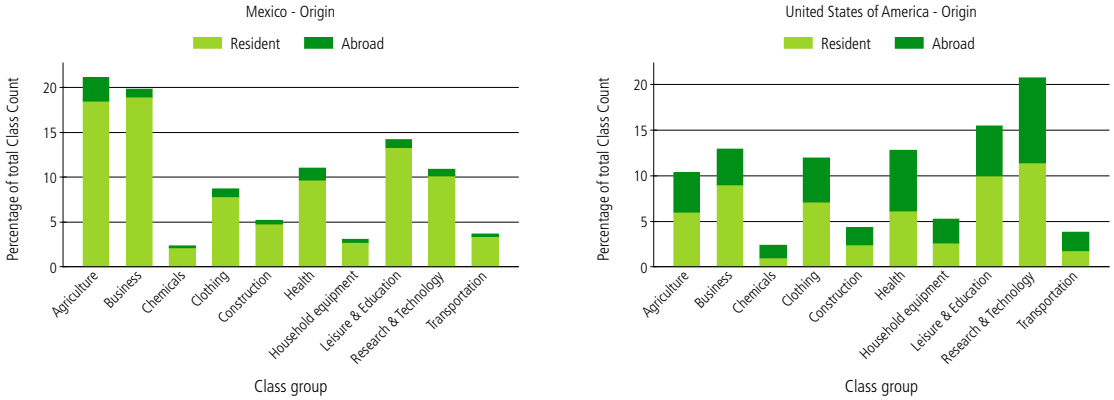
As shown in the Figure B.4.3.1 of the eight origins represented, the agriculture and business sectors received the largest shares of trademark application filing activity by applicants from Mexico, Poland and Turkey, whereas research and technology, and leisure and education were the highest industry sectors in demand by applicants domiciled in Australia and the US.

In the case of origins for China and the Republic of Korea, agriculture, clothing, and research and technology were the top three of the ten defined industry sectors. Together with those from the Russian Federation, applicants from the US had much higher shares of their total filing activity abroad than applicants from the other origins.

As outlined earlier, approximately two-thirds of all trademark applications worldwide in 2012 were goods-related, and one-third services-related. As was the case for IP offices, these shares differed considerably across origins (Figure B.4.3.2). Of the origins listed, seven had over 40% of their applications filed worldwide fall within the services classes, notably the four Latin American origins of Argentina (48.5%), Brazil (62.2%), Chile (46.9%) and Mexico (50%).

Figure B.4.3.1 Trademark applications by industry sector for selected origins, 2012



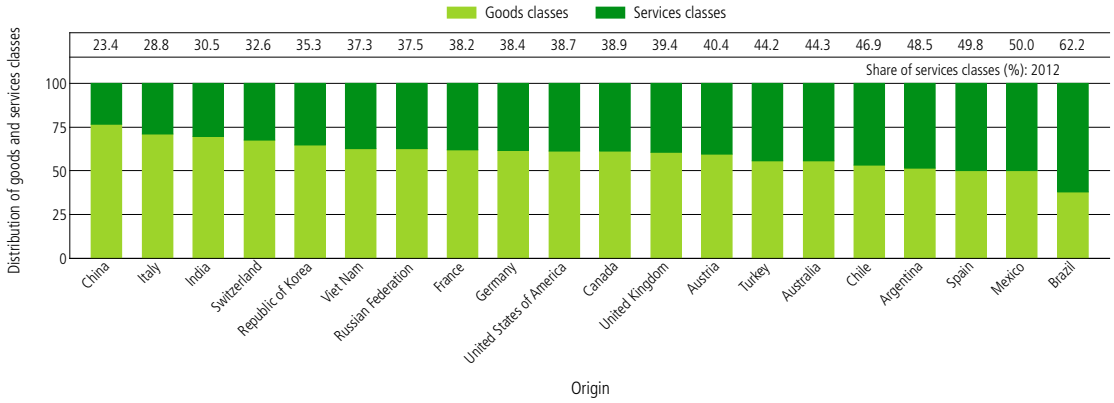


Note: Class groups are those defined by Edital®. For definitions of the class groups, see Annex B for a complete list of the Nice Classification.

Agriculture = Agricultural products and services; Business = Management, Communications, Real estate and Financial services; Chemicals = Chemicals; Clothing = Textiles - Clothing and Accessories; Construction = Construction, Infrastructure; Health = Pharmaceuticals, Health, Cosmetics; Household equipment = Household equipment; Leisure & Education = Leisure, Education, Training; Research & Technology = Scientific research, Information and Communication technology; Transportation = Transportation and Logistics

Sources: WIPO Statistics Database and Edital®, October 2013

Figure B.4.3.2 Distribution of trademark applications by goods and services classes for selected origins, 2012



Source: WIPO Statistics Database, October 2013

B.5

TRADEMARK REGISTRATIONS THROUGH THE MADRID SYSTEM

Section B.5 analyzes only trademark activity occurring in the IP offices of countries, territories or regions that are members of the WIPO-administered Madrid System for the International Registration of Marks (Madrid system). In order to obtain trademark protection in multiple countries or jurisdictions, applicants can either file directly at each individual office – referred to as the Paris route – or they can file an application for an international registration through the Madrid system – known as the Madrid route. It must be noted that Madrid applications and registrations cannot be directly compared to applications filed with national or regional offices, or with the registrations they issue. In 2012, Colombia, New Zealand and the Philippines joined the Madrid system, thereby making it possible for holders to extend protection for their trademarks in up to 88 countries by filing a single international application.

Applicants wishing to use the Madrid system must have obtained or must apply for trademark protection at their national IP office or at a relevant regional IP office before seeking international protection. An international registration under this system produces the same effects as an application for registration of the mark in each of the Madrid members designated by the applicant. If the office of a designated member does not refuse protection within certain time limits, the status of the mark is the same as if it had been registered by that office. Thereafter, the international registration can be maintained and renewed through a single procedure.

B.5.1 Madrid registrations

Figure B.5.1.1 depicts the trend in international trademark registrations issued via the Madrid system from 1995 to 2012. In 2012, registrations saw a third year of continued growth after a decrease in 2009, which followed the onset of the global economic downturn. Madrid registrations increased by 3.1% in 2012, when they reached a new record of almost 42,000 international registrations in total, thus surpassing by approximately 1,000 registrations the pre-global economic crisis level achieved in 2008.

The exceptionally high growth in 2005, when international registrations increased by 41.9%, reflects the accession of the US and the EU to the Madrid system. For the EU, this made it possible for applicants of its member states to apply for international registrations via the regional office OHIM. Figure B.5.1.1 also highlights the fact that international trademark registrations are sensitive to business cycles, with registrations dropping during or immediately following economic downturns. The trend in registrations closely mirrors that of applications.

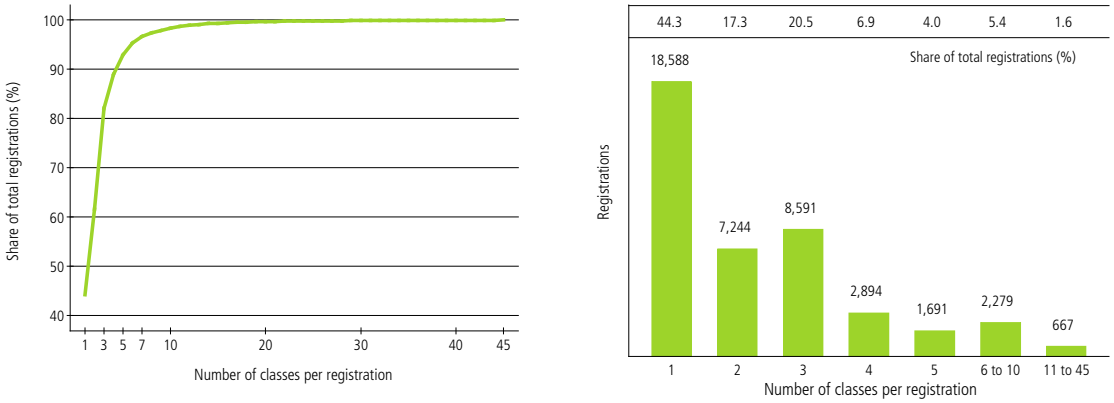
The Madrid system is a multi-class filing system that enables applicants to specify one or more classes in each international trademark application.[3] An average of 2.5 classes were specified in all international registrations in 2012. The left-hand graph in Figure B.5.1.2 shows the cumulative share, whereas the right-hand graph shows absolute numbers. Although the Madrid system is a multi-class system, a high percentage (44.3%) of all international registrations specified only one class; 17.3% specified two classes and 20.5% specified a total of three classes. Six or fewer classes were specified in 95% of the more than 40,000 international registrations, and 13 or more classes were specified in only 1% of total registrations.

3 Each class corresponds to specific industry sectors.

Figure B.5.1.1 Trend in Madrid international registrations

Source: WIPO Statistics Database, October 2013

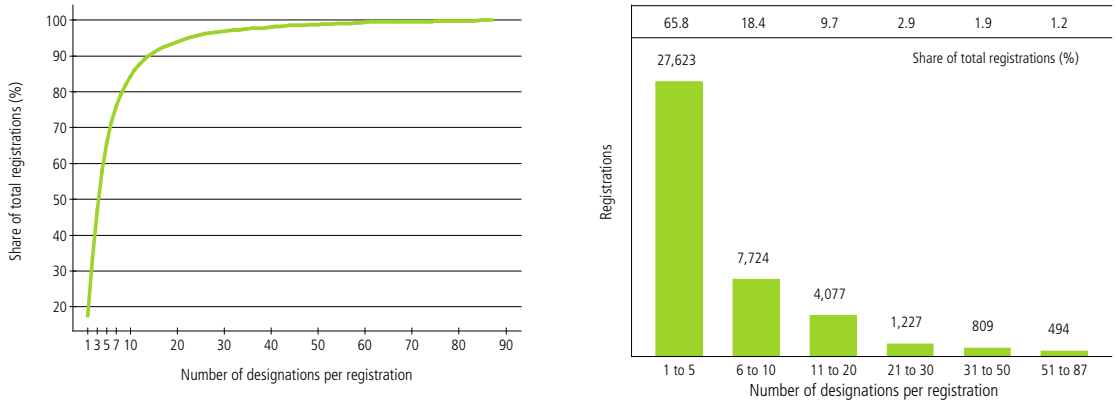
Figure B.5.1.2 Number of classes per Madrid registration, 2012



Source: WIPO Statistics Database, October 2013

The applicant can choose to designate any of the Madrid member countries or jurisdictions in which to seek trademark protection. Again, the left-hand graph in Figure B.5.1.3 shows the cumulative share, and the right-hand graph shows absolute numbers of designations made per international registration. In 2012, an average of 6.7 Madrid members were designated per international registration. The majority (65.8%) of holders of these registrations chose to designate between one and five Madrid members, and 90% designated up to 14 Madrid members in each registration. Only 1% of international registrations filed in 2012 designated more than 54 of the possible 88 Madrid members.

Figure B.5.1.3 Number of designations per Madrid registration, 2012

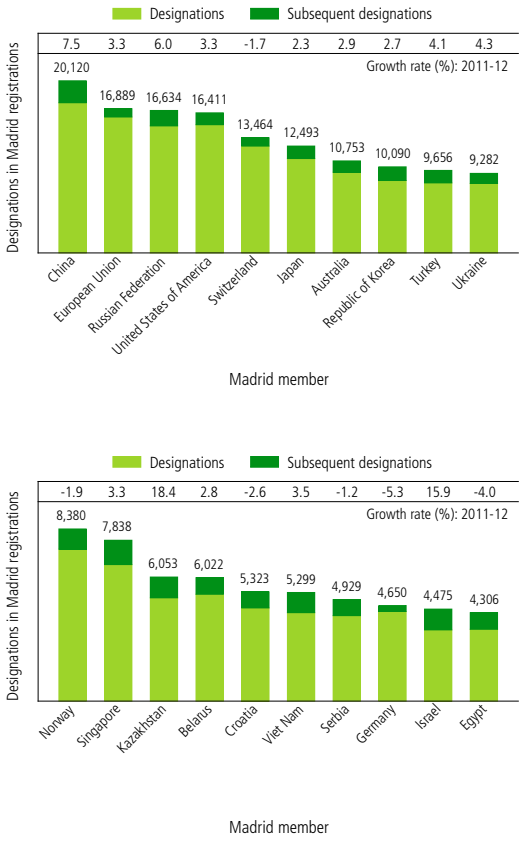


Source: WIPO Statistics Database, October 2013

It is interesting to examine the geographical coverage of international registrations. Designations listed in new international registrations are referred to as individual designations, and designations added to existing international registrations at a later date are referred to as subsequent designations. Figure B.5.1.4 shows the number of both types of designations in international registrations received in 2012 by the top 20 designated Madrid members i.e., the country or jurisdiction in which the holder of the international registration seeks trademark protection. China received the largest number of designations (20,120), followed by the EU (16,889), the Russian Federation (16,634) and the US (16,411), with each accounting for approximately 5% of the total.

The ranking of the top 10 Madrid members is virtually identical to that of 2011, the only difference being that the Russian Federation received a slightly higher number of designations than the US. A total of 14 of the top 20 designated Madrid members experienced annual growth between 2011 and 2012, the most notable being Israel (+15.9%) and Kazakhstan (+18.4%). Despite this development, growth during 2012 represented a slowdown when compared with 2011 growth figures. From 2010 to 2011, designations for the top 10 Madrid members grew by an average of 12.1% compared with an average growth of only 3.5% from 2011 to 2012. It is interesting to note that none of the EU member states, with the exception of Germany, appear among the top 20 designated Madrid members, as EU member states can, as a whole, be covered by a single EU designation at OHIM. This factor is reflected in Germany's year-on-year decreases since 2005 – the year after which the EU became a Madrid member – when Germany fell an additional 5.3% between 2011 and 2012.

Figure B.5.1.4 Designations in registrations for the top 20 designated Madrid members, 2012

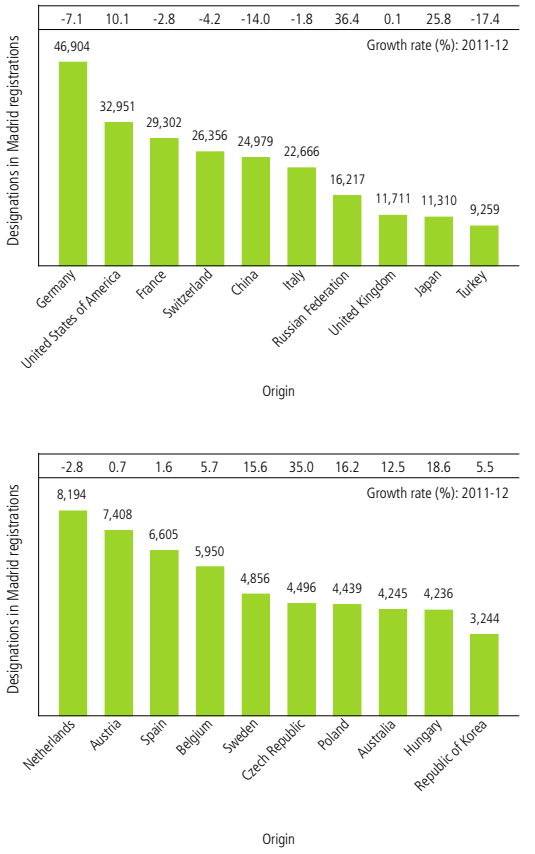


Source: WIPO Statistics Database, October 2013

Figure B.5.1.5 shows the total number of designations – individual and subsequent combined – in Madrid registrations for the top 20 origins in 2012. Reporting the country of origin allows an international registration to be allocated to the applicant's "true origin". This is interesting, particularly in the case of applicants from EU member states, who can either file via the EU's OHIM or via their respective national offices. The largest numbers of designations were made by applicants from Germany (46,904), followed by applicants from the US (32,951) and France (29,302).

A total of 13 of the top 20 origins showed growth in their numbers of designations in 2012. Designations in international registrations from the Russian Federation (+36.4%), the Czech Republic (+35%) and Japan (+25.8%) showed high year-on-year increases.

Figure B.5.1.5 Designations in registrations for the top 20 origins, 2012



Source: WIPO Statistics Database, October 2013

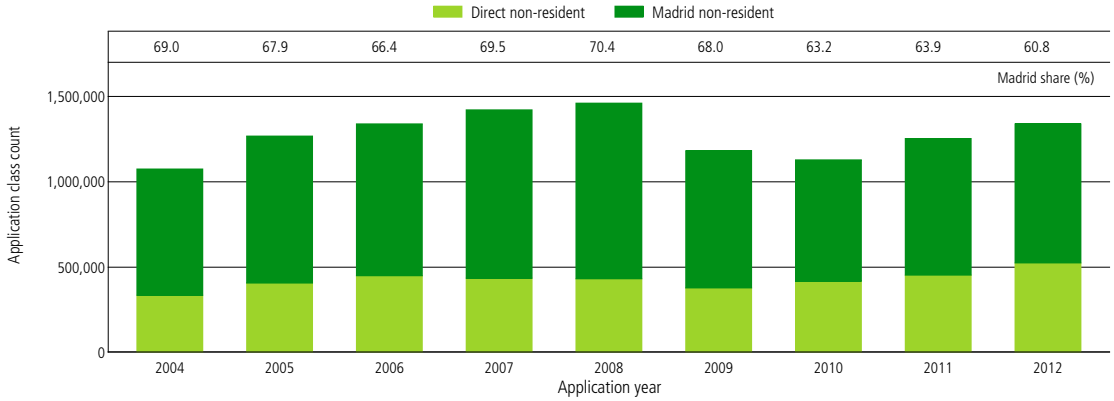
Table B.5.2 Top Madrid applicants

			Madrid international applications		
Ranking	Applicant's name	Origin	2010	2011	2012
1	NOVARTIS AG	Switzerland	118	125	176
2	BOEHRINGER INGELHEIM PHARMA GMBH & CO.	Germany	112	98	160
3	L'OREAL	France	43	67	138
4	GLAXO GROUP LIMITED	United Kingdom	60	51	127
5	SOCIÉTÉ DES PRODUITS NESTLÉ SA	Switzerland	68	80	105
6	RICHTER GEDEON NYRT.	Hungary	8	89	91
7	BSH BOSCH UND SIEMENS HAUSGERÄTE GMBH	Germany	65	74	90
8	PHILIP MORRIS BRANDS S.A.R.L.	Switzerland	137	110	88
9	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	76	92	83
10	EGIS GYÓGYSZERGYÁR	Hungary	53	57	73
11	ZENTIVA GROUP, A.S.	Czech Republic	36	29	65
12	WORLD MEDICINE ILAÇLARI LIMITED	Turkey	..	3	64
13	VOLKSWAGEN AG	Germany	14	27	56
14	SIEMENS AG	Germany	36	52	52
15	MICROSOFT CORPORATION	United States of America	30	15	51
16	BIOFARMA	France	14	14	50
16	NOAO SA	France	..	..	50
18	KRKA	Slovenia	80	26	48
19	MERCK KGaA	Germany	..	26	45
20	HENKEL AG & CO. KGAA	Germany	78	46	42
20	SAINT-GOBAIN SA	France	7	27	42
22	BAYER AG	Germany	23	48	41
22	KOWA COMPANY LTD.	Japan	..	15	41
24	TESCO STORES LTD.	United Kingdom	19	21	39
25	TRIBEKA, LLC	Russian Federation	..	..	37
25	PHILIP MORRIS BULGARIA	Bulgaria	..	13	37
27	AVON PRODUCTS, INC.	United States of America	11	15	35
27	OUT FIT 7 LIMITED	Cyprus	..	..	35
29	BAYERISCHE MOTOREN WERKE AG (BMW)	Germany	42	75	34
29	MEDI GMBH & CO. KG	Germany	..	16	34
31	JANSSEN PHARMACEUTICA NV	Belgium	66	68	33
32	APPLE INC.	United States of America	49	50	32
33	ITM ENTREPRISES, SA	France	32	26	31
34	ABERCROMBIE & FITCH EUROPE SA	Switzerland	22	59	30
34	DAIMLER AG	Germany	31	34	30
34	SPAR ÖSTERREICHISCHE WARENHANDELS AG	Austria	22	23	30
34	UNIVERSAL ENTERTAINMENT CORPORATION	Japan	8	7	30
38	ALMIRALL SA	Spain	3	17	29
38	ALVOGEN PHARMA TRADING EUROPE	Bulgaria	..	3	29
38	FAST LANE VENTURES, LLC	Russian Federation	..	..	29
38	PLUNGES KOOPERATINE PREKYBA UAB	Lithuania	1	4	29
42	SANOFI SA	France	18	47	27
42	AUDI AG	Germany	12	18	27
42	RHODIA OPERATIONS	France	15	..	27
42	ZALANDO GMBH	Germany	..	..	27
46	GRIESSON - DE BEUKELAER GMBH & CO. KG	Germany	8	16	26
46	PARFUMS CHRISTIAN DIOR	France	5	20	26
46	PIVOVARNA UNION D.D.	Slovenia	27	25	26
46	POSLOVNI SISTEM MERCATOR, D.D.	Slovenia	14	10	26
46	SYNGENTA PARTICIPATIONS AG	Switzerland	62	28	26

Note: This list includes applicants that filed 26 or more international applications in 2012.

Source: WIPO Statistics Database, October 2013

Figure B.5.3.1 Non-resident application class counts by filing route at offices of Madrid members



Note: The direct route refers to applications filed directly with national or regional IP offices of Madrid members only. The Madrid route refers to designations received by offices via the Madrid system. For the sake of simplicity, designations are referred to as applications received via the Madrid route.

Source: WIPO Statistics Database, October 2013

B.5.2 Madrid applicants

Table B.5.2 presents the top 50 Madrid system applicants – ranked 1 to 46, as some applicants filed identical numbers of applications. The list covers a variety of industries ranging from automobile manufacturing, to retail and clothing, to pharmaceuticals. About one-third (16) of the top 50 applicants are active in the pharmaceuticals industry. For the second year running, Novartis AG, a Swiss pharmaceutical company, was the largest applicant in 2012, with 176 applications followed by the German pharmaceutical company Boehringer Ingelheim with 160 applications. Cosmetics and beauty company, L'Oréal, was the top French filer with 138 applications, thus ranking it in third position overall.

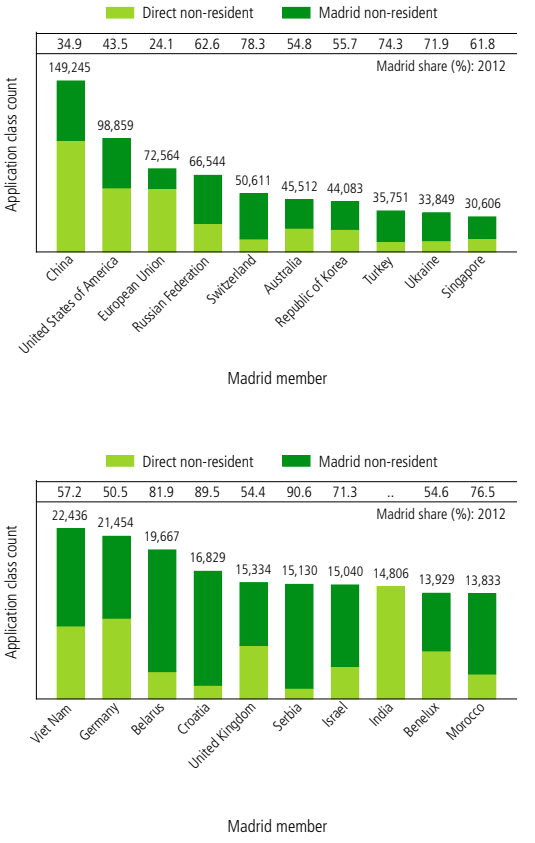
The geographical locations of these applicants vary. For example, 13 of them were from Germany, whereas France and Switzerland had eight and five applicants, respectively. Interestingly, 11 of the top 50 applicants in 2012 were located in Eastern Europe, compared with only 5 in 2011.

B.5.3 Non-resident application class counts by filing route

As outlined earlier, non-resident trademark applications can be filed directly at national and regional IP offices (Paris route) or through the Madrid system (Madrid route). An application received by an office in the form of a designation via the Madrid system has the same effect as one received by an office directly from an applicant. Subsection B.5.3 considers the non-resident filing activity (in terms of application class counts) for Madrid members only. The total number of application class counts filed with Madrid members' IP offices increased by 6.9% from 2011 to 2012, reaching a total of approximately 1.3 million. When broken down by direct filing route and Madrid system filing route, growth for the former was significantly higher at 16.1% compared with just 1.6% growth for the latter. The smaller growth in Madrid designations resulted in an approximately three percentage point decrease (i.e., from 63.9% to 60.8%) in the share of total non-resident application class counts, as highlighted in Figure B.5.3.1. For all years listed, applications received in the form of Madrid designations represented approximately two-thirds of all non-resident filing activity by Madrid members. Since not all offices are members of the Madrid system, this figure was lower (approximately half) when all class counts in non-resident applications filed globally were compared.

Figure B.5.3.2 presents the share of Madrid designations in total non-resident application class counts for the top 20 Madrid members. The share of non-resident application class counts resulting from designations via the Madrid system varies across offices. In 2012, 17 of the top 20 offices received more than half of their trademark filing activity from abroad through designations via the Madrid system, with some IP offices reported receiving upwards of 71-91% of their trademark filing activity from abroad via this system. It is interesting to note that the top Madrid members in terms of non-resident application class counts – China, the EU and the US – all received substantially smaller shares of their non-resident applications via Madrid designations, ranging from 24.1% to 43.5%.

Figure B.5.3.2 Non-resident application class counts by filing route for selected Madrid members, 2012



Note: Protection for registrations issued by the EU's OHIM is extended to 27 EU member states i.e., the number of EU member states in 2012. Similarly, registrations issued by the BOIP are valid in Benelux countries Belgium, Luxembourg and the Netherlands. Some top designated Madrid members – such as France, Japan and Norway – which would otherwise have been included – were omitted due to the lack of available direct application class count data.

Source: WIPO Statistics Database, October 2013

B.6

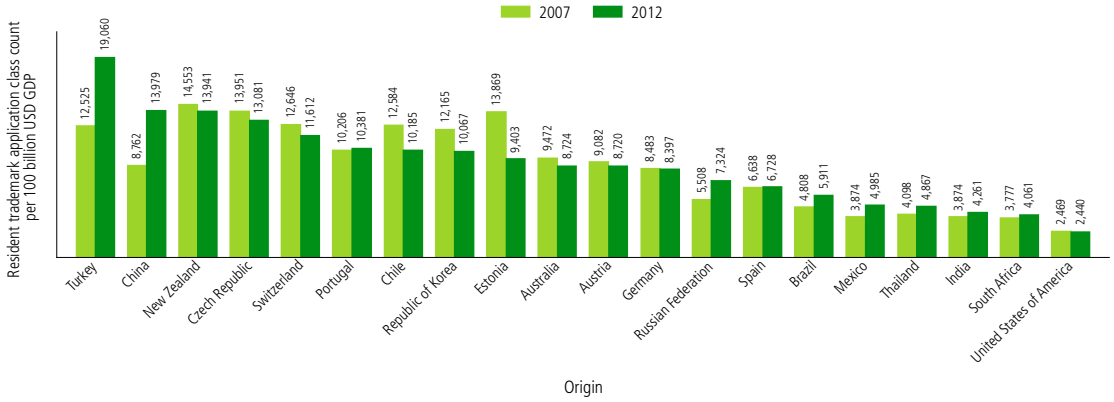
TRADEMARK APPLICATION CLASS COUNTS PER GDP AND POPULATION

Differences in trademark activity across economies reflect to a large extent both the size of the economies and the level of economic development. For the purpose of cross-country comparisons, it is instructive to measure resident trademark activity by application class count relative to GDP or population level. Figures B.6.1 and B.6.2 present the resulting trademark activity intensity indicators for selected origins.

When resident trademark applications are corrected for by equivalent class counts and adjusted by GDP, countries with relatively lower numbers of class counts in resident applications (e.g., the Czech Republic and Estonia) may rank higher than some countries that otherwise show higher numbers of resident application class counts (e.g., Germany and the US). Of the selected origins, Turkey, with 19,060, followed by China, New Zealand, and the Czech Republic (with between 13,000 and 14,000) exhibited among the highest resident application class count-to-GDP ratios in 2012. For all other reported origins, the resident application class count-to-GDP ratio varied from 2,440 for the US to 11,612 for Switzerland. Half of the selected origins for which resident application class count data exist for 2007 and 2012, had higher ratios in 2012 than in 2007, with Turkey exhibiting the largest increase of about 6,500, followed by China with an increase of approximately 5,200. However, the remaining half of these origins experienced decreases, although some were only slight, as was the case for Germany and the US.

When the resident trademark applications per million population data are analyzed, a somewhat different picture emerges. In 2012, the IP office of Switzerland - with a population of 8 million - reported a resident trademark application class count of 36,537. The resulting 4,569 resident application class count per million population made Switzerland one of the most intensive trademark filers according to this alternative indicator. New Zealand (3,581) and Australia (3,112) ranked high in terms of resident application class counts per million population. Among the 20 selected origins, the Russian Federation (1,112) and the US (1,051) had virtually equal numbers of resident application class counts per million population, as was also the case for South Africa (400) and Thailand (412). China more than doubled its resident trademark application count per million population from 459 to 1,112. This reflects the large increase in its resident application activity over the 2007-12 period. Despite exhibiting high resident application activity in both 2007 and 2012, India's large population of 1.24 billion results in a lower ratio of 142 resident application class count per million population.

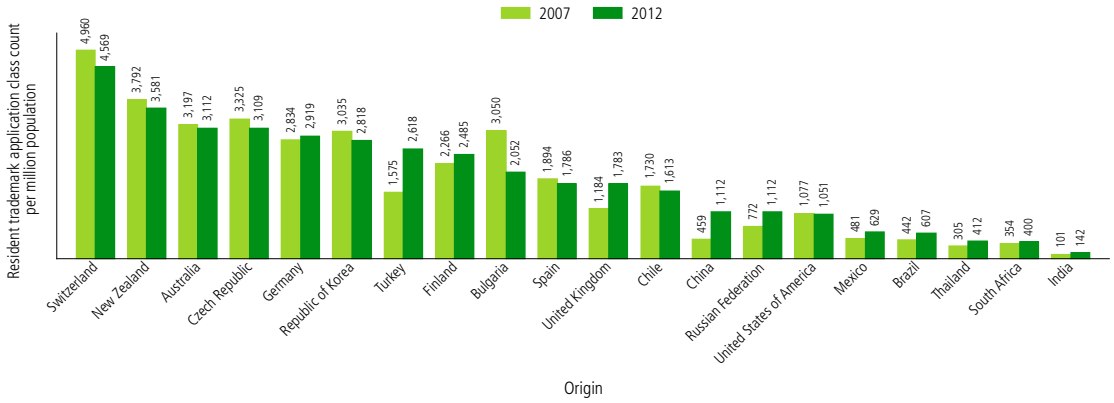
Figure B.6.1 Resident trademark application class count per GDP for selected origins



Note: GDP data are in constant 2005 purchasing power parity (PPP) US dollars. This graph does not provide an overall ranking of all origins; rather, it provides a selection across geographical regions and income groups.

Source: WIPO Statistics Database, October 2013

Figure B.6.2 Resident trademark application class counts per million population for selected origins



Note: This graph does not provide an overall ranking for all origins; rather, it provides a selection across geographical regions and income groups.

Source: WIPO Statistics Database, October 2013

B.7

TRADEMARKS IN FORCE

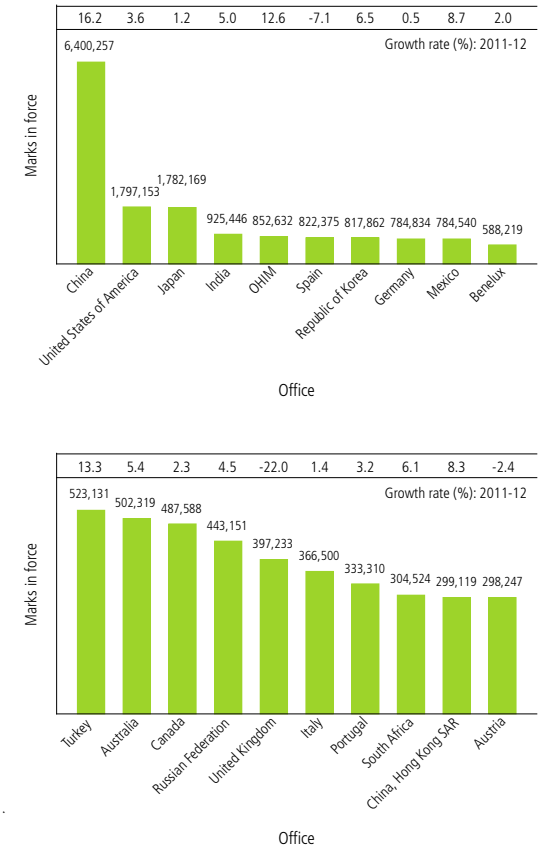
This section presents statistics on trademarks in force, focusing on their breakdown by office, one-year growth, and distribution by year of registration.

Due to data limitations and different reporting practices, it is not possible to estimate the total number of trademarks in force worldwide. However, there were a combined total of about 24 million trademarks in force in 2012 for a sample of 74 IP offices for which these statistics are available.

Figure B.7.1 presents the breakdown by selected offices that issue trademark registrations. Caution should be exercised when comparing these offices, as their statistics do not take into account whether the office has a single- or a multi-class filing system. In other words, in a number of offices, several Nice classes may apply to a single trademark registration. Complete statistics based on class counts for trademarks in force were unavailable.

Of the reported offices, China with 6.4 million accounted for the largest number of trademarks in force in 2012, representing a 16.2% increase on the 5.5 million trademarks in force recorded in 2011. Both the US (1,797,153) and Japan (1,782,169), which had almost equivalent numbers of trademarks in force in 2012, reported more modest growth rates of 3.6% and 1.2%, respectively. India, with 925,446 trademarks in force, also ranks high in the world in terms of trademarks in force. Most of the offices shown in this figure saw growth in the numbers of trademarks in force in 2012, but as was the case for China, both OHIM (+12.6%) and the Turkish office (+13.3%) reported double-digit growth. Of the selected offices presented here, those of Austria (-2.4%), Spain (-7.1%) and the UK (-22%) each saw decreases between 2011 and 2012.

Figure B.7.1 Trademarks in force by office for selected offices, 2012

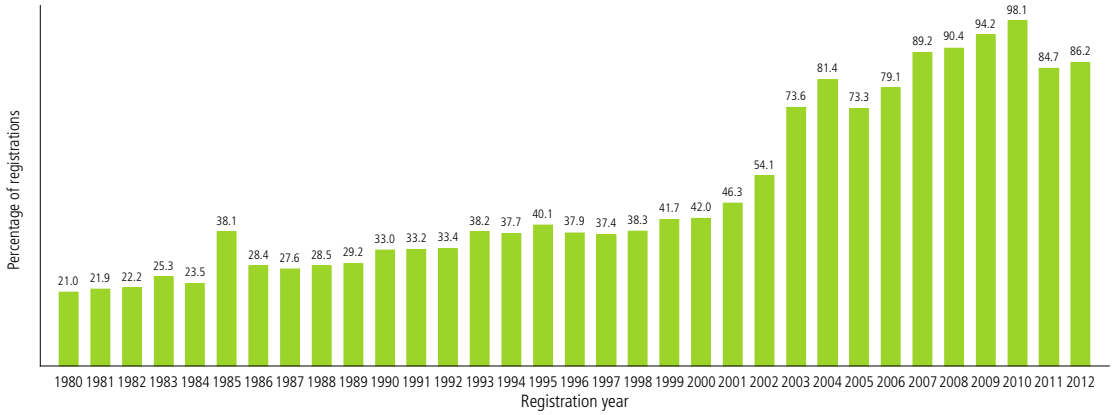


Note: OHIM = Office for Harmonization in the Internal Market; data refer to the number of registrations in force and are not equivalent to the number of classes specified in these registrations.

Source: WIPO Statistics Database, October 2013

Figure B.7.2 depicts, for a total of 62 offices, the distribution of the approximately 13.8 million trademarks that were in force in 2012 according to the year in which they were originally registered. Data for several larger offices, such as those of Brazil, China, France and Japan, are not included in this graph, as the trademarks in force statistics provided by these offices were not broken down by year of registration.

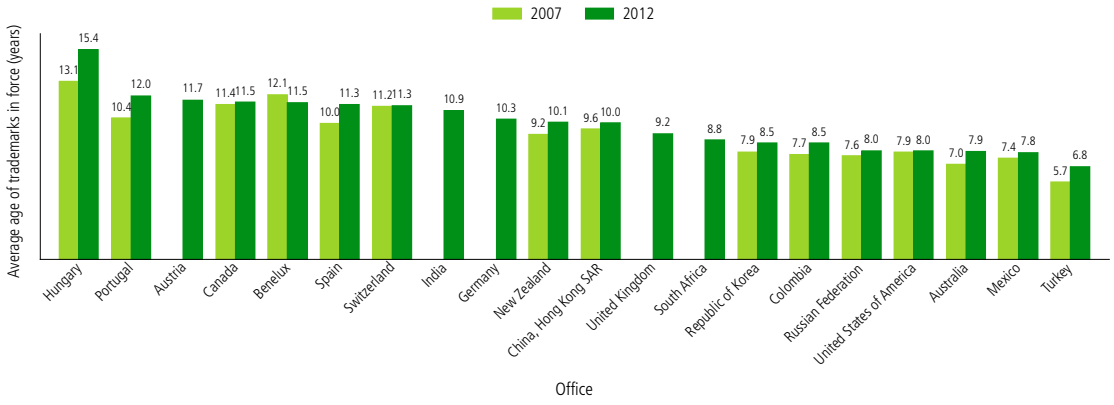
Figure B.7.2 Trademarks in force in 2012 as a percentage of total registrations



Note: Percentages are calculated as follows: the number of trademark registrations issued in year t and in force in 2012 divided by the total number of trademark registrations issued in year t. This graph is based on actual data received from 62 offices (including all larger offices, with the exception of the IP offices of Brazil, China, France and Japan) that provided a breakdown of trademarks in force by year of registration.

Source: WIPO Statistics Database, October 2013

Figure B.7.3 Average age of trademarks in force at selected offices



Source: WIPO Statistics Database, October 2013

This sample of offices shows that approximately 21% of trademarks registered in 1980 were still in force in 2012. These registrations, which have been valid for more than 30 years, reflect the enduring value of certain marks. For trademarks that were registered in the 1990s, the percentage rises to more than 40%.

Of these 13.8 million registrations in force in 2012, approximately a quarter of them have a recent registration year of between 2010 and 2012.

Figure B.7.3 depicts the average age of trademarks in force at selected offices for 2007 and 2012. As is the case for Figure B.7.2, data for several larger offices, such as those of Brazil, China, France and Japan, were not available. The average age of trademarks in force varies among offices. For example, in 2012 trademarks in Hungary had an average age of 15.4 years. This is in contrast to the average age of a trademark in force in Turkey, which was only 6.8 years. The offices of Australia, the Republic of Korea and the US had average ages of approximately 8 to 9 years. Despite the fact that a trademark can be potentially renewed indefinitely, most are not, as reflected in Figure B.7.2. In addition, the increase in recent years of trademark registrations issued by offices reduces the average age of all trademarks recorded in their respective trademark registers. Some European IP offices have reported decreases in trademark application and registration activity in recent years, but this has had little effect on the average age of their trademarks in force since 2007. In some cases, the average age has increased – for example Portugal (+1.6 years) – and in others it has decreased – for example, the BOIP (-0.6 years).

SECTION C
INDUSTRIAL DESIGNS

This section provides an overview of industrial design activity, using a range of indicators and covering the following areas: a) industrial design applications, b) industrial design registrations, c) international registrations of industrial designs (administered by WIPO through the Hague system), d) intensity of industrial design activity and e) industrial design registrations in force. Where possible, statistics on application and registration design counts are provided in order to take institutional differences across intellectual property (IP) offices into consideration. In particular, some IP offices allow applications to contain more than one design for the same product or within the same class, while other IP offices allow only one design per application.

Industrial designs are applied to a wide variety of industrial products and handicrafts.[1] They refer to the ornamental or aesthetic aspects of a useful article, including compositions of lines or colors or three-dimensional forms that give a special appearance to a product or handicraft. The holder of a registered industrial design has exclusive rights over the design and can prevent unauthorized copying or imitation of the design by third parties.

The procedures for registering industrial designs are governed by national or regional laws. An industrial design can be protected if it is new or original, and rights are limited to the jurisdiction of the issuing authority. Industrial design registrations can be obtained by filing an application with a relevant national or regional IP office or by filing an international application through the Hague system. Once a design is registered, the term of protection is generally 5 years and may be renewed for additional periods of 5 years up to, in most cases, 15 years. In some countries, industrial designs are protected through the delivery of a design patent rather than a design registration.

The Hague system comprises several international treaties – the London Act, the Hague Act and the Geneva Act.[2] The Hague system makes it possible for an applicant to register industrial designs in multiple countries by filing a single application with the International Bureau of WIPO. By allowing the filing of up to 100 different designs per application, the system offers significant opportunities for efficiency gains. Moreover, it simplifies the process of multinational registration by reducing the requirement to file separate applications with each office at which protection is sought. The system also streamlines the subsequent management of the industrial design registration, since it is possible to record changes or to renew the registration through a single procedural step. Further information on the Hague system are available at: *www.wipo.int/hague/en/*.

1 The applications to which industrial designs are applied range from technical and medical instruments to watches, jewelry and other luxury items, and from housewares, electrical appliances, vehicles and construction materials to textile designs and leisure goods.

2 The London Act has been frozen since January 2010.

C.1

INDUSTRIAL DESIGN APPLICATIONS AND REGISTRATIONS WORLDWIDE

C.1.1 Applications worldwide

Figure C.1.1.1 shows the total number of designs contained in industrial design applications filed worldwide between 2004 and 2012. World totals are WIPO estimates covering data for 131 offices, and they include both designs contained in applications filed directly at an IP office and those contained in designations received via international registrations through the Hague system.[3]

The long-term trend shows continuous growth in the number of designs contained in applications (i.e., design counts) over the past decade. Design counts increased from approximately 582,000 in 2004 to 1,217,000 in 2012. After a slowdown in growth in 2008 and 2009, the numbers of designs contained in applications have rebounded strongly since 2010, with double-digit growth recorded in each of the past three years. The 2012 growth of 17% was, in fact, the highest recorded since 2004. Growth for all years listed has been mostly due to sharp increases in the number of applications filed in China (see C.2.1.4).

Figure C.1.1.2 provides a breakdown of designs contained in industrial design applications filed worldwide by residence of the applicant. A resident application is defined as an application filed at an IP office by an applicant residing in the country in which that office has jurisdiction. For example, an application filed at the office of Switzerland by a Swiss resident is considered a resident application for that office.[4] Similarly, a resident registration is an industrial design registration based on a resident application. A non-resident application is defined as an application filed at an office of a given country or jurisdiction by an applicant residing in another country. For example, an application filed with the office of Australia by an applicant residing in Canada is considered a non-resident application for the purpose of recording applications at that office. Similarly, a non-resident registration is an industrial design registration based on a non-resident application. An application filed at a regional office is considered a resident application if the applicant is a resident of one of that office's member states, and is considered a non-resident application if the applicant does not reside in one of its member states.[5]

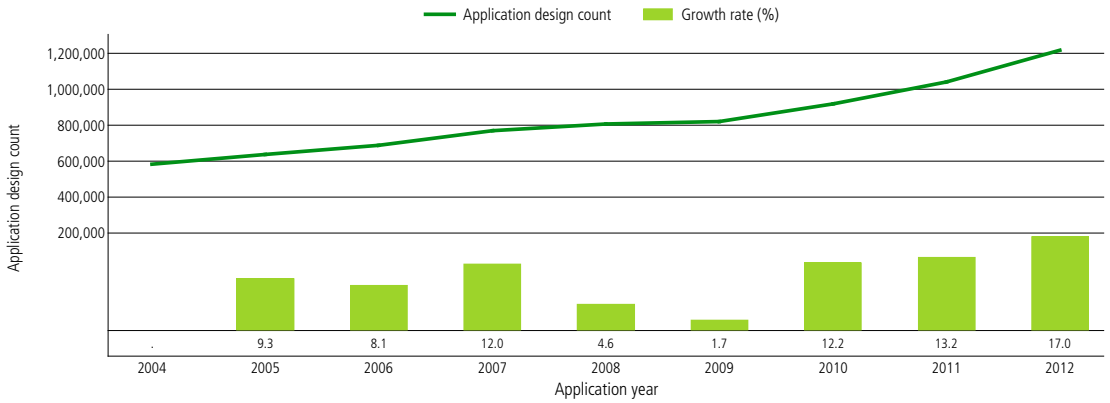
As reflected in Figure C.1.1.2, in 2012 an estimated 1,042,500 designs were filed by resident applicants worldwide, and 174,500 designs were filed by non-resident applicants. Industrial designs are primarily used by resident applicants. Since 2004, the share of non-resident designs contained in applications has decreased steadily from 30.5% in 2004 to 14.3% in 2012. The downward trend is explained by the sharp increase in resident filings at the State Intellectual Property Office of the People's Republic of China (SIPO).

3 The indicators covered in this section include, where applicable, both direct applications (registrations) and designations received via international registrations through the Hague system.

4 For the sake of simplicity, country names are used rather than IP office names to label graphs. For example, industrial design data for China are labeled "China" rather than "State Intellectual Property Office of the People's Republic of China".

5 Resident and non-resident applications (registrations) are also known as domestic and foreign applications (registrations).

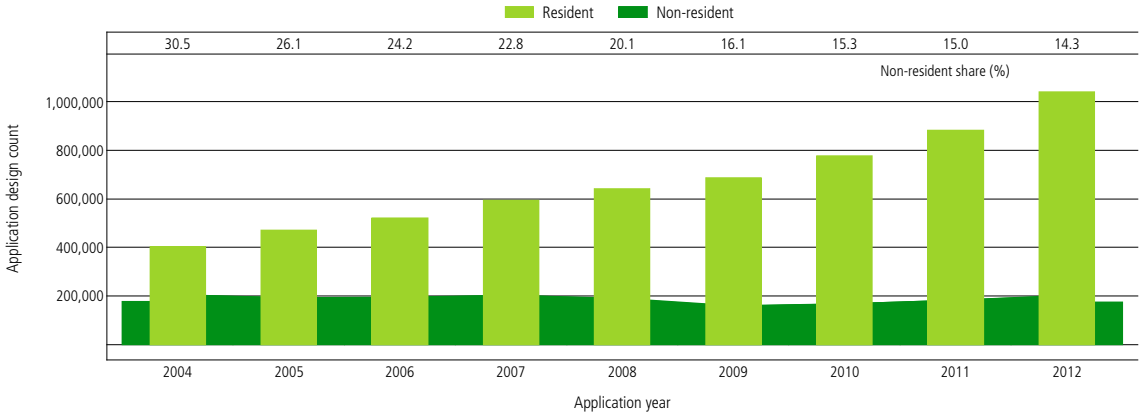
Figure C.1.1.1 Trend in application design counts worldwide



Note: World totals are WIPO estimates covering 131 IP offices (see Data Description). These estimates include direct national and regional applications as well as designations received via the Hague system.

Source: WIPO Statistics Database, October 2013

Figure C.1.1.2 Resident and non-resident application design counts worldwide



Note: World totals are WIPO estimates covering 131 IP offices (see Data Description). These estimates include direct national and regional applications and designations received via the Hague system.

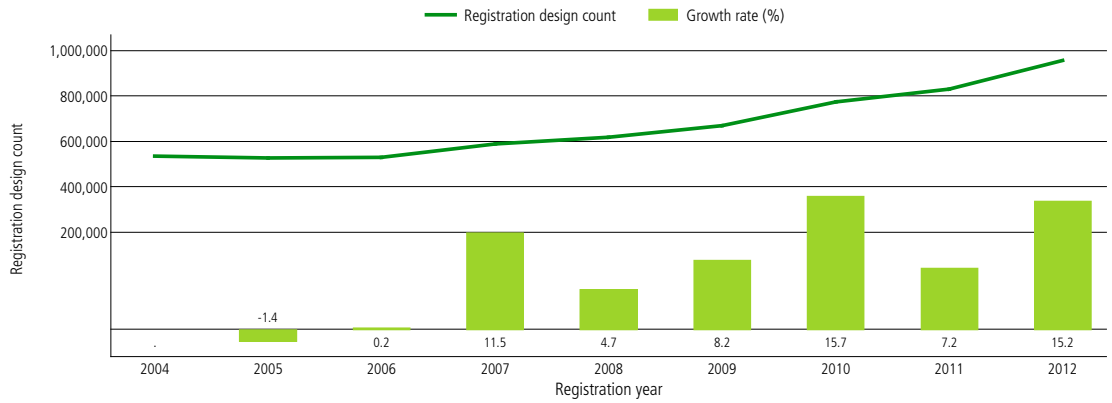
Source: WIPO Statistics Database, October 2013

Compared to 2011, the number of designs in applications filed by residents grew by about 158,500 (+17.9%) in 2012, while non-resident design counts grew by about 18,500 (+11.8%). Residents of China accounted for most of the growth in the total resident design counts, as residents of that country filed applications with 134,863 more designs in 2012 than in the previous year, thus contributing to 85.2% of world resident growth. In contrast, applicants of France, Germany and the US each contributed to about a quarter of world non-resident growth, together accounting for 73.9% of overall growth.

C.1.2 Registrations worldwide

Figure C.1.2.1 shows the estimated number of designs registered worldwide since 2004. Following three years of relative stagnation at about 530,000 designs per year, the number of designs contained in registrations has increased markedly since 2006. In 2012, an estimated 955,500 designs were registered worldwide. The 2012 annual growth rate of 15.2% was the second highest rate reported, only slightly lower than the rate reported for 2010 (15.7%). The large increases observed since 2006 were mainly due to strong growth at SIPO, which issued registrations for approximately 364,000 more designs in 2012 than in 2006.

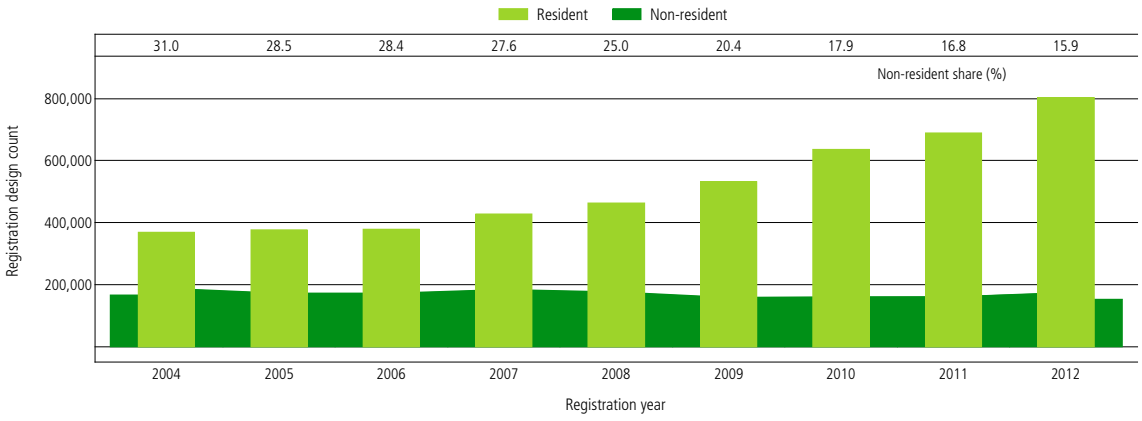
Figure C.1.2.1 Trend in registrations design counts worldwide



Note: World totals are WIPO estimates covering 131 IP offices (see Data Description). These estimates include registrations issued for direct applications and designations received via the Hague system.

Source: WIPO Statistics Database, October 2013

Figure C.1.2.2 Resident and non-resident registration design counts worldwide



Note: World totals are WIPO estimates covering 131 offices (see Data Description). These estimates include registrations issued for direct applications and designations received via the Hague system.

Source: WIPO Statistics Database, October 2013

As is the case for applications (see Figure C.1.1.2), resident applicants accounted for the vast majority of designs registered worldwide. Figure C.1.2.2 shows that the non-resident share of designs contained in registrations has decreased from 31% in 2004 to 15.9% in 2012. Again, the decrease in the non-resident share was due to considerable growth in resident registrations issued in China, as well as relative stagnation in non-resident design registrations worldwide. The estimated number of resident and non-resident designs contained in registrations stood, respectively, at 803,500 and 152,000 in 2012. When compared with figures for 2011, this represented an increase of 16.5% for resident designs and 8.8% for non-resident designs.

C.2

INDUSTRIAL DESIGN APPLICATIONS AND REGISTRATIONS BY OFFICE

This subsection offers a detailed breakdown of industrial design applications and registrations by IP office.

C.2.1 Application design counts by office

As shown in Table C.2.1.1, with 393,200 designs contained in applications in 2007, the IP offices of high-income countries received almost 60,000 more application design counts than did those of upper middle-income countries. Five years later, in 2012, upper middle-income country offices received 739,100 designs in applications i.e., over 300,000 more designs than did the offices of high-income countries. However, the number of designs in applications filed in upper middle-income countries was considerably lower when the figures for China were excluded from the total figures. In both 2007 and 2012, the offices of lower middle-income and low-income countries received approximately 35,000 and 4,000 designs in applications, respectively.

Between 2007 and 2012, the share of resident filings in total filings increased for each income group, to the extent that in 2012 resident design counts outnumbered those of non-residents for every income group. The low-income and lower middle-income groups saw their resident shares increase the most over this period of time, with growth of 10.7 and 7.8 percentage points, respectively. This trend can be explained by an increase in resident design counts for all income groups, coupled with a decrease in non-resident design counts for all groups excluding the high-income group, and also excluding filings at SIPO.

Table C.2.1.1 Applications design counts by income group

Income group	Number of designs in applications		Resident share (%)		Share in world total (%)		Average growth (%)
	2007	2012	2007	2012	2007	2012	2007-12
High-income	393,200	437,700	71.0	73.7	51.1	36.0	2.2
Upper middle-income	336,800	739,100	88.0	94.5	43.8	60.7	17.0
…Upper middle-income without China	*69,400*	*81,500*	*62.1*	*68.4*	*9.0*	*6.7*	*3.3*
Lower middle-income	35,100	35,900	46.2	54.0	4.6	3.0	0.5
Low-income	4,300	4,000	39.9	50.6	0.6	0.3	-1.4
World	**769,400**	**1,216,700**	**77.2**	**85.7**	**100**	**100**	**9.6**

Note: Total by income groups are WIPO estimates covering 131 offices. Each category includes the following number of IP offices: high-income (50), upper middle-income (37), lower middle-income (27) and low income (17). OHIM data are allocated to the high-income group, as the majority of European Union member states are high-income countries. For the same reason, African Intellectual Property Organization (OAPI) data are allocated to the low-income group.

Source: WIPO Statistics Database, October 2013

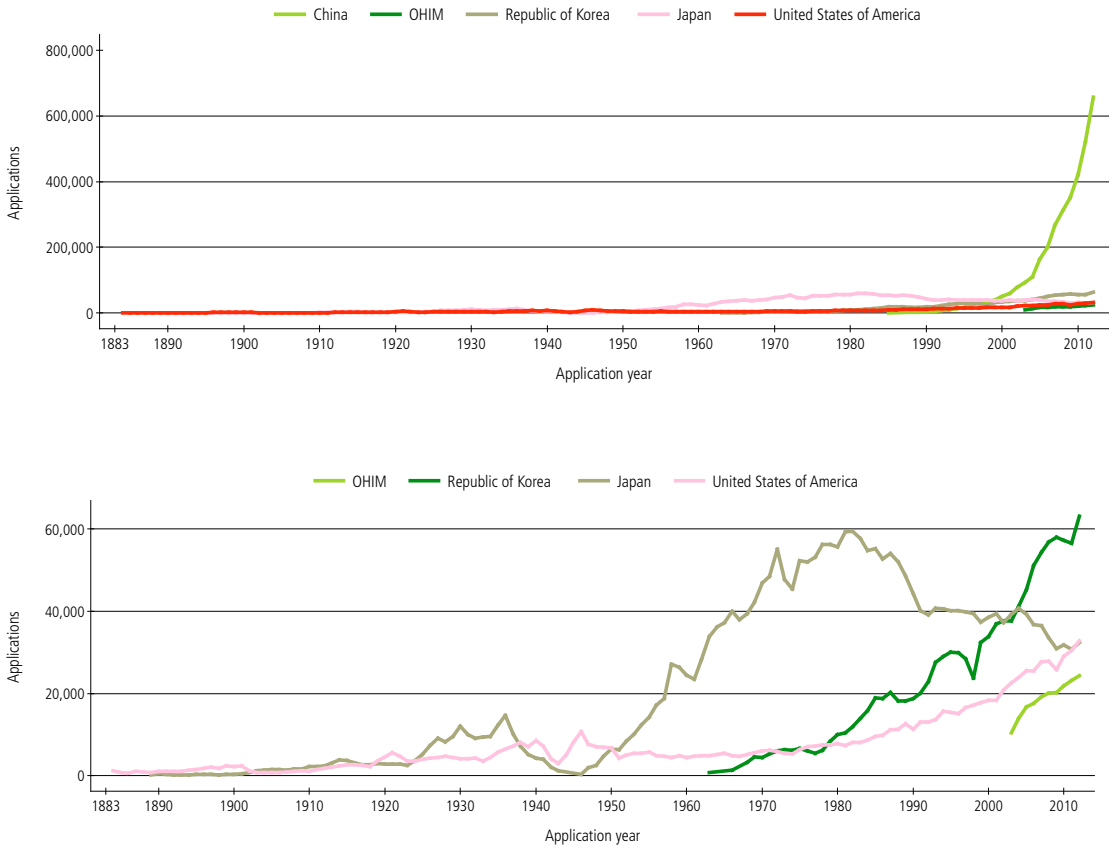
In 2007, approximately half of all designs in applications worldwide (51.1%) were filed at the offices of high-income countries, but by 2012, the high-income group share of world total had fallen to 36%. In fact, the exponential growth in industrial design filings in China (see C.2.1.2) explains the decrease in share for all income groups with the exception of the upper middle-income group (with China included). SIPO's share of total world filings increased from 34.8% in 2007 to 54% in 2012.

The 2007-12 average annual growth for the upper middle-income group was by far the highest recorded among all income groups. With growth of 17%, the upper middle-income group was the only one to exceed the world growth figure of 9.6%. Even when the figures for China were excluded from total figures for this group, the upper middle-income group still accounted for the largest increase (+3.3%). The upper middle-income group was followed by the high-income (+2.2%) and lower middle-income (+0.5%) groups. In contrast, designs filed at the IP offices of low-income countries decreased by 1.4% over the same period.

Figure C.2.1.2 presents the trend in numbers of applications received by the top five IP offices between 1883 and 2012.[6] The data refer to application counts rather than design counts due to the unavailability of historical design count data. The Japan Patent Office (JPO) and the United States Patent and Trademark Office (USPTO) received, on average, similar numbers of applications between 1883 and 1950. The JPO began to receive the largest number of applications from the 1950s to the late 1990s, when it was surpassed by SIPO. Industrial design applications were first received at SIPO in 1985, after which filings grew at a sustained pace until the early 2000s, whereupon they grew exponentially. Since the early 1980s, the number of applications received by the JPO has followed a downward trend. In contrast, activity at the Korean Intellectual Property Office (KIPO) and the USPTO has exhibited an upward trend. In 2004, KIPO surpassed the JPO, and has since maintained its ranking in second position. In 2012, the USPTO surpassed the JPO by a few hundred applications, to achieve its ranking in third position. The Office for Harmonization in the Internal Market (OHIM) of the European Union began issuing its Registered Community Design (RCD) in 2003 and has since become the fifth largest office in terms of application field.

6 The upper graph shows the trend for the top five offices. Because of large differences between China and the other four offices in terms of volumes of applications, it is difficult to observe fluctuations. For this reason, the lower graph reports data for other offices, excluding China.

Figures C.2.1.2 Trend in industrial design applications for the top five offices



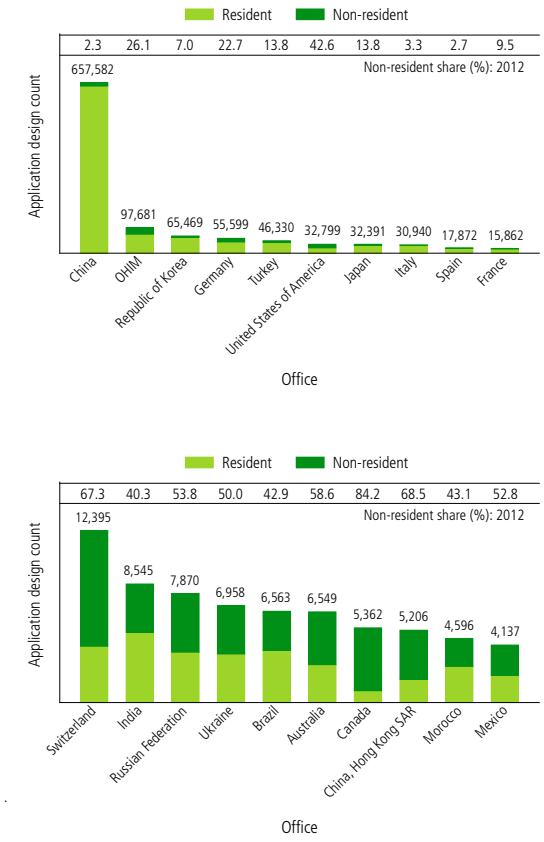
Note: OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

Figure C.2.1.3 shows the number of designs contained in applications filed at the top 20 IP offices. With 657,582 design counts, SIPO was by far the largest office worldwide. It was followed by OHIM, KIPO and the office of Germany, which each received between 50,000 and 100,000 designs in applications. In 2012, 11 offices received applications containing more than 10,000 designs.

The non-resident share for design counts varied considerably across offices. Non-resident applicants accounted for the largest proportion of design counts at the offices of Canada (84.2%), China Hong Kong (SAR) (68.5%) and Switzerland (67.3%). In contrast, the non-resident share was below 5% at SIPO (2.3%) and at the offices of Italy (3.3%) and Spain (2.7%). Among the top 10 offices, resident applicants accounted for the bulk of total design counts.

Figure C.2.1.3 Application design counts for the top 20 offices, 2012



Note: Application design count data for the UK were not available; OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

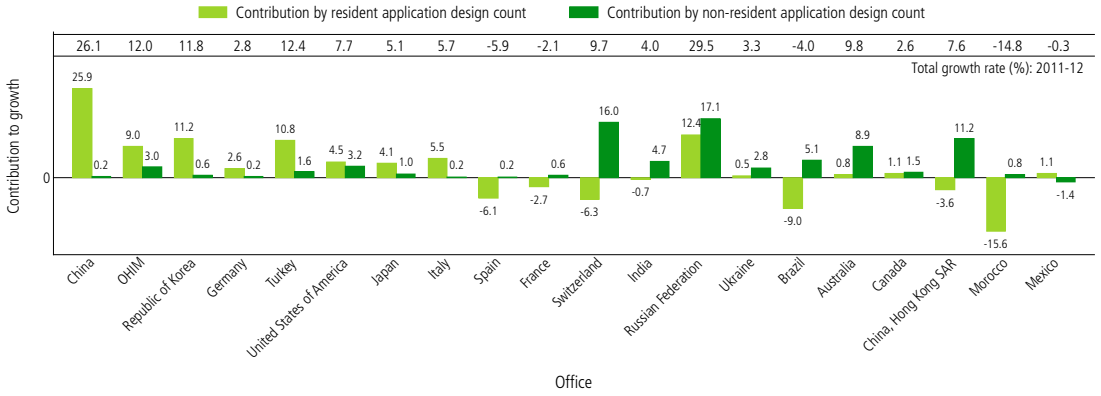
Three-fourths of the top 20 IP offices listed in Figure C.2.1.4 saw growth in the number of designs contained in applications in 2012 compared to 2011. Five offices experienced double-digit growth for the same period. Growth was highest at the offices of the Russian Federation (+29.5%), SIPO (+26.1%), Turkey (+12.4%), OHIM (+12%) and KIPO (+11.8%). With the exception of the office of the Russian Federation, resident filings accounted for most of the growth at these five offices. For example, resident growth accounted for almost all of the growth at SIPO and KIPO. Even though resident filings also markedly increased at the office of the Russian Federation, its non-resident filings increased even faster.

Drops in the numbers of designs contained in resident filings explained the overall decreases observed at the offices of Morocco (-14.8%), Spain (-5.9%), Brazil (-4%) and France (-2.1%). In contrast, the decrease of 0.3% in designs at the office of Mexico was due to a decrease in the non-resident component of 1.4 percentage points on 2011.

Figure C.2.1.5 shows design count data for offices of selected middle- and low-income countries. Among the reported offices, Thailand (3,481), South Africa (2,361), the Republic of Moldova (2,193), Viet Nam (2,107) and Malaysia (2,082) were the offices that received the highest numbers of designs in applications for 2012.

The non-resident share of total application design counts varied widely from one office to another. The non-resident share was higher than 90% for six offices, and approaching 100% for the offices of Montenegro (99.3%) and Azerbaijan (96.8%). In contrast, resident designs accounted for the bulk of total designs contained in applications at eight of the selected offices. This is illustrated by their low non-resident shares at a number of offices such as those of Bangladesh (7%), Algeria (18.2%), Pakistan (20.4%) and Belarus (24.8%).

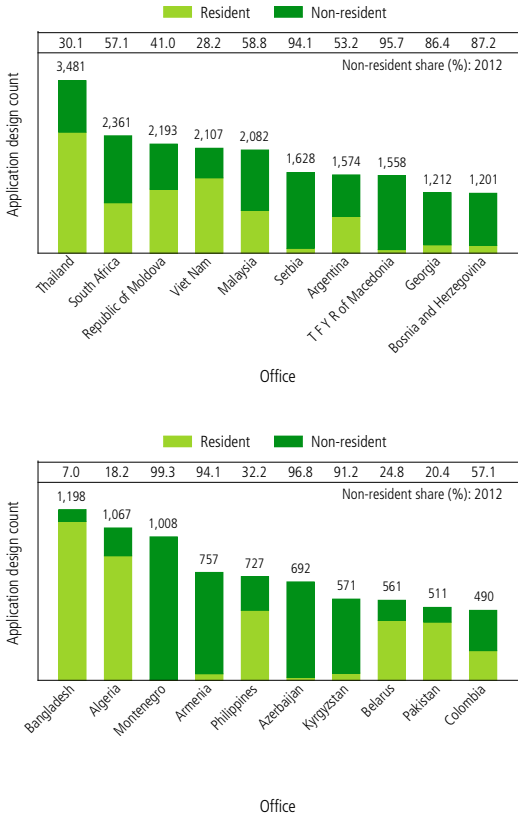
Figure C.2.1.4 Contribution of resident and non-resident application design counts to total growth for the top 20 offices, 2011-12



Note: OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

Figure C.2.1.5 Application design counts for offices of selected middle- and low-income countries, 2012



Source: WIPO Statistics Database, October 2013

C.2.2 Registration design counts by office

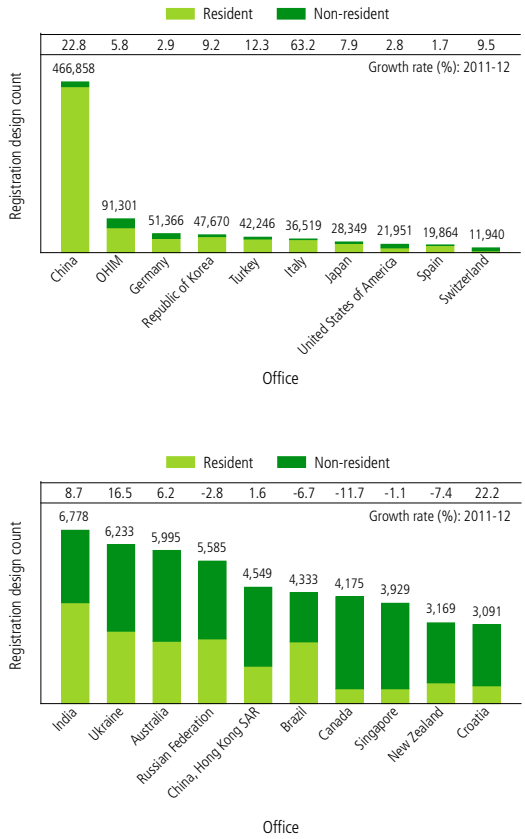
Figure C.2.2.1 shows the number of designs contained in registrations for the top 20 offices. There were strong similarities between application and registration design count data for most offices, even though registration volumes were usually lower.[7] However, for KIPO, SIPO and the USPTO the differences between registration and application design counts were higher, where design counts for registrations were much lower than those for applications. In 2012, SIPO issued by far the highest number of registrations containing 466,858 designs, followed by OHIM (91,301), the office of Germany (51,366) and KIPO (47,670).

As was the case for applications, resident designs accounted for the bulk of total designs contained in registrations issued by the top 9 offices. For the 11 remaining offices, non-resident designs outnumbered resident designs, except for the offices of India (41.6%) and Brazil (44.3%).

7 This may reflect the fact that, for many IP offices, the registration process involves only a formality examination, thus resulting in registrations issued for most applications.

Most offices saw growth in their registration design counts between 2011 and 2012. Italy (+63.2%), China (+22.8%) and Croatia (+22.2%) experienced the largest increases among the top 20 offices. In contrast, five offices saw decreases, of which Canada (-11.7%), New Zealand (-7.4%) and Brazil (-6.7%) saw the sharpest drops.

Figure C.2.2.1 Registration design counts for the top 20 offices, 2012



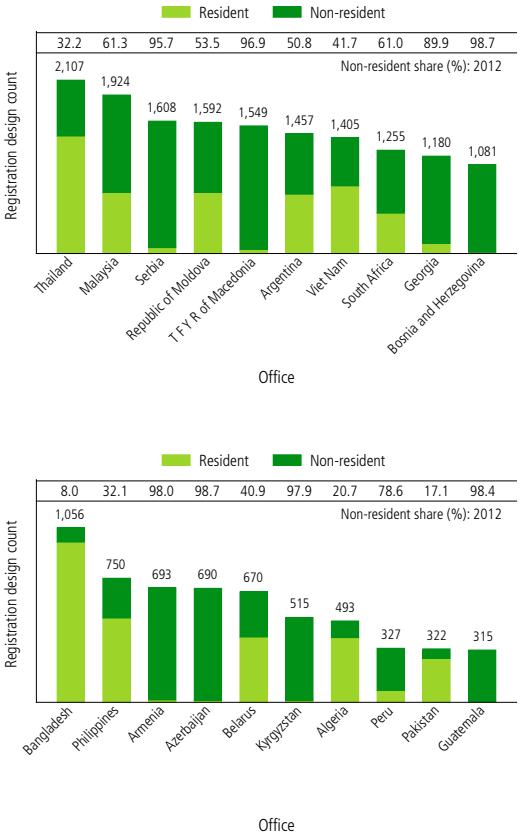
Note: Registration design count data for France and the UK were not available. OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

Figure C.2.2.2 shows the number of designs in registration issued in 2012 at offices of selected middle- and low-income countries. Eleven of these selected offices each issued registrations containing over 1,000 designs in 2012, of which the offices of Thailand (2,107), Malaysia (1,924) and Serbia (1,608) issued the highest. The offices of the Republic of Moldova (1,592), Viet Nam (1,405) and Georgia (1,180) had the highest design registration volumes among the lower middle-income countries in 2012. Two offices of low-income countries also witnessed high registration activity in 2012, namely those of Bangladesh (1,056) and Kyrgyzstan (515).

The shares of non-resident design counts varied widely from one office to another. The non-resident shares were lowest at the offices of Bangladesh (8%), Pakistan (17.1%) and Algeria (20.7%), but were highest at the offices of Bosnia and Herzegovina (98.7%), Azerbaijan (98.7%) and Guatemala (98.4%).

Figure C.2.2.2 Registration design counts for offices of selected middle- and low-income offices, 2012



Note: TFYR of Macedonia = The Former Yugoslav Republic of Macedonia

Source: WIPO Statistics Database, October 2013

C.3

Industrial design applications by origin

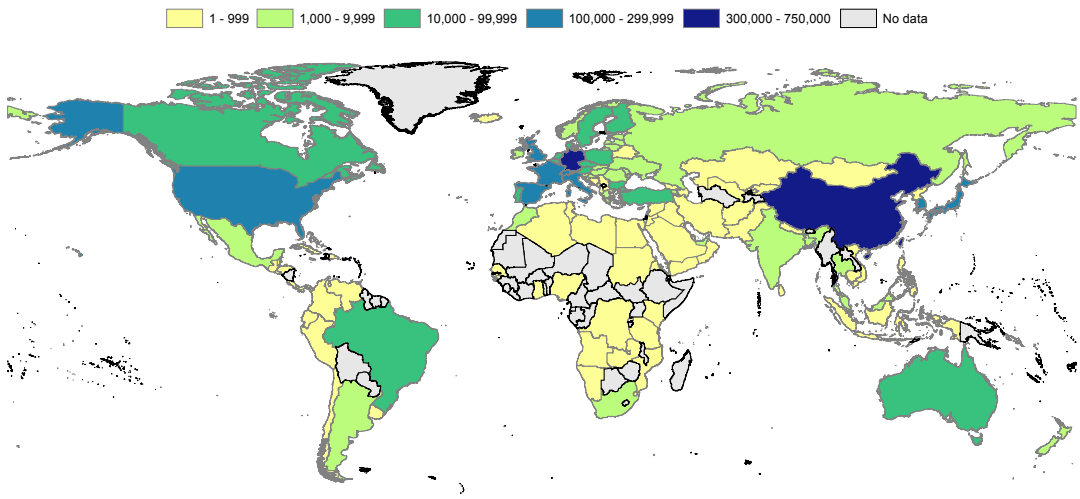
This subsection presents statistics on the origin of applicants filing industrial designs. It shows designs contained both in resident applications and in applications filed abroad. The origin of an application is determined by the residence of the first-named applicant. As some offices did not provide data broken down by origin, the number of applications by origin reported here is likely to be lower than the actual number. In 2012, approximately 29,000 designs in applications (2.4% of designs filed worldwide) were not recorded with a valid country of origin.

Figures are based on absolute numbers or on equivalent counts. The method used to report data is indicated for each figure. In the case of equivalent counts, designs contained in applications at regional offices are equivalent to multiple designs in applications in the respective member states of those offices. In order to calculate the number of equivalent designs for the African Intellectual Property Organization (OAPI), the Benelux Office for Intellectual Property (BOIP) or OHIM, each design in applications is multiplied by the corresponding number of member states. In contrast, the African Regional Intellectual Property Organization (ARIPO) does not register industrial designs with automatic region-wide applicability. Thus, for this office, each application is counted as one application abroad if the applicant does not reside in a member state, or is counted as one resident and one application abroad if the applicant resides in a member state. This method might underestimate the number of designs filed at ARIPO, as applications received by this office may lead to protection being granted in more than one jurisdiction. Lack of available data is the main reason for limiting the number of applications abroad to one in the case of this particular IP office.

Figure C.3.1 shows the total number of equivalent designs filed worldwide by country of origin. It is important to note that the data shown in this map may be lower than the actual data, as some offices did not provide design count data, or do not provide detailed information on the origin of applications. The data include both resident filings and filings abroad. In 2012, the majority of equivalent design counts in applications filed worldwide were in Europe (61.6%). Asia accounted for 29.7% of the total, whereas the share for North America was 7.2%. These three regions combined accounted for 98.6% of the world total. Applicants from the three other regions accounted for the remaining 1.4%.

In each of four of the world's six main geographical regions, a single country accounted for the majority of designs contained in applications filed. This was the case for the US (92% of filings from North America), Australia (87% of filings from Oceania), China (67.9% of filings from Asia) and Brazil (61.1% of filings from LAC). Even though South Africa and Germany did not account for the majority of application design counts originating in their respective regions, they still reported substantial contributions, accounting for 40.9% and 29.7% of African and European filings, respectively.

Figure C.3.1 Equivalent application design counts by origin, 2012



Note: Data shown may be lower than actual figures, as some offices did not provide their design count data, or data for origins were incomplete.

Source: WIPO Statistics Database, October 2013

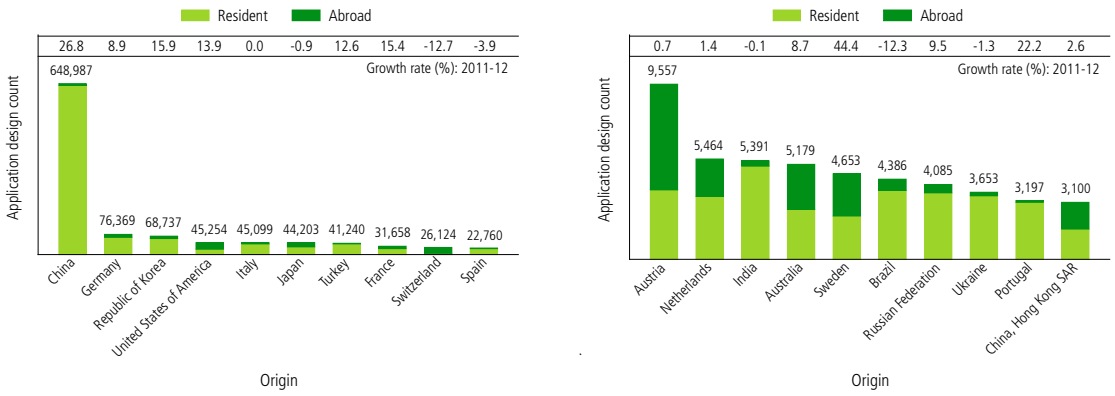
Figure C.3.2 shows the actual number of designs contained in applications filed by the top 20 origins in 2012. Residents of China filed, worldwide, applications containing almost 650,000 designs, followed by those of Germany (76,369) and the Republic of Korea (68,737). Applicants from the US (45,254), Italy (45,099) and Japan (44,203) had similar design counts.

For the vast majority of the top 20 listed origins, the resident application design counts were higher than those filed abroad. For example, applicants residing in China filed applications containing 99% of their designs at SIPO. Among the top 20 origins, applicants from only three countries filed applications containing the majority of their designs abroad in 2012. This was the case for applicants residing in Switzerland (84.5%), Austria (60.5%) and the US (58.4%).

Between 2011 and 2012, 14 of the top 20 origins saw growth in application design counts of which seven experienced double-digit growth. Sweden (+44.4%), China (+26.8%) and Portugal (+22.2%) had the highest growth, while Switzerland (-12.7%), Brazil (-12.3%) and Spain (-3.9%) saw the largest decreases.

Figure C.3.3 shows the actual number of designs contained in applications originating in selected middle- and low-income countries in 2012. Among this selection of origins, applicants from Ukraine (3,653), Morocco (2,647), Thailand (2,568) and Mexico (2,095) each filed applications containing more than 2,000 designs worldwide.

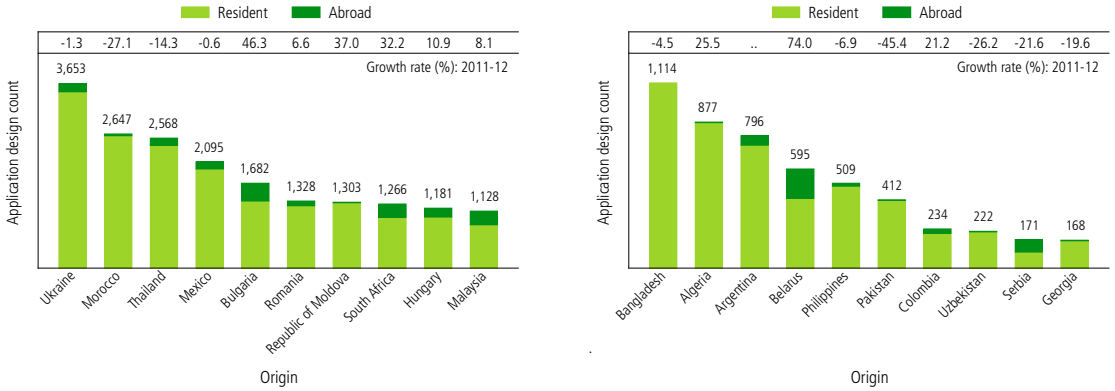
Figure C.3.2 Application design counts for the top 20 origins, 2012



Note: Data shown may be lower than actual figures, as some offices did not provide their design counts, or data for origins were incomplete. An application filed at a regional office is considered a resident filing if the applicant is a resident of one of that office's member states.

Source: WIPO Statistics Database, October 2013

Figure C.3.3 Application design counts for selected middle- and low-income origins, 2012



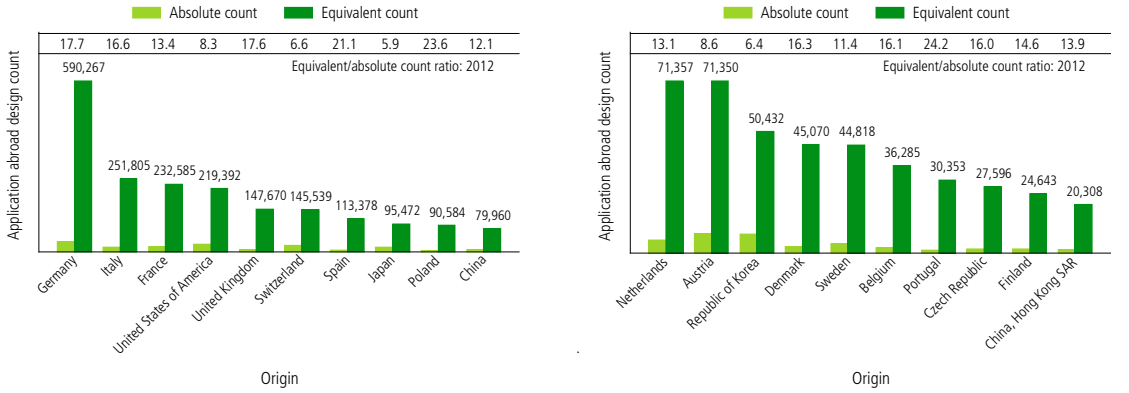
Note: ".." = not available. Data shown may be lower than actual figures, as some offices did not provide their design counts, or data for origins were incomplete. An application filed at a regional office is considered a resident filing if the applicant is a resident of one of that office's member states.

Source: WIPO Statistics Database, October 2013

The share of resident filings in the overall total was high for most origins. It was higher than 90% for 13 origins and greater than 50% for all 20 reported origins. In contrast, Serbia (44%), Belarus (29%) and Malaysia (24%) had higher filings abroad shares. In absolute terms, applicants from Bulgaria (362), Malaysia (271) and South Africa (252) had the highest filing activity abroad within this selection of middle- and low-income origins.

Figure C.3.4 compares the absolute number of designs contained in applications with the number of equivalent design counts for the top 20 origins in 2012 for filings abroad. As outlined earlier, for equivalent counts, designs contained in applications at regional offices are equivalent to multiple designs in applications in the respective member states of those offices. The following example illustrates the difference between absolute and equivalent count data for Germany in 2012. The total number of designs in the absolute count was 76,369 (42,962 resident plus 33,407 abroad) compared to 590,267 (42,962 resident plus 612,537 abroad) in the equivalent design count.

Figure C.3.4 Application design counts abroad for the top 20 origins, 2012



Note: Data shown may be lower than actual figures, as some offices did not provide their design count data, or data for origins were incomplete.

Source: WIPO Statistics Database, October 2013

Residents of Germany (590,267) filed the largest number of equivalent designs abroad in 2012, followed by residents of Italy (251,805), France (232,585) and the US (219,392). The top 20 list includes 15 European countries, partly reflecting the OHIM multiplier. This also explains why EU member states have the highest equivalent to absolute count ratios. Among non-EU countries, applicants from China (12.1) had the highest ratio, followed by applicants from the US (8.3) and Switzerland (6.6).

When considering absolute counts (as opposed to equivalent counts), the ranking of the top five origins differs. Germany (33,407) remained the country whose residents had the highest application design count in 2012, followed by those of the US (26,442), Switzerland (22,070), France (17,305) and Japan (16,270).

Table C.3.5 shows a breakdown of the absolute numbers of designs contained in applications by country of origin (source) and office (destination) for the top 20 origins and top 15 IP offices. The table provides a detailed picture of industrial design flows across countries with the highest filing volumes.

In all reported offices, residents accounted for the bulk of designs in applications filed. For some of these offices, the resident shares were higher than 90%, e.g., SIPO (97.7%), Spain (97.3%), Italy (96.7%), KIPO (93%) and France (90.5%).

Table C.3.5 Application design counts by office and origin: top offices and origins, 2012

	Office														
Origin	**CN**	**EM**	**KR**	**DE**	**TR**	**US**	**JP**	**IT**	**ES**	**FR**	**CH**	**IN**	**RU**	**UA**	**BR**
China	642,401	2,822	116	1,410	32	952	146	4	-	6	3	83	38	11	47
Germany	1,372	22,270	367	42,962	652	1,219	438	22	3	63	1,860	461	520	140	286
Republic of Korea	1,567	1,637	60,867	75	93	1,881	753	50	11	47	9	-	291	10	86
United States of America	2,785	7,421	1,374	313	255	18,812	1,323	6	4	79	368	973	1,172	51	1,155
Italy	686	9,465	196	2,630	197	591	187	29,919	2	6	126	141	214	29	101
Japan	4,805	3,046	1,470	65	91	2,662	27,933	2	2	6	101	547	303	18	240
Turkey	20	390	-	30	39,926	39	3	17	5	5	29	12	59	85	-
France	567	8,514	99	484	686	532	210	88	68	14,353	956	108	146	224	150
Switzerland	506	4,642	209	873	1,326	261	335	24	11	114	4,054	218	292	1,008	149
Spain	125	4,320	3	37	86	88	9	29	17,388	76	88	26	39	37	33
Austria	62	2,522	5	5,182	20	126	36	-	-	6	113	32	26	2	13
United Kingdom	333	5,572	75	39	15	938	120	-	-	9	32	137	123	38	52
Netherlands	345	2,603	140	13	73	173	76	-	-	4	3	125	154	4	146
India	15	70	-	-	2	80	-	-	-	-	-	5,100	1	9	3
Australia	249	669	22	-	3	356	78	-	2	2	3	18	6	-	29
Sweden	254	1,636	89	32	37	244	75	-	-	18	75	87	113	6	86
Brazil	48	232	1	1	6	56	7	-	-	6	39	16	9	-	3,746
Russian Federation	21	80	3	8	9	19	2	-	-	-	7	1	3,638	126	1
Poland	19	3,470	1	61	32	18	1	-	2	20	17	5	14	58	3
Ukraine	1	22	-	-	9	3	-	-	-	-	8	-	113	3,480	-
Others/Unknown	1,401	16,278	432	1,384	2,780	3,749	659	779	374	1,042	4,504	455	599	1,622	237
Total	**657,582**	**97,681**	**65,469**	**55,599**	**46,330**	**32,799**	**32,391**	**30,940**	**17,872**	**15,862**	**12,395**	**8,545**	**7,870**	**6,958**	**6,563**

Note: CN (China), EM (Office for Harmonization in the Internal Market), KR (Republic of Korea), DE (Germany), TR (Turkey), JP (Japan), IT (Italy), US (United States of America), ES (Spain), FR (France), CH (Switzerland), IN (India), RU (Russian Federation), UA (Ukraine) and BR (Brazil)

Source: WIPO Statistics Database, October 2013

When considering non-resident filings only, applicants from the US accounted for the largest shares of total design counts at the offices of Brazil, India, Japan, OHIM and the Russian Federation. Similarly, applicants from Japan accounted for the largest proportions of non-resident designs in total application design counts at SIPO, KIPO and the USPTO.

C.4

INDUSTRIAL DESIGN APPLICATIONS AND REGISTRATIONS THROUGH THE HAGUE SYSTEM

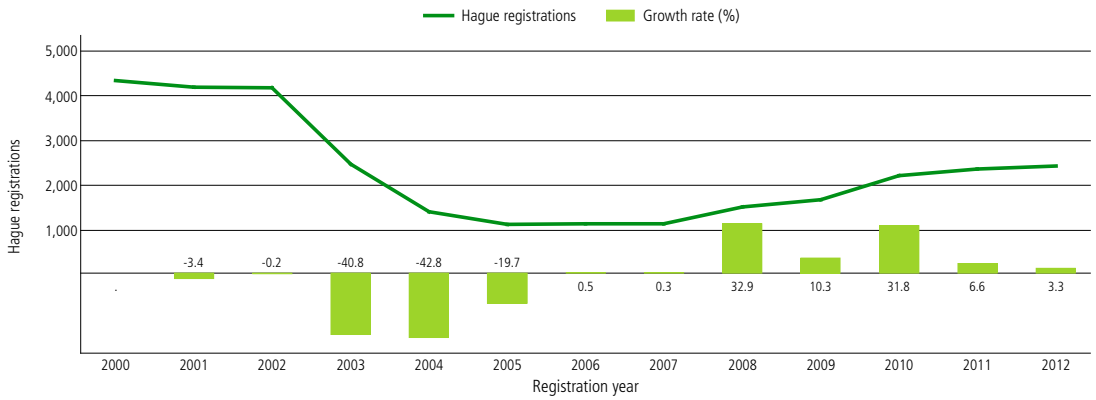
An applicant seeking protection for an industrial design in a number of jurisdictions can choose to file an application directly with each national or regional IP office (Paris route), or they can choose to file a single application via the Hague system. The Hague system makes it possible for an applicant to register industrial designs in multiple contracting parties by filing a single application with the International Bureau of WIPO. Moreover, each application filed under the Hague system may contain up to 100 different industrial designs. An application for international registration of an industrial design leads to it being recorded in the International Register. It also leads to the publication of the registration in the *International Designs Bulletin*. A registration recorded in the International Register has the same effect as one made directly with each designated contracting party, unless the IP office of that contracting party issues a refusal. In 2012, the Hague system comprised 60 members.

C.4.1 Hague registrations

As shown in Figure C.4.1.1, the International Bureau of WIPO recorded 2,440 international registrations for industrial designs in 2012, corresponding to an increase of 3.3% on 2011. The six years prior to 2012 also saw growth in the number of registrations issued. However, the growth rate for 2012 was lower than the year-on-year growth rate of the previous four years.

The large decrease witnessed after 2002 can be explained by the availability of the RCD issued by OHIM. This enables applicants to file a single application for protection across all EU member states. Since then, applicants seeking protection in EU markets began to use the RCD rather than the Hague system. However, international registrations rebounded strongly in 2008, when the EU became a member of the Hague system. As a result, a single Hague registration can lead to industrial design protection across all EU member states as well as in other countries member to the Hague system, e.g., Switzerland and Turkey.

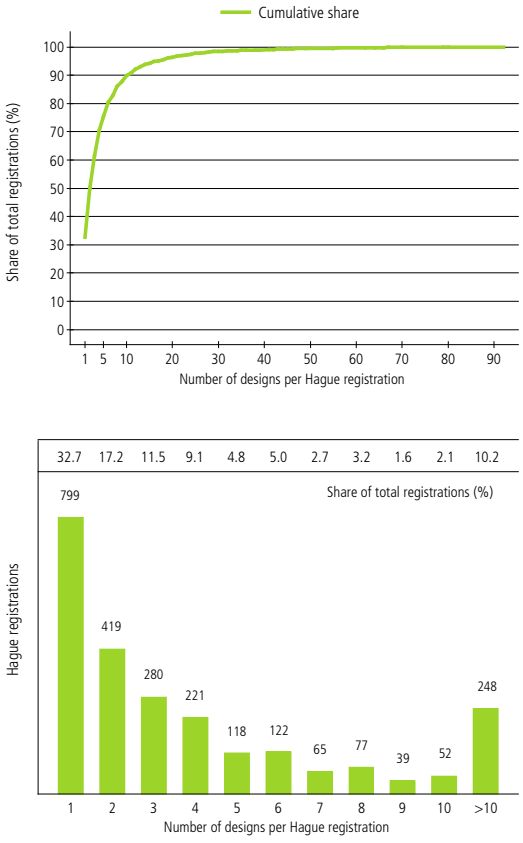
Figure C.4.1.1 Trend in Hague international registrations



Source: WIPO Statistics Database, October 2013

Figure C.4.1.2 shows the number of designs contained in Hague registrations. The upper graph shows the cumulative share of total registrations, whereas the lower presents absolute numbers. In 2012, approximately 32.7% of registrations contained a single design; 17.2% contained two designs, and 11.5% contained three designs. Even if the Hague system permits, under certain conditions, a single registration to include up to 100 designs, only 248 registrations or 10.2% of total registrations contained more than 10 designs.

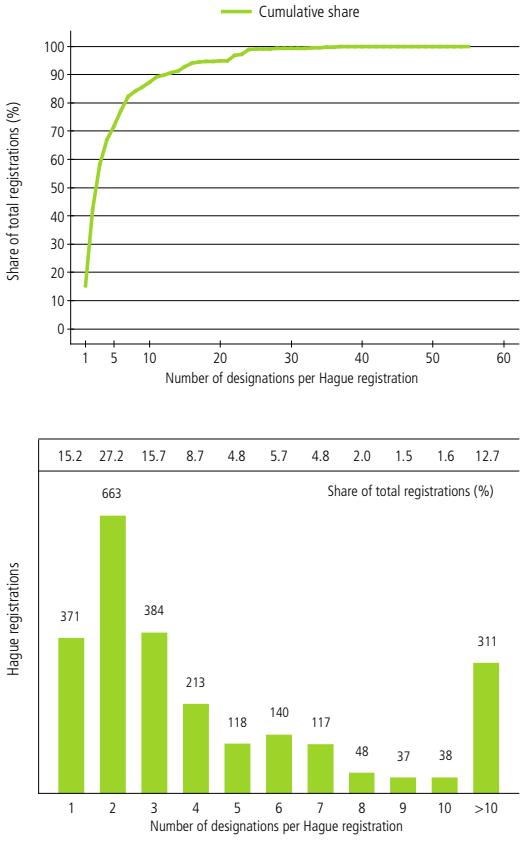
Figure C.4.1.2 Distribution of designs per Hague international registration, 2012



Source: WIPO Statistics Database, October 2013

Figure C.4.1.3 presents the number of designations contained in Hague registrations. The upper graph shows the cumulative distribution, whereas the lower shows absolute numbers. In 2012, international registrations containing two designations accounted for 27.2% of total registrations; they were followed by those containing three designations (15.7%) and a single designation (15.2%). Therefore, most registrations (58.1%) recorded in 2012 contained up to three designations. At the other end of the spectrum, 12.7% of registrations contained over 10 designations.

Figure C.4.1.3 Distribution of designations per Hague international registration, 2012



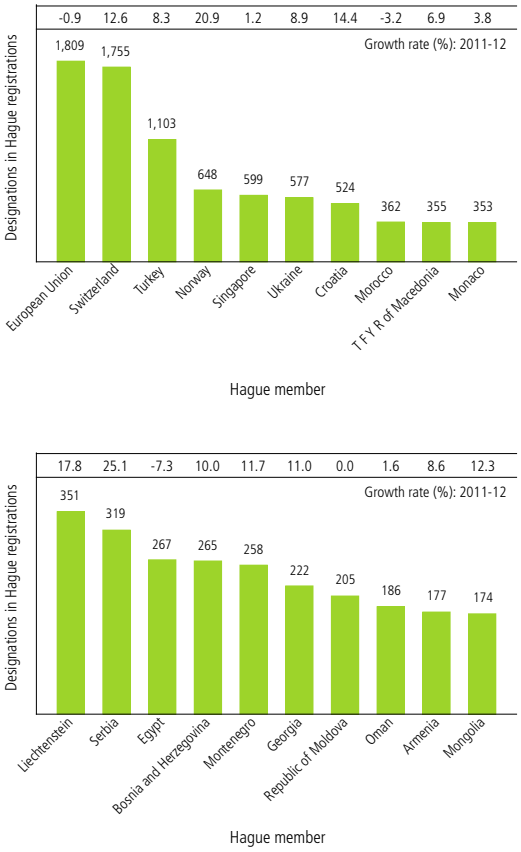
Source: WIPO Statistics Database, October 2013

Figure C.4.1.4 presents the top 20 Hague member countries/regions in which applicants wish to protect their industrial designs (i.e., designated members). This graph provides an insight into the geographical coverage of international registrations.

In 2012, the total number of designations in registrations amounted to 12,786, which corresponded to 9.2% annual growth. The EU was the most designated Hague member (with 1,809 designations), followed by Switzerland (1,755) and Turkey (1,103).

Among the top 20 designated Hague members in 2012, Serbia (+25.1%) recorded the strongest growth on 2011, followed by Norway (+20.9%) and Liechtenstein (+17.8%).[8] In contrast, Egypt (-7.3%), Morocco (-3.2%) and the EU (-0.9%), were the only Hague members to have received fewer designations. 2012 marked the first time the EU experienced a drop in the number of designations since 2008, the year in which OHIM became a member of the Hague system.

Figure C.4.1.4 Registrations for the top 20 designated Hague members, 2012



Source: WIPO Statistics Database, October 2013

Figure C.4.1.5 shows the number of registrations for the top 20 origins, where a registration is allocated to the applicant's "true" origin, rather than to the Hague member, if they differ.[9] For this reason, countries that are not members of the Hague system, such as the US, appear in the origins list. Holders residing in Germany (649) were issued the largest number of registrations, followed by those in Switzerland (562) and France (283). Along with Italy (173) and the Netherlands (135), these were the only five countries whose residents were issued more than 100 registrations in 2012.

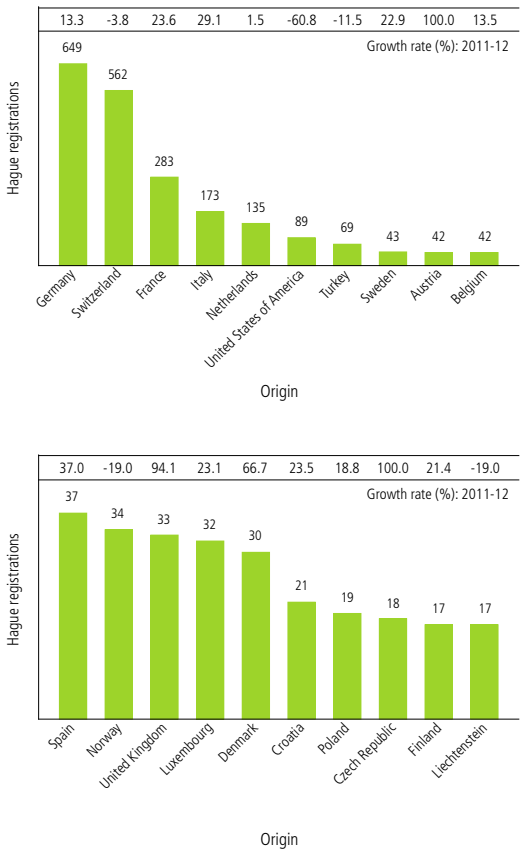
8 It should be noted that these countries have high growth rates compared to the top three designated members; this is due to their low baseline numbers. In terms of absolute numbers, Switzerland (+197) saw the largest increase in the number of designations received, followed by Norway (+112).

9 Applicants domiciled in a non-member country can file applications for international registrations if they have a real and effective industrial or commercial establishment in the jurisdiction of a Hague member country/region.

Germany and Switzerland together accounted for almost half (49.6%) of all international registrations, whereas the top five origins accounted for 73.8% of total registrations. Altogether, European origins accounted for the vast majority (92.4%) of the 2,440 Hague registrations issued in 2012.

The majority of the top 20 origins saw growth in registrations between 2011 and 2012. Austria, the Czech Republic and the UK doubled or almost doubled their numbers of registrations.[10] Among the top five origins, Italy (+29.1%), France (+23.6%) and Germany (+13.3%) saw double-digit growth, while Switzerland saw a decrease of 3.8% over the same period. The sharpest decrease was attributed to holders residing in the US (-60.8%).

Figure C.4.1.5 Registrations for the top 20 origins, 2012



Source: WIPO Statistics Database, October 2013

10 It should be noted that these countries have very high growth rates due to their low baseline numbers. In terms of absolute numbers, Germany (+76) saw the largest increase in the number of registrations, followed by France (+54).

C.4.2 Hague applicants

In 2012, a total of 2,604 Hague international applications were filed. Swatch AG of Switzerland was the top Hague applicant in 2012 with its 81 filings (Table C.4.2). Daimler AG of Germany (75) ranked second. It was followed by Koninklijke Philips Electronics of the Netherlands (67), the Procter & Gamble Company (57), and Audi AG of Germany (54), with the latter appearing in the top Hague applicants list for the first time.

The Procter & Gamble Company, which was the top applicant between 2009 and 2011, filed 110 fewer applications in 2012 than in 2011, thus dropping to fourth position. The Gillette Company of the US (-27) and Vestel of Turkey (-21) also filed substantially fewer applications. However, Daimler AG of Germany (+20), Saverglass of France (+20), Hermes Sellier of France (+14) and Thun SPA of Italy (+14) recorded the largest increases in the number of applications.

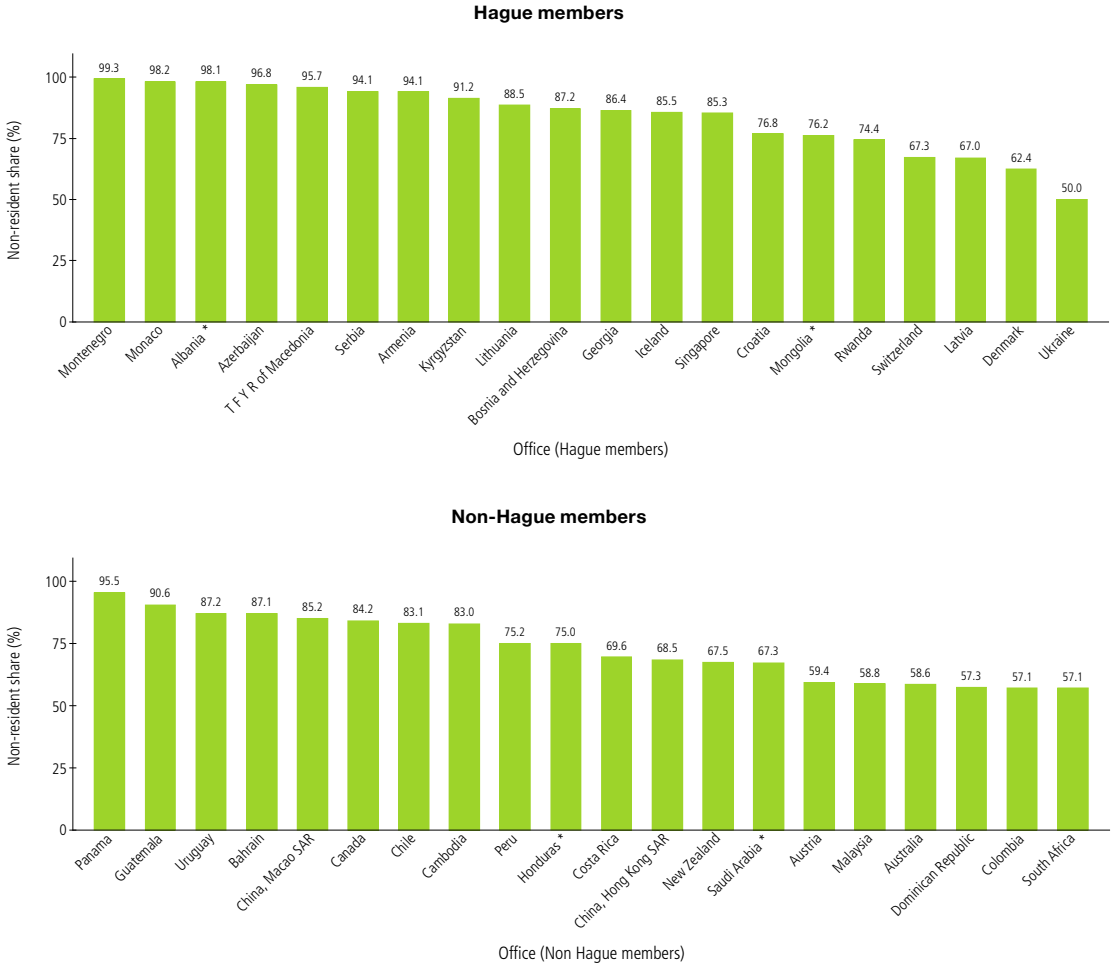
Germany (8) had the highest number of companies appearing in the top 25 applicants list, followed by Switzerland (6) and France (5). In total, applicants from 7 countries are included in the top 25 applicants list; of these countries, only Turkey and the US are not located in Europe.

Table C.4.2 Top Hague applicants

			Hague international applications		
2012 rank	Applicant's name	Origin	2010	2011	2012
1	SWATCH AG (SWATCH SA)(SWATCH LTD)	Switzerland	75	79	81
2	DAIMLER AG	Germany	36	55	75
3	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	87	64	67
4	THE PROCTER & GAMBLE COMPANY	United States of America	129	167	57
5	AUDI AG	Germany	0	0	54
6	SOCIÉTÉ DES PRODUITS NESTLÉ S.A.	Switzerland	24	47	43
7	VOLKSWAGEN AG	Germany	46	38	40
8	LIDL STIFTUNG & CO. KG	Germany	20	28	32
9	HERMES SELLIER	France	14	15	29
9	THE GILLETTE COMPANY	United States of America	44	56	29
11	ALFRED KÄRCHER GMBH & CO. KG	Germany	18	15	25
12	SAVERGLASS	France	0	3	23
13	THUN SPA	Italy	0	8	22
14	VESTEL BEYAZ ESYA SANAYI VE TICARET ANONIM SIRKETI	Turkey	52	40	19
15	HENKEL AG & CO. KGAA	Germany	4	10	16
15	KOZIOL IDEAS FOR FRIENDS GMBH	Germany	0	5	16
17	CARTIER CRÉATION STUDIO SA	Switzerland	18	11	13
17	PHILIP MORRIS BRANDS	Switzerland	0	3	13
17	SALOMON S.A.S.	France	0	7	13
17	TOD'S S.P.A.	Italy	0	7	13
21	VITRA PATENTE AG	Switzerland	0	0	11
21	HANSGROHE SE	Germany	10	8	11
21	MAPED	France	12	14	11
21	RENAULT SAS	France	0	0	11
25	NOVARTIS AG	Switzerland	0	9	10

Source: WIPO Statistics Database, October 2013

Figure C.4.3.1 Share of non-resident application design counts by office, 2012



Note: * 2011 data; the direct (Paris) route refers to applications filed directly with national or regional offices of Hague members only. The Hague route refers to designations received by offices via the Hague system. For the sake of simplicity, designations are referred to as applications received via the Hague route.

Source: WIPO Statistics Database, October 2013

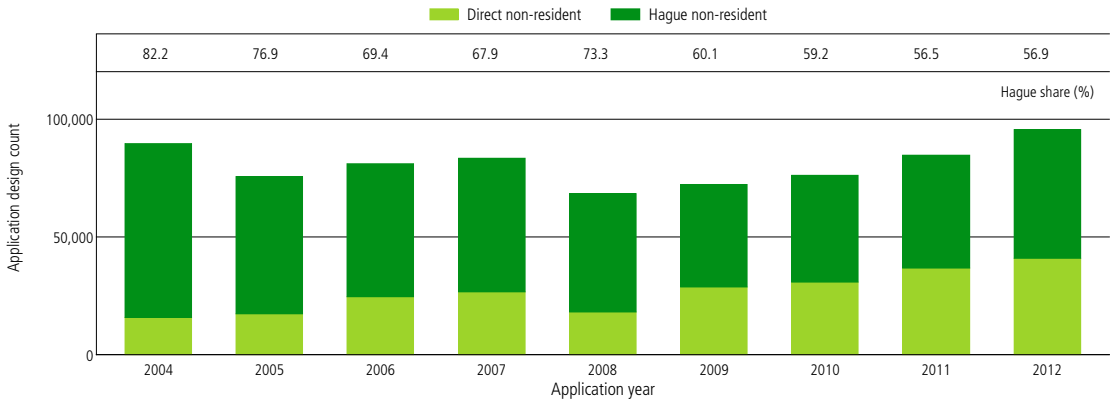
C.4.3 Non-resident application design counts by filing route

Applicants seeking design protection in foreign jurisdictions can either file applications directly at national or regional offices, or they can make use of the Hague system.

Figure C.4.3.1 presents 20 offices with the highest non-resident shares both among the offices of Hague members and those of non-Hague members. Among the 20 reported Hague member offices, 15 received more than 75% of their application design counts from non-residents. Montenegro (99.3%), Monaco (98.2%) and Albania (98.1%) had the highest non-resident shares among Hague members, whereas Ukraine had equal resident and non-resident shares.

Half of the reported non-Hague members received at least three-fourths of their application design counts from non-residents. Among these offices, Panama (95.5%) had the highest non-resident share, and Colombia and South Africa (57.1%) the lowest.

Figure C.4.3.2 Non-resident application design counts by filing route at Hague Members



Note: The direct (Paris) route refers to applications filed directly with the national or regional IP offices of Hague members only. The Hague route refers to designations received by IP offices via the Hague system. For the sake of simplicity, designations are referred to as applications received via the Hague route.

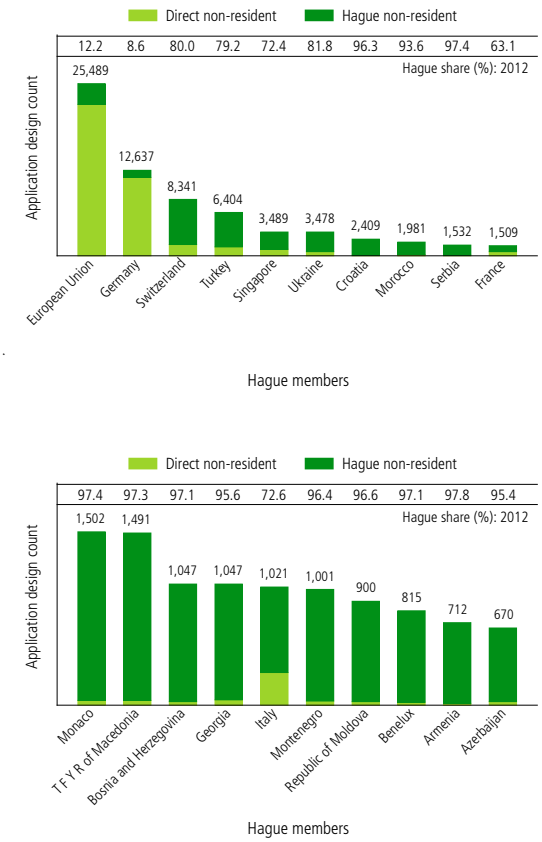
Source: WIPO Statistics Database, October 2013

Figure C.4.3.2 shows the breakdown of the number of designs contained in non-resident applications filed via the direct (Paris) route and via the Hague system. Worldwide, about 31.3% of all non-resident application design counts were filed via the Hague system in 2012. However, not all countries – notably China – are members of the Hague system. As shown in Figure C.4.3.2, non-resident applications filed at offices of Hague members contained approximately 95,700 designs in 2012; of these, 56.9% were filed through the Hague system.

Since 2004, the overall shares of Hague non-resident designs in total non-resident designs have followed a downward trend. The Hague share decreased from 82.2% in 2004 to 56.9% in 2012. This decrease can be attributed to the fact that, before 2003, applicants domiciled in EU member states filed their applications as non-residents directly with the offices of other EU member states or via the Hague system, where applicable. However, the EU's introduction of the RCD in 2003 enabled these EU residents to file a single application directly with OHIM, in order to seek protection within the EU as a whole. Applicants seeking protection in the EU only made greater use of OHIM than of the Hague system, as reflected by the low Hague share for two large Hague members, namely the EU and Germany (see Figure C.4.3.3).

Figure C.4.3.3 shows a breakdown of designs contained in non-resident applications by filing route for selected Hague members. The Hague share in total non-resident design counts varied across offices – from 8.6% for Germany to 97.8% for Armenia. For all reported Hague members with the exception of the EU, France and Germany, the Hague system accounted for over 70% of designs contained in non-resident applications. For the majority of the smaller Hague members (i.e., with fewer than 3,000 industrial designs), the share received via the Hague system was above 90%.

Figure C.4.3.3 Non-resident application design counts by filing route for selected Hague members, 2012



Source: WIPO Statistics Database, October 2013

C.5

Application design counts per GDP and population

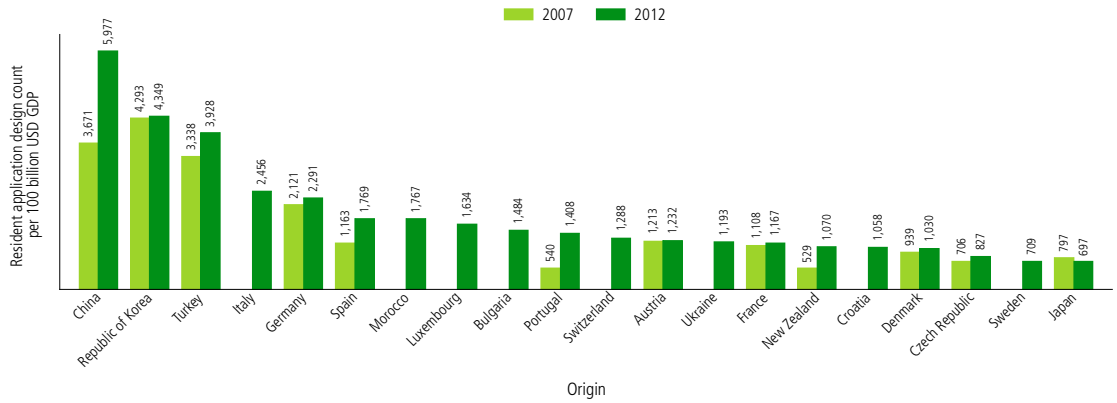
For the purposes of cross-country comparisons, it is instructive to express designs contained in applications relative to GDP and population. GDP data are in constant 2005 PPP US dollars.

As shown in figure C.5.1, application design counts per 100 billion GDP varied substantially across the reported top origins. Applicants from China (5,977), the Republic of Korea (4,349) and Turkey (3,928) had the highest number of designs contained in applications relative to their GDP. At the other end of the spectrum, applicants from Japan (697), Sweden (709) and the Czech Republic (827) had relatively low application design counts per 100 billion GDP.

Although 14 of the top 20 origins were from Europe, the top 3 were Asian. Morocco and New Zealand were the only origins from Africa and Oceania. No origins from both American continents were ranked among these top origins. The high number of European countries may be partly due to the fact that an application filed at a regional office is considered a resident filing if the applicant is domiciled in one of that office's member states.

Compared to 2007, all origins saw an increase in their resident design count-to-GDP ratio, with the exception of Japan, which experienced a decrease of 100. The origins that saw the highest increases in 2012 over 2007 were China (+2,306), Portugal (+868) and Spain (+606).

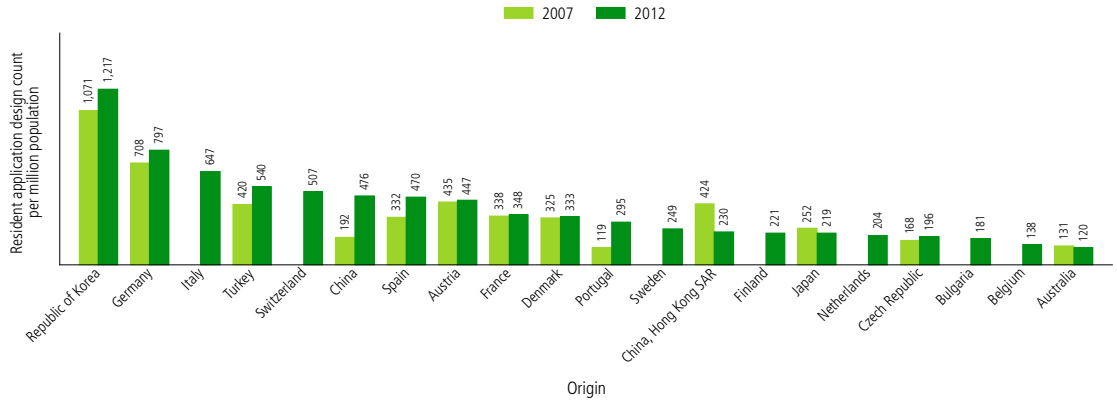
Figure C.5.1 Resident application design counts per GDP for selected top origins



Note: GDP data are in constant 2005 PPP US dollars. For the resident industrial design-per-GDP indicator, countries were selected if they had a GDP greater than 25 billion PPP US dollars and received resident applications containing more than 100 designs. However, due to space constraints, only the top origins that fulfill these criteria are included in the graphs.

Source: WIPO Statistics Database, October 2013

Figure C.5.2 Resident application design counts per million population for selected top origins



Note: For the resident industrial design count per-population indicator, countries were selected if they had a population greater than 5 million and received resident applications containing more than 100 designs. However, due to space constraints, only the top origins that fulfill these criteria are included in the graphs.

Source: WIPO Statistics Database, October 2013

Figure C.5.2 presents the top origins in terms of designs contained in resident applications filed per million population. Only five origins filed applications containing more than 500 designs per million population, namely the Republic of Korea (1,217), Germany (797), Italy (647), Turkey (540) and Switzerland (507). Similar to the resident application design counts relative to GDP, 14 countries were located in Europe. The six remaining countries, with the exception of Australia, were located in Asia. The high number of European countries may be partly due to the fact that an application filed at a regional office is considered a resident filing when the applicant resides in one of that office's member states.

Residents from China (+284), Portugal (+176) and the Republic of Korea (+146) saw the sharpest increases in application design counts per million population between 2007 and 2012. In contrast, applicants from Australia, China Hong Kong (SAR) and Japan recorded decreases in their ratios over the same period.

C.6

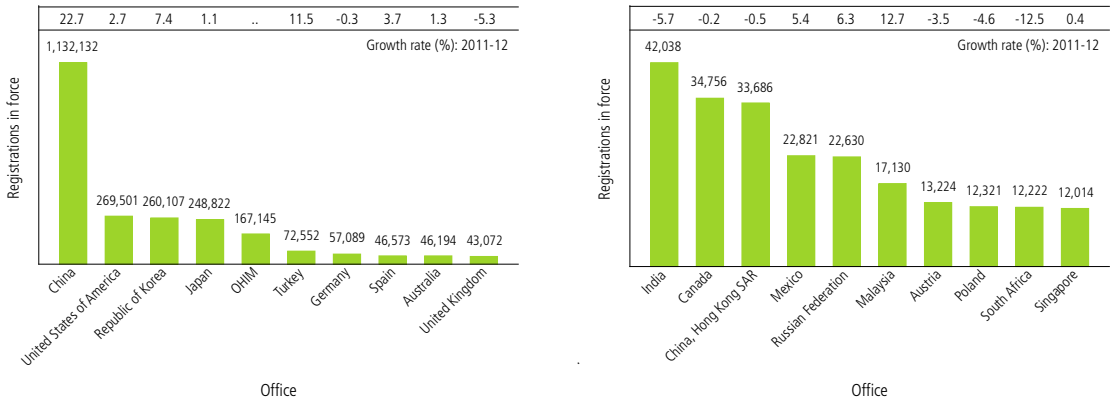
Industrial design registrations in force

Industrial design registrations are valid for a limited period. The term of protection is usually 15 years, but can vary depending on the IP office. For example, it is limited to 10 years in Canada but 25 years in France. Due to data limitations, figures reported in this subsection refer to industrial design registrations, not the number of designs contained in registrations.

The estimated number of industrial design registrations in force worldwide increased from 2.46 million in 2011 to 2.71 million in 2012. This estimate was based on data from 86 offices, including all major offices with the exception of Brazil, France and Italy. As shown in Figure C.6.1, with over 1.1 million registrations, SIPO had the largest number of registrations in force in 2012. The USPTO (269,501), KIPO (260,107), the JPO (248,822) and OHIM (167,145) all had large numbers of registrations in force. Several offices from middle-income countries also had a substantial number of registrations in force. These included the IP offices of Turkey (72,552), India (42,038) and Mexico (22,821).

SIPO alone accounted for 41.8% of the world total of industrial design registrations in force in 2012, while the top five offices combined accounted for 76.7% of the world total. Among these 20 offices, three experienced double-digit growth in 2012 when compared with 2011. These three offices were SIPO (+22.7%), Malaysia (+12.7%) and Turkey (+11.5%). In contrast, South Africa saw the sharpest decrease in the number of its registrations in force (-12.5%), followed by the offices of India (-5.7%) and the UK (-5.3%).

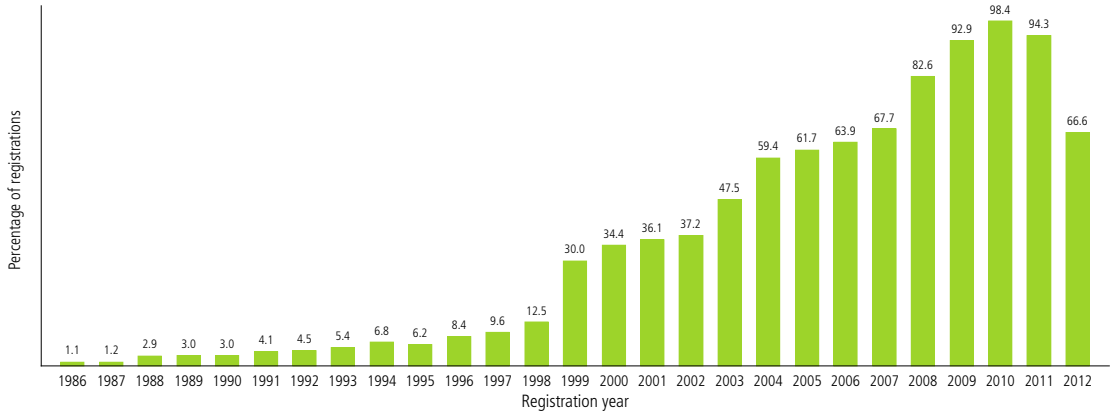
Figure C.6.1 Industrial design registrations in force by office, 2012



Note: ".." = not available; data refer to the number of industrial design registrations in force and not the number of designs contained in registrations. Registration data for Brazil, France and Italy were not available. OHIM = Office for Harmonization in the Internal Market

Source: WIPO Statistics Database, October 2013

Figure C.6.2 Industrial design registrations in force in 2012 as a percentage of total registrations

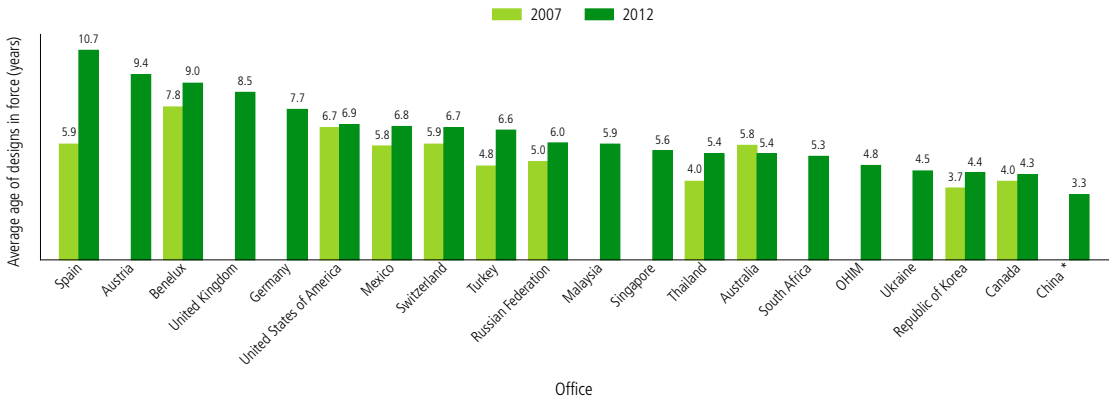


Note: Percentages are calculated as follows: the number of industrial designs registered in year t and in force in 2012 divided by the total number of industrial designs registered in year t. The graph is based on data from 68 IP offices (including most large IP offices, with the exception of China, France, Italy and Japan) for which a breakdown of industrial design registrations in force by year of registration was available.

Source: WIPO Statistics Database, October 2013

Figure C.6.2 shows the distribution of industrial design registrations in force in 2012 by their year of registration and as a percentage of total registrations in a given year, thus portraying the age distribution of industrial design registrations in force. Data for a number of large offices are included in this figure, but those for China, France, Italy and Japan were not available. Figure C.6.2 shows that 67.7% of industrial designs registered in 2007 and 30% of industrial designs registered in 1999 were still in force in 2012.

Figure C.6.3 Average age of Industrial design registrations in force at selected offices



Note: * 2011 data

Source: WIPO Statistics Database, October 2013

Figure C.6.3 shows the average age of industrial design registrations in force at selected offices for 2007 and 2012. The average age of 2012 registrations in force varied from 10.7 years in Spain to 3.3 years in China. The average age of registrations in force in Austria and at the Benelux office was approximately 9 years. In contrast, the average age at OHIM, Ukraine, KIPO and Canada was less than 5 years. In the case of OHIM, its low average age could be due to the fact that design registrations with this office have existed only since 2003. In the case of China, the low average age is partly due the fact that the majority of registrations in force at SIPO were issued in recent years. All the reported offices, with the exception of Australia, had a higher average age for 2012 industrial design registrations in force when data were compared with 2007 figures.

SECTION D
PLANT VARIETY PROTECTION

The International Union for the Protection of New Varieties of Plants (UPOV), an intergovernmental organization based in Geneva, Switzerland, was established in 1961 by the International Convention for the Protection of New Varieties of Plants (the "UPOV Convention"). UPOV's mission is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants for the benefit of society.

In order to obtain protection, a breeder must file an individual application with each authority entrusted with the granting of breeders' rights. A breeder's right is only granted where the variety is new, distinct, uniform, stable, and has a suitable denomination.

In the United States of America (US), there are two Acts for protecting new plant varieties: the Plant Patent Act (PPA) and the Plant Variety Protection Act (PVPA). According to the PPA, whoever invents or discovers and asexually reproduces any distinct and new variety of plant – including cultivated sports, mutants, hybrids and newly found seedlings other than a tuber-propagated plant (in practice, Irish potato and Jerusalem artichoke), or a plant found in an uncultivated state – may obtain a patent therefor. Under the PVPA, the US protects all sexually reproduced plant varieties and tuber-propagated plant varieties, excluding fungi and bacteria.

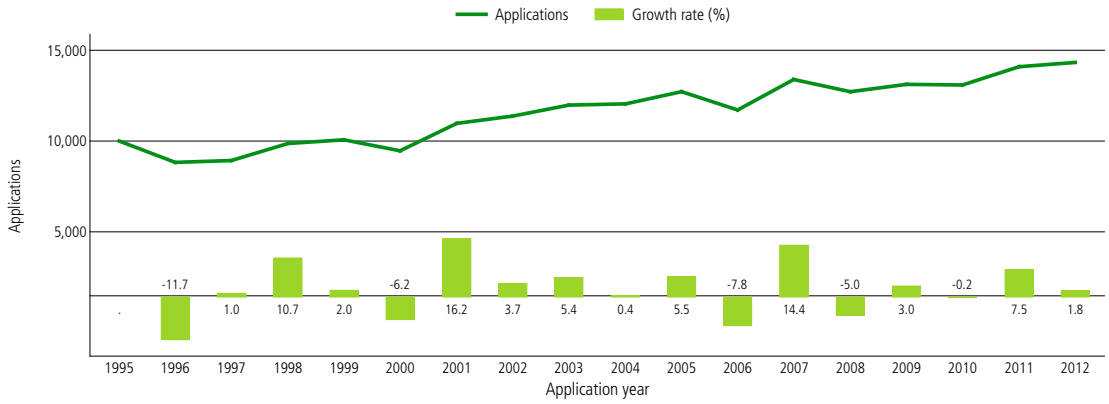
This section covers plant variety protection statistics relating to applications and grants, based on data collected from 66 offices. For plant variety data, this publication uses the term "office" to refer to reporting authorities, and "origin" to indicate the region/country of origin of applicants.

D.1

PLANT VARIETY APPLICATIONS AND GRANTS WORLDWIDE

Figure D.1.1 shows the total number of plant variety applications field worldwide between 1995 and 2012. World totals are WIPO estimates covering data for 66 offices – national and regional. Between 1995 and 2012, the estimated number of applications increased from approximately 10,000 to 14,300. This growth occurred in the face of substantial year-to-year fluctuations in application numbers. For example, applications worldwide grew at double-digit rates in 1998, 2001 and 2007. In contrast, both 1996 and 2006 saw a sharp decrease. Even though the number of plant variety applications reached a new record in 2012, the growth rate (+1.8%) for 2012 was modest compared to 2011 (+7.5%).

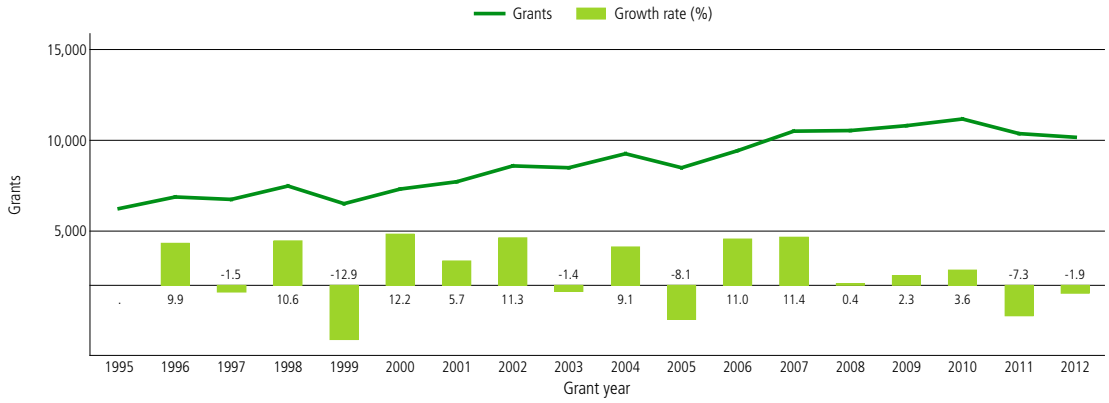
Figure D.1.1 Trend in plant variety applications worldwide



Note: World totals are WIPO estimates covering data for 66 offices.

Source: WIPO Statistics Database, October 2013

Figure D.1.2 Trend in plant variety grants worldwide



Note: World totals are WIPO estimates covering data for 66 offices.

Source: WIPO Statistics Database, October 2013

As is the case for applications, the number of plant variety grants has also followed an upward trend.[1] Grants worldwide increased from approximately 6,200 in 1995 to a peak of approximately 11,200 in 2010 (Figure D.1.2). Since 2010, the number of grants has exhibited a downward trend, with a 7.3% decrease in 2011, followed by a 1.9% decrease in 2012. This is in contrast to the trend observed for applications (Figure D.1.1). In 2012, the number of grants issued worldwide is estimated at approximately 10,200, which is 1,000 less than the 2010 peak.

1 For simplicity, this publication uses the term "grant" rather than the formal term "titles issued".

D.2

PLANT VARIETY APPLICATIONS AND GRANTS BY OFFICE

This subsection provides detailed data on plant variety applications and grants by national and regional offices.

D.2.1 Applications by office

The concentration of plant variety applications varies across the world's six regions. With a total of 6,485 applications, the offices in Europe were the largest recipients of plant variety applications, and accounted for 45.3% of the world total in 2012 (Table D.2.1.1). This, however, signifies a 2.5 percentage point decrease in their share of the world total when compared with figures for 2007. Between 2007 and 2012, Asia exhibited the largest shift, with its world share of applications increasing by 2.8 percentage points to reach 25.7%. Africa's yearly average growth of 3.9% resulted in a share of the world total equivalent to 4.0% in 2012, such that Africa surpassed Oceania in the number of applications received. The growth in the number of applications received by offices in Asia (+3.7%) was similar to that of Africa.

Africa's share of the world total, however, only moderately increased (+0.5 percentage points), due to a lower absolute number of applications received. The share of the world total for the remaining four regions was either stagnant or it decreased, with Oceania accounting for only 3.0% of the world total in 2012 when it recorded a 2.4% yearly average decrease in the number of applications received.

The average growth seen in Asia and North America was exclusively due to increases in the numbers of resident applications, as the numbers of non-resident applications for these two regions actually decreased. This can be seen by the increases in the share of resident applications i.e., from 76.6% to 80.4% in Asia, and from 39.4% to 43.2% in North America, between 2007 and 2012. Two of the world's six regions, namely Europe and Oceania, saw decreases in resident shares that declined by 7.9 and 3.8 percentage points, respectively.

Table D.2.1.1 Plant variety applications by region

Region	Number of applications		Resident share (%)		Share in world total (%)		Average growth (%)
	2007	2012	2007	2012	2007	2012	2007-12
Africa	468	567	37.0	42.3	3.5	4.0	3.9
Asia	3,059	3,673	76.6	80.4	22.9	25.7	3.7
Europe	6,400	6,485	74.1	66.2	47.8	45.3	0.3
Latin America and the Caribbean	1,051	1,124	33.0	37.4	7.9	7.8	1.4
North America	1,915	2,034	39.4	43.2	14.3	14.2	1.2
Oceania	493	436	46.2	42.4	3.7	3.0	-2.4
World	**13,386**	**14,319**	**64.1**	**63.1**	**100.0**	**100.0**	**1.4**

Note: World totals are WIPO estimates covering data for 66 offices. Each category included the following number of offices: Africa (4), Asia (10), Europe (33), Latin America and the Caribbean (14), North America (3) and Oceania (2).

Source: WIPO Statistics Database, October 2013

Table D.2.1.2 Plant variety applications by income group

Income group	Number of applications		Resident share (%)		Share in world total (%)		Average growth (%)
	2007	2012	2007	2012	2007	2012	2007-12
High-income	10,276	9,249	65.5	66.6	76.8	64.6	-2.1
Upper middle-income	2,313	3,447	63.7	70.2	17.3	24.1	8.3
Lower middle-income	704	1,567	48.4	29.6	5.3	10.9	17.4
Low-income	93	56	30.4	21.4	0.7	0.4	-9.6
World	**13,386**	**14,319**	**64.1**	**63.1**	**100.0**	**100.0**	**1.4**

Note: World totals are WIPO estimates covering data for 66 offices. Each category includes the following numbers of offices: high-income countries (35), upper middle-income countries (20), lower middle-income countries (9) and low income countries (2). CPOV data are allocated to the high-income countries group, as all of the CPVO member states are high-income countries.

Source: WIPO Statistics Database, October 2013

A shown in Table D.2.1.2, the majority of plant variety applications worldwide are filed at the offices of high-income countries. Despite the 12.2 percentage point decrease in high-income countries' share of total world filings, this group received 64.6% of all plant variety applications filed worldwide in 2012.[2] The upper middle-income countries received approximately a quarter of total applications filed in 2012, and their share of the world total increased by 6.8 percentage points between 2007 and 2012. The lower middle-income countries group doubled its share of the world total received over the same period.

In 2012, resident applications accounted for approximately two-thirds of all applications filed at the offices of high-income and upper middle-income countries. In addition, the resident share of the upper middle-income countries group increased by 6.6 percentage points between 2007 and 2012. In contrast, over the same period, the resident share for the lower middle-income countries group fell substantially from 48.4% to 29.6%. This fall was mainly due to a much faster growth in non-resident applications than that seen in resident applications at the office of Ukraine. The drop in the resident share for the low-income group of countries – i.e., a decrease from 30.4% in 2007 to 21.4% in 2012 – appears to be larger than it is. This is due to the small number of applications received, which in 2012 dropped from 28 to 12.

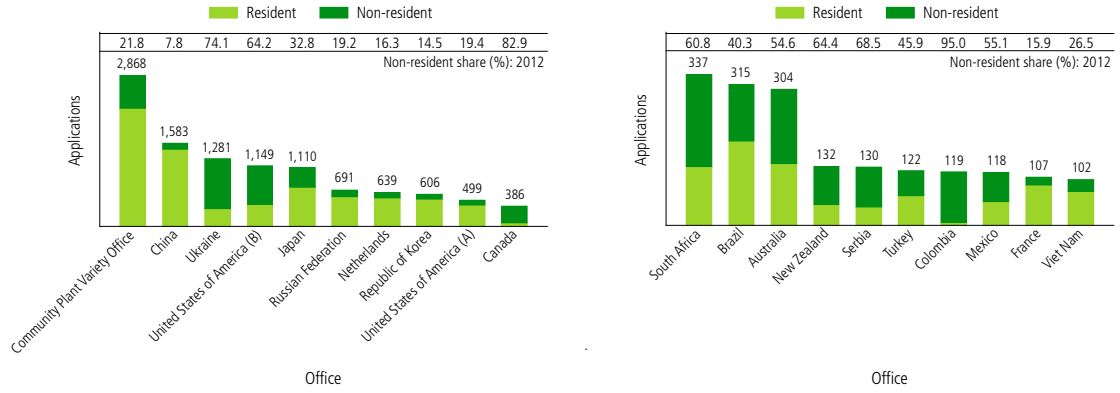
Figure D.2.1.3 shows the number of plant variety applications, broken down by resident and non-resident filings for the top 20 offices worldwide. The European Union's Community Plant Variety Office (CPVO) (2,868) received the highest number of applications in 2012, followed by the offices of China (1,583), Ukraine (1,281), the US (B, PPA data, 1,149) and Japan (1,110).[3] Despite a 9.9% decrease in applications at CPVO, this office received almost twice the number of applications received by China.

The non-resident share of total applications varied from 7.8% at the office of China to 95% at the office of Colombia. For nine of the top 20 offices, non-resident applications accounted for more than 50% of total applications received.

2 Such a finding is to be expected, as this country income group has 35 offices – a figure that is considerably higher than the number of offices in any other country income group.

3 The US is ranked in second position if PVPA and PPA data are combined.

Figure D.2.1.3 Plant variety applications for the top 20 offices, 2012

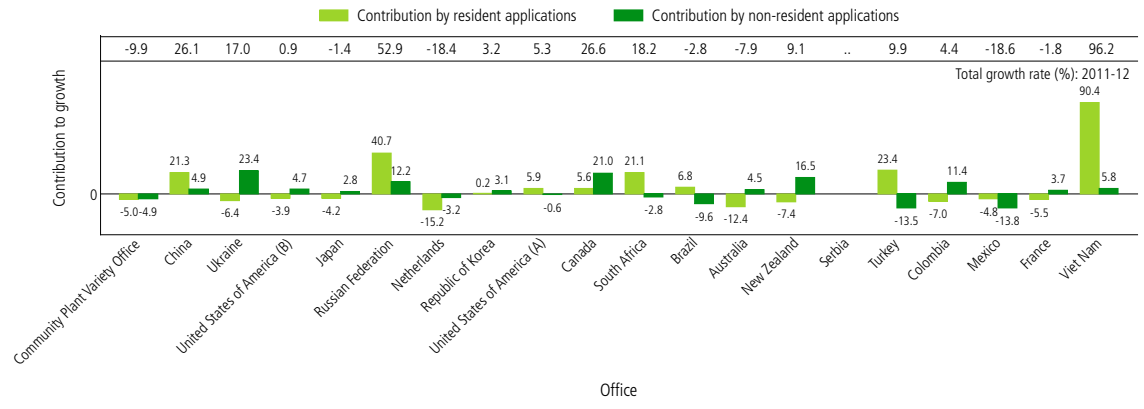


Note: United States of America (A) refers to PVPA data, and United States of America (B) refers to PPA data.

Source: WIPO Statistics Database, October 2013

Figure D.2.1.4 shows the contribution to total growth attributed to residents and non-residents for the top 20 offices. Plant variety applications nearly doubled for Viet Nam, which showed growth of 96.2% (due to an increase of 50 applications when figures are compared with 2011). Most of this growth (90.4 percentage points) came from a substantial increase in resident applications. Four of the five offices exhibiting the fastest growth in applications – Viet Nam (+96.2%), the Russian Federation (+52.9%), China (+26.1%) and South Africa (+18.2%) – showed substantially higher growth in resident applications than in non-resident applications. For example, growth in resident applications in China accounted for 21.3 percentage points of the 26.1% total growth. In contrast, growth in applications in Canada, New Zealand and Ukraine was mainly due to increases in non-resident applications. The CPVO, the largest office, received fewer resident and non-resident applications in 2012 than in 2011.

Figure D.2.1.4 Contribution of resident and non-resident applications to total growth for the top 20 offices



Note: ".." = not available

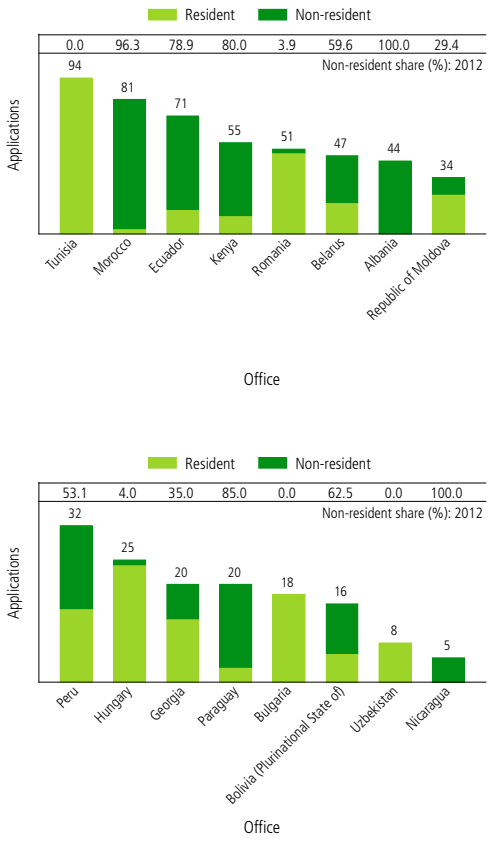
Source: WIPO Statistics Database, October 2013

Figure D.2.1.5 shows the number of applications filed, broken down by resident and non-resident filings for selected offices of middle- and low-income countries – excluding those already reported in Figure D.2.1.4.

All applications filed at the offices of Bulgaria, Tunisia and Uzbekistan were filed by residents. The offices of Hungary and Romania also received almost all of their applications from resident applicants; both of these countries' non-resident shares were below 5%. In contrast, the offices of Albania and Morocco received 100% and 96.3% of their filings from non-resident applicants.

Ecuador and Romania received more resident applications in 2012 than in 2011 (13 and 21 more applications, respectively), while the Republic of Moldova saw an increase of 16 applications in 2012. However, Ecuador saw a net decrease in total applications, due to receiving 27 fewer non-resident applications in 2012. Kenya also received 15 fewer non-resident applications in 2012 which together with a drop in resident applications, contributed to an overall decrease of 40.9%. Resident applications more than halved in Belarus (from 40 to 19 applications in 2012).

Figure D.2.1.5 Plant variety applications for offices of selected middle- and low-income countries, 2012



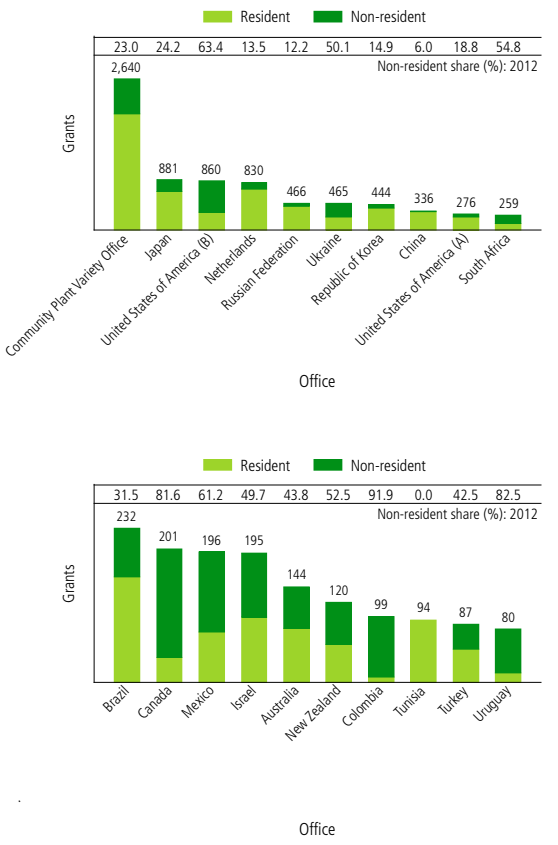
Source: WIPO Statistics Database, October 2013

D.2.2 Grants by office

Similar to the situation that applied in the case of applications, the CPVO (2,640 grants) issued the largest number of plant variety grants in 2012 i.e., approximately three times the number of grants issued by the offices of Japan (881), the US (B, PPA data) (860) and the Netherlands (830) (Figure D.2.2.1). All other offices, issued fewer than 500 grants each in 2012.

The office of Tunisia is the only reported office where resident applicants received all grants issued. Resident grants also accounted for the bulk of total grants in China. In contrast, Canada (81.6%), Colombia (91.9%) and Uruguay (82.5%) had high non-resident shares in 2012. With the exception of the offices of France, Serbia and Viet Nam, 17 of the top 20 offices in terms of applications received (Figure D.2.1.3), also ranked in the top 20 offices for grants issued (Figure D.2.2.1).[4] China slipped from second to eighth place. Mexico, on the other hand, moved up five places from 18th to 13th. The share of non-resident grants is of similar magnitude to the share of non-resident applications for nearly all offices reported in both indicators. The exceptions are Ukraine, whose non-resident share is 24 percentage points lower for grants compared to applications, New Zealand (-11.9 percentage points) and Australia (-10.8 percentage points).

Figure D.2.2.1 Plant variety grants for the top 20 offices



Note: United States of America (A) refers to PVPA data, and United States of America (B) refers to PPA data.

Source: WIPO Statistics Database, October 2013

4 Grant data for France were not available.

D.3

Plant variety applications and grants by origin

The statistics presented in this subsection offer insights into the origins of the demand for plant variety protection. Plant variety activity by origin includes resident applications and applications abroad. Origin is determined by the residence of the applicant.

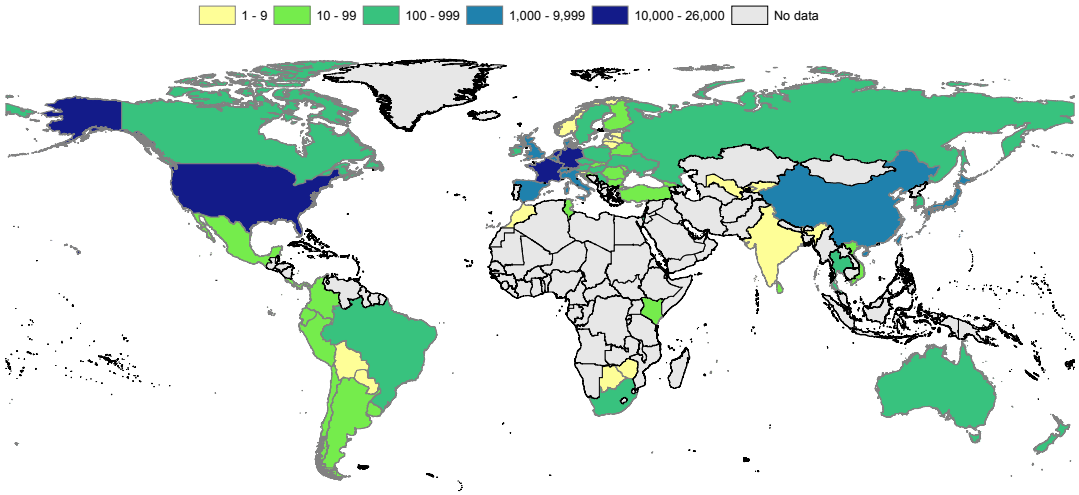
This subsection presents application and grant data by origin based on two different counting methods – data based on absolute number count and data based on the equivalent count concept. The difference between the two methods lies in the treatment of regional office (CPVO) data. Where the absolute count method is applied, an application received by the CPVO is counted only once; however, where the equivalent count method is applied, a single application filed at the CPVO is equivalent to multiple applications. In order to calculate the number of equivalent applications at the CPVO in 2012, each application was multiplied by the corresponding number of member states. If the applicant resided in one of the 27 EU member states in 2012, the application was counted as one resident filing and 26 filings abroad. However, if the applicant did not reside in an EU member state in 2012, the application was counted as 27 applications abroad.

D.3.1 Plant variety applications by origin

Map D.3.1.1 is a country-specific representation of the number of plant variety applications filed by residents of each country. The data are based on equivalent counts (i.e., an application filed with the CPVO is equivalent to multiple applications). Plant variety applications are concentrated among few origins, namely China, a number of Western European countries, Japan and the US.

Residents of China and Japan filed substantially higher numbers of applications than residents of all other countries in Asia. The biggest contributors in Europe were residents of France (12,206), Germany (11,192) and the Netherlands (25,882), with each of these countries filing over 10,000 plant variety applications. Most of the remaining countries in Western Europe reported between 1,000 and 9,999 filings. Residents of Eastern European countries filed substantially fewer applications, typically less than 1,000. In Latin America and the Caribbean, Brazilian residents accounted for the largest share of applications, filing 212 applications. In the case of most other countries of this region, residents of these countries filed between 10 and 99 applications. In North America, US residents (10,955) accounted for 98% of all applications. In contrast, the figures for Canada were very low, with Canadian residents filing the remaining 2% i.e., a total of 218 applications.

Figure D.3.1.1 Equivalent plant variety applications by origin, 2012



Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than the actual numbers.

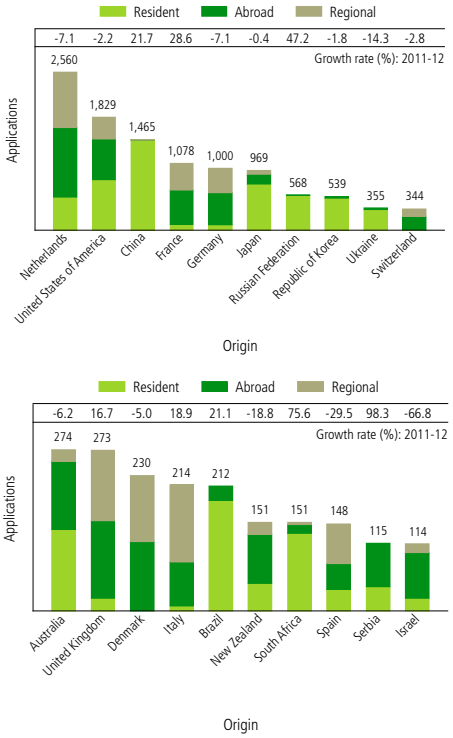
Source: WIPO Statistics Database, October 2013

Plant variety applications for the top 20 origins, based on the absolute count method, are presented in Figure D.3.1.2. In 2012, the largest number of plant variety applications originated in the Netherlands (2,560), followed by the US (1,829) and China (1,465). Residents of France, Germany and Japan had similar numbers of applications i.e., approximately 1,000 each.

Applicants residing in China, the Republic of Korea, the Russian Federation and Ukraine filed more than 90% of their applications with their respective national offices. In contrast, applications abroad and applications filed at the CPVO office accounted for more than 90% of all applications filed by residents of Denmark, France, Germany, Italy, Switzerland and the United Kingdom (UK).

Twelve of the top 20 origins, including the top two origins, filed fewer applications in 2012 than in 2011. Israel and Spain witnessed the fastest decreases in the numbers of applications filed in 2012. Between 2011 and 2012, residents of Serbia (+98.3%) and South Africa (+75.6%) saw the largest growth in applications.

Figure D.3.1.2 Plant variety applications for the top 20 origins, 2012



Note: As some offices do not provide data broken down by origin, the numbers of applications by origin reported here are likely to be lower than the actual numbers. Regional refers to applications filed at the CPVO.

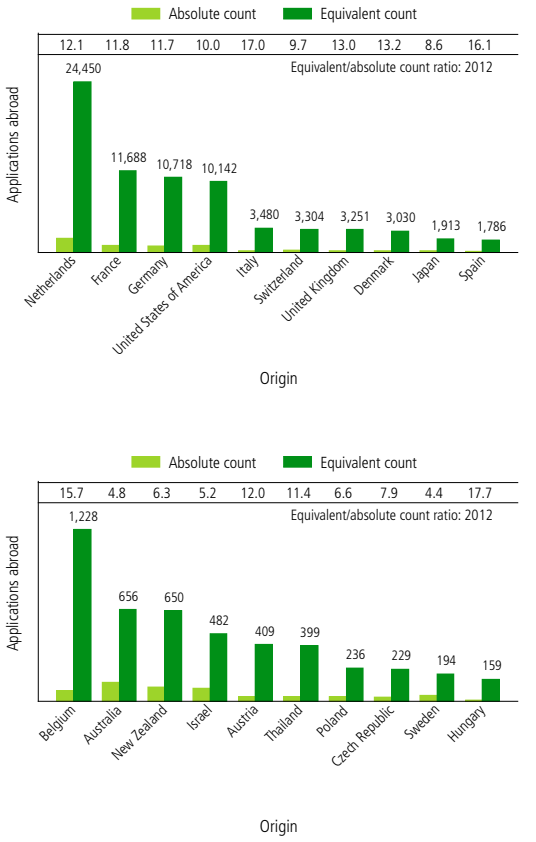
Source: WIPO Statistics Database, October 2013.

Figure D.3.1.3 compares the absolute and equivalent numbers of applications abroad for the top 20 origins. As outlined earlier, applications at regional offices are equivalent to multiple applications in the respective member states of those offices. The following example illustrates the difference between absolute count and equivalent count data for the Netherlands in 2012. The total number of applications in terms of absolute count was 2,560 (1,432 resident applications plus 1,128 abroad) compared to 25,882 (1,432 resident applications plus 24,450 abroad) for equivalent applications.

As Figure D.3.1.3 shows, in 2012 the Netherlands had the largest number of applications abroad in the equivalent counts category. This was more than double the number of applications abroad for France, which was ranked in second position. France, Germany and the US had a similar magnitude of applications abroad for both absolute counts and equivalent counts.

The greater the equivalent/absolute count ratio, the more frequently applicants made use of the CPVO to seek plant variety protection. Most EU origins had a high equivalent/absolute count ratio, which is to be expected, due to their frequent use of the CPVO. The highest ratios were seen in Hungary (17.7), Italy (17), Spain (16.1) and Belgium (15.7), reflecting the intensive use of the CPVO. In contrast, Sweden (4.4), Australia (4.8) and Israel (5.2) had the lowest ratios, reflecting less intensive use of the CPVO for applications abroad.

Figure D.3.1.3 Plant variety applications abroad for the top 20 origins, 2012



Note: As some offices do not provide data broken down by origin, the applications by origin reported here are likely to be lower than the actual numbers.

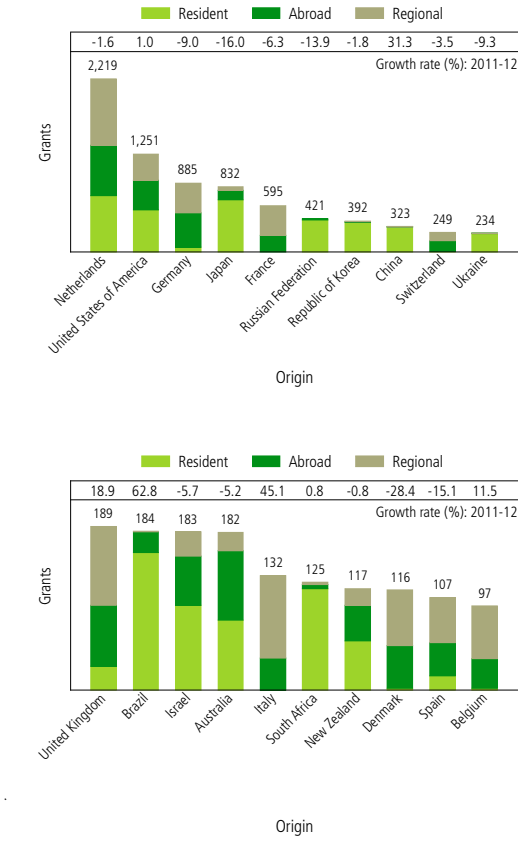
Source: WIPO Statistics Database, October 2013

D.3.2 Plant variety grants by origin

Figure D.3.2.1 presents plant variety grants for the top 20 origins based on absolute count data. Grant data provide a profile which is similar to that of application data for all reported origins. The top 10 origins comprise the same origins for grants as for applications, albeit with a slightly different ranking. Residents of the Netherlands (2,219) were issued the largest number of grants, followed by applicants residing in the US (1,251), Germany (885) and Japan (832). The majority of origins were issued fewer grants in 2012 compared to 2011. The most notable decreases in the number of grants issued related to

applicants residing in Denmark (-28.4%), Japan (-16%) and Spain (-15.1%). Residents of Brazil experienced the fastest growth, followed by residents of Italy and China. For all reported origins, the distributions of resident grants, grants abroad, and regional grants are similar to the distribution of applications.

Figure D.3.2.1 Plant variety grants for the top 20 origins, 2012

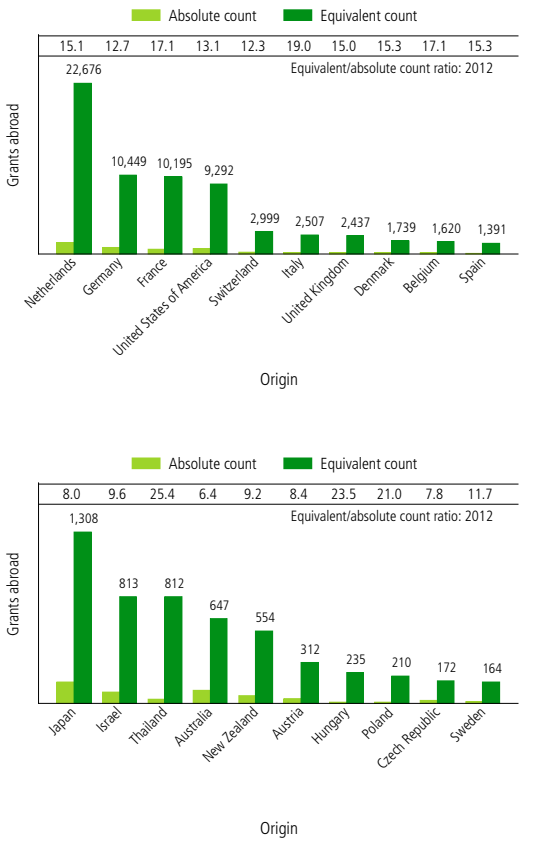


Note: As some offices do not provide data broken down by origin, the numbers of grants by origin reported here are likely to be lower than the actual numbers.

Source: WIPO Statistics Database, October 2013

Figure D.3.2.2 shows grants abroad based on the equivalent and absolute counts for the top 20 origins. Applicants from the Netherlands (22,676), Germany (10,449), France (10,195) and the US (9,292) were issued the highest number of equivalent grants. Applications and grants abroad for the top 20 origins presented a similar profile; however, there are a few differences. For example, Thailand had a much higher equivalent/absolute count ratio for grants (25.4) than for filings.

Figure D.3.2.2 Plant variety grants abroad for the top 20 origins, 2012



Note: As some offices do not provide data broken down by origin, the numbers of grants by origin reported here are likely to be lower than the actual numbers.

Source: WIPO Statistics Database, October 2013

D.4

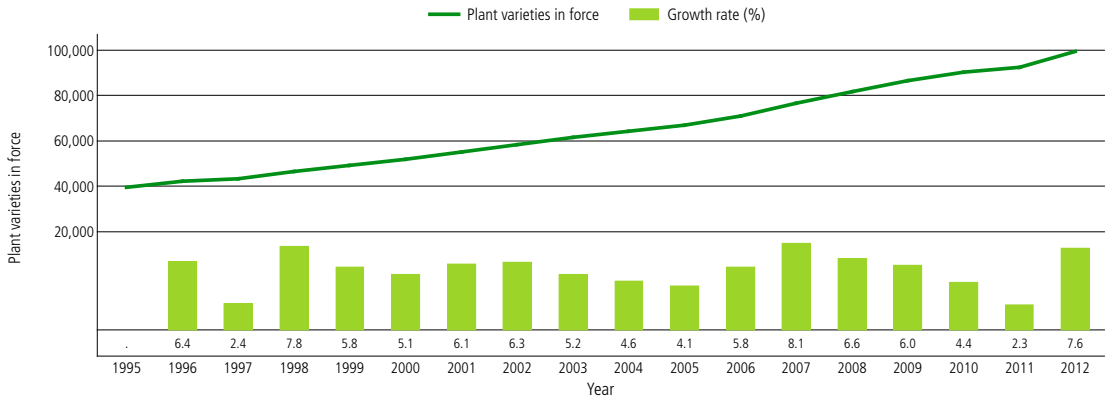
Plant varieties in force

In accordance with the legislation governing plant variety protection in the territory concerned, the protection of plant varieties is granted for a limited period of time. Figure D.4.1 shows the total number of plant varieties in force worldwide between 1995 and 2012. World totals are WIPO estimates covering data for 66 offices. In 2012, there were close to 100,000 plant varieties in force, which is more than double the number in force in 1995 (i.e., approximately 39,600). There has been a consistent upward trend in the number of plant varieties in force, with the 7.6% growth rate in 2012 representing the fastest growth rate since 2007. The CPVO, and the offices of China and the Netherlands accounted for two-fifths of total growth worldwide in 2012.

As Figure D.4.2 shows, the CPVO accounted for approximately 20% of all plant varieties in force worldwide in 2012. This reflects the fact that this office has issued the largest number of grants since the mid-1990s. In comparison with all other offices, a considerably higher number of plant varieties were also in force in the US (B, PPA data).

The majority of offices presented in Figure D.4.2 had more plant varieties in force in 2012 than in 2011. The offices of China (+32.9%), Ukraine (+11.8%), Brazil (+11%) and the Netherlands (+10%) saw double-digit growth. In contrast, Italy showed a substantial decrease of 10.1%.

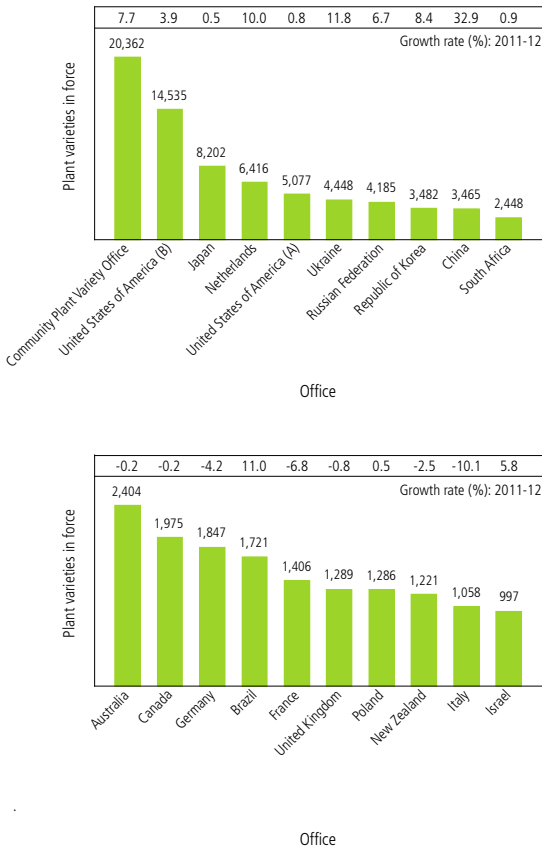
Figure D.4.1 Trend in plant varieties in force worldwide



Note: World totals are WIPO estimates covering data for 66 offices.

Source: WIPO Statistics Database, October 2013

Figure D.4.2 Plant varieties in force for selected offices, 2012



Note: United States of America (A) refers to PVPA data, and United States of America (B) refers to PPA data.

Source: WIPO Statistics Database, October 2013

ANNEX, GLOSSARY AND LIST OF ABBREVIATIONS

ANNEX A

DEFINITIONS FOR SELECTED ENERGY-RELATED TECHNOLOGY FIELDS

Energy-related technologies	International Patent Classification (IPC) Symbols
Solar energy technology	F24J 2/00, F24J 2/02, F24J 2/04, F24J 2/05, F24J 2/06, F24J 2/07, F24J 2/08, F24J 2/10, F24J 2/12, F24J 2/13, F24J 2/14, F24J 2/15, F24J 2/16, F24J 2/18, F24J 2/23, F24J 2/24, F24J 2/36, F24J 2/38, F24J 2/42, F24J 2/46, F03G 6/06, G02B 5/10, H01L 31/052, E04D 13/18, H01L 31/04, H01L 31/042, H01L 31/18, E04D 1/30, G02F 1/136, G05F 1/67, H01L 25/00, H01L 31/00, H01L 31/048, H01L 33/00, H02J 7/35, H02N 6/00
Fuel cell technology	H01M 4/00, H01M 4/86, H01M 4/88, H01M 4/90, H01M 8/00, H01M 8/02, H01M 8/04, H01M 8/06, H01M 8/08, H01M 8/10, H01M 8/12, H01M 8/14, H01M 8/16, H01M 8/18, H01M 8/20, H01M 8/22, H01M 8/24
Wind energy	F03D 1/00, F03D 3/00, F03D 5/00, F03D 7/00, F03D 9/00, F03D 11/00, B60L 8/00
Geothermal energy	F24J 3/08, F03G 4/00, F03G 7/05

Note: For a definition of IPC symbols, see www.wipo.int/classifications/ipc/en/. The correspondence between IPC symbols and technology fields is not always clear-cut. Therefore, it is difficult to capture all patents in a specific technology field. Nonetheless, the IPC-based definitions of the four technologies presented above are likely to capture the vast majority of related patents.

Source: WIPO

Annex B

International classification of goods and services under the Nice Agreement

Class Headings	Products
Class 1	Chemicals used in industry, science and photography, as well as in agriculture, horticulture and forestry; unprocessed artificial resins, unprocessed plastics; manures; fire extinguishing compositions; tempering and soldering preparations; chemical substances for preserving foodstuffs; tanning substances; adhesives used in industry
Class 2	Paints, varnishes, lacquers; preservatives against rust and against deterioration of wood; colorants; mordants; raw natural resins; metals in foil and powder form for painters, decorators, printers and artists
Class 3	Bleaching preparations and other substances for laundry use; cleaning, polishing, scouring and abrasive preparations; soaps; perfumery, essential oils, cosmetics, hair lotions; dentifrices
Class 4	Industrial oils and greases; lubricants; dust absorbing, wetting and binding compositions; fuels (including motor spirit) and illuminants; candles and wicks for lighting
Class 5	Pharmaceutical and veterinary preparations; sanitary preparations for medical purposes; dietetic substances adapted for medical use, food for babies; plasters, materials for dressings; material for stopping teeth, dental wax; disinfectants; preparations for destroying vermin; fungicides, herbicides
Class 6	Common metals and their alloys; metal building materials; transportable buildings of metal; materials of metal for railway tracks; non-electric cables and wires of common metal; ironmongery, small items of metal hardware; pipes and tubes of metal; safes; goods of common metal not included in other classes; ores
Class 7	Machines and machine tools; motors and engines (except for land vehicles); machine coupling and transmission components (except for land vehicles); agricultural implements other than hand-operated; incubators for eggs
Class 8	Hand tools and implements (hand-operated); cutlery; side arms; razors
Class 9	Scientific, nautical, surveying, photographic, cinematographic, optical, weighing, measuring, signaling, checking (supervision), life-saving and teaching apparatus and instruments; apparatus and instruments for conducting, switching, transforming, accumulating, regulating or controlling electricity; apparatus for recording, transmission or reproduction of sound or images; magnetic data carriers, recording discs; automatic vending machines and mechanisms for coin-operated apparatus; cash registers, calculating machines, data processing equipment and computers; fire-extinguishing apparatus
Class 10	Surgical, medical, dental and veterinary apparatus and instruments, artificial limbs, eyes and teeth; orthopedic articles; suture materials
Class 11	Apparatus for lighting, heating, steam generating, cooking, refrigerating, drying, ventilating, water supply and sanitary purposes
Class 12	Vehicles; apparatus for locomotion by land, air or water
Class 13	Firearms; ammunition and projectiles; explosives; fireworks
Class 14	Precious metals and their alloys and goods in precious metals or coated therewith, not included in other classes; jewellery, precious stones; horological and chronometric instruments
Class 15	Musical instruments
Class 16	Paper, cardboard and goods made from these materials, not included in other classes; printed matter; bookbinding material; photographs; stationery; adhesives for stationery or household purposes; artists' materials; paint brushes; typewriters and office requisites (except furniture); instructional and teaching material (except apparatus); plastic materials for packaging (not included in other classes); printers' type; printing blocks
Class 17	Rubber, gutta-percha, gum, asbestos, mica and goods made from these materials and not included in other classes; plastics in extruded form for use in manufacture; packing, stopping and insulating materials; flexible pipes, not of metal
Class 18	Leather and imitations of leather, and goods made of these materials and not included in other classes; animal skins, hides; trunks and travelling bags; umbrellas, parasols and walking sticks; whips, harness and saddlery

Class 19	Building materials (non-metallic); non-metallic rigid pipes for building; asphalt, pitch and bitumen; non-metallic transportable buildings; monuments, not of metal
Class 20	Furniture, mirrors, picture frames; goods (not included in other classes) of wood, cork, reed, cane, wicker, horn, bone, ivory, whalebone, shell, amber, mother-of-pearl, meerschaum and substitutes for all these materials, or of plastics
Class 21	Household or kitchen utensils and containers; combs and sponges; brushes (except paint brushes); brush-making materials; articles for cleaning purposes; steelwool; unworked or semi-worked glass (except glass used in building); glassware, porcelain and earthenware not included in other classes
Class 22	Ropes, string, nets, tents, awnings, tarpaulins, sails, sacks and bags (not included in other classes); padding and stuffing materials (except of rubber or plastics); raw fibrous textile materials
Class 23	Yarns and threads, for textile use
Class 24	Textiles and textile goods, not included in other classes; bed and table covers
Class 25	Clothing, footwear, headgear
Class 26	Lace and embroidery, ribbons and braid; buttons, hooks and eyes, pins and needles; artificial flowers
Class 27	Carpets, rugs, mats and matting, linoleum and other materials for covering existing floors; wall hangings (non-textile)
Class 28	Games and playthings; gymnastic and sporting articles not included in other classes; decorations for Christmas trees
Class 29	Meat, fish, poultry and game; meat extracts; preserved, frozen, dried and cooked fruits and vegetables; jellies, jams, compotes; eggs, milk and milk products; edible oils and fats
Class 30	Coffee, tea, cocoa, sugar, rice, tapioca, sago, artificial coffee; flour and preparations made from cereals, bread, pastry and confectionery, ices; honey, treacle; yeast, baking-powder; salt, mustard; vinegar, sauces (condiments); spices; ice
Class 31	Agricultural, horticultural and forestry products and grains not included in other classes; live animals; fresh fruits and vegetables; seeds, natural plants and flowers; foodstuffs for animals, malt
Class 32	Beers; mineral and aerated waters and other non-alcoholic drinks; fruit drinks and fruit juices; syrups and other preparations for making beverages
Class 33	Alcoholic beverages (except beers)
Class 34	Tobacco; smokers' articles; matches

Class Headings	**Services**
Class 35	Advertising; business management; business administration; office functions
Class 36	Insurance; financial affairs; monetary affairs; real estate affairs
Class 37	Building construction; repair; installation services
Class 38	Telecommunications
Class 39	Transport; packaging and storage of goods; travel arrangement
Class 40	Treatment of materials
Class 41	Education; providing of training; entertainment; sporting and cultural activities
Class 42	Scientific and technological services and research and design relating thereto; industrial analysis and research services; design and development of computer hardware and software
Class 43	Services for providing food and drink; temporary accommodation
Class 44	Medical services; veterinary services; hygienic and beauty care for human beings or animals; agriculture, horticulture and forestry services
Class 45	Legal services; security services for the protection of property and individuals; personal and social services rendered by others to meet the needs of individuals

Note: See www.wipo.int/classifications/nivilo/nice/index.htm?lang=EN for further information on the International Classification of Goods and Services under the Nice Agreement.

Source: WIPO

CLASS GROUPS DEFINED BY EDITAL®

Industry sector	Nice classes
Agricultural products and services	29, 30, 31, 32, 33, 43
Management, Communications, Real estate and Financial services	35, 36
Chemicals	1, 2, 4
Textiles - Clothing and Accessories	14, 18, 22, 23, 24, 25, 26, 27, 34
Construction, Infrastructure	6, 17, 19, 37, 40
Pharmaceuticals, Health, Cosmetics	3, 5, 10, 44
Household equipment	8, 11, 20, 21
Leisure & Education = Leisure, Education, Training	13, 15, 16, 28, 41
Scientific research, Information and Communication technology	9, 38, 42, 45
Transportation and Logistics	7, 12, 39

Source: Edital®

GLOSSARY

This glossary provides definitions of key technical terms and concepts. Many of the terms are defined generically (e.g., "application"), but apply to several or all of the various forms of intellectual property (IP) covered in this report.

Applicant: An individual or other legal entity that files an application for a patent, utility model, trademark or industrial design. There may be more than one applicant in an application. For the statistics presented in this publication, the name of the first-named applicant is used to determine the owner of the application.

Application: The procedure for requesting IP rights at an office, which examines the application and decides whether to grant or refuse protection. Application also refers to a set of documents submitted to an office by the applicant.

Application abroad: For statistical purposes, an application filed by a resident of a given state/jurisdiction with an IP office of another state/jurisdiction. For example, an application filed by an applicant domiciled in France with the Japan Patent Office (JPO) is considered an "application abroad" from the perspective of France. This differs from a "non-resident application", which describes an application filed by a resident of a foreign state/jurisdiction from the perspective of the office receiving the application.

Application date: The date on which the IP office receives an application that meets the minimum requirements. Application date is also referred to as the filing date.

Budapest Treaty: Disclosure of an invention is a requirement for the granting of a patent. Normally, an invention is disclosed by means of a written description. Where an invention involves a microorganism or the use of a microorganism, disclosure is not always possible in writing but can sometimes only be effected by the deposit, with a specialized institution, of a sample of the microorganism. In order to eliminate the need to deposit a microorganism in each country in which patent protection is sought, the Budapest Treaty provides that the deposit of a microorganism with any "international depositary authority" (IDA) suffices for the purposes of patent procedure before the national patent offices of all contracting states and before any regional patent office (where such a regional office recognizes the effects of the Treaty).

Class: Refers to the classes defined in both the Locarno Classification and the Nice Classification. Classes indicate the categories of products and services (where applicable) for which trademark or industrial design protection is requested. (See "Locarno Classification" and "Nice Classification".)

Class count: The number of classes specified in a trademark application or registration. In the international trademark system and at certain offices an applicant can file a trademark application that specifies one or more of the 45 goods and services classes of the Nice Classification. Offices use either a single- or multi-class filing system. For example, the offices of Japan, the Republic of Korea and the United States of America (US) as well as many European IP offices have multi-class filing systems. The offices of Brazil, China and Mexico follow a single-class filing system, requiring a separate application for each class in which applicants seek trademark protection. To capture the differences in application numbers across offices, it is useful to compare their respective application and registration class counts.

Community Plant Variety Office (CPVO) of the European Union (EU): An EU agency that manages a system of plant variety rights covering the 27 EU member states.

Hague member (contracting party): A state or intergovernmental organization that is a member of the Hague System for the International Registration of Industrial Designs. The expression "contracting party" includes any state or intergovernmental organization party to the 1999 Act and/or the 1960 Act of the Hague Agreement. The entitlement to file an international application under the Hague Agreement is limited to natural persons or legal entities having a real and effective industrial or commercial establishment, or a domicile, in at least one of the contracting parties to the Agreement, or to nationals of one of these contracting parties, or of a member state of an intergovernmental organization that is a contracting party. In addition, but only under the 1999 Act, an international application may be filed on the basis of habitual residence in the jurisdiction of a contracting party.

Design count: The number of designs contained in an industrial design application or registration. Under the Hague System for International Registration of Industrial Designs, it is possible for an applicant to obtain protection for up to 100 industrial designs for products belonging to one and the same class by filing a single application. Some patent offices allow applications to contain more than one design for the same product or within the same class, while other offices allow only one design per application. In order to capture the differences in application numbers across offices, it is useful to compare their respective application and registration design counts.

Designation: The request in an international application or registration for protection in a Hague or Madrid member's jurisdiction in which holders of registrations seek protection for their industrial designs or trademarks.

Direct filing: See "National route".

Equivalent application: Applications at regional offices are equivalent to multiple applications, one in each of the states that is a member of those offices. To calculate the number of equivalent applications for Benelux Office for Intellectual Property (BOIP), Eurasian Patent Organization (EAPO), African Intellectual Property Organization (OAPI) or the Office for Harmonization in the Internal Market (OHIM) data, each application is multiplied by the corresponding number of member states. For European Patent Office (EPO) and African Regional Intellectual Property Organization (ARIPO) data, each application is counted as one application abroad if the applicant does not reside in a member state; or as one resident and one application abroad if the applicant resides in a member state. The equivalent application concept is used for reporting data by origin.

Equivalent grant (registration): Grants (registrations) at regional offices are equivalent to multiple grants (registrations), one in each of the states that is a member of those offices. To calculate the number of equivalent grants (registrations) for BOIP, EAPO, OAPI or OHIM data, each grant (registration) is multiplied by the corresponding number of member states. For EPO and ARIPO data, each grant is counted as one grant abroad if the applicant does not reside in a member state; or as one resident and one grant abroad if the applicant resides in a member state. The equivalent grant (registration) concept is used for reporting data by origin.

European Patent Convention (EPC): The Convention on the Grant of European Patents, commonly known as the European Patent Convention (EPC), is a multilateral treaty instituting the European Patent Organization and providing a legal system according to which European patents are granted. The EPC permits applicants to file a single application at the EPO and to designate any of the participating European countries.

European Patent Office (EPO): The EPO is the regional patent office created under the EPC, in charge of granting European patents for EPC member states. Under Patent Cooperation Treaty (PCT) procedures, the EPO acts as a receiving office, an international searching authority and an international preliminary examining authority.

Filing: See "Application".

Foreign-oriented patent families: A patent family having at least one filing office that is different from the office of the applicant's origin. (See "Patent family".)

Grant: A set of exclusive rights legally accorded to the applicant when a patent or utility model is "granted" or "issued". (See "Patent" and "Utility model".)

Gross domestic product (GDP): The total unduplicated output of economic goods and services produced within a country as measured in monetary terms.

Hague international application: An application for the international registration of an industrial design filed under the WIPO-administered Hague system.

Hague international registration: An international registration issued via the Hague system, which facilitates the acquisition of industrial design rights in multiple jurisdictions. An application for international registration of an industrial design leads to its recording in the International Register and the publication of the registration in the International Designs Bulletin. If the registration is not refused by the IP office of a designated Hague member, the international registration will have the same effect as a registration made in that jurisdiction.

Hague route: An alternative to the Paris route (direct route), the Hague route enables an application for international registration of industrial designs to be filed using the Hague system.

Hague system: The abbreviated form of the Hague System for the International Registration of Industrial Designs. This system comprises several international treaties (the London Act (currently frozen), the Hague Act and the Geneva Act). The Hague system makes it possible for an applicant to register up to 100 industrial designs in multiple jurisdictions by filing a single application with the International Bureau of WIPO. It simplifies the process of multinational registration by reducing the requirement to file separate applications with each IP office. The system also simplifies the subsequent management of the industrial design, since it is possible to record changes or to renew the registration through a single procedural step.

In force: Refers to IP rights that are currently valid. To remain in force, IP protection must be maintained (see "Maintenance").

Industrial design: Industrial designs are applied to a wide variety of industrial products and handicrafts. They refer to the ornamental or aesthetic aspects of a useful article, including compositions of lines or colors or any three-dimensional forms that give a special appearance to a product or handicraft. The holder of a registered industrial design has exclusive rights against unauthorized copying or imitation of the design by third parties. Industrial design registrations are valid for a limited period. The term of protection is usually 15 years for most jurisdictions. However, differences in legislation do exist, notably in China (which provides for a 10-year term from the application date) and the US (which provides for a 14-year term from the date of registration).

Intellectual property (IP): Refers to creations of the mind: inventions, literary and artistic works, symbols, names, images and designs used in commerce. IP is divided into two categories: industrial property, which includes patents, utility models, trademarks, industrial designs and geographical indications of source; and copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs.

International Bureau (IB): In the context of the PCT, Hague and Madrid systems, the International Bureau of WIPO acts as a receiving office for international applications from all contracting states/contracting parties. It also handles processing tasks with respect to these applications and the subsequent management of Hague and Madrid systems registrations.

International Depositary Authority (IDA): A scientific institution – typically a "culture collection" – capable of storing microorganisms that has acquired the status of an "international depositary authority" under the Budapest Treaty and that provides for the receipt, acceptance and storage of microorganisms and the furnishing of samples thereof. Currently, there are 41 such authorities in existence around the world.

International Patent Classification (IPC): The IPC 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. The symbols contain information relating to sections, classes, subclasses and groups.

International Union for the Protection of New Varieties of Plants (UPOV): An intergovernmental organization established by the International Convention for the Protection of New Varieties of Plants ("UPOV Convention"), which was adopted on December 2, 1961. UPOV provides and promotes an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants for the benefit of society.

Invention: A new solution to a technical problem. To obtain patent rights, the invention must be novel, involve an inventive step and be industrially applicable, as judged by a person skilled in the art.

Locarno Classification (LOC): The abbreviated form of the International Classification for Industrial Designs under the Locarno Agreement used for registering industrial designs. The LOC comprises a list of 32 classes and their respective subclasses, with explanatory notes and an alphabetical list of goods in which industrial designs are incorporated, and an indication of the classes and subclasses into which they fall.

Madrid international application: An application for international registration under the Madrid system, which is a request for protection of a trademark in one or more of the Madrid members. Such international applications must be based on a basic mark.

Madrid international registration: An international registration is issued under the Madrid system, which facilitates the acquisition of mark rights in multiple jurisdictions. An application for international registration of a mark leads to its recording in the International Register, and the publication of the international registration in the WIPO Gazette of International Marks. If the international registration is not refused protection by a designated Madrid member, it will have the same effect as a national or regional trademark registration made under the law applicable in that Madrid member's jurisdiction.

Madrid route: The Madrid route (the Madrid system) is an alternative to the direct national or regional route (also called the Paris route).

Madrid system: The abbreviated form of the Madrid System for the International Registration of Marks, established under the Madrid Agreement and the Madrid Protocol and administered by WIPO. The Madrid system makes it possible for an applicant to register a trademark in a large number of countries by filing a single application at their national or regional IP office that is party to the system. The Madrid system simplifies the process of multinational trademark registration by reducing the requirement to file separate applications at each office. It also simplifies the subsequent management of the mark, since it is possible to record changes or to renew the registration through a single procedural step. Registration through the Madrid system does not create an "international" trademark, and the decision to register or refuse the trademark remains in the hands of national and/or regional office(s). Trademark rights are limited to the jurisdiction of the trademark registration office(s).

Maintenance: An act by the applicant to keep the IP grant/registration valid (in force), primarily by paying the required fee to the IP office of the state/jurisdiction providing protection. The fee is also known as a "maintenance fee". A trademark can be maintained indefinitely by paying renewal fees; however, patents, utility models and industrial designs can only be maintained for a limited number of years. (See "Renewal".)

Microorganism deposit: The transmittal of a microorganism to an international depositary authority (IDA), which receives and accepts it, or the storage of such a microorganism by the IDA, or both transmittal and storage.

National Phase Entry (NPE): See "National phase under the PCT".

National phase under the PCT: This follows the international phase of the PCT procedure, and consists of the entry and processing of the international application in the individual countries or regions in which the applicant seeks protection for an invention.

National route: Applications for IP protection filed directly with the national office of, or acting for, the relevant state/jurisdiction (see also "PCT route", "Hague route" or "Madrid route"). National route is also called the "direct route" or "Paris route".

Nice Classification (NCL): The abbreviated form of the International Classification of Goods and Services for the Purposes of Registering Marks, an international classification established under the Nice Agreement. The Nice Classification consists of 45 classes, which are divided into 34 classes for goods and 11 for services. See also "Class" above.

Non-resident: For statistical purposes, a "non-resident" application refers to an application filed with the IP office of or acting for a state/jurisdiction in which the first-named applicant in the application is not domiciled. For example, an application filed with the JPO by an applicant residing in France is considered a non-resident application from the perspective of this office. Non-resident applications are sometimes referred to as foreign applications. A non-resident grant or registration is an IP right issued on the basis of a non-resident application.

Origin (country/region): For statistical purposes, the "origin" of an application means the country/territory of residence of the first-named applicant in the application. In some cases (notably in the US), the country of origin is determined by the residence of the assignee rather than that of the applicant.

Paris Convention: The Paris Convention for the Protection of Industrial Property (1883), signed on March 20, 1883, is one of the most important IP treaties. It establishes the "right of priority" that enables an IP applicant, when filing an application in countries other than the original country of filing, to claim priority of an earlier application filed up to 12 months previously.

Paris route: An alternative to the PCT, Hague or Madrid routes, the Paris route (also called the "direct route") enables individual IP applications to be filed directly with an office that is a signatory of the Paris Convention.

Patent: A set of exclusive rights granted by law to applicants for inventions that are new, non-obvious and commercially applicable. It is valid for a limited period of time (generally 20 years), during which patent holders can commercially exploit their inventions on an exclusive basis. In return, applicants are obliged to disclose their inventions to the public in a manner that enables others, skilled in the art, to replicate the invention. The patent system is designed to encourage innovation by providing innovators with time-limited exclusive legal rights, thus enabling innovators to appropriate a return on their innovative activity.

Patent Cooperation Treaty (PCT): The PCT is an international treaty, administered by WIPO. The PCT system facilitates the filing of patent applications worldwide and makes it possible to seek patent protection for an invention simultaneously in each of a large number of countries by first filing a single "international" patent application. The granting of patents, which remains under the control of the national or regional patent offices, is carried out in what is called the "national phase" or "regional phase".

Patent family: A set of interrelated patent applications filed in one or more countries/jurisdictions to protect the same invention.

PCT filing: Abbreviated form of "PCT International Application".

PCT application: A patent application filed through the WIPO-administered Patent Cooperation Treaty (PCT).

PCT-Patent Prosecution Highway Pilots (PCT-PPH): A number of bilateral agreements signed between patent offices enable applicants to request a fast-track examination procedure, whereby patent examiners can make use of the work products of another office or offices. These work products can include the results of a favorable written opinion by an International Searching Authority, the written opinion of an International Preliminary Examining Authority or the international preliminary report on patentability (IPRP) issued within the framework of the PCT. By requesting this procedure, applicants can generally obtain patents from participating offices more quickly.

PCT route: Patent applications filed or patents granted based on PCT international applications.

PCT system: The PCT, an international treaty administered by WIPO, facilitates the acquisition of patent rights in a large number of jurisdictions. The PCT system simplifies the process of multiple national patent filings by reducing the requirement to file a separate application in each jurisdiction. However, the decision on whether or not to grant patent rights remains in the hands of national and regional patent offices, and patent rights remain limited to the jurisdiction of the patent-granting authority. The PCT international application process starts with the international phase, during which an international search and possibly a preliminary examination are performed, and concludes with the national phase, during which national and regional patent offices decide on the patentability of an invention according to national law.

Pending patent application: In general, this refers to a patent application filed with a patent office, and for which no patent has yet been granted or refused but neither has the application been withdrawn. In jurisdictions where a request for examination is obligatory in order to start the examination process, a pending application may refer to an application for which a request for examination has been received, and for which no patent has been granted or refused, but neither has the application been withdrawn.

Plant Patent Act (PPA) of the US: Under the law commonly known as the "Plant Patent Act", whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state, may obtain a patent therefor.

Plant variety: According to the UPOV Convention, "variety" means a plant grouping within a single botanical taxon of the lowest known rank, which, irrespective of whether the conditions for the grant of a breeder's right are fully met, can be (a) defined by the expression of the characteristics resulting from a given genotype or combination of genotypes; (b) distinguished from any other plant grouping by the expression of at least one of the said characteristics; and (c) considered as a unit with regard to its suitability for being propagated unchanged.

Plant variety grant: Under the UPOV Convention, the breeder's right is only granted (title of protection is issued) where the variety is new, distinct, uniform, stable and has a suitable denomination.

Plant Variety Protection Act (PVPA) of the US: Under the PVPA, the US protects all sexually reproduced plant varieties and tuber-propagated plant varieties, excluding fungi and bacteria.

Prior art: All information disclosed to the public about an invention, in any form, before a given date. Information on prior art can assist in determining whether the claimed invention is new and involves an inventive step (is non-obvious) for the purposes of international searches and international preliminary examination.

Priority date: The filing date of the application on the basis of which priority is claimed.

Publication date: The date on which an IP application is disclosed to the public. On that date, the subject matter of the application becomes "prior art".

Regional application/grant (registration): An application filed with or granted (registered) by a regional IP office having jurisdiction over more than one country. Regional IP offices in operation include: the African Regional Intellectual Property Organization (ARIPO), the Benelux Office for Intellectual Property (BOIP), the Eurasian Patent Office (EAPO), the European Patent Office (EPO), the African Intellectual Property Organization (OAPI) and the Office for Harmonization in the Internal Market (OHIM) of the EU.

Regional route (or regional direct): Applications for IP protection filed or granted based on applications filed with a regional IP office.

Registered Community Design (RCD): A registration issued by the Office for Harmonization in the Internal Market (OHIM) based on a single application filed directly with this office by an applicant seeking protection within the European Union (EU) as a whole.

Registration: A set of exclusive rights legally accorded to the applicant when an industrial design or trademark is "registered" or "issued". (See "Industrial design" or "Trademark".) Registrations are issued to applicants to make use of and exploit their industrial design or trademark for a limited period of time and can, in some cases, particularly in the case of trademarks, be renewed indefinitely.

Renewal: The process by which the protection of an IP right is maintained (i.e., kept in force). This usually consists of paying renewal fees to an IP office at regular intervals. If renewal fees are not paid, the registration may lapse. (See "Maintenance".)

Resident: For statistical purposes, a "resident" application refers to an application filed with the IP office of or acting for the state/jurisdiction in which the first-named applicant in the application has residence. For example, an application filed with the Japan Patent Office (JPO) by a resident of Japan is considered a resident application for the JPO. Resident applications are sometimes referred to as domestic applications. A resident grant/registration is an IP right issued on the basis of a resident application.

Trademark: A trademark is a distinctive sign that identifies certain goods or services as those produced or provided by a specific person or enterprise. The holder of a registered trademark has the legal right to exclusive use of the mark in relation to the products or services for which it is registered. The owner can prevent unauthorized use of the trademark, or a confusingly similar mark, so as to prevent consumers and the public in general from being misled. Unlike patents, trademarks can be maintained indefinitely by paying renewal fees. The procedures for registering trademarks are governed by the rules and regulations of national and regional IP offices. Trademark rights are limited to the jurisdiction of the authority that registers the trademark. Trademarks can be registered by filing an application at the relevant national or regional office(s), or by filing an international application through the Madrid system.

Utility model: A special form of patent right granted by a state/jurisdiction to an inventor or the inventor's assignee for a fixed period of time. The terms and conditions for granting a utility model are slightly different from those for normal patents (including a shorter term of protection and less stringent patentability requirements). The term "utility model" can also describe what are known in certain countries as "petty patents", "short-term patents" or "innovation patents".

World Intellectual Property Organization (WIPO): A United Nations specialized agency dedicated to the promotion of innovation and creativity for the economic, social and cultural development of all countries through a balanced and effective international IP system. Established in 1967, WIPO's mandate is to promote the protection of IP throughout the world through cooperation among states and in collaboration with other international organizations.

LIST OF ABBREVIATIONS

ARIPO	African Regional Intellectual Property Organization
BOIP	Benelux Office for Intellectual Property
CPVO	Community Plant Variety Office of the European Union
EAPO	Eurasian Patent Organization
EPO	European Patent Office
EU	European Union
GDP	gross domestic product
IB	International Bureau
ID	industrial design
IDA	International Depositary Authority
IP	intellectual property
IPC	International Patent Classification
JPO	Japan Patent Office
KIPO	Korean Intellectual Property Office
NCL	Nice Classification
OAPI	African Intellectual Property Organization
OHIM	Office for Harmonization in the Internal Market (of the European Union)
PCT	Patent Cooperation Treaty
PCT NPE	Patent Cooperation Treaty National Phase Entry
PPA	Plant Patent Act of the United States of America
PVPA	Plant Variety Protection Act of the United States of America
RCD	Registered Community Design
SIPO	State Intellectual Property Office of the People's Republic of China
UM	utility model
UPOV	International Union for the Protection of New Varieties of Plants
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization

STATISTICAL TABLES

Table P1: Patent applications by patent office and origin, 2012

	Applications by Office			Equivalent applications by Origin	PCT International Applications		PCT National Phase Entry	
Name	Total	Resident	Non-Resident	Total (1)	Receiving Office	Origin	Office	Origin
Afghanistan	..	..	..	4	n.a.	0	..	3
African Intellectual Property Organization	550	106	444	n.a.	0	n.a.	..	n.a.
African Regional Intellectual Property Organization (4)	603	..	..	n.a.	0	n.a.	..	n.a.
Albania (2,3)	11	3	8	4	1	3	6	..
Algeria	900	119	781	138	4	4	738	15
Andorra	..	..	..	18	n.a.	7	..	9
Angola (5)	..	..	..	1	n.a.	0	..	..
Antigua and Barbuda	..	..	..	3	0	0	..	1
Argentina	4,813	735	4,078	1,048	n.a.	27	..	117
Armenia	141	137	4	188	7	8	3	15
Aruba	..	..	..	1	n.a.	0	..	..
Australia	26,358	2,627	23,731	11,234	1,607	1,707	19,107	7,048
Austria	2,552	2,258	294	12,088	535	1,320	550	5,743
Azerbaijan	144	144	0	640	4	5	11	38
Bahamas	..	..	..	122	n.a.	13	..	75
Bahrain	164	3	161	19	0	2	160	4
Bangladesh	354	67	287	71	n.a.	3	..	1
Barbados (5)	36	0	36	358	n.a.	165	36	262
Belarus	1,871	1,681	190	2,812	7	14	145	30
Belgium	882	755	127	11,719	53	1,226	..	6,612
Belize	..	..	..	4	0	2	..	..
Benin (6)	..	..	..	112	0	0	..	..
Bermuda	..	..	..	106	n.a.	0	..	61
Bhutan	..	..	..	1	n.a.	0	..	..
Bolivia (Plurinational State of)	..	..	..	3	n.a.	0	..	1
Bosnia and Herzegovina	16	2	14	7	9	9	14	4
Botswana	..	..	..	32	0	0	..	..
Brazil	30,116	4,804	25,312	6,603	565	589	22,240	1,244
Brunei Darussalam	..	..	..	7	2	3	..	1
Bulgaria	259	245	14	372	31	33	9	45
Burkina Faso (6)	..	..	..	17	0	0	..	1
Burundi	..	..	..	8	n.a.	0	..	1
Cambodia	53	1	52	1	n.a.	0	..	..
Cameroon (6)	..	..	..	725	n.a.	0	..	..
Canada	35,242	4,709	30,533	26,304	2,135	2,758	26,904	8,976
Cape Verde	..	..	..	1	n.a.	0	..	..
Chad (6)	..	..	..	19	0	0	..	1
Chile	3,019	336	2,683	761	79	118	2,463	341
China	652,777	535,313	117,464	560,681	19,924	18,617	69,693	16,656
China, Hong Kong SAR	12,988	171	12,817	1,596	0	0	..	210
China, Macao SAR	58	5	53	28	n.a.	0	..	11
Colombia	2,061	213	1,848	334	4	72	1,759	101
Costa Rica	610	10	600	44	4	5	570	11
Côte d'Ivoire (6)	27	26	1	459	0	1	..	1
Croatia (2,3)	251	230	21	366	26	30	10	59
Cuba	178	38	140	175	9	9	131	113
Curaçao	..	..	..	3	n.a.	0	..	1
Cyprus	12	4	8	435	2	49	..	259
Czech Republic	1,017	867	150	1,875	140	163	44	404

Name	Applications by Office			Equivalent applications by Origin	PCT International Applications		PCT National Phase Entry	
	Total	Resident	Non-Resident	Total (1)	Receiving Office	Origin	Office	Origin
Democratic People's Republic of Korea	8,381	8,354	27	8,364	3	3	27	7
Democratic Republic of the Congo	..	..	..	2	n.a.	0	..	2
Denmark	1,635	1,406	229	10,666	644	1,421	60	6,127
Djibouti	..	..	..	2	n.a.	0	..	2
Dominica	..	..	..	2	0	0	..	..
Dominican Republic	282	18	264	24	2	4	254	..
Ecuador	..	..	..	14	11	44	..	1
Egypt	2,211	683	1,528	770	36	41	1,474	23
Eritrea	..	..	..	1	n.a.	0	..	1
Estonia	25	20	5	293	6	34	1	166
Ethiopia	..	..	..	1	n.a.	0	..	..
Eurasian Patent Organization	3,946	677	3,269	n.a.	15	n.a.	3,149	n.a.
European Patent Office	148,560	73,014	75,546	n.a.	32,427	n.a.	85,421	n.a.
Finland	1,827	1,698	129	12,658	1,356	2,326	47	7,526
France	16,632	14,540	2,092	67,188	3,266	7,851	..	34,275
Gabon (6)	..	..	..	35	0	3	..	2
Georgia	372	139	233	153	5	6	219	11
Germany	61,340	46,620	14,720	178,896	1,424	18,764	4,490	72,951
Ghana	..	..	..	3	1	1	..	2
Greece	656	628	28	1,096	54	94	..	241
Guatemala	344	7	337	14	0	1	319	..
Guinea (6)	..	..	..	34	0	0	..	2
Guyana	..	..	..	1	n.a.	0	..	..
Haiti (2,3)	35	32	3	32	n.a.	0	..	..
Honduras	241	8	233	9	0	0	223	..
Hungary	758	692	66	1,654	145	161	25	735
Iceland	44	37	7	314	24	43	7	172
India	43,955	9,553	34,402	18,020	858	1,313	29,318	3,428
Indonesia (2,3)	5,838	541	5,297	608	9	13	4,847	42
International Bureau	..	..	..	n.a.	9,774	n.a.	..	n.a.
Iran (Islamic Republic of)	..	..	..	68	n.a.	2	..	5
Iraq	..	..	..	12	n.a.	0	..	1
Ireland	555	492	63	4,214	54	390	..	1,737
Israel	6,792	1,319	5,473	12,208	967	1,376	5,583	5,643
Italy	9,310	8,439	871	27,547	407	2,863	..	11,376
Jamaica (2,3)	113	20	93	25	n.a.	1	..	13
Japan	342,796	287,013	55,783	486,070	42,787	43,660	53,058	111,843
Jordan	394	48	346	95	n.a.	2	..	7
Kazakhstan (2,3)	1,732	1,415	317	1,821	15	12	132	24
Kenya	259	123	136	143	2	5	128	8
Kuwait	..	..	..	121	n.a.	0	..	7
Kyrgyzstan	111	110	1	132	1	4	..	..
Lao People's Democratic Republic (5)	..	..	..	..	n.a.	9	..	..
Latvia	205	193	12	364	22	36	..	117
Lebanon (2,4)	282	..	..	34	n.a.	6	..	10
Lesotho	..	..	..	1	0	0	..	..
Liberia	..	..	..	1	0	1	..	..
Libya	..	..	..	3	0	0	..	1
Liechtenstein (7)	..	..	..	1,022	n.a.	102	..	260
Lithuania	124	109	15	198	10	30	6	22
Luxembourg	161	109	52	2,399	0	268	5	1,487
Madagascar (5)	44	4	40	5	n.a.	0	38	..

Name	Applications by Office			Equivalent applications by Origin	PCT International Applications		PCT National Phase Entry	
	Total	Resident	Non-Resident	Total (1)	Receiving Office	Origin	Office	Origin
Malaysia	6,940	1,114	5,826	1,939	294	289	5,014	463
Mali (6)	..	..	..	57	0	0	..	4
Malta	17	11	6	256	0	18	..	149
Marshall Islands	..	..	..	3	n.a.	1	..	1
Mauritania (6)	..	..	..	16	0	0	..	..
Mauritius	..	..	..	50	n.a.	5	..	4
Mexico	15,314	1,294	14,020	2,142	138	191	11,533	535
Monaco	8	4	4	104	0	15	..	58
Mongolia	..	..	..	2	0	0	..	1
Montenegro (5)	78	37	41	38	0	0	37	1
Morocco	1,040	197	843	211	35	39	802	4
Mozambique (8)	..	..	..	2	0	0	..	..
Namibia (8)	..	..	..	20	0	14	..	15
Nepal	..	..	..	5	n.a.	0	..	2
Netherlands	2,713	2,375	338	29,906	1,020	4,071	..	18,798
New Zealand	7,099	1,425	5,674	2,856	241	303	3,858	1,000
Nicaragua	176	4	172	6	0	2	162	..
Niger (6)	..	..	..	64	0	2	..	..
Nigeria (5)	..	..	..	10	0	11	..	1
Norway	1,564	1,009	555	5,703	325	669	436	3,541
Oman (5)	..	..	..	12	0	0	..	3
Pakistan	894	96	798	112	n.a.	2	..	1
Palau	..	..	..	1	n.a.	0	..	..
Panama	234	0	234	30	n.a.	16	..	10
Paraguay	..	..	..	30	n.a.	0	..	16
Patent Office of the Cooperation Council for the Arab States of the Gulf	3,008	0	3,008	n.a.	n.a.	n.a.	..	n.a.
Peru	1,190	54	1,136	69	11	11	994	14
Philippines	2,994	162	2,832	255	15	18	..	14
Poland	4,657	4,410	247	6,023	171	252	53	774
Portugal	647	621	26	1,097	54	129	12	323
Qatar	61	3	58	56	0	53	56	10
Republic of Korea	188,915	148,136	40,779	203,410	11,869	11,848	30,752	17,073
Republic of Moldova	115	93	22	149	3	3	11	13
Romania	1,077	1,022	55	1,243	25	25	8	78
Russian Federation	44,211	28,701	15,510	34,803	1,129	1,091	12,594	1,942
Rwanda	70	40	30	42	0	0	..	1
Saint Kitts and Nevis	..	..	..	22	n.a.	1	..	13
Saint Vincent and the Grenadines (5)	..	..	..	19	0	1	..	9
Samoa	..	..	..	25	n.a.	1	..	4
San Marino (2,4)	64	..	..	29	0	7	..	5
Saudi Arabia (2,3)	990	347	643	1,107	0	293	..	321
Senegal (6)	..	..	..	181	0	1	..	1
Serbia	224	192	32	234	17	20	13	14
Seychelles	..	..	..	112	0	9	..	32
Sierra Leone (8)	..	..	..	1	n.a.	0	..	1
Singapore	9,685	1,081	8,604	4,826	494	708	6,670	2,070
Slovakia	203	168	35	365	28	42	14	117
Slovenia	..	..	..	495	67	115	..	333
South Africa	7,444	608	6,836	1,608	93	314	6,275	923
Spain	3,475	3,266	209	11,380	1,249	1,700	114	5,088
Sri Lanka (5)	..	..	..	31	n.a.	14	..	19

Name	Applications by Office			Equivalent applications by Origin	PCT International Applications		PCT National Phase Entry	
	Total	Resident	Non-Resident	Total (1)	Receiving Office	Origin	Office	Origin
Sudan (4)	157	..	..	3	0	0	..	..
Swaziland (8)	..	..	..	65	0	0	..	9
Sweden	2,436	2,288	148	21,161	1,713	3,587	80	13,570
Switzerland	2,988	1,480	1,508	39,858	281	4,191	68	22,453
Syrian Arab Republic	..	..	..	8	1	4	..	4
T F Y R of Macedonia (2,3)	40	37	3	41	2	2	..	1
Tajikistan	6	3	3	21	0	0	3	..
Thailand	6,746	1,020	5,726	1,277	54	67	4,793	118
Togo (6)	..	..	..	32	0	0	..	..
Trinidad and Tobago	..	..	..	8	1	1	..	5
Tunisia	..	..	..	39	5	6	..	27
Turkey	4,666	4,434	232	5,986	241	535	228	1,132
Turkmenistan	..	..	..	2	0	0	..	..
Uganda (8)	..	..	..	4	n.a.	0	..	3
Ukraine	4,955	2,491	2,464	3,083	121	120	2,108	136
United Arab Emirates (5)	..	..	..	222	n.a.	51	..	79
United Kingdom	23,235	15,370	7,865	50,447	4,129	4,895	2,109	22,102
United States of America	542,815	268,782	274,033	460,276	51,999	51,643	109,976	145,345
Uruguay	700	22	678	51	n.a.	8	..	10
Uzbekistan	510	257	253	271	2	1	241	2
Vanuatu	..	..	..	4	n.a.	0	..	3
Venezuela (Bolivarian Republic of) (2,3)	1,598	33	1,565	90	n.a.	7	..	4
Viet Nam	3,805	382	3,423	424	8	13	2,950	32
Yemen	85	36	49	41	n.a.	1	..	4
Zambia	38	7	31	8	0	0	26	1
Zimbabwe	..	..	..	5	0	0	..	1

(1) Equivalent applications by origin data are incomplete, as some offices do not report detailed statistics containing the origin of applications.
(2) 2011 data are reported for applications by office.
(3) 2011 data are reported for equivalent applications by origin.
(4) The office did not report resident applications. Therefore, the equivalent applications by origin data may be incomplete.
(5) The International Bureau acts as the receiving office for PCT applications.
(6) The African Intellectual Property Organization (OAPI) acts as the receiving office for PCT applications.
(7) The Swiss Federal Institute of Intellectual Property (IFPI) acts as the receiving office for PCT applications.
(8) The African Regional Intellectual Property Organization (ARIPO) acts as the receiving office for PCT applications.
n.a. = not applicable
.. = not available

Source: WIPO Statistics Database, October 2013

Table P2: Patent grants by patent office and origin, and patents in force, 2012

	Grants by Office			Equivalent Grants by Origin	In Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total
Afghanistan	..	..	..	2	..
African Intellectual Property Organization (4)	380	..	..	n.a.	3,120
African Regional Intellectual Property Organization (4)	205	..	..	n.a.	..
Albania (2,3,5)	21	1	20	1	64
Algeria	352	41	311	41	6,308
Andorra	..	..	..	13	..
Angola	..	..	..	2	..
Antigua and Barbuda	..	..	..	4	..
Argentina	932	208	724	354	..
Armenia	117	104	13	119	266
Australia	17,724	1,311	16,413	5,720	112,176
Austria	1,439	1,247	192	5,482	10,715
Azerbaijan	111	105	6	191	289
Bahamas	..	..	..	72	..
Bahrain	2	2	0	3	2
Bangladesh (2,3)	85	6	79	6	..
Barbados (5)	16	0	16	402	61
Belarus (3,5)	1,291	..	..	2,001	4,842
Belgium	795	620	175	6,277	..
Belize	..	..	..	15	..
Bermuda	..	..	..	60	..
Bosnia and Herzegovina	57	16	41	22	734
Botswana	..	..	..	3	..
Brazil (5)	2,830	365	2,465	1,027	41,453
Brunei Darussalam	..	..	..	20	..
Bulgaria	101	57	44	99	1,519
Cameroon	..	..	..	4	..
Canada	21,819	2,404	19,415	11,997	144,363
Central African Republic	..	..	..	2	..
Chad	..	..	..	2	..
Chile	770	113	657	236	8,981
China	217,105	143,808	73,297	152,102	875,385
China, Hong Kong SAR	5,035	90	4,945	861	36,158
China, Macao SAR	29	0	29	6	435
Colombia	1,667	106	1,561	153	4,172
Congo	..	..	..	2	..
Costa Rica	65	0	65	9	313
Croatia	155	9	146	101	3,379
Cuba	84	9	75	118	1,417
Cyprus	5	0	5	147	246
Czech Republic	668	401	267	899	8,608
Democratic People's Republic of Korea	6,550	6,520	30	6,528	..
Denmark	190	152	38	4,526	1,681
Dominica	..	..	..	3	..
Dominican Republic	89	2	87	4	201
Ecuador	..	..	..	6	..
Egypt (5)	634	92	542	124	3,187
El Salvador	..	..	..	1	..
Estonia	116	52	64	141	1,276
Eurasian Patent Organization	1,541	269	1,272	n.a.	n.a.
European Patent Office	65,665	32,632	33,033	n.a.	n.a.
Finland	836	698	138	6,353	46,854

	Grants by Office			Equivalent Grants by Origin	In Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total
France	12,913	11,417	1,496	40,315	490,941
Georgia	346	142	204	151	1,501
Germany	11,332	8,164	3,168	77,125	549,521
Greece	291	286	5	512	3,491
Grenada	..	..	..	1	..
Guatemala	86	3	83	5	681
Guinea	..	..	..	1	..
Haiti (2,3)	35	32	3	32	..
Honduras	136	1	135	1	241
Hungary	477	96	381	625	5,167
Iceland	47	3	44	111	3,327
India	4,328	722	3,606	3,588	42,991
Indonesia	..	..	..	19	..
Iran (Islamic Republic of)	..	..	..	30	..
Ireland	190	132	58	2,034	96,583
Israel (5)	3,386	484	2,902	4,622	24,338
Italy	5,625	4,845	780	15,734	68,000
Jamaica	..	..	..	2	..
Japan	274,791	224,917	49,874	343,484	1,694,435
Jordan	48	3	45	10	346
Kazakhstan (2,3)	1,887	1,608	279	1,711	..
Kenya	76	4	72	8	..
Kuwait	..	..	..	36	..
Kyrgyzstan	103	101	2	121	341
Latvia	154	145	9	259	6,833
Lebanon	..	..	..	13	..
Liechtenstein	..	..	..	543	..
Lithuania	92	83	9	104	599
Luxembourg	112	63	49	1,110	21,267
Madagascar	44	3	41	4	439
Malawi	..	..	..	1	..
Malaysia	2,460	295	2,165	660	21,447
Malta	11	6	5	118	615
Marshall Islands	..	..	..	2	..
Mauritius	..	..	..	22	..
Mexico	12,358	290	12,068	650	96,962
Monaco	6	4	2	57	42,838
Mongolia	..	..	..	18	..
Montenegro	291	54	237	54	858
Morocco	979	112	867	126	..
Namibia	..	..	..	1	..
Nepal	2	2	0	2	72
Netherlands	1,895	1,653	242	16,029	12,753
New Zealand	6,152	340	5,812	1,097	27,222
Nicaragua	68	2	66	2	260
Nigeria	..	..	..	4	..
Norway	1,310	390	920	2,457	15,396
Oman	..	..	..	4	..
Pakistan	312	13	299	26	..
Panama	325	0	325	63	357
Paraguay	..	..	..	3	..
Patent Office of the Cooperation Council for the Arab States of the Gulf	358	0	358	n.a.	1,756
Peru	431	11	420	16	2,616

Name	Grants by Office			Equivalent Grants by Origin	In Force by Office
	Total	Resident	Non-Resident	Total (1)	Total
Philippines	1,111	11	1,100	63	..
Poland	2,484	1,848	636	2,195	41,242
Portugal	112	91	21	294	1,765
Qatar	..	..	..	5	..
Republic of Korea	113,467	84,061	29,406	112,090	738,312
Republic of Moldova	51	47	4	76	635
Romania	384	369	15	438	15,284
Russian Federation	32,880	22,481	10,399	24,551	181,515
Rwanda	24	12	12	12	119
Saint Kitts and Nevis	..	..	..	4	..
Saint Vincent and the Grenadines	..	..	..	7	..
Samoa	126	1	125	10	99
San Marino	..	..	..	19	..
Saudi Arabia (2,3,5)	252	17	235	229	1,933
Serbia	167	79	88	95	2,303
Seychelles	..	..	..	39	..
Singapore	5,633	410	5,223	2,272	..
Slovakia	161	43	118	113	3,174
Slovenia	..	..	..	237	..
South Africa	6,205	685	5,520	1,337	112,339
Spain	2,720	2,559	161	5,278	35,616
Sri Lanka	..	..	..	6	..
Sudan (4)	84	..	..	..	27
Sweden	999	855	144	12,186	..
Switzerland	455	288	167	19,571	148,020
Syrian Arab Republic	..	..	..	3	..
T F Y R of Macedonia	..	..	..	2	..
Tajikistan	1	0	1	9	254
Thailand	1,008	57	951	144	11,065
Trinidad and Tobago	..	..	..	10	..
Tunisia	..	..	..	11	..
Turkey	1,004	923	81	1,375	7,531
Uganda	..	..	..	1	..
Ukraine	3,405	1,557	1,848	1,847	25,275
United Arab Emirates	..	..	..	50	..
United Kingdom	6,864	2,974	3,890	20,194	459,447
United States of America	253,155	121,026	132,129	228,918	2,239,231
Uruguay (5)	22	3	19	22	863
Uzbekistan	175	131	44	133	1,016
Venezuela (Bolivarian Republic of)	..	..	..	45	..
Viet Nam	1,068	52	1,016	56	11,524
Yemen	51	14	37	14	..
Zambia	32	1	31	2	4,384
Zimbabwe	..	..	..	1	..

(1) Equivalent grants by origin data are incomplete, as some offices do not report detailed statistics containing the origin of applications for which patents were granted.
(2) 2011 data are reported for grants by office.
(3) 2011 data are reported for equivalent grants by origin.
(4) The office did not report resident patents granted; therefore, equivalent grants by origin data may be incomplete.
(5) 2011 data are reported for patents in force.
n.a. = not applicable
.. = not available

Source: WIPO Statistics Database, October 2013

Table T1: Trademark applications by office and origin, 2012

Name	Application class count by Office			Application class count by Origin	Equivalent Application class count by Origin	Madrid International Applications	
	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Madrid Member
Afghanistan	..	..	..	106	106	n.a.	n.a.
African Regional Intellectual Property Organization	513	165	348	n.a.	n.a.	n.a.	n.a.
Albania (2,3)	9,480	427	9,053	434	486	2	2,697
Algeria	12,122	3,477	8,645	3,552	3,552	19	2,069
Andorra (2,3)	2,047	677	1,370	878	2,446	n.a.	n.a.
Angola	..	..	..	143	2,639	n.a.	n.a.
Antigua and Barbuda (4)	1,795	..	1,795	63	453	0	673
Argentina	83,163	61,165	21,998	64,500	71,372	n.a.	n.a.
Armenia	10,852	1,985	8,867	2,831	3,003	25	3,087
Aruba	..	..	..	8	86	n.a.	n.a.
Australia	116,097	70,585	45,512	95,327	149,803	1,074	10,753
Austria	27,253	17,294	9,959	52,986	299,392	867	3,009
Azerbaijan	14,781	3,612	11,169	3,816	3,894	3	3,893
Bahamas	..	..	..	1,247	7,903	n.a.	n.a.
Bahrain	10,932	310	10,622	406	848	0	2,273
Bangladesh	11,429	8,294	3,135	8,359	8,463	n.a.	n.a.
Barbados	1,397	195	1,202	866	1,906	n.a.	n.a.
Belarus	37,348	17,681	19,667	22,775	24,387	288	6,022
Belgium (5)	n.a.	n.a.	n.a.	22,681	163,645	n.a.	n.a.
Belize	..	..	..	419	1,719	n.a.	n.a.
Benelux (6)	71,376	57,447	13,929	n.a.	n.a.	n.a.	3,061
Benin	..	..	..	6	110	n.a.	n.a.
Bermuda	..	..	..	656	4,296	n.a.	n.a.
Bhutan (4)	1,729	..	1,729	2	2	0	623
Bolivia (Plurinational State of)	..	..	..	85	85	n.a.	n.a.
Bonaire, Sint Eustatius and Saba (4)	1,670	..	1,670	..	..	0	594
Bosnia and Herzegovina	12,581	535	12,046	722	800	12	3,752
Botswana (4)	2,108	..	2,108	76	180	5	797
Brazil	151,711	120,530	31,181	126,057	140,507	n.a.	n.a.
Brunei Darussalam	85	85	0	529	607	n.a.	n.a.
Bulgaria	19,264	13,416	5,848	26,025	67,101	269	2,070
Burkina Faso	..	..	..	12	12	n.a.	n.a.
Cambodia	5,140	906	4,234	912	912	n.a.	n.a.
Cameroon	..	..	..	9	9	n.a.	n.a.
Canada	141,471	77,015	64,456	96,069	159,235	n.a.	n.a.
Chad	..	..	..	1	1	n.a.	n.a.
Chile	41,853	28,169	13,684	32,839	35,809	n.a.	n.a.
China	1,651,785	1,502,540	149,245	1,575,370	1,684,082	2,100	20,120
China, Hong Kong SAR	66,811	25,163	41,648	34,329	84,733	n.a.	n.a.
China, Macao SAR	9,581	985	8,596	1,118	1,404	n.a.	n.a.
Colombia	32,538	18,591	13,947	22,223	25,343	0	472
Comoros	1	0	1	1	1	n.a.	n.a.
Congo	..	..	..	2	2	n.a.	n.a.
Cook Islands	..	..	..	20	20	n.a.	n.a.
Costa Rica	14,155	6,503	7,652	7,240	7,708	n.a.	n.a.
Côte d'Ivoire	..	..	..	48	74	n.a.	n.a.
Croatia	21,217	4,388	16,829	7,094	10,884	140	5,323
Cuba	4,848	778	4,070	995	1,129	2	1,313
Curaçao	2,795	0	2,795	330	1,916	5	667

	Application class count by Office			Application class count by Origin	Equivalent Application class count by Origin	Madrid International Applications	
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Madrid Member
Cyprus	3,888	781	3,107	7,752	36,756	38	1,151
Czech Republic	36,957	29,553	7,404	43,622	125,374	410	2,316
Democratic People's Republic of Korea (4)	3,161	..	3,161	147	147	2	1,176
Denmark	12,764	7,815	4,949	21,751	121,375	428	1,761
Dominica	..	..	..	42	146	n.a.	n.a.
Dominican Republic	..	..	..	235	1,067	n.a.	n.a.
Ecuador	..	..	..	613	1,369	n.a.	n.a.
Egypt (4)	10,660	..	10,660	1,130	3,118	36	4,306
El Salvador	..	..	..	401	479	n.a.	n.a.
Equatorial Guinea (4)	7	..	..	..	..	n.a.	n.a.
Eritrea	..	..	..	4	4	n.a.	n.a.
Estonia	5,897	1,684	4,213	3,112	20,644	46	1,620
Ethiopia	..	..	..	46	46	n.a.	n.a.
Fiji	..	..	..	153	205	n.a.	n.a.
Finland	14,727	9,880	4,847	20,062	113,002	232	1,636
France (4,8)	278,458	..	..	384,665	1,023,741	3,735	3,788
Gabon	..	..	..	4	4	n.a.	n.a.
Georgia	10,538	1,214	9,324	1,423	1,659	14	3,345
Germany	192,728	171,274	21,454	387,503	2,152,501	4,408	4,650
Ghana (4)	2,981	..	2,981	38	42	3	1,172
Greece (4)	3,968	..	3,968	3,679	39,657	69	1,692
Grenada	..	..	..	14	14	n.a.	n.a.
Guatemala	..	..	..	823	979	n.a.	n.a.
Guinea	..	..	..	5	5	n.a.	n.a.
Guyana	..	..	..	27	183	n.a.	n.a.
Haiti (2,3)	1,949	572	1,377	577	577	n.a.	n.a.
Honduras	6,938	1,933	5,005	2,052	2,078	n.a.	n.a.
Hungary	15,576	9,380	6,196	16,195	41,745	232	2,102
Iceland	9,151	1,582	7,569	2,367	6,163	122	2,372
India	190,850	176,044	14,806	182,168	196,618	n.a.	n.a.
Indonesia	..	..	..	1,145	1,779	n.a.	n.a.
Iran (Islamic Republic of) (4)	8,036	..	8,036	1,457	2,593	17	3,150
Iraq	..	..	..	128	128	n.a.	n.a.
Ireland (4)	7,071	..	..	7,302	74,322	41	1,288
Israel	18,267	3,227	15,040	7,205	22,049	170	4,475
Italy	89,889	78,523	11,366	168,078	767,532	2,354	3,617
Jamaica	..	..	..	211	1,745	n.a.	n.a.
Japan (4,8)	218,698	..	..	260,758	383,682	2,054	12,493
Jordan	6,751	2,286	4,465	2,779	3,923	n.a.	n.a.
Kazakhstan (4)	15,505	..	15,505	1,872	2,008	79	6,053
Kenya (4)	4,193	..	4,193	131	547	4	1,663
Kuwait	..	..	..	401	949	n.a.	n.a.
Kyrgyzstan	7,957	230	7,727	286	286	4	2,832
Lao People's Democratic Republic	..	..	..	2	2	n.a.	n.a.
Latvia	7,260	2,309	4,951	4,042	11,856	81	1,939
Lebanon	..	..	..	435	2,163	n.a.	n.a.
Lesotho (4)	1,826	..	1,826	..	..	0	664
Liberia (4)	2,171	..	2,171	6	162	0	787
Libya	..	..	..	19	45	n.a.	n.a.
Liechtenstein (4)	7,693	..	7,693	3,227	10,367	73	2,479
Lithuania	8,140	3,265	4,875	5,032	15,972	97	1,949

Name	Application class count by Office			Application class count by Origin	Equivalent Application class count by Origin	Madrid International Applications	
	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Madrid Member
Luxembourg (5)	n.a.	n.a.	n.a.	10,635	93,951	n.a.	n.a.
Madagascar	5,465	1,997	3,468	2,012	2,012	3	949
Malawi	..	..	..	12	12	n.a.	n.a.
Malaysia (2,3)	28,833	13,001	15,832	16,128	18,322	n.a.	n.a.
Maldives	..	..	..	24	544	n.a.	n.a.
Mali (4)	63	..	..	4	4	n.a.	n.a.
Malta	787	405	382	2,460	23,324	n.a.	n.a.
Marshall Islands	..	..	..	198	562	n.a.	n.a.
Mauritania	..	..	..	5	5	n.a.	n.a.
Mauritius	..	..	..	595	1,595	n.a.	n.a.
Mexico	105,825	76,010	29,815	83,972	98,626	n.a.	n.a.
Monaco	10,631	2,089	8,542	4,806	16,418	55	2,536
Mongolia (4)	4,572	..	4,572	41	93	2	1,827
Montenegro (4)	9,209	..	9,209	94	94	3	3,333
Morocco	28,837	15,004	13,833	16,489	18,513	60	3,856
Mozambique (4)	2,903	..	2,903	17	69	2	1,078
Myanmar	8,490	4,422	4,068	4,453	4,453	n.a.	n.a.
Namibia (4)	2,555	..	2,555	38	116	0	924
Nauru	..	..	..	8	8	n.a.	n.a.
Nepal (4)	2,700	..	..	34	60	n.a.	n.a.
Netherlands (5)	n.a.	n.a.	n.a.	61,185	398,193	n.a.	n.a.
New Zealand	33,380	15,876	17,504	20,820	30,932	n.a.	n.a.
Nicaragua	..	..	..	122	174	n.a.	n.a.
Niger	..	..	..	19	19	n.a.	n.a.
Nigeria	..	..	..	81	263	n.a.	n.a.
Norway (4)	22,372	..	22,372	6,998	40,604	339	8,380
Office for Harmonization in the Internal Market (7)	313,492	240,928	72,564	n.a.	n.a.	n.a.	16,889
Oman (4)	5,864	..	5,864	86	164	0	2,145
Pakistan	19,565	15,332	4,233	15,781	16,379	n.a.	n.a.
Panama	12,231	4,519	7,712	7,325	10,341	n.a.	n.a.
Papua New Guinea	..	..	..	175	175	n.a.	n.a.
Paraguay	..	..	..	305	565	n.a.	n.a.
Peru	29,553	18,089	11,464	19,217	20,205	n.a.	n.a.
Philippines	31,006	16,437	14,569	17,132	18,408	21	439
Poland	44,609	35,674	8,935	52,651	221,245	323	2,947
Portugal	25,935	20,623	5,312	26,360	85,880	154	1,876
Qatar	..	..	..	568	1,816	n.a.	n.a.
Republic of Korea	184,991	140,908	44,083	163,096	203,572	499	10,090
Republic of Moldova	13,684	3,100	10,584	4,264	4,512	68	3,555
Romania	27,378	20,942	6,436	23,596	68,534	83	2,225
Russian Federation	226,086	159,542	66,544	230,819	259,549	1,591	16,634
Rwanda	517	109	408	109	109	n.a.	n.a.
Saint Kitts and Nevis	..	..	..	58	136	n.a.	n.a.
Saint Lucia	..	..	..	41	197	n.a.	n.a.
Saint Vincent and the Grenadines	..	..	..	89	843	n.a.	n.a.
Samoa	228	23	205	491	725	n.a.	n.a.
San Marino (4)	3,611	4	3,607	418	3,538	11	1,244
Sao Tome and Principe	1,547	19	1,528	25	103	1	559
Saudi Arabia	..	..	..	1,176	3,984	n.a.	n.a.
Senegal	..	..	..	2	28	n.a.	n.a.
Serbia	17,645	2,515	15,130	5,429	8,769	183	4,929

	Application class count by Office			Application class count by Origin	Equivalent Application class count by Origin	Madrid International Applications	
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Madrid Member
Seychelles (2,3)	91	91	0	487	1,631	n.a.	n.a.
Sierra Leone (4)	2,031	..	2,031	10	10	0	742
Singapore	37,572	6,966	30,606	17,345	28,849	236	7,838
Sint Maarten (Dutch Part)	2,309	0	2,309	22	74	1	655
Slovakia	14,652	8,039	6,613	11,168	33,384	100	1,870
Slovenia (4)	4,773	2	4,771	7,416	25,790	204	1,821
Solomon Islands	..	..	..	10	10	n.a.	n.a.
Somalia	..	..	..	1	1	n.a.	n.a.
South Africa	34,604	20,499	14,105	22,912	32,930	n.a.	n.a.
Spain	69,114	59,786	9,328	105,929	698,117	767	3,099
Sri Lanka	..	..	..	273	1,261	n.a.	n.a.
Sudan	4,478	851	3,627	857	857	0	1,167
Suriname	..	..	..	95	387	n.a.	n.a.
Swaziland (4)	2,081	..	2,081	29	29	0	749
Sweden	24,231	18,533	5,698	36,796	208,912	219	1,933
Switzerland	87,148	36,537	50,611	158,378	439,618	2,778	13,464
Syrian Arab Republic (4)	5,108	..	5,108	114	140	0	1,950
T F Y R of Macedonia (4)	9,029	..	9,029	1,281	2,359	50	3,271
Tajikistan	7,258	274	6,984	275	275	0	2,467
Thailand	44,963	27,508	17,455	30,138	35,162	n.a.	n.a.
Togo	..	..	..	37	869	n.a.	n.a.
Tonga	..	..	..	13	13	n.a.	n.a.
Trinidad and Tobago	..	..	..	55	55	n.a.	n.a.
Tunisia	..	..	..	280	1,594	n.a.	n.a.
Turkey	229,500	193,749	35,751	215,647	244,297	1,202	9,656
Turkmenistan (4)	6,060	..	6,060	13	13	0	2,548
Tuvalu	..	..	..	9	9	n.a.	n.a.
Uganda	..	..	..	38	272	n.a.	n.a.
Ukraine	64,251	30,402	33,849	41,403	44,837	363	9,282
United Arab Emirates	..	..	..	3,173	13,797	n.a.	n.a.
United Kingdom	93,522	78,188	15,334	175,751	1,075,225	1,559	3,874
United Republic of Tanzania	..	..	..	29	29	n.a.	n.a.
United States of America	428,687	329,828	98,859	599,896	1,366,452	5,402	16,411
Uruguay	9,949	4,143	5,806	5,264	7,344	n.a.	n.a.
Uzbekistan	14,541	6,434	8,107	6,495	6,495	1	2,844
Vanuatu	..	..	..	8	8	n.a.	n.a.
Venezuela (Bolivarian Republic of) (2,3)	19,587	11,066	8,521	11,651	12,093	n.a.	n.a.
Viet Nam	57,537	35,101	22,436	36,571	37,881	70	5,299
Yemen (3)	4,951	..	..	2,220	2,220	n.a.	n.a.
Zambia	4,090	633	3,457	634	634	0	904
Zimbabwe	..	..	..	24	24	n.a.	n.a.

(1) Data on application class count by origin are incomplete, as some offices do not report detailed statistics containing the origin of application class counts.
(2) 2011 data are reported for application class count by office.
(3) 2011 data are reported for application class count by origin.
(4) Only Madrid designation data are available; therefore, application class count by office and origin data may be incomplete.
(5) This country does not have a national trademark office. All applications for trademark protection are filed at the Benelux Office for Intellectual Property (BOIP) or the Office for Harmonization in the Internal Market (OHIM) of the European Union (EU).
(6) Resident applications include those filed by residents of Belgium, Luxembourg and the Netherlands.
(7) Resident applications include those filed by residents of EU member states.
(8) Equivalent application class count by origin is calculated using an estimated component for the missing resident application class count at the national office.
n.a. = not applicable
.. = not available

Source: WIPO Statistics Database, October 2013

Table T2: Trademark registrations by office and origin, and trademarks in force, 2012

	Registration class count by Office			Registration class count by Origin	Equivalent Registration class count by Origin	Madrid International Registrations by Origin	Registrations in Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Total	Total
Afghanistan	..	..	..	87	87	n.a.	..
African Regional Intellectual Property Organization	346	58	288	n.a.	n.a.	n.a.	769
Albania (2,3,5)	9,006	297	8,709	308	360	2	7,167
Algeria	11,021	2,251	8,770	2,304	2,304	2	67,876
Andorra (2,3,5)	2,030	673	1,357	825	2,489	n.a.	18,570
Angola	..	..	..	136	2,138	n.a.	..
Antigua and Barbuda (4)	1,302	..	1,302	64	584	0	..
Argentina	64,295	51,646	12,649	55,007	59,617	n.a.	..
Armenia	9,574	1,471	8,103	2,137	2,309	25	11,968
Aruba	..	..	..	31	681	n.a.	..
Australia	82,085	43,494	38,591	61,181	109,559	990	502,319
Austria (4)	8,129	1	8,128	31,448	252,198	804	298,247
Azerbaijan	13,803	3,361	10,442	3,447	3,447	3	..
Bahamas	..	..	..	723	4,519	n.a.	..
Bahrain	8,815	198	8,617	267	579	1	20,188
Bangladesh	2,520	759	1,761	814	840	n.a.	..
Barbados	397	40	357	683	2,399	n.a.	..
Belarus (5)	30,618	11,918	18,700	16,085	17,125	288	100,436
Belgium (6)	n.a.	n.a.	n.a.	6,201	114,595	n.a.	n.a.
Belize	..	..	..	345	1,541	n.a.	..
Benelux (7)	59,859	49,766	10,093	n.a.	n.a.	1,774	588,219
Bermuda	..	..	..	752	5,926	n.a.	..
Bhutan (4)	1,727	..	1,727	1	1	0	..
Bolivia (Plurinational State of)	..	..	..	77	77	n.a.	..
Bonaire, Sint Eustatius and Saba (4)	1,670	..	1,670	..	..	0	..
Bosnia and Herzegovina	14,286	829	13,457	1,010	1,062	12	66,731
Botswana (4)	2,108	..	2,108	89	193	4	..
Brazil	55,230	41,670	13,560	45,299	57,433	n.a.	..
Brunei Darussalam	59	59	0	671	723	n.a.	4,301
Bulgaria	18,707	12,466	6,241	19,438	46,322	225	58,710
Burkina Faso	..	..	..	12	12	n.a.	..
Cambodia	3,490	705	2,785	709	735	n.a.	3,490
Cameroon	..	..	..	9	139	n.a.	..
Canada	62,789	33,544	29,245	47,573	102,337	n.a.	487,588
Cape Verde	..	..	..	6	6	n.a.	..
Central African Republic	..	..	..	3	3	n.a.	..
Chile	20,970	13,738	7,232	16,732	20,138	n.a.	198,734
China	1,023,729	919,951	103,778	977,594	1,064,950	1,799	6,400,257
China, Hong Kong SAR	49,175	17,317	31,858	23,491	64,233	n.a.	299,119
China, Macao SAR	5,707	865	4,842	947	1,103	n.a.	60,606
Colombia	26,734	14,565	12,169	17,018	19,930	0	255,734
Comoros	1	0	1	..	..	n.a.	..
Congo	..	..	..	6	162	n.a.	..
Cook Islands	..	..	..	39	143	n.a.	..
Costa Rica	10,578	4,286	6,292	4,755	4,937	n.a.	183,226
Côte d'Ivoire	..	..	..	20	20	n.a.	..
Croatia	19,430	3,179	16,251	5,781	9,675	151	133,691
Cuba	4,214	479	3,735	652	838	2	42,886
Curaçao	2,850	0	2,850	330	2,098	5	19,926

	Registration class count by Office			Registration class count by Origin	Equivalent Registration class count by Origin	Madrid International Registrations by Origin	Registrations in Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Total	Total
Cyprus	4,478	890	3,588	5,322	42,418	24	58,871
Czech Republic	29,043	22,135	6,908	34,456	97,576	353	116,783
Democratic People's Republic of Korea (4)	2,710	..	2,710	219	219	0	..
Democratic Republic of the Congo	..	..	..	4	4	n.a.	..
Denmark	11,809	7,098	4,711	17,474	103,154	371	146,671
Djibouti	..	..	..	2	2	n.a.	..
Dominica	..	..	..	26	78	n.a.	..
Dominican Republic	..	..	..	163	917	n.a.	..
Ecuador	..	..	..	400	1,102	n.a.	..
Egypt (4)	10,322	..	10,322	756	2,112	27	..
El Salvador	..	..	..	148	174	n.a.	..
Equatorial Guinea	..	..	..	5	5	n.a.	..
Estonia	5,939	1,847	4,092	2,910	15,500	41	61,190
Ethiopia	..	..	..	5	5	n.a.	..
Fiji	..	..	..	31	31	n.a.	..
Finland	12,262	7,871	4,391	16,945	104,187	207	112,313
France (4)	8,328	6	8,322	103,077	683,423	3,639	..
Gabon	..	..	..	9	9	n.a.	..
Georgia	9,584	792	8,792	985	1,091	13	51,483
Germany	147,002	132,206	14,796	318,067	1,893,057	4,553	784,834
Ghana (4)	2,981	..	2,981	39	39	3	..
Greece (4)	3,823	..	3,823	3,308	33,466	63	..
Grenada	..	..	..	2	2	n.a.	..
Guatemala	..	..	..	444	626	n.a.	..
Guinea	..	..	..	5	5	n.a.	..
Guinea-Bissau	..	..	..	4	4	n.a.	..
Guyana	..	..	..	5	57	n.a.	..
Haiti (5)	..	..	..	6	6	n.a.	1,949
Honduras (2,3)	5,001	1,149	3,852	1,198	1,198	n.a.	68,987
Hungary	11,791	5,783	6,008	11,992	32,690	239	264,709
Iceland	8,165	1,359	6,806	1,913	5,319	44	22,928
India	55,191	48,014	7,177	52,090	63,642	n.a.	925,446
Indonesia	..	..	..	743	1,913	n.a.	..
Iran (Islamic Republic of) (4)	7,257	..	7,257	1,294	2,300	15	..
Iraq	..	..	..	64	116	n.a.	..
Ireland (4)	5,774	..	..	5,797	57,991	38	86,972
Israel	13,173	1,932	11,241	4,764	18,320	160	170,902
Italy	79,606	68,471	11,135	143,249	663,665	2,332	366,500
Jamaica	..	..	..	205	1,167	n.a.	..
Japan (4)	16,198	..	16,198	69,642	189,372	1,898	1,782,169
Jordan	4,624	1,082	3,542	1,413	2,453	n.a.	14,350
Kazakhstan (4)	13,984	..	13,984	1,532	2,240	71	..
Kenya (4)	4,188	..	4,188	201	695	5	..
Kuwait	..	..	..	291	1,071	n.a.	..
Kyrgyzstan	7,814	239	7,575	286	286	4	8,850
Lao People's Democratic Republic	..	..	..	2	2	n.a.	..
Latvia	6,593	1,747	4,846	3,167	8,667	77	28,010
Lebanon	..	..	..	411	1,763	n.a.	..
Lesotho (4)	1,826	..	1,826	2	2	0	..
Liberia (4)	2,171	..	2,171	17	173	0	..
Libya	..	..	..	3	3	n.a.	..

	Registration class count by Office			Registration class count by Origin	Equivalent Registration class count by Origin	Madrid International Registrations by Origin	Registrations in Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Total	Total
Liechtenstein (4)	7,637	..	7,637	3,006	10,528	73	..
Lithuania	7,198	2,408	4,790	3,948	12,358	104	36,190
Luxembourg (6)	n.a.	n.a.	n.a.	6,864	74,802	n.a.	n.a.
Madagascar	6,296	2,622	3,674	2,635	2,635	3	..
Malawi	..	..	..	15	15	n.a.	..
Malaysia (2,3,5)	23,819	10,201	13,618	12,484	16,488	n.a.	56,649
Mali	..	..	..	30	30	n.a.	..
Malta	765	320	445	1,362	13,972	n.a.	25,758
Marshall Islands	..	..	..	76	362	n.a.	..
Mauritania	..	..	..	17	17	n.a.	..
Mauritius	..	..	..	535	1,211	n.a.	..
Mexico	82,170	56,569	25,601	61,342	72,250	n.a.	784,540
Monaco	10,089	1,776	8,313	3,874	13,254	54	10,540
Mongolia (4)	4,508	..	4,508	14	66	2	..
Montenegro (4)	9,179	..	9,179	73	125	2	6,392
Morocco	26,394	13,009	13,385	14,531	21,905	51	..
Mozambique (4)	2,902	..	2,902	16	16	1	..
Myanmar	8,490	4,422	4,068	4,437	4,437	n.a.	..
Namibia (4)	2,555	..	2,555	33	163	0	..
Nepal (4)	1,001	..	..	325	325	n.a.	34,479
Netherlands (6)	n.a.	n.a.	n.a.	18,487	254,541	n.a.	n.a.
New Zealand	27,616	11,948	15,668	15,397	25,627	n.a.	234,889
Nicaragua	..	..	..	45	45	n.a.	..
Niger	..	..	..	12	12	n.a.	..
Nigeria	..	..	..	70	174	n.a.	..
Norway (4)	20,180	..	20,180	5,516	32,446	313	189,107
Office for Harmonization in the Internal Market (8)	276,856	211,725	65,131	n.a.	n.a.	6,256	852,632
Oman (4)	5,721	..	5,721	71	123	0	..
Pakistan	6,431	2,959	3,472	3,451	3,763	n.a.	64,908
Panama (5)	12,077	4,068	8,009	5,909	8,483	n.a.	159,391
Papua New Guinea	..	..	..	205	205	n.a.	..
Paraguay	..	..	..	139	295	n.a.	..
Peru	21,902	12,594	9,308	13,251	15,045	n.a.	..
Philippines	23,797	10,249	13,548	10,663	12,173	5	..
Poland	28,271	20,937	7,334	35,112	168,574	341	233,083
Portugal	23,067	18,060	5,007	23,003	69,651	169	333,310
Qatar	..	..	..	459	1,213	n.a.	..
Republic of Korea	97,184	71,589	25,595	88,195	123,515	488	817,862
Republic of Moldova	11,650	1,733	9,917	2,949	3,117	57	19,112
Romania	22,785	16,199	6,586	18,116	47,064	63	81,599
Russian Federation	110,150	60,685	49,465	125,724	151,908	1,659	443,151
Rwanda	517	109	408	109	109	n.a.	1,635
Saint Kitts and Nevis	..	..	..	62	140	n.a.	..
Saint Lucia	..	..	..	34	190	n.a.	..
Saint Vincent and the Grenadines	..	..	..	17	225	n.a.	..
Samoa	134	5	129	147	459	n.a.	3,709
San Marino (4)	3,611	4	3,607	292	2,736	8	..
Sao Tome and Principe	1,547	19	1,528	26	130	1	..
Saudi Arabia	..	..	..	900	3,032	n.a.	..
Senegal	..	..	..	12	38	n.a.	..
Serbia	16,902	2,196	14,706	4,908	7,468	191	26,961

	Registration class count by Office			Registration class count by Origin	Equivalent Registration class count by Origin	Madrid International Registrations by Origin	Registrations in Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Total	Total
Seychelles (2,3)	91	91	0	432	1,884	n.a.	..
Sierra Leone (4)	2,031	..	2,031	8	8	0	..
Singapore	29,032	4,949	24,083	13,602	24,456	216	272,011
Sint Maarten (Dutch Part)	2,308	0	2,308	18	70	1	19,197
Slovakia	12,845	6,629	6,216	9,134	27,734	101	49,001
Slovenia (4)	4,633	2	4,631	7,013	22,917	211	..
Solomon Islands	..	..	..	11	11	n.a.	..
Somalia	..	..	..	1	1	n.a.	..
South Africa	29,230	16,507	12,723	17,983	25,767	n.a.	304,524
Spain	63,281	54,325	8,956	93,728	614,524	703	822,375
Sri Lanka	..	..	..	184	938	n.a.	..
Sudan (4)	2,900	..	2,900	3	55	0	..
Suriname	..	..	..	9	87	n.a.	..
Swaziland (4)	2,081	..	2,081	9	9	0	..
Sweden	17,679	12,487	5,192	27,566	191,636	207	132,444
Switzerland	77,751	29,388	48,363	133,659	392,277	2,720	214,246
Syrian Arab Republic (4)	3,409	..	3,409	150	930	0	..
T F Y R of Macedonia (4)	8,997	..	8,997	1,147	1,861	53	..
Tajikistan	6,721	230	6,491	321	321	0	7,310
Thailand	19,825	11,821	8,004	13,383	18,271	n.a.	..
Timor-Leste	..	..	..	1	1	n.a.	..
Togo	..	..	..	9	165	n.a.	..
Trinidad and Tobago	..	..	..	33	33	n.a.	..
Tunisia	..	..	..	302	3,500	n.a.	..
Turkey	136,374	104,569	31,805	123,346	142,278	870	523,131
Turkmenistan (4)	6,042	..	6,042	34	34	0	..
Tuvalu	..	..	..	17	17	n.a.	..
Uganda	1,106	421	685	441	753	n.a.	..
Ukraine	51,299	20,360	30,939	29,894	33,376	354	144,481
United Arab Emirates	..	..	..	2,648	12,346	n.a.	..
United Kingdom	81,821	67,125	14,696	142,468	906,234	1,274	397,233
United Republic of Tanzania	..	..	..	23	101	n.a.	..
United States of America	236,632	186,780	49,852	381,358	1,082,440	5,073	1,797,153
Uruguay	18,257	7,756	10,501	8,338	9,846	n.a.	81,501
Uzbekistan	9,925	2,439	7,486	2,445	2,445	0	15,302
Vanuatu	..	..	..	2	2	n.a.	..
Venezuela (Bolivarian Republic of) (2,3)	12,006	6,455	5,551	6,888	7,278	n.a.	..
Viet Nam	40,413	23,521	16,892	24,604	25,756	66	171,337
Yemen (3)	3,089	..	..	2,122	2,226	n.a.	..
Zambia	3,226	201	3,025	209	209	0	28,947
Zimbabwe	..	..	..	17	17	n.a.	..

(1) Data on registration class count by origin are incomplete, as some offices do not report detailed statistics containing the origin of registration class counts.
(2) 2011 data are reported for registration class count by office.
(3) 2011 data are reported for registration class count by origin.
(4) Only Madrid designation data are available; therefore, registration class count by office and origin data may be incomplete.
(5) 2011 data are reported for trademarks in force.
(6) This country does not have a national trademark office. All trademark registrations for this country are issued by the Benelux Office for Intellectual Property (BOIP) or the Office for Harmonization in the Internal Market (OHIM) of the European Union (EU).
(7) Resident registrations include those issued to residents of Belgium, Luxembourg and the Netherlands.
(8) Resident registrations include those issued to residents of EU member states.
n.a. = not applicable
.. = not available

Source: WIPO Statistics Database, October 2013

Table ID1: Industrial design applications by office and origin, 2012

	Application Design Count by Office			Application Design Count by Origin	Equivalent Application Design Count by Origin	Hague International Applications	
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Hague Member
Afghanistan	..	..	..	3	3	0	n.a.
African Intellectual Property Organization (4)	572	..	572	n.a.	n.a.	n.a.	120
Albania (2,3)	853	16	837	16	16	2	193
Algeria	1,067	873	194	877	877	0	n.a.
Angola	..	..	..	1	27	0	n.a.
Argentina	1,574	737	837	796	1,004	0	n.a.
Armenia	757	45	712	96	1,318	0	195
Australia	6,549	2,714	3,835	5,179	22,573	0	n.a.
Austria	3,099	1,257	1,842	9,557	75,129	40	n.a.
Azerbaijan	692	22	670	24	50	1	185
Bahamas	..	..	..	8	112	0	n.a.
Bahrain	70	9	61	11	11	0	n.a.
Bangladesh	1,198	1,114	84	1,114	1,114	0	n.a.
Barbados	4	3	1	35	321	0	n.a.
Belarus	561	422	139	595	595	0	n.a.
Belgium	n.a.	n.a.	n.a.	2,247	37,827	51	n.a.
Belize (4)	410	..	410	6	6	0	125
Benelux	1,837	1,022	815	n.a.	n.a.	n.a.	114
Benin (4)	17	..	17	..	..	0	17
Bermuda	..	..	..	46	956	0	n.a.
Bosnia and Herzegovina	1,201	154	1,047	161	161	2	292
Botswana (4)	228	..	228	..	..	0	50
Brazil	6,563	3,746	2,817	4,386	10,418	0	n.a.
Brunei Darussalam	..	..	..	2	2	0	n.a.
Bulgaria	923	742	181	1,682	16,710	10	38
Cambodia	47	8	39	8	8	0	n.a.
Canada	5,362	847	4,515	2,813	19,739	2	n.a.
Chile	538	91	447	146	406	0	n.a.
China	657,582	642,401	15,181	648,987	722,361	2	n.a.
China, Hong Kong SAR	5,206	1,642	3,564	3,100	21,950	1	n.a.
China, Macao SAR	169	25	144	29	55	0	n.a.
Colombia	490	210	280	234	234	0	n.a.
Cook Islands	..	..	..	2	2	0	n.a.
Costa Rica	69	21	48	89	531	0	n.a.
Côte d'Ivoire (4)	39	..	39	..	..	0	21
Croatia	3,138	729	2,409	1,036	3,246	27	549
Cuba	9	5	4	5	5	0	n.a.
Curaçao	..	..	..	10	244	2	n.a.
Cyprus	99	99	0	389	3,509	0	n.a.
Czech Republic	1,183	1,031	152	2,752	29,662	20	n.a.
Democratic People's Republic of Korea (4)	260	..	260	11	11	0	90
Democratic Republic of the Congo	..	..	..	1	1	0	n.a.
Denmark	465	175	290	2,935	46,932	34	60
Dominican Republic	75	32	43	36	88	0	n.a.
Ecuador	..	..	..	45	409	0	n.a.
Egypt (4)	1,455	..	1,455	70	798	1	291
El Salvador	..	..	..	3	3	0	n.a.
Eritrea	..	..	..	1	1	0	n.a.
Estonia (4)	111	..	111	140	3,182	0	35
Finland	385	280	105	1,973	25,841	18	34

	Application Design Count by Office			Application Design Count by Origin	Equivalent Application Design Count by Origin	Hague International Applications	
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Hague Member
France	15,862	14,353	1,509	31,658	255,452	308	183
Gabon (4)	19	..	19	..	..	0	15
Georgia	1,212	165	1,047	168	168	0	235
Germany	55,599	42,962	12,637	76,369	655,499	663	191
Ghana (4)	146	..	146	1	1	0	50
Greece	1,345	918	427	1,076	4,144	3	73
Guatemala	265	25	240	26	26	0	n.a.
Guinea-Bissau	..	..	..	1	1	0	n.a.
Honduras (2,3)	44	11	33	13	13	0	n.a.
Hungary	923	871	52	1,181	4,769	5	31
Iceland	455	66	389	98	670	3	102
India	8,545	5,100	3,445	5,391	7,211	0	n.a.
Indonesia (2,4)	4,196	..	..	32	32	0	n.a.
Iran (Islamic Republic of)	..	..	..	5	31	0	n.a.
Iraq	..	..	..	1	1	0	n.a.
Ireland	..	..	..	232	4,158	3	n.a.
Israel	..	..	..	837	7,441	2	n.a.
Italy	30,940	29,919	1,021	45,099	291,189	189	114
Jamaica (2,3)	64	41	23	41	41	0	n.a.
Japan	32,391	27,933	4,458	44,203	123,405	0	n.a.
Jordan	81	38	43	45	45	0	n.a.
Kazakhstan	172	79	93	88	88	0	n.a.
Kenya	103	93	10	94	94	0	n.a.
Kuwait	..	..	..	3	3	0	n.a.
Kyrgyzstan	571	50	521	50	50	0	155
Latvia	315	104	211	157	1,249	3	60
Lebanon (2,4)	109	..	..	8	112	0	n.a.
Libya	..	..	..	2	2	0	n.a.
Liechtenstein (4)	1,499	38	1,461	557	4,387	17	372
Lithuania	573	66	507	164	1,750	5	80
Luxembourg	n.a.	n.a.	n.a.	742	15,438	35	n.a.
Malaysia	2,082	857	1,225	1,128	1,726	0	n.a.
Mali (4)	16	..	..	..	..	1	15
Malta	13	13	0	47	723	0	n.a.
Mexico	4,137	1,954	2,183	2,095	2,901	0	n.a.
Monaco	1,530	28	1,502	76	804	1	391
Mongolia (2,3)	765	182	583	182	182	0	190
Montenegro	1,008	7	1,001	7	7	1	287
Morocco	4,596	2,615	1,981	2,647	2,755	3	381
Mozambique	..	..	..	8	8	0	n.a.
Namibia (4)	154	..	154	5	5	0	47
Nepal	..	..	..	1	1	0	n.a.
Netherlands	n.a.	n.a.	n.a.	5,464	74,778	151	n.a.
New Zealand	3,751	1,219	2,532	1,531	3,377	0	n.a.
Nicaragua	19	0	19	..	..	0	n.a.
Niger (4)	19	..	19	..	..	0	14
Nigeria	..	..	..	1	1	0	n.a.
Norway (4)	2,391	30	2,361	1,016	7,724	34	709
Office for Harmonization in the Internal Market	97,681	72,192	25,489	n.a.	n.a.	n.a.	1,946
Oman (4)	735	..	735	11	63	0	204
Pakistan	511	407	104	412	412	0	n.a.
Panama	89	4	85	37	89	0	n.a.

Name	Application Design Count by Office			Application Design Count by Origin	Equivalent Application Design Count by Origin	Hague International Applications	
	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Designated Hague Member
Peru	407	101	306	101	101	0	n.a.
Philippines	727	493	234	509	509	0	n.a.
Poland (4)	46	2	44	3,836	94,056	21	50
Portugal	2,122	1,944	178	3,197	33,461	1	n.a.
Qatar	..	..	..	10	36	0	n.a.
Republic of Korea	65,469	60,867	4,602	68,737	111,299	0	n.a.
Republic of Moldova	2,193	1,293	900	1,303	1,303	1	229
Romania	1,298	1,046	252	1,328	6,008	9	57
Russian Federation	7,870	3,638	4,232	4,085	6,165	1	n.a.
Rwanda	78	20	58	20	20	0	34
San Marino (2,4)	6	..	..	156	156	0	n.a.
Sao Tome and Principe (4)	72	..	72	..	..	0	38
Saudi Arabia (2,3)	752	246	506	251	251	0	n.a.
Senegal (4)	24	..	24	1	1	0	23
Serbia	1,628	96	1,532	171	327	9	343
Seychelles	..	..	..	29	55	0	n.a.
Singapore	4,092	603	3,489	1,030	3,006	6	625
Slovakia	664	468	196	652	4,552	1	n.a.
Slovenia (4)	581	3	578	1,036	6,849	14	115
Solomon Islands	..	..	..	3	3	0	n.a.
South Africa	2,361	1,014	1,347	1,266	3,376	0	n.a.
Spain	17,872	17,388	484	22,760	135,086	37	97
Sri Lanka	..	..	..	53	313	0	n.a.
Sudan	98	88	10	88	88	0	n.a.
Suriname (4)	70	..	70	..	..	0	34
Swaziland	..	..	..	2	2	0	n.a.
Sweden	814	735	79	4,653	47,189	52	n.a.
Switzerland	12,395	4,054	8,341	26,124	149,593	582	1,856
Syrian Arab Republic (4)	151	..	151	5	5	0	61
T F Y R of Macedonia	1,558	67	1,491	92	196	1	380
Tajikistan	299	0	299	..	..	0	88
Thailand	3,481	2,432	1,049	2,568	3,062	1	n.a.
Trinidad and Tobago	..	..	..	2	2	0	n.a.
Tunisia (4)	435	..	435	17	121	0	133
Turkey	46,330	39,926	6,404	41,240	51,485	72	1,160
Ukraine	6,958	3,480	3,478	3,653	4,225	4	608
United Arab Emirates	..	..	..	92	1,288	0	n.a.
United Kingdom	..	..	..	8,370	153,242	33	n.a.
United Republic of Tanzania	..	..	..	2	2	0	n.a.
United States of America	32,799	18,812	13,987	45,254	238,204	85	n.a.
Uruguay	117	15	102	16	16	0	n.a.
Uzbekistan	255	218	37	222	222	0	n.a.
Venezuela (Bolivarian Republic of)	..	..	..	20	72	0	n.a.
Viet Nam	2,107	1,512	595	1,831	2,195	0	n.a.
Yemen (2,3)	17	13	4	18	18	0	n.a.
Zambia	12	9	3	11	11	0	n.a.

(1) Design count by origin are incomplete, as some offices do not report the origin of applications.
(2) 2011 data are reported for application design count by office.
(3) 2011 data are reported for application design count by origin.
(4) Only Hague designation data are available and/or the office has not report the origin of applications; therefore, design count by office and origin data may be incomplete.
n.a. = not applicable
.. = not available

Source: WIPO Statistics Database, October 2013

Table ID2: Industrial design registrations by office and origin, and industrial designs in force, 2012

	Registration Design Count by Office			Registration Design Count by Origin	Equivalent Registration Design Count by Origin	Hague International Registrations	Registrations in Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Total
Afghanistan	..	..	..	5	5	0	..
African Intellectual Property Organization (4)	572	..	572	n.a.	n.a.	n.a.	..
African Regional Intellectual Property Organization	..	..	..	n.a.	n.a.	n.a.	307
Albania (2,3,5)	835	0	835	1	1	0	49
Algeria	493	391	102	391	391	0	1,137
Angola	..	..	..	3	81	0	..
Antigua and Barbuda	..	..	..	2	2	0	..
Argentina	1,457	717	740	742	872	0	..
Armenia	693	14	679	64	1,286	0	88
Australia	5,995	2,440	3,555	4,641	20,865	0	46,194
Austria	2,408	1,143	1,265	10,494	73,284	42	13,224
Azerbaijan	690	9	681	10	10	0	139
Bahamas	..	..	..	15	119	0	..
Bahrain	77	2	75	2	2	0	77
Bangladesh	1,056	972	84	972	972	0	..
Barbados	3	3	0	34	294	0	..
Belarus (5)	670	396	274	487	487	0	1,223
Belgium	n.a.	n.a.	n.a.	1,924	33,462	42	n.a.
Belize (4)	410	..	410	15	15	0	..
Benelux	1,871	1,029	842	n.a.	n.a.	n.a.	10,540
Benin (4)	17	..	17	1	1	0	..
Bermuda	..	..	..	43	901	0	..
Bosnia and Herzegovina	1,081	14	1,067	26	26	1	307
Botswana (4)	228	..	228	..	..	0	..
Brazil	4,333	2,415	1,918	2,852	4,958	0	..
Brunei Darussalam	..	..	..	2	2	0	..
Bulgaria	817	643	174	1,300	11,336	9	5,954
Cambodia	47	6	41	6	6	0	..
Canada	4,175	582	3,593	2,087	16,465	3	34,756
Chile	279	25	254	54	314	0	1,726
China	466,858	452,629	14,229	458,461	525,515	3	1,132,132
China, Hong Kong SAR	4,549	1,468	3,081	2,511	16,141	1	33,686
China, Macao SAR	153	5	148	8	34	0	605
Colombia (2,3)	772	313	459	349	349	0	3,091
Cook Islands	..	..	..	6	6	0	..
Costa Rica	128	9	119	60	138	0	414
Côte d'Ivoire (4)	39	..	39	..	..	0	925
Croatia	3,091	684	2,407	983	2,959	21	5,038
Cuba	6	3	3	3	3	0	57
Curaçao	..	..	..	10	244	2	..
Cyprus	113	113	0	463	3,531	0	544
Czech Republic	671	663	8	2,176	27,708	18	3,291
Democratic People's Republic of Korea (4)	260	..	260	9	9	0	..
Denmark (5)	459	172	287	2,567	41,390	30	4,014
Dominican Republic	70	27	43	37	89	0	277
Ecuador	..	..	..	25	415	0	..
Egypt (4)	1,415	..	1,415	65	793	4	..
El Salvador	..	..	..	1	1	0	..
Eritrea	..	..	..	1	1	0	..
Estonia (4)	111	..	111	125	3,011	0	1,468
Finland	278	176	102	1,711	25,735	17	3,085

	Registration Design Count by Office			Registration Design Count by Origin	Equivalent Registration Design Count by Origin	Hague International Registrations	Registrations in Force by Office
Name	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Total
France (4)	1,219	267	952	15,855	225,477	283	..
Gabon (4)	19	..	19	..	..	0	..
Georgia	1,180	119	1,061	121	121	0	303
Germany	51,366	38,694	12,672	69,047	603,145	649	57,089
Ghana (4)	146	..	146	3	3	0	..
Greece	1,298	873	425	1,016	3,642	6	1,519
Guatemala	315	5	310	5	5	0	362
Honduras	38	8	30	8	8	0	175
Hungary	673	614	59	924	4,408	4	4,225
Iceland	452	64	388	91	663	2	350
India	6,778	3,959	2,819	4,129	5,845	0	42,038
Indonesia	..	..	..	20	20	0	..
Iran (Islamic Republic of)	..	..	..	5	31	0	..
Iraq	..	..	..	1	1	0	..
Ireland	..	..	..	257	5,717	2	1,012
Israel	..	..	..	695	6,935	2	..
Italy	36,519	35,531	988	49,241	296,501	173	..
Jamaica (2,3)	48	14	34	14	14	0	..
Japan	28,349	24,610	3,739	40,722	117,636	0	248,822
Jordan	87	24	63	26	26	0	1,928
Kazakhstan (2,3)	270	142	128	143	169	0	..
Kenya	50	38	12	38	38	0	..
Kuwait	..	..	..	1	1	0	..
Kyrgyzstan	515	11	504	11	11	0	88
Latvia	273	64	209	112	1,152	2	493
Lebanon	..	..	..	10	192	0	..
Liechtenstein (4)	1,499	38	1,461	523	4,093	17	..
Lithuania	560	53	507	135	1,617	4	327
Luxembourg	n.a.	n.a.	n.a.	719	14,415	32	n.a.
Madagascar (5)	..	..	..	..	..	0	1,863
Malaysia	1,924	744	1,180	944	1,568	0	17,130
Mali (4)	15	..	15	..	..	0	..
Malta	11	11	0	36	608	0	62
Mexico	2,644	902	1,742	1,034	1,892	0	22,821
Monaco	1,501	9	1,492	59	943	1	366
Mongolia (2,3,5)	829	246	583	246	246	0	18,945
Montenegro	1,008	0	1,008	..	..	0	65
Morocco (4)	1,854	..	1,854	8	64	1	..
Namibia (4)	154	..	154	1	1	0	..
Nepal	5	5	0	6	6	0	92
Netherlands	n.a.	n.a.	n.a.	5,180	72,894	135	n.a.
New Zealand	3,169	812	2,357	1,070	2,630	0	9,460
Nicaragua	14	0	14	..	..	0	142
Niger (4)	19	..	19	..	..	0	..
Norway (4)	13	2	11	874	7,868	34	6,870
Office for Harmonization in the Internal Market	91,301	68,320	22,981	n.a.	n.a.	n.a.	167,145
Oman (4)	735	..	735	6	58	0	..
Pakistan	322	267	55	272	272	0	6,508
Panama	68	0	68	21	47	0	481
Paraguay	..	..	..	1	1	0	..
Peru	327	70	257	71	71	0	2,060
Philippines	750	509	241	522	526	0	..
Poland	1,664	1,607	57	5,152	86,844	19	12,321

Name	Registration Design Count by Office			Registration Design Count by Origin	Equivalent Registration Design Count by Origin	Hague International Registrations	Registrations in Force by Office
	Total	Resident	Non-Resident	Total (1)	Total (1)	Origin	Total
Portugal	1,953	1,867	86	3,092	33,148	1	4,463
Qatar	..	..	..	4	30	0	..
Republic of Korea	47,670	43,427	4,243	48,851	89,783	0	260,107
Republic of Moldova	1,592	740	852	751	751	1	3,260
Romania	1,975	1,567	408	1,806	5,732	5	3,763
Russian Federation	5,585	2,534	3,051	3,207	4,923	1	22,630
Rwanda (4)	54	..	54	..	..	0	29
Samoa	..	..	..	15	15	0	24
San Marino	..	..	..	108	108	0	..
Sao Tome and Principe (4)	72	..	72	..	..	0	..
Saudi Arabia (2,3,5)	457	62	395	69	69	0	1,741
Senegal (4)	24	..	24	..	..	0	..
Serbia	1,608	69	1,539	156	338	10	7,033
Seychelles	..	..	..	17	43	0	..
Singapore	3,929	581	3,348	971	2,479	6	12,014
Slovakia	548	410	138	565	4,309	1	997
Slovenia (4)	581	3	578	990	6,699	13	..
South Africa	1,255	490	765	659	2,925	0	12,222
Spain	19,864	19,360	504	24,137	125,017	37	46,573
Sri Lanka	..	..	..	22	152	0	..
Sudan	65	62	3	62	62	0	..
Suriname (4)	70	..	70	..	..	0	..
Swaziland	..	..	..	7	7	0	..
Sweden	416	367	49	3,465	46,365	43	6,896
Switzerland	11,940	3,804	8,136	23,650	133,885	562	9,587
Syrian Arab Republic (4)	56	..	56	1	1	0	..
T F Y R of Macedonia	1,549	48	1,501	75	179	1	2,590
Tajikistan	295	0	295	..	..	0	56
Thailand	2,107	1,428	679	1,525	2,071	1	10,783
Trinidad and Tobago	..	..	..	1	1	0	..
Tunisia (4)	435	..	435	6	110	0	..
Turkey	42,246	35,990	6,256	37,245	47,104	69	72,552
Ukraine	6,233	2,832	3,401	2,924	3,366	4	9,625
United Arab Emirates	..	..	..	79	1,353	0	..
United Kingdom	..	..	..	8,020	152,112	33	43,072
United States of America	21,951	12,445	9,506	33,945	205,159	89	269,501
Uruguay (5)	111	32	79	41	41	0	580
Uzbekistan	242	223	19	228	228	0	371
Venezuela (Bolivarian Republic of)	..	..	..	17	43	0	..
Viet Nam	1,405	819	586	1,099	1,281	0	7,834
Yemen (2,3)	4	3	1	4	4	0	..
Zambia	10	6	4	8	8	0	..
Zimbabwe	..	..	..	5	5	0	..

(1) Design count by origin are incomplete, as some offices do not report the origin of registrations.
(2) 2011 data are reported for registration design count by office.
(3) 2011 data are reported for registration design count by origin.
(4) Only Hague designation data are available and/or the office has not report the origin of registrations; therefore, design count by office and origin data may be incomplete.
n.a. = not applicable
.. = not available

Source: WIPO Statistics Database, October 2013

Table PV1: Plant variety applications and grants by office and origin, 2012

	Applications by Office			Applications by Origin	Equivalent applications by Origin	Grants by Office			Plant varieties in force
Name	Total	Resident	Non-Resident	Total	Total	Total	Resident	Non-Resident	Office
Albania	44	0	44	..	..	..	..	..	..
Argentina (1)	..	..	..	77	77	..	..	..	..
Australia	304	138	166	274	794	144	81	63	2,404
Austria (1)	..	..	..	34	424	..	..	..	58
Belarus	47	19	28	23	23	26	12	14	250
Belgium	3	1	2	79	1,275	3	2	1	139
Bolivia (Plurinational State of)	16	6	10	6	6	13	6	7	46
Botswana (2)	..	..	..	1	1	..	..	..	..
Brazil	315	188	127	212	212	232	159	73	1,721
Bulgaria	18	18	0	26	26	34	34	0	406
Canada	386	66	320	88	218	201	37	164	1,975
Chile	84	9	75	14	14	62	9	53	733
China	1,583	1,460	123	1,465	1,517	336	316	20	3,465
Colombia	119	6	113	10	10	99	8	91	475
Community Plant Variety Office	2,868	2,243	625	n.a.	..	2,640	2,032	608	20,362
Costa Rica (1)	..	..	..	15	67	..	..	..	..
Croatia	11	11	0	12	12	33	32	1	33
Cyprus (2)	..	..	..	3	3	..	..	..	..
Czech Republic	78	74	4	103	311	67	61	6	703
Denmark	6	0	6	230	3,142	6	2	4	200
Ecuador	71	15	56	16	16	76	0	76	395
Estonia	7	1	6	1	1	2	0	2	90
Finland	5	5	0	6	32	..	..	..	154
France	107	90	17	1,078	12,206	..	..	..	1,406
Georgia	20	13	7	15	15	21	14	7	40
Germany	98	82	16	1,000	11,192	69	61	8	1,847
Hungary	25	24	1	33	189	12	12	0	194
India (2)	..	..	..	1	1	..	..	..	..
Ireland	1	1	0	35	139	1	1	0	70
Israel	68	22	46	114	504	195	98	97	997
Italy	14	9	5	214	3,620	..	..	..	1,058
Japan	1,110	746	364	969	2,659	881	668	213	8,202
Kenya	55	11	44	12	38	13	6	7	302
Kyrgyzstan	1	1	0	1	1	..	..	..	8
Latvia	7	7	0	8	8	14	14	0	285
Lithuania	14	6	8	6	6	10	6	4	42
Luxembourg (2)	..	..	..	25	25	..	..	..	..
Mauritius (2)	..	..	..	10	10	..	..	..	..
Mexico	118	53	65	55	55	196	76	120	836
Morocco	81	3	78	3	3	27	7	20	198
Netherlands	639	535	104	2,560	25,882	830	718	112	6,416
New Zealand	132	47	85	151	697	120	57	63	1,221
Nicaragua	5	0	5	..	..	3	0	3	8
Norway	29	7	22	9	9	41	11	30	265
Panama	3	3	0	25	77	2	2	0	12
Paraguay	20	3	17	3	3	21	3	18	342
Peru	32	15	17	15	15	11	3	8	48
Poland	70	61	9	97	305	75	65	10	1,286
Portugal (1)	..	..	..	..	..	2	1	1	11
Republic of Korea	606	518	88	539	539	444	378	66	3,482
Republic of Moldova	34	24	10	26	26	20	20	0	104
Romania	51	49	2	78	78	37	37	0	255

	Applications by Office			Applications by Origin	Equivalent applications by Origin	Grants by Office			Plant varieties in force
Name	Total	Resident	Non-Resident	Total	Total	Total	Resident	Non-Resident	Office
Russian Federation	691	558	133	568	568	466	409	57	4,185
Serbia	130	41	89	115	115	31	6	25	38
Slovakia	20	17	3	22	74	28	22	6	382
Slovenia	3	3	0	3	3	..	..	..	22
South Africa	337	132	205	151	255	259	117	142	2,448
Spain	47	37	10	148	1,890	18	16	2	328
Sri Lanka (2)	..	..	..	1	27	..	..	..	..
Sweden	5	5	0	49	205	13	10	3	170
Switzerland	69	4	65	344	3,308	76	6	70	800
Thailand (2)	..	..	..	35	399	..	..	..	..
Tunisia	94	94	0	94	94	94	94	0	94
Turkey	122	66	56	83	83	87	50	37	393
Ukraine	1,281	332	949	355	355	465	232	233	4,448
United Kingdom	55	22	33	273	3,393	46	27	19	1,289
United States of America (A)	499	402	97	1,829	10,955	276	224	52	5,077
United States of America (B) (3)	1,149	411	738	n.a.	..	860	315	545	14,535
Uruguay	56	16	40	22	22	80	14	66	467
Uzbekistan	8	8	0	8	8	12	12	0	52
Viet Nam	102	75	27	75	75	54	38	16	149
Zimbabwe (2)	..	..	..	1	1	..	..	..	..

(1) The office did not report data; therefore, applications by origin data may be incomplete.
(2) Is not a member of the International Union for the Protection of New Varieties of Plants (UPOV).
(3) Applications by origin are reported under "United States of America (A)", as statistics by origin do not distinguish between applications under the Plant Variety Protection Act or the Plant Patent Act.
.. = not available

Source: WIPO Statistics Database, October 2013

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