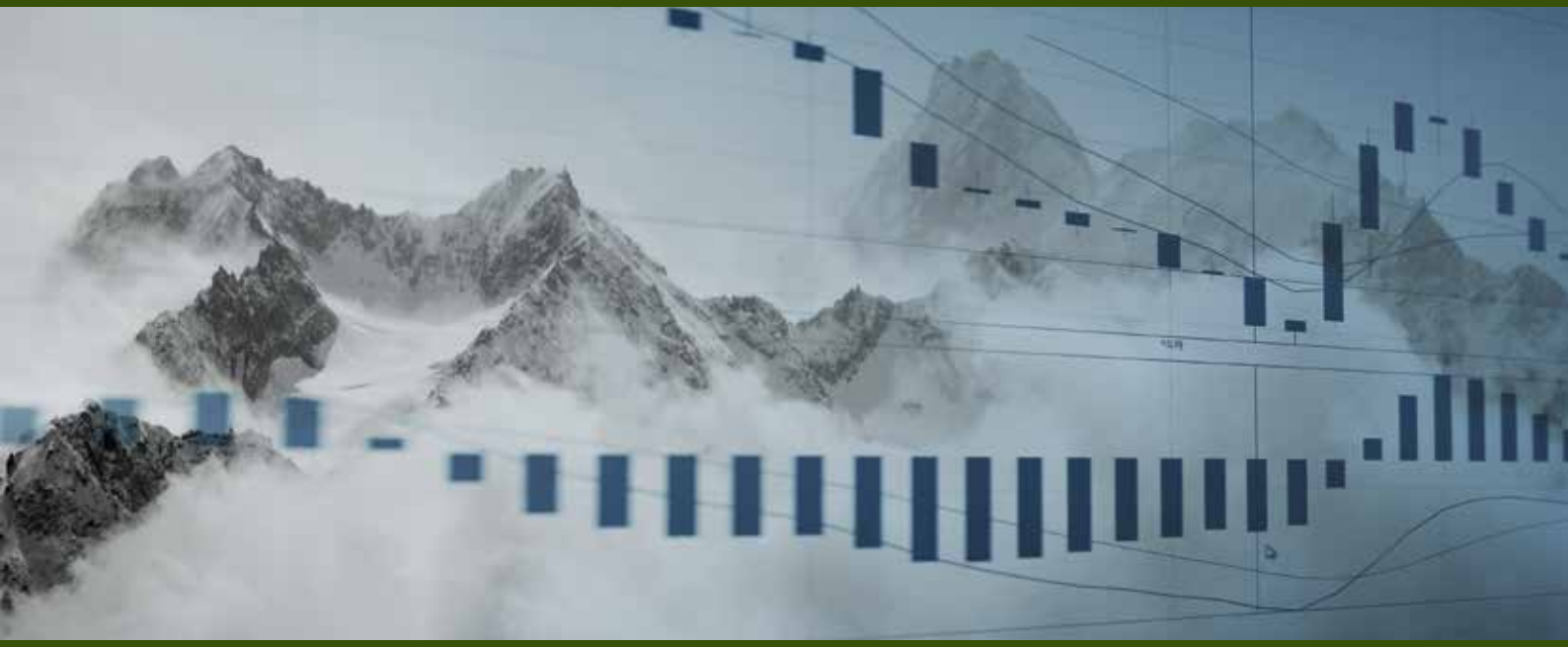
World Intellectual Property Indicators 2016

Economics & Statistics Series



WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

World Intellectual Property Indicators 2016

Economics & Statistics Series

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

World Intellectual Property Organization
34, chemin des Colombettes, P.O. Box 18
CH-1211 Geneva 20, Switzerland

ISBN: 978-92-805-2805-3

Photo credits:
www.istockphoto.com/baona
www.istockphoto.com/cdbrphotography

Printed in Switzerland

Table of contents

Foreword

As policymakers seek to invigorate growth around the world, it is encouraging to report that intellectual property (IP) activity saw healthy growth in 2015. Global patent filings grew by 7.8%, and global trademark filings by 15.3%. As in previous years, China was the main driver of growth. From already high levels, patent applications in China increased by 18.7%, and trademark applications by 27.4%.

Most other IP offices also recorded growth in patent and trademark filings. In particular, patent applications increased by 4.8% at the European Patent Office, 1.8% in the United States of America (U.S.) and 1.6% in the Republic of Korea. Among the top five offices, only Japan saw a decline (-2.2%) in patent filings. Trademark filing activity increased markedly in Japan and India, with growth rates of 43.0% and 21.9%, respectively. The U.S. also registered strong growth of 9.6%, as did the European Union Intellectual Property Office (EUIPO) with growth of 9.0%.

Global industrial design activity increased only modestly at 0.6% in 2015, though this followed a decline of 8.3% in 2014. The U.S. stood out, receiving 13.4% more designs in 2015 than in 2014. Design activity in other offices was uneven, with double-digit growth in China, Hong Kong (SAR), India and the Islamic Republic of Iran but double-digit declines in the Russian Federation and Ukraine.

The 2016 edition of WIPO's *World Intellectual Property Indicators* documents these and many other developments that shaped the global IP system in 2015. This year's special theme presents new statistics on the gender of inventors listed in patent filings under WIPO's Patent Cooperation Treaty. It shows that women inventors are still a minority, even if female participation in international patenting has increased between 1995 and 2015. However, the share of female inventors varies across countries and technical fields, with the highest participation rates in the life science fields.

Readers wishing to go beyond the statistics presented in this report can use the statistics tools on the WIPO website (*www.wipo.int/ipstats*) – especially the IP Statistics Data Center and the Statistical Country Profiles.

Finally, I would like to thank our Member States as well as national and regional IP offices for sharing their annual statistics with WIPO. Their invaluable cooperation makes the *World Intellectual Property Indicators* possible.

Francis GURRY
Director General

Acknowledgements

World Intellectual Property Indicators, 2016 was prepared under the direction of Francis Gurry (Director General) and supervised by Carsten Fink (Chief Economist). The report was prepared by a team led by Mosahid Khan; the team comprised Kyle Bergquist, Ryan Lamb, Bruno Le Feuvre, Julio Raffo, Gerard Torres and Hao Zhou, all from the Economics and Statistics Division.

Colleagues in WIPO's Patents and Technology Sector and Brands and Designs Sector and staff from the International Union for the Protection of New Varieties of Plants (UPOV) offered valuable comments on drafts of the report at various stages in its preparation.

Samiah Do Carmo Figueiredo and Caterina Valles Galmes provided administrative support. Gratitude is also due to colleagues in the Communications Division leading the production of the report, especially to Toby Boyd for his editing input and Stephen Mettler for the report's design. Thanks go to staff in the Printing Plant for their services.

Further information

Online resources

The electronic version of the report as well as all figures and their underlying data can be downloaded at *www.wipo.int/ipstats*. This webpage also provides a link to the IP Statistics Data Center, offering access to WIPO's statistical data.

Contact Information

Economics and Statistics Division
Website: *www.wipo.int/ipstats*
e-mail: *ipstats.mail@wipo.int*

Key numbers

Patents	2014	2015	Growth (%)
Applications worldwide	**2,680,900**	**2,888,800**	**7.8**
China	928,177	1,101,864	18.7
United States of America	578,802	589,410	1.8
Japan	325,989	318,721	-2.2

Trademarks

Application class counts worldwide	**7,426,900**	**8,445,300**	**13.7**
China	2,220,663	2,828,287	27.4
United States of America	472,016	517,297	9.6
EUIPO (EU Office)	336,204	366,383	9.0

Industrial Designs

Applications design counts worldwide	**1,137,500**	**1,144,800**	**0.6**
China	564,555	569,059	0.8
EUIPO (EU Office)	98,273	98,162	-0.1
Republic of Korea	68,441	72,458	5.9

Utility Models

Applications worldwide	**948,900**	**1,205,300**	**27.0**
China	868,511	1,127,577	29.8
Germany	14,741	14,274	-3.2
Russian Federation	13,952	11,906	-14.7

Plant Varieties

Applications worldwide	**15,600**	**15,240**	**-2.3**
Community Plant Variety Office (EU)	3,625	3,111	-14.2
China	2,026	2,342	15.6
United States of America	1,567	1,634	4.3

Overview of IP filing activity

Table 1: Rankings of total (resident and abroad) IP filing activity by origin, 2015

Origin	Patents	Marks	Designs
China	1	1	1
United States of America	2	2	4
Germany	5	3	3
Republic of Korea	4	7	2
Japan	3	5	7
France	6	4	9
United Kingdom (f)	7	8	11
Italy (a, b, c)	11	11	5
Switzerland	8	12	8
India	14	6	13
Turkey	23	9	6
Russian Federation	10	10	23
Netherlands	9	18	17
Spain	22	14	10
Austria	16	21	14
Australia	21	15	18
Sweden	13	23	19
Canada	12	16	28
Brazil	25	13	20
Poland (f)	24	20	15
Ukraine	30	25	16
Belgium	20	27	29
Denmark	19	33	24
Mexico	32	17	32
China, Hong Kong (SAR)	38	22	25
Finland	18	40	33
Thailand (a)	42	28	22
Czech Republic	33	31	30
Portugal	40	30	26
Indonesia	45	26	27
Singapore	26	34	38
Viet Nam	50	24	33
Israel	15	58	35
Luxembourg	31	35	42
Norway	27	45	37
Argentina	47	19	44
Iran (Islamic Republic of) (a, c, e)	17	81	12
New Zealand	29	39	49
South Africa	36	36	46
Romania	44	38	43
Malaysia	35	43	48
Bulgaria	53	44	31
Morocco	64	46	21
Egypt (a)	48	50	36
Hungary	41	48	45
Ireland (e)	28	53	54
Colombia	52	32	55
Philippines	51	41	51
Greece (e)	46	75	39
Chile	49	29	83

Origin	Patents	Marks	Designs
Slovakia	54	49	58
Belarus	37	59	66
Pakistan	71	37	61
Liechtenstein (d)	43	78	53
Croatia	72	56	50
Cyprus	62	55	63
United Arab Emirates (b, c)	61	51	69
Algeria (c)	88	47	47
Bangladesh	92	54	40
Saudi Arabia (e)	34	90	64
Sri Lanka	68	63	57
Slovenia (d, e, f)	56	72	62
Uzbekistan	65	71	56
Syrian Arab Republic	75	52	67
Malta (c)	58	67	70
Serbia	73	64	59
Lithuania	67	66	73
Latvia	66	69	72
Peru	90	42	80
Republic of Moldova	96	76	41
Kazakhstan (e)	39	96	82
Mongolia (c)	93	61	68
Estonia	74	74	75
Azerbaijan	55	65	112
Kenya	79	70	84
Barbados	60	99	79
Monaco	80	83	76
Iceland	68	79	95
Georgia	87	87	74
Jordan	82	80	88
Côte d'Ivoire (d, e, f)	59	115	78
Panama	104	57	93
Armenia	83	84	89
Dominican Republic	110	60	92
Bahamas (a, b, c)	86	97	87
Tunisia (e)	76	118	77
Cameroon (d, e, f)	57	119	101
China, Macao SAR	97	89	91
Costa Rica	103	62	112
Jamaica	115	77	86
D.P.R. of Korea (d, e, f)	119	101	60
Lebanon (f)	85	92	103
Uruguay	95	73	119
Cuba (a, b, c)	77	91	122
Qatar (a, b, f)	81	82	127
Albania (c)	123	108	65
Senegal (d, e, f)	70	124	103
Bosnia and Herzegovina (a)	106	106	96
Bolivia (Plurinational State of) (a, b, c)	125	85	99
Kyrgyzstan	78	131	103

Note: Rankings are based on the total numbers of applications filed by origin. Patent data refer to numbers of equivalent patent applications. Mark data refer to numbers of equivalent trademark applications based on class counts – the number of classes specified in applications. Design data refer to numbers of equivalent industrial design applications based on design counts – the number of designs contained in applications. This table lists origins for which at least two types of IP filing data are available.

a. 2014 patent data.
b. 2014 trademark data.
c. 2014 industrial design data.
d. Data on patent applications at the national IP office are not available.
e. Data on trademark applications at the national IP office are not available.
f. Data on industrial design applications at the national IP office are not available.

Source: WIPO Statistics Database, October 2016.

Table 2: Rankings of resident IP filing activity by origin, 2015

Origin	Patents	Marks	Designs	Origin	Patents	Marks	Designs
China	1	1	1	Bulgaria	53	40	31
United States of America	2	2	7	New Zealand	32	39	57
Germany	5	5	3	Israel	30	65	38
Japan	3	4	6	Hungary	43	50	41
Republic of Korea	4	8	2	Philippines	49	36	50
France	7	3	9	Colombia	52	31	56
India	10	6	11	Luxembourg	47	52	45
Italy (a, b, c)	11	12	4	Pakistan	60	32	55
Turkey	15	7	5	Saudi Arabia	41	..	59
Iran (Islamic Republic of) (a, c)	9	..	10	Kazakhstan	29	..	75
United Kingdom (f)	8	10	12	Greece (e)	44	78	35
Russian Federation	6	9	24	Algeria (c)	75	41	42
Spain	18	13	8	Chile	48	26	85
Brazil	17	11	18	Slovakia	55	46	58
Switzerland	13	21	13	Ireland (e)	39	71	53
Poland (f)	16	19	14	Bangladesh	81	49	34
Netherlands	12	18	23	Uzbekistan	54	61	52
Australia	24	16	20	Belarus	42	62	64
Ukraine	25	23	15	Syrian Arab Republic	61	47	61
Sweden	14	28	25	Sri Lanka	59	57	54
Austria	20	29	19	Croatia	64	60	51
Mexico	28	14	29	Mongolia (c)	72	53	60
Canada	19	15	43	Peru	77	37	71
Thailand (a)	37	24	17	Republic of Moldova	78	75	35
Indonesia	35	22	22	Latvia	65	67	65
Portugal	34	27	21	Lithuania	66	64	68
Belgium	23	30	32	Kenya	67	59	77
Viet Nam	45	20	27	Serbia	62	68	74
Czech Republic	33	33	28	Tunisia	63	..	73
Denmark	21	48	26	Estonia	79	70	69
Argentina	46	17	40	Georgia	73	82	67
Finland	22	44	37	United Arab Emirates (b, c)	94	54	76
Romania	36	34	39	Malta (c)	74	86	66
Egypt (a)	40	43	30	Slovenia (d, e, f)	69	95	62
China, Hong Kong (SAR)	56	25	33	Armenia	70	73	86
Morocco	57	42	16	Cyprus	80	79	70
Malaysia	31	38	47	Dominican Republic	92	55	82
Norway	26	45	48	Azerbaijan	58	72	104
South Africa	38	35	46	Liechtenstein (d)	50	105	80
Singapore	27	51	44	Jordan	81	74	81

Note: Rankings are based on the numbers of resident applications filed by origin. Patent data refer to numbers of equivalent patent applications. Mark data refer to numbers of equivalent trademark applications based on class counts – the number of classes specified in applications. Design data refer to numbers of equivalent industrial design applications based on design counts – the number of designs contained in applications. This table lists origins for which at least two types of IP filing data are available.

a. 2014 patent data.
b. 2014 trademark data.
c. 2014 industrial design data.
d. Data on patent applications at the national IP office are not available.
e. Data on trademark applications at the national IP office are not available.
f. Data on industrial design applications at the national IP office are not available.
.. indicates not available.

Source: WIPO Statistics Database, October 2016.

Special section
Measuring women's participation in international patenting

Introduction

Women contribute to all fields of creativity and intellectual endeavor, highlighting the importance of gender equality for scientific advancement and innovation. However, despite general improvements in gender equality around the world, gender gaps still persist, especially at senior levels.

Measuring the participation of women in science, technology and innovation activity has attracted considerable attention over the past two decades. A number of studies have attempted to quantify women's participation in science and technology by using information available in patent documents and scientific publications.[1] However, a key barrier to doing so is the fact that it is not customary for inventors or authors to provide information regarding their gender. This has required researchers to devise alternative methods for attributing gender to a given name. The two most common methods are to conduct surveys of inventors and authors, and to use name dictionaries to infer women's participation in patenting and publications.[2]

In order to extract gender statistics from patent documents at the global level, WIPO has developed a name dictionary to analyze around nine million inventors' and individual applicants' names recorded in international patent applications filed under the Patent Cooperation Treaty (PCT) – commonly referred to as the PCT System. Attributing gender to European/American names is challenging but less daunting than to Chinese and Korean names, partly because of the unavailability of original character and the relatively greater ambiguity inherent in names in these latter languages. WIPO has the advantage of being able to draw on the knowledge of its Chinese and Korean staff members, who are familiar with names in their respective languages. By using both publicly available information and staff members' inputs, WIPO has developed a World Gender-Name Dictionary (WGND) containing given names used in 182 countries. To our knowledge, this is the most comprehensive gender attribution exercise for patent documents undertaken so far.[3]

1. See Frietsch *et al.*, 2009; Naldi and Parenti, 2002; Sugimoto *et al.*, 2015; UKIPO, 2016; among others.
2. See UKIPO (2016) as an example of the dictionary approach and Walsh and Nagaoka (2009) as an example of the survey approach.
3. The closest most recent work has been done by UKIPO (2016).

This section documents the participation of women in international patenting between 1995 and 2015, broken down by country of origin, field of technology and institutional sector.

How to extract gender statistics from patent documents?

In order to attribute gender to inventors' names recorded in Patent Cooperation Treaty (PCT) applications, WIPO produced a gender-name dictionary based on information taken from 13 different public sources. The final dictionary can be used to attribute gender to around 6.2 million names in 182 countries/economies. Note that gender is attributed to a given name on a country-by-country basis because certain names can be considered male in one country but female in another. For example, the name Andrea can refer to a male in Italy but to a female in Spain.

Using this dictionary, gender was attributed to 96% of the 8.8 million names of individuals recorded in PCT applications. However, the gender attribution percentage of applications is not equal across countries. Among applicants from the top 20 countries of origin of PCT applications, gender attribution is least complete for those from China (88%), India (89%), the Republic of Korea (92%) and Japan (94%). For applicants from each of the remaining top 20 countries of origin, gender could be attributed for 95% or more of names. This was also the case for applicants from the remaining 198 countries of origin.

Attributing gender to a name is not an exact science; there is no guarantee that gender has been attributed correctly, and so the gender attributed to a given name should be treated as the most likely gender associated with that name.

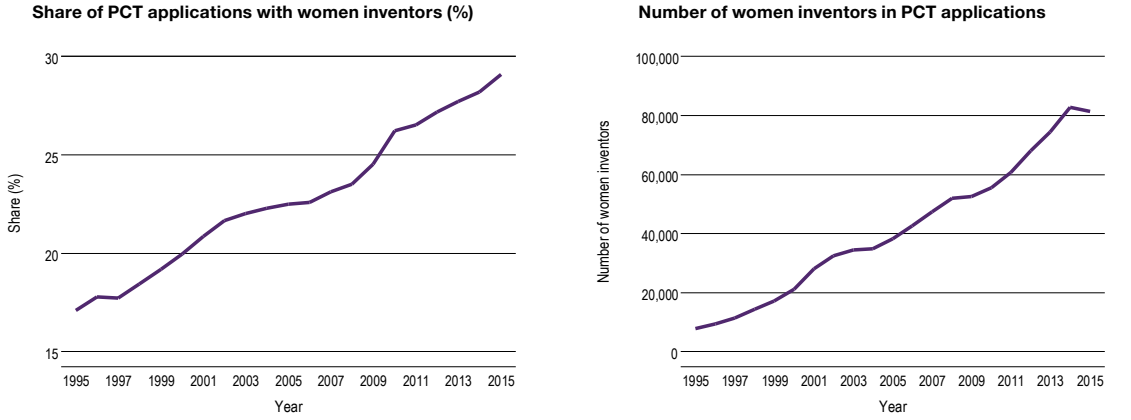
The detailed methodology and dictionary are described in Lax-Martinez et al. (2016), which is available for download at: *www.wipo.int/econ_stat/en/economics.*

The overall share of women inventors in international patenting has been increasing

Figure 1 presents the annual shares of PCT international patent applications with at least one woman inventor (hereinafter, applications with women inventors).[4] The share of PCT applications with women inventors increased from 17% in 1995 to 29% in 2015. Despite this increase, less than a third of all applications in 2015 included women. In terms of volumes, the total number of women inventors recorded in PCT applications increased from only 7,780 in 1995 to 81,316 in 2015, representing annual average growth of 12.5%.

4. Data reported in this section refer to PCT international applications, and the terms "PCT applications" and "international patent applications" are used interchangeably.

Figure 1. Women inventors in international patent applications



Source: WIPO Statistics Database, October 2016.

The combined total of male inventors recorded in applications stood much higher, at 455,624 in 2015, but represented more modest growth of 9.5% per year over the same period.

Women's participation rate of 29% at the global level masks considerable variation in participation rates across countries. Figure 2 presents data on the share of PCT applications with women inventors for some leading users of the PCT System. China and the Republic of Korea have the greatest gender equality in international patenting in that half of all PCT applications that originated in these countries between 2011 and 2015 included women inventors (figure 2). Singapore (36.6%), Spain (36.3%) and Poland (33.5%) also had high shares of PCT applications with women inventors. In contrast, Germany, Italy, Japan and South Africa have the greatest gender gaps among the listed countries of origin. Less than a fifth of all PCT applications from each of these countries included women inventors. Women inventors in PCT applications from the United States of America (U.S.) – the largest country of origin of PCT applications – were represented in 29% of these applications, which is on a par with the world average. However, in absolute terms the U.S (104,565) had the largest number of women inventors recorded in PCT applications, followed by China (63,365), Japan (43,957), the Republic of Korea (42,730) and Germany (23,905) (figure 3).

Middle-income countries such as Brazil and Mexico have a gender balance in PCT applications similar to that of some high-income countries such as Ireland and the Netherlands (figure 2). But in terms of volume, the Netherlands has five times more women inventors than Brazil and 15 times more than Mexico (figure 3).

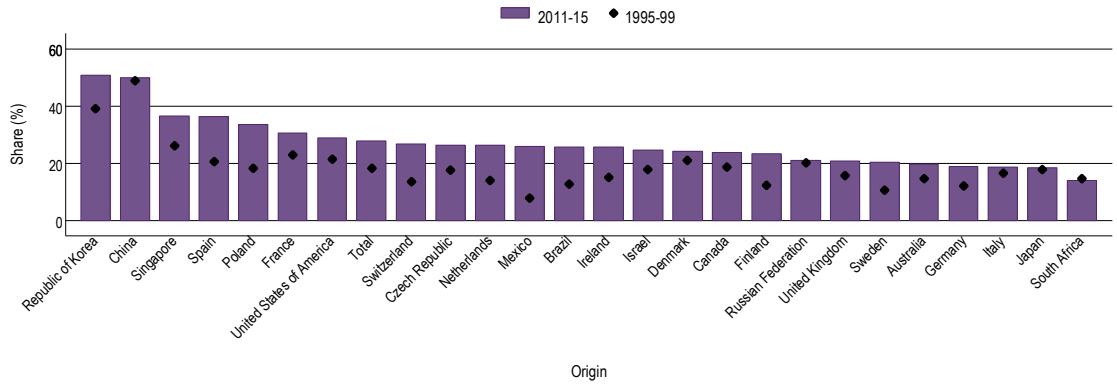
For all reported countries of origin except South Africa, gender balance improved when the five-year period of 1995-99 is compared with that of 2011-15. The fastest improvement was observed for Mexico, followed by Spain, Poland and Switzerland. Mexico's share of international patent applications with women inventors increased from 7.8% in 1995-99 to 25.8% in 2011-15. Spain, Poland and Switzerland saw similar magnitudes of increase – around a 15 percentage point improvement. South Africa saw a small decline in its share of patent applications with women inventors, while the shares for China, Japan and the Russian Federation remained largely unchanged.

Can technological specialization explain the gender gap in international patenting?

In order to better understand why women's participation rate is high in China, the Republic of Korea and Singapore but relatively low in Germany, Japan and the United Kingdom (U.K.), figure 4 presents PCT application data broken down by field of technology.[5] Among the 35 fields of technology, biotechnology had the highest share of PCT applications with women inventors (57.6%), followed by pharmaceuticals (55.5%), organic fine chemistry (54.1%) and food chemistry (50.7%). In contrast, civil engineering; engines, pumps, turbines;

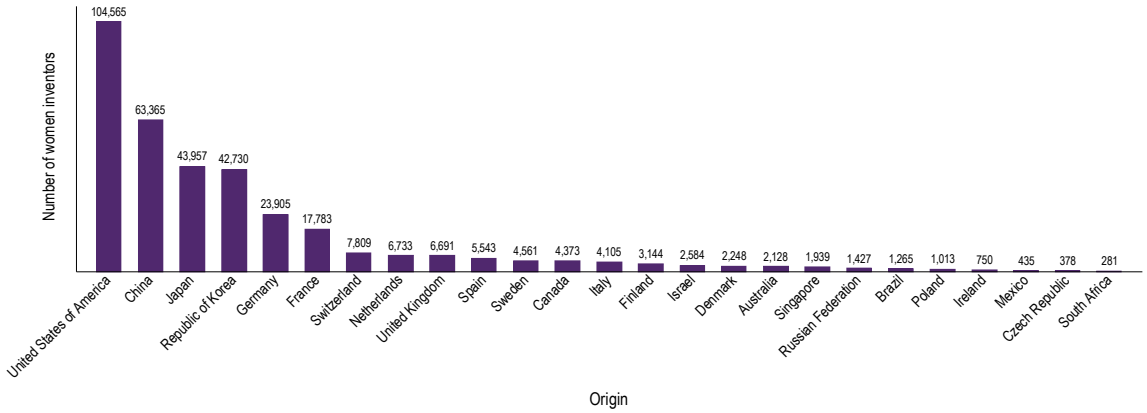
5. Participation rate is defined as the share of PCT applications with at least one woman inventor in total PCT applications.

Figure 2. Share of international patent applications with women inventors by origin



Source: WIPO Statistics Database, October 2016.

Figure 3. Number of women inventors in international patent applications by origin, 2011-15



Source: WIPO Statistics Database, October 2016.

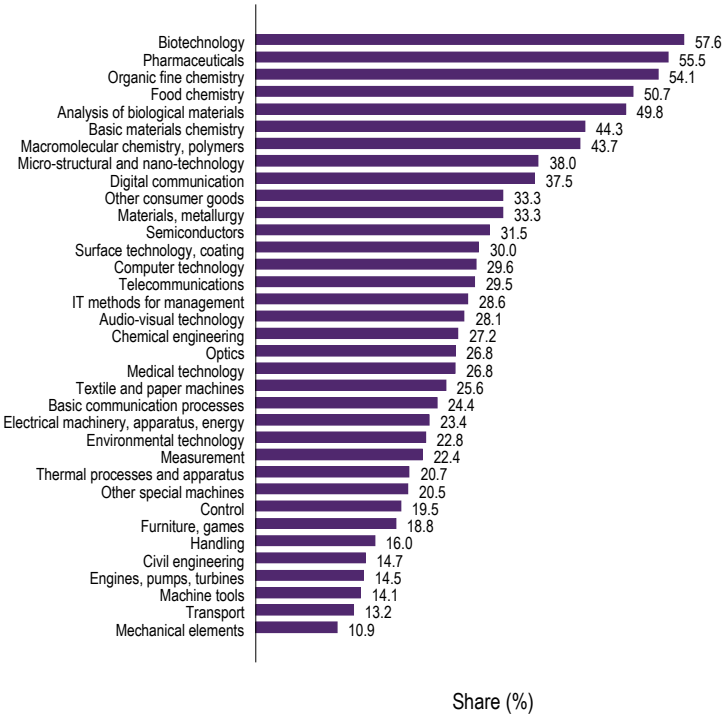
machine tools; mechanical elements; and transport had the largest gender disparities. Women's participation rates were less than 15% in each of these five fields.

Figure 5 shows trends in women's participation rates for each of the top five fields of technology alongside the top five fields that saw the fastest improvement in gender balance. For all fields of technology presented in this figure, there was a sizable increase in the shares of PCT applications with women inventors. For example, digital communication and telecommunications both saw a narrowing of the gender gap between 1995 and 2015. This was partly due to the fact that a large proportion of PCT applications filed in these two fields originated in China, which as mentioned earlier has a good overall gender balance (see figure 2).[6] Gender disparity also narrowed markedly in the fields of food chemistry and organic fine chemistry as well as in other consumer goods categories.

As shown in figure 2, Germany, Japan, South Africa and the U.K. have some of the largest gender disparities. This could be due in part to the fact that these countries of origin have high numbers of patent filings in fields of technology in which women's participation rates are low. For example, only 13% of all transport-related PCT applications had female inventors. Applicants from Germany filed a high share of their applications in this sector (around one-tenth of all PCT applications),

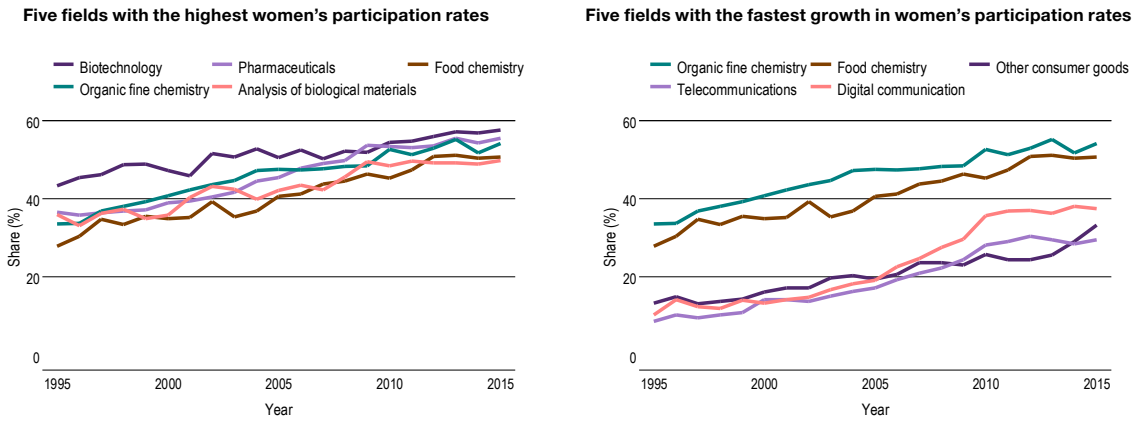
6. Computer technology accounted for 13% of China's PCT applications, while digital communication accounted for 23.7%.

Figure 4. Share of international patent applications with women inventors by field of technology, 2015



Source: WIPO Statistics Database, October 2016.

Figure 5. Share of international patent applications with women inventors for selected fields of technology



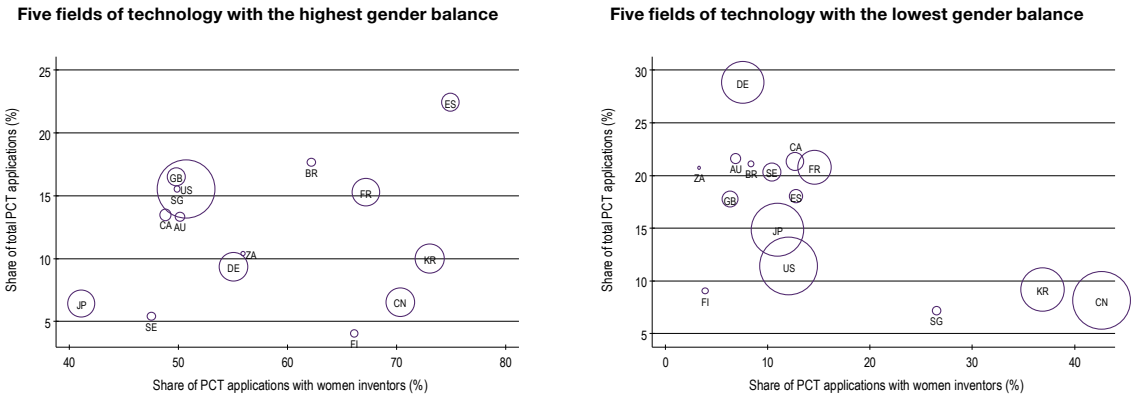
Source: WIPO Statistics Database, October 2016.

whereas applicants from China – which had a high women's participation rate in all PCT applications combined – filed only 2% of all their PCT applications in this sector.

Figure 6 illustrates this point by presenting the share of women's participation rates in the five fields of technology with the highest and the lowest women's participation rates, together with the shares of these five fields in total PCT applications for selected countries of origin. Countries whose applicants file high shares of their PCT applications in the five fields with the lowest women's participation rates, such as Germany, Japan and the U.S., tend to have wider gender disparities. Similarly, countries whose applicants file high shares of their PCT applications in the five fields with high women's participation rates, such as Spain, tend to have greater gender balance.

There were women inventors in more than 70% of PCT applications filed by applicants from Poland, Spain,

Figure 6. Women's participation rates by field of technology and origin



Note: The five fields with the highest shares of PCT applications with women inventors were: biotechnology, pharmaceuticals, organic fine chemistry, food chemistry and analysis of biological materials. The five fields with the lowest shares of PCT applications with women inventors were: civil engineering; engines, pumps, turbines; machine tools; mechanical elements; and transport. See figure 4. Country codes are as follows: AU (Australia); BR (Brazil); CA (Canada); CN (China); DE (Germany); ES (Spain); FI (Finland); FR (France); GB (United Kingdom); JP (Japan); KR (Republic of Korea); SE (Sweden); SG (Singapore); US (United States of America); and ZA (South Africa).

Source: WIPO Statistics Database, October 2016.

the Republic of Korea and China in the five fields of technology with the greatest gender balance (figure 7). In contrast, less than half of PCT applications in these fields from Canada, Japan, New Zealand, Singapore, Sweden and the U.K. included women inventors.

As for the five fields of technology with the largest gender disparities, China (43%), the Republic of Korea (37%) and Singapore (26%) had the largest shares of PCT applications with women inventors. But for the majority of the reported countries of origin, less than one-tenth of PCT applications filed in these fields of technology featured women inventors.

Is there gender disparity in international patenting across institutional sectors?

The academic sector, which includes universities and public research organizations, tends to have a higher share of PCT applications with women inventors than the business sector. In 2015, around 48% of all PCT applications filed by the academic sector included women inventors compared to only 28% for the business sector.[7] The shares of women inventors in both sectors have followed upward trends between 1995 and 2015. Although the academic sector has the highest women's participation rate, the business sector had the largest number of women inventors in terms of absolute numbers – by a factor of five. The total numbers of women inventors recorded in PCT applications between 1995 and 2015 amounted to 702,764 for the business sector and 121,087 for the academic sector (figure 8). This is to be expected considering that the business sector accounted for 85% of all PCT applications in 2015, compared to just 7% filed by the academic sector.

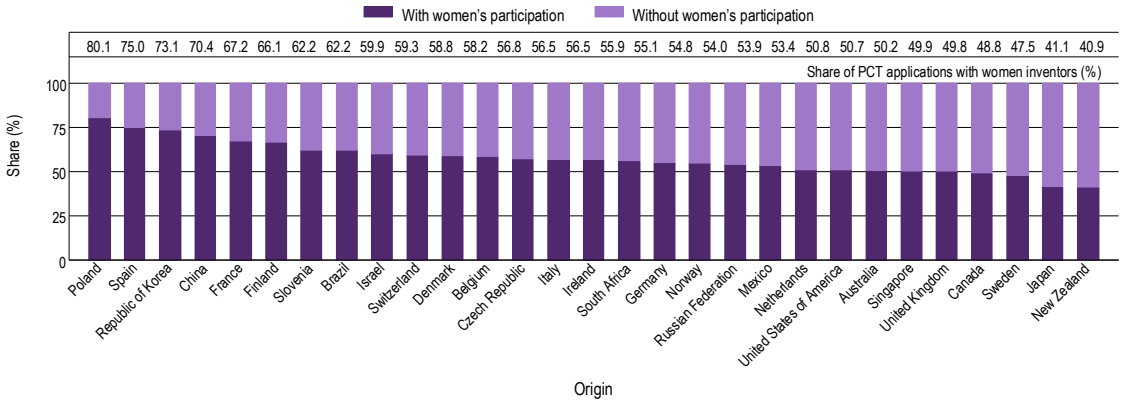
China, Mexico, Brazil and Spain had the highest shares of PCT applications with women inventors in the academic sector. Around two-thirds of PCT applications filed by the academic sector in each of these countries of origin included women inventors. This is in contrast to Japan and Sweden, where the shares were less than 30% (figure 9). The largest gender disparities between the academic and business sectors were observed for Brazil, Italy, Mexico and South Africa. For example, the share of PCT applications with women inventors originating from Mexico was 69% for the academic sector and 26% for the business sector. In contrast, the Netherlands, the Republic of Korea, Sweden and Switzerland had the lowest gender disparities between the two sectors.

Differences in women's participation across institutional sectors can partly be explained by the fact that

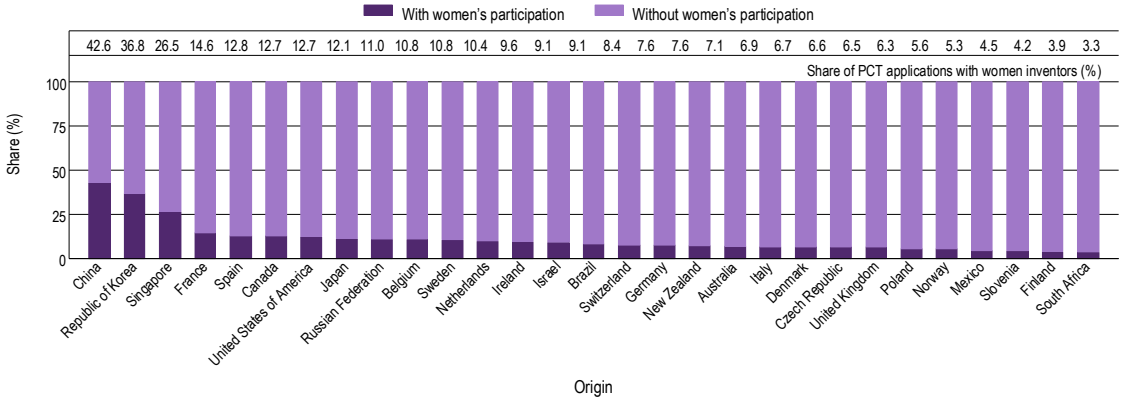
7. Sectorial allocation of PCT applications is based on the first applicant named in an application. For example, in a PCT application with two applicants, if the first applicant named is a university followed by the name of a company, the application will be allocated to the academic sector.

Figure 7. Share of international patent applications with women inventors by field of technology and origin, 2011-15

Five fields of technology with the highest gender balance



Five fields of technology with the lowest gender balance

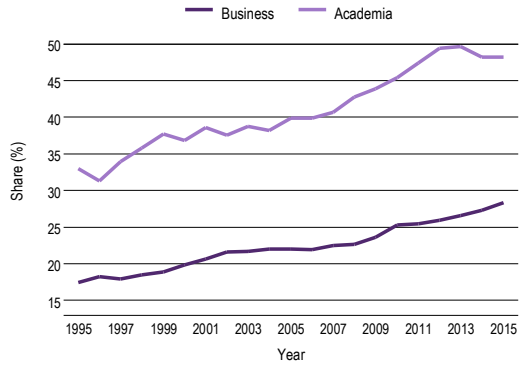


Note: As shown in figure 4, the five fields with the highest shares of PCT applications with women inventors were: biotechnology, pharmaceuticals, organic fine chemistry, food chemistry and analysis of biological materials, while the five fields with the lowest shares of PCT applications with women inventors were: civil engineering; engines, pumps, turbines; machine tools; mechanical elements; and transport.

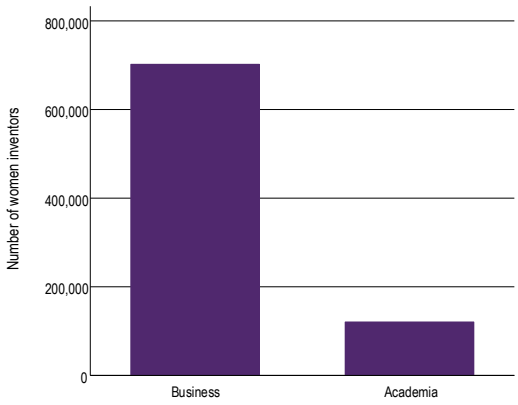
Source: WIPO Statistics Database, October 2016.

Figure 8. Shares of international patent applications with women inventors by institutional sector

Shares of PCT applications with women inventors

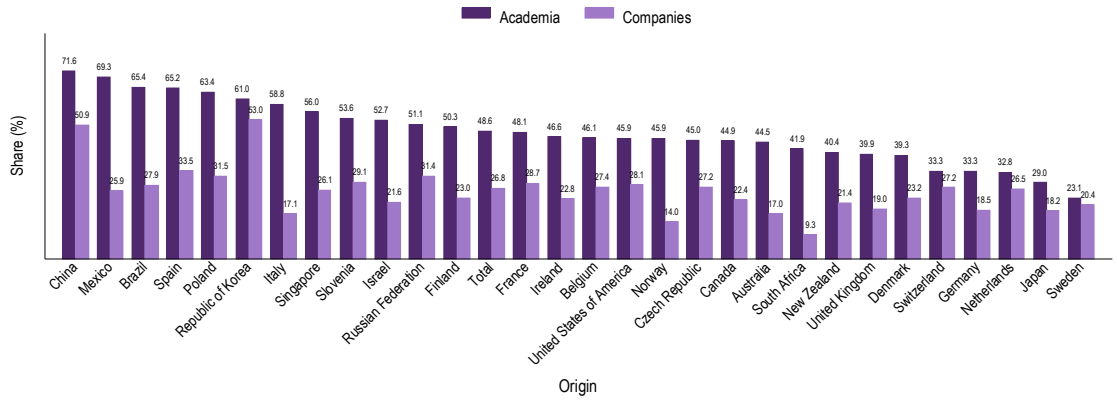


Number of women inventors: 1995-2015



Source: WIPO Statistics Database, October 2016.

Figure 9. Share of international patent applications with women inventors by institutional sector and origin, 2011-15



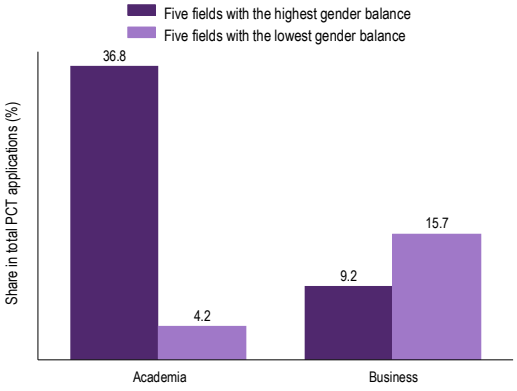
Source: WIPO Statistics Database, October 2016.

the distribution of applications from the academic sector by fields of technology is skewed towards fields that have a good gender balance (figure 10). For example, in 2015 the top five fields of technology for women's participation rates accounted for 36.8% of total applications filed by the academic sector, while the five fields of technologies with the largest gender disparities accounted for 4.2%. In contrast, for the business sector, the top five fields accounted for 9.2% and the five fields of technologies with the largest gender disparities accounted for 15.7%.

Gender gaps among top PCT applicants

Among the top 100 PCT applicants, LG Chem Limited of the Republic of Korea had the highest share of PCT applications with women inventors for the period of 2011-15. It was followed by L'Oréal of France, Henkel of Germany, Novartis and F. Hoffmann-La Roche, both of Switzerland, and Merck Patent GmbH of Germany. For each of these companies, around three-fifths of their PCT applications included women inventors. Three of these companies specialize in pharmaceuticals, while one is active in chemistry and two in the manufacture of beauty products. In this list of top PCT applicants, Bosch-Siemens of Germany, Nokia Corporation of Finland and two Japanese companies – Daikin Industries and Hitachi Limited – had the lowest shares of PCT applications with women inventors, at less than a quarter each. Apple and Google, both of the U.S., also had low shares of PCT applications with women inventors.

Figure 10. Distribution of international patent applications by institutional sector and field of technology, 2015



Note: The five fields with the highest shares of PCT applications with women inventors were: biotechnology, pharmaceuticals, organic fine chemistry, food chemistry and analysis of biological materials, while the five fields with the lowest shares of PCT applications with women inventors were: civil engineering; engines, pumps, turbines; machine tools; mechanical elements; and transport. See figure 4.

Source: WIPO Statistics Database, October 2016.

ZTE Corporation and Huawei Technologies of China are the top two PCT applicants overall. For both, around 50% of their PCT applications included women inventors, putting them in 14th and 15th position respectively in terms of gender balance. However, in absolute numbers, ZTE had the largest number of women inventors (9,298) in PCT applications for the period of 2011-15, followed by Huawei Technologies (8,531). The majority of the reported companies saw increases in their shares of PCT applications with women inventors between the periods 1995-99 and 2011-15.

Table 1. Shares of international patent applications with women inventors for top PCT applicants in the business sector

	Share of PCT applications with women inventors (%)		Number of women inventors	Number of PCT applications
Applicant	**2011-15**	**1995-99**	**2011-15**	**2011-15**
LG Chem Ltd	71.3	73.2	2,849	2,288
L'Oréal	69.4	63.8	1,737	1,530
Henkel KGaA	65.8	37.8	1,346	1,174
Novartis AG	61.4	35.1	1,168	1,019
F. Hoffmann-La Roche AG	60.7	32.2	1,024	935
Merck Patent GmbH	59.8	43.6	858	935
Samsung Electronics Co Ltd	59.3	38.7	5,007	5,689
BOE Technology Group	56.2	n.a.	1,543	2,045
LG Electronics Inc	56.2	42.9	4,387	5,642
Dow Global Technologies Inc	54.7	n.a.	1,576	1,993
Tencent Technology (Shenzhen) Co Ltd	52.0	n.a.	1,984	2,419
Procter & Gamble Company	51.4	37.0	1,909	2,288
BASE SE	51.2	31.1	3,005	3,646
ZTE Corporation	51.1	n.a.	9,298	13,076
Huawei Technologies Co Ltd	50.5	n.a.	8,531	12,770
NESTEC SA	49.9	n.a.	1,084	1,208
Huawei Device Co Ltd	46.8	n.a.	980	1,615
DSM IP Assets	46.8	n.a.	615	949
Corning Inc	40.7	24.0	807	1,423
Qualcomm Incorporated	40.3	15.6	5,003	9,721
Shenzhen China Star Optoelectronics Technology Co Ltd	38.6	n.a.	1,274	2,651
Applied Materials Inc	38.0	28.9	888	1,689
E.I. Du Pont de Nemours and Company	37.9	25.3	863	1,693
Microsoft Corporation	36.9	21.8	1,969	3,602
Intel Corporation	36.0	15.2	2,682	5,556
International Business Machines Corporation	35.9	15.6	1,243	2,624
Nitto Denko Corporation	35.2	29.5	812	1,604
3M Innovative Properties Company	34.9	26.7	1,580	3,139
Uni-Charm Corporation	32.9	25.0	365	923
Hitachi High-Technologies Corporation	32.9	n.a.	398	979
Nokia Siemens Networks	31.4	n.a.	416	1,203
Alcatel Lucent	30.6	18.5	941	2,467
General Electric Company	30.1	15.7	885	2,222
Koninklijke Philips Electronics	28.9	9.1	2,403	6,502
Hewlett-Packard Development Company	28.9	18.9	1,514	4,089
Toray Industries Inc	28.6	19.6	392	1,166
Mitsubishi Chemical Corporation	28.3	45.4	302	884
Compagnie Générale des Etablissements Michelin - Michelin & Cie	28.0	5.5	395	1,039
Thomson Licensing	27.5	24.6	552	1,461
Société Nationale d'Etude et de Construction de Moteurs d'Aviation	26.2	25.0	296	916
Kabushiki Kaisha Toshiba	26.0	16.8	859	2,766
Telefonaktiebolaget LM Ericsson	26.0	7.6	2,076	6,703
Asahi Glass Company Ltd	25.7	27.7	440	1,537
Google Inc	25.4	n.a.	935	2,892
Terumo Kabushiki Kaisha	25.0	17.6	314	1,132
Apple Computer Inc	24.6	19.1	649	2,146
Nokia Corporation	24.1	25.0	846	2,885
Daikin Industries Ltd	23.5	9.0	352	1,077
Hitachi Ltd	22.7	21.9	1,102	4,293
Bosch-Siemens Hausgeräte GmbH	22.6	7.6	454	1,471

Note: The top 100 PCT applicants were selected based on the numbers of PCT applications they filed between 2011 and 2015. The table reports data for the 50 business applicants with the highest women's participation rates.
n.a. indicates not applicable.

Source: WIPO Statistics Database, October 2016.

Table 2. Shares of international patent applications with women inventors for the top PCT applicants in the academic sector

	Share of PCT applications with women inventors (%)		Number of women inventors	Number of PCT applications
Applicant	**2011-15**	**1995-99**	**2011-15**	**2011-15**
Korea Research Institute of Bioscience and Biotechnology	83.1	100.0	639	261
Consejo Superior de Investigaciones Científicas	81.2	55.6	734	426
Electronics & Telecommunications Research Institute of Korea	80.5	75.0	606	395
Korea Research Institute of Chemical Technology	77.9	59.2	284	181
China Academy of Telecommunications Technology	75.2	n.a.	1,152	875
Tsinghua University	74.5	50.0	522	329
Korea Institute of Science and Technology	74.5	78.9	194	141
Peking University	74.1	50.0	416	351
Institut National de la Santé et de la Recherche Médicale	70.4	73.1	701	595
Korea Institute of Energy Research	66.5	n.a.	361	245
Yeda Research and Development Co Ltd	64.9	39.7	192	188
Kyunghee University	64.4	n.a.	132	132
Korea Institute of Industrial Technology	63.0	n.a.	302	276
Chonbuk National University	62.9	n.a.	133	132
Korea Advanced Institute of Science and Technology	62.0	33.3	399	408
Korea Research Institute of Standards and Science	61.9	n.a.	110	134
Korea Electronics Technology Institute	61.8	n.a.	175	199
Nanyang Technological University	60.4	n.a.	227	298
Kyungpook National University	60.2	n.a.	147	166
Hanyang University	60.2	n.a.	218	246
Seoul National University	59.5	n.a.	467	462
Ajou University	59.4	n.a.	123	133
USA as represented by The Secretary Dept. of Health and Human Services	59.4	40.4	445	453
Centre National de la Recherche Scientifique	58.7	46.0	825	846
Agency of Science Technology and Research	58.6	n.a.	618	681
Yonsei University	57.9	n.a.	259	278
Gwangju Institute of Science and Technology	57.7	n.a.	114	142
Korea Institute of Machinery & Materials	53.9	n.a.	150	167
Leland Stanford Junior University	53.6	35.1	414	491
Duke University	53.5	36.0	159	228
New York University	53.2	37.1	203	267
University of Rochester	53.1	35.0	108	147
Hebrew University of Jerusalem	53.0	45.5	152	198
State University of New Jersey	53.0	42.0	104	151
Yale University	52.7	35.1	128	182
Postech Foundation	52.7	n.a.	173	245
Tel Aviv University	52.5	32.4	177	179
Korea University	52.1	n.a.	228	292
Massachusetts Institute of Technology	51.5	28.4	720	1,010
Johns Hopkins University	51.2	42.1	504	664
Council of Scientific and Industrial Research	50.6	n.a.	370	443
University of Pennsylvania	50.3	33.5	246	346
University of California	50.1	33.6	1,305	1,800
Wisconsin Alumni Research Foundation	50.0	38.9	156	192
Sloan-Kettering Institute for Cancer Research	50.0	50.6	125	166
Purdue University	49.0	45.0	120	196
Northeastern University	48.8	40.9	112	172
Columbia University	48.6	38.1	338	521
Max-Planck-Gesellschaft Zur Forderung Der Wissenschaften	48.3	34.3	159	232
University of Colorado	48.1	39.1	138	208

Note: The top 100 PCT applicants from the academic sector were selected based on the numbers of PCT applications they filed between 2011 and 2015. The table reports data for the 50 applicants with the highest women's participation rates.
n.a. indicates not applicable.

Source: WIPO Statistics Database, October 2016.

As for the top PCT applicants in the academic sector, at least 80% of PCT applications filed by the Korea Research Institute of Bioscience and Biotechnology (the Republic of Korea), the Consejo Superior de Investigaciones Científicas (Spain) and the Electronics & Telecommunications Research Institute of Korea (the Republic of Korea) included women inventors. Eight of the top 10 academic applicants with the highest shares of PCT applications with women inventors are located either in China or the Republic of Korea. The two exceptions are the Consejo Superior de Investigaciones Científicas of Spain and the Institut National de la Santé et de la Recherche Médicale of France.

Conclusions

We are able to produce reliable data on the number of women inventors worldwide based on information available in international patent documents and a name dictionary assembled from 13 public sources. From this data, we can confidently conclude that there has been considerable improvement in women's participation in patenting. Despite this improvement, only 29% of all PCT applications filed in 2015 involved women inventors, which suggests that a significant gender gap persists.

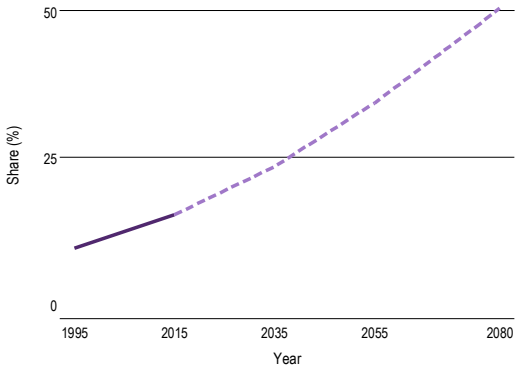
Women's participation in patenting is not equally distributed across countries. Countries such as China and the Republic of Korea have contributed substantially to the improvement in gender balance over the past 20 years. Germany, Japan and the U.S., although home to a large number of women inventors, each have low shares of women inventors relative to their total numbers of inventors. Improvement in gender balance in these countries will determine the rate of progress at the global level over the coming decades.

Some fields of technology have seen more progress than others. In particular, fields related to the life sciences, such as biotechnology and pharmaceuticals, are among those with higher gender balance scores. In addition, movement toward gender balance in fields related to ICTs, such as digital communication and telecommunications, has been faster than average. To a certain extent, improvement in a country's gender balance score will depend on the level of patenting activity in the life sciences and in fast-growing technological fields.

Participation of women inventors in international patenting tends to be higher in the academic sector, which includes universities and public research organizations, than in the business sector. Countries with high shares of PCT applications filed by the academic sector will have a better gender balance. However, the share of academic sector PCT applications in total PCT applications remains small.

Overall, the proportion of women inventors relative to men remains far from balanced. At the current rate of progress, we will not reach gender balance until 2080 (figure 11).

Figure 11. Forecast trend in gender balance



Source: WIPO.

Gender balance/disparity in patenting activity is determined by various factors such as the participation of women in science and engineering, education and the labor market. In addition, the propensity to use the patent system varies across countries and fields of technology. Therefore, one should draw on other gender-related indicators – beyond patenting – to make any general conclusion about gender balance for a country, institutional sector or field of technology.

References

Frietsch, R., Haller, I., Funken-Vrohlings, M. and Grupp, H. (2009). Gender-Specific Patterns in Patenting and Publishing. *Research Policy* 38, 590–599.

Lax-Martínez, G., Raffo, J. and Saito, K. (2016). *Identifying the Gender of PCT Inventors and the Construction of a World Gender-Name Dictionary.* WIPO Economics & Statistics Series, No. 33. Geneva.

Naldi, F. and Parenti, I.V. (2002). *Scientific and Technological Performance by Gender: A Feasibility Study on Patent and Bibliometric Indicators,* Vol. II : Methodological Report.

Sugimoto, C.R., Ni, C., West, J.D. and Larivière, V. (2015). *The Academic Advantage: Gender Disparities in Patenting.* PLOS ONE 10, e0128000.

UKIPO (2016). *Gender Profiles in Worldwide Patenting: An Analysis of Female Inventorship.* UK Intellectual Property Office Informatics Team, September, 2016.

Walsh, J. P. and Nagaoka, S. (2009). *Who Invents? Evidence from the Japan-U.S. Inventor Survey.* RIETI Discussion Paper Series, No. 09-E-034, Tokyo.

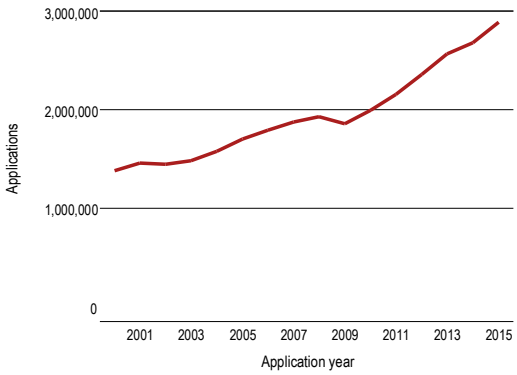
Patents

Highlights

Patent applications worldwide grew by 7.8% in 2015

Around 2.9 million patent applications were filed worldwide in 2015, up 7.8% from 2014 (figure 1). Driving that strong growth were filings in China, which received about 174,000 of the nearly 208,000 additional filings in 2015 and accounted for 84% of total growth. The next largest contributors were the United States of America (U.S.) and the European Patent Office – combined they accounted for 8.6% of total growth. Excluding patent applications filed in China shows that applications in the rest of the world grew by only 1.9% in 2015. The 7.8% growth in filings for 2015 is considerably higher than the growth rate in 2014, but slightly lower than the annual growth rates between 2011 and 2013, which varied between 8% and 9%.

Figure 1. Patent applications worldwide



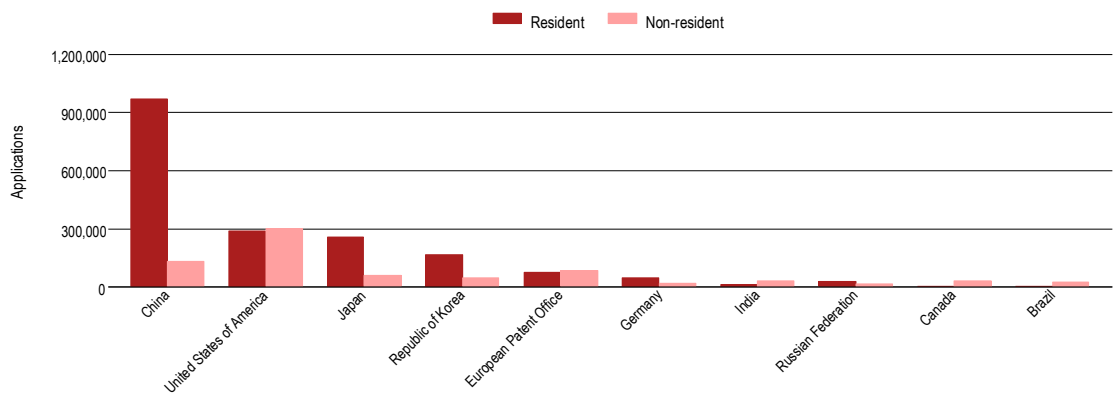
Source: Standard figure A1.

China became the first office to receive a million applications in a single year

The State Intellectual Property Office of the People's Republic of China (SIPO) received the most applications in 2015 and became the first office to receive more than a million applications in a single year. SIPO was followed by the United States Patent and Trademark Office (USPTO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO) and the European Patent Office (EPO). SIPO – with 1,101,864 filings – received almost as many applications as the combined total for the JPO (318,721), KIPO (213,694) and the USPTO (589,410). The EPO received 160,028 applications. Together, the top five offices accounted for 82.5% of the world total in 2015, which was considerably higher than their combined share in 2000 (70.4%). The four BRIC countries – Brazil, China, India and the Russian Federation – rank among the top 10 offices (figure 2).

The top 20 list includes patent offices representing 12 high-income economies, six located in upper middle-income countries and two in lower middle-income countries. As for geographical distribution, nine offices

Figure 2. Patent applications at the top 10 offices, 2015



Source: Standard figure A8.

are located in Asia, six in Europe, two each in North America and Latin America & the Caribbean (LAC) and one in Oceania. South Africa, which is ranked 21st, is the most active office in Africa in terms of patent filings.

Of the top 20 offices, 15 received more applications in 2015 than in 2014. China (+18.7%), Indonesia (+14.1%), the Russian Federation (+12.9%), Mexico (+12%) and Australia (+10.2%) all exhibited double-digit growth. The increases in applications filed in China and the Russian Federation were driven mainly by growth in resident applications. Growth in Australia, Mexico and Indonesia primarily came from non-resident applications. Other offices showing notable growth in 2015 were India (+6.5%), Singapore (+4.9%), the EPO (+4.8%) and Canada (+4.2%). At each of those offices, growth in non-resident applications was the main driver of overall growth.

Brazil, China Hong Kong (SAR), France, the JPO and the United Kingdom (U.K.) all experienced small declines in applications received in 2015. A decline in resident applications was the primary source of the decrease in total applications for France, the JPO and the U.K., whereas a decline in non-resident applications was the main driver for Brazil and China Hong Kong (SAR). Except for the U.K., all these offices have now seen applications fall for at least two consecutive years.

Among the top five offices, only the JPO saw filings decrease, continuing a trend that started in the early 2000s and mainly reflects a persistent drop in resident applications. The JPO received 318,721 applications in 2015 – considerably lower than the 440,248 applications it received at their peak in 2001. SIPO continues to experience very strong growth in applications and retains the top spot. The EPO (+4.8%) also enjoyed solid growth in 2015, while both the USPTO (+1.8%) and KIPO (+1.6%) grew at slower rates. KIPO's 2015 growth rate is the lowest it has experienced since 2009.

Among offices of low- and middle-income countries, Mozambique (+70%), Bangladesh (+16%), Turkey (+14.6%) and Viet Nam (+13.2%) recorded particularly fast growth. Growth in resident applications was the main driver of total growth in Turkey, while non-resident applications were the main source of overall growth in Mozambique and Viet Nam. At most offices of low- and middle-income countries, the bulk of applications are filed by non-residents. As a result, overall increases or decreases in applications received by these offices are determined mainly by the filing behavior of non-resident applicants. Variations in year-on-year growth are considerable, especially at offices that receive low numbers of applications.

Continued shift toward China

High-income countries received 53.5% of applications filed worldwide in 2015, reflecting their high research and development spending (figure 3). However, the distribution of applications is shifting toward the upper middle-income group as they grow in China and decline in Japan. Applications filed in China increased from 173,327 in 2005 to 1,101,864 in 2015, while those filed in Japan decreased from 427,078 to 318,721.

Due to the high numbers of applications filed in China, the offices of upper middle-income countries have seen their combined share of the world total increase from 16.5% in 2005 to 43.5% in 2015. SIPO accounted for 87.7% of the upper middle-income group total. Excluding China, the share of the remaining upper middle-income countries only increased from 7% to 8.7% during this period, with the offices of Brazil, the Islamic Republic of Iran and the Russian Federation driving that growth.

The lower middle-income group's share of the world total (2.7%) has remained unchanged over the last decade. However, a number of offices within this country group, such as India, Indonesia and Viet Nam, have seen strong growth in numbers of applications received. Between 2005 and 2015, India, Indonesia and Viet Nam reported average annual growth of 6.5%, 7.8% and 10%, respectively. The low-income country group accounted for less than 0.5% of the world total in both 2005 and 2015. However, it should be noted that data are available for only 14 offices of low-income countries. In addition, the use of the patent system in low-income countries is less intense than that for trademarks.

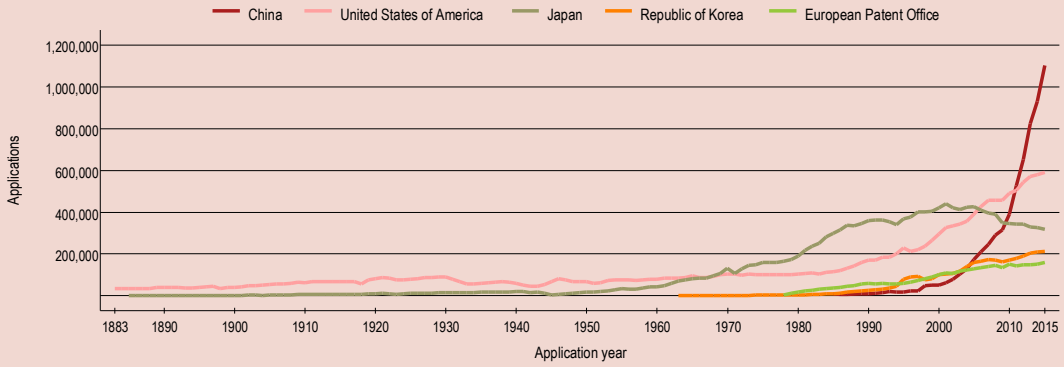
Offices located in Asia received 61.9% of all applications filed worldwide in 2015, compared with 50.2% in 2005 (figure 4). This high share reflects the fact that three of the top five patent offices are located in Asia. However, the increase in Asia's share of the world total has resulted primarily from the substantial increase in filings in China. Excluding China, the share of the rest of Asia actually decreased from around 45% to 38% over the same period, mainly due to fewer applications being filed in Japan.

Offices in North America accounted for 21.7% and those in Europe for 12.5% of the 2015 world total. Over

Patent filings since 1883

From 1883 to 1963, the USPTO was the leading office for world filings. Application numbers at the JPO and the USPTO were stable until the early 1970s, when the JPO began to see rapid growth, a pattern also observed for the USPTO from the 1980s onwards. Among the top five offices, the JPO surpassed the USPTO in 1968 and maintained the top position until 2005. Since early 2000s, the number of applications filed at the JPO has trended downward. Both the EPO and KIPO have seen increases each year since the early 1980s, as has SIPO since 1995. SIPO surpassed the EPO and KIPO in 2005, the JPO in 2010 and the USPTO in 2011 – and it now receives the largest number of applications worldwide. There has been a gradual upward trend in the combined share of the top five offices in the world total – from 70.4% in 2000 to 82.5% in 2015.

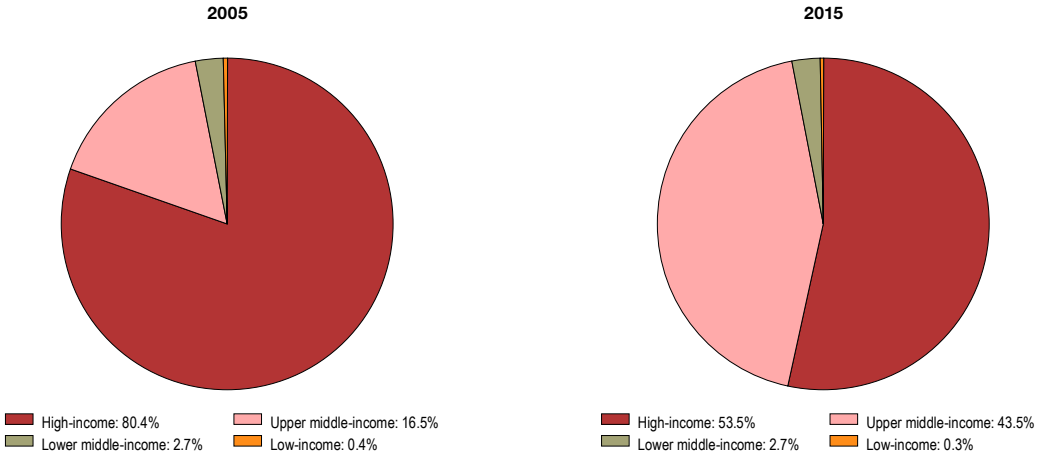
Trend in patent applications for the top five offices



Source: Standard figure A7.

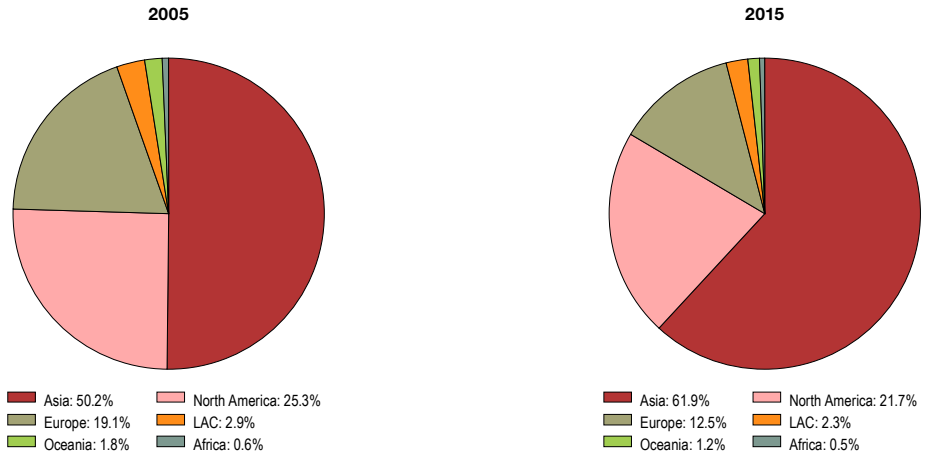
Note: The IP office of the Soviet Union, not represented in this figure, was the leading office in the world in terms of filings from 1964 to 1969. Like the JPO and the USPTO, the office of the Soviet Union saw stable application numbers until the early 1960s, after which it recorded rapid growth in applications filed.

Figure 3. Patent applications by income group



Source: Standard table A5.

Figure 4. Patent applications by region



Source: Standard table A6.

the past 10 years, patenting activity has been gradually shifting toward Asia – to be more specific, China – and the pace of this shift has been accelerating since 2010. As for the other world regions, the combined share for Africa, LAC and Oceania was 4% in 2015.

Residents of China filed more than a million patent applications

Applications received by offices from resident and non-resident applicants are referred to as office data, whereas applications filed by applicants at a national/regional office (resident applications) or at foreign offices (applications abroad) are referred to as origin data. Here, patent statistics based on the origin of the residence of the first-named applicant are reported to complement the picture of patent activity worldwide.

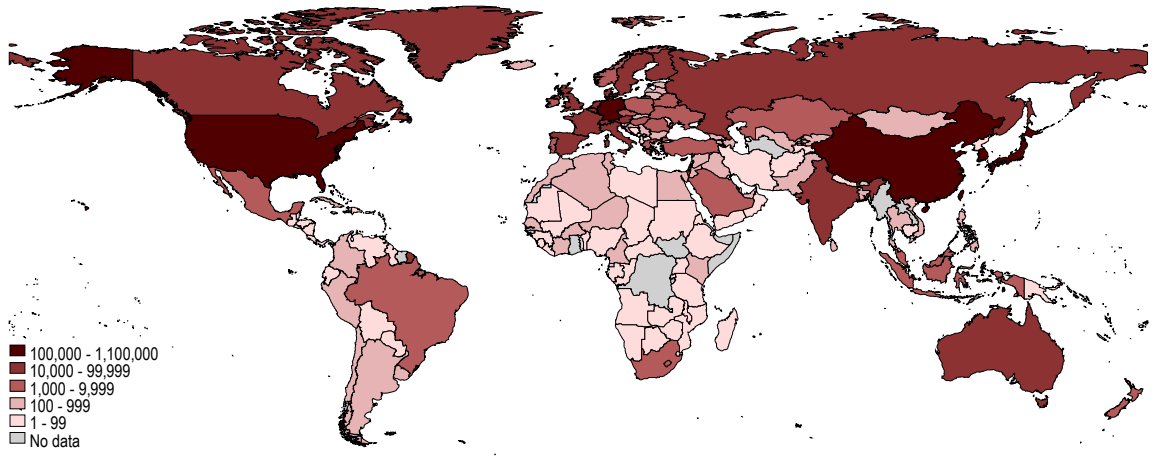
Equivalent patent applications

Applications at regional IP offices are equivalent to multiple applications in the countries that are members of the organizations establishing those offices. In particular, to calculate the number of equivalent applications for the Eurasian Patent Organization (EAPO) and the African Intellectual Property Organization (OAPI), 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 application and one application abroad if the applicant resides in a member state. The equivalent application concept is used for reporting data by origin.

Applicants from China filed 1,010,406 equivalent patent applications in 2015 – the first time that applicants from a single origin have filed more than a million applications in a given year. They were followed by applicants from the U.S. (526,296) and Japan (454,285) (map 1). China has been the largest origin of patent applications since 2012, when it overtook Japan. Furthermore, the gap between China and the other origins has increased considerably over the past three years. However, it should be noted that around 96% of total applications from China are filed in China and only 4% of the total are filed abroad. In contrast, filings abroad constitute around 45% of the total in the case of applicants from Japan and the U.S.

Among the top 20 origins, 12 are located in Europe, and their combined total is of a similar magnitude to that of the U.S. All top 20 origins except China, India, the Islamic Republic of Iran and the Russian Federation are high-income countries. Among the top origins, China (+20.6%) and the Russian Federation (+18.5%) recorded the fastest growth in 2015. Almost all the growth by these two origins was driven by increases in their respective resident filings. Israel (+7.7%) and India (+6.2%) also reported strong growth. For both origins, growth in applications abroad was the main source of overall growth. A number of origins outside the top 20, such as Indonesia (+52.3%), Mexico (+14.7%) and Turkey (+11.9%) recorded double-digit growth in 2015. The overall growth in Indonesia and Turkey was due to growth in resident applications, while growth in equivalent applications abroad drove overall growth in Mexico.

Map 1. Equivalent patent applications by origin, 2015



Source: Standard map A17.

Filing abroad reflects the globalization of intellectual property (IP) protection and the desire to commercialize technology in foreign markets. The costs of filing abroad can be substantial, so the patents for which applicants seek international protection are likely to confer higher values. Among the top 20 origins, applications filed abroad made up a large share of Canada's, Israel's and Switzerland's totals. However, in absolute numbers, the U.S. had the most with 237,961, followed by Japan (195,446) and Germany (101,892). The U.S. saw growth in applications abroad, while they decreased from both Germany and Japan.

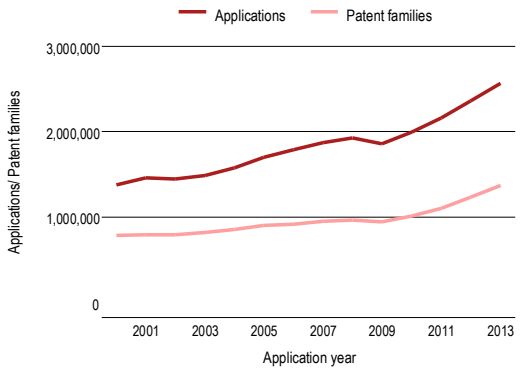
Applicants residing in China, while ranking first in terms of resident applications, filed only 42,154 applications abroad – slightly lower than the number of filings abroad from France (46,581). However, applications filed abroad from China have increased markedly in recent years – from around 15,300 in 2010 to around 42,000 in 2015. Among the other BRIC origins, India (47.3%) had the highest proportion of applications abroad as a share of total applications, followed by Brazil (29.2%) and the Russian Federation (12.5%). The bulk of filings abroad from India were destined for the USPTO.

Among other things, proximity and market size influence cross-border applications. US applicants accounted for 54% of all non-resident applications filed in Canada and 52% of non-resident filings in Mexico. At many offices, applicants from Germany, Japan or the U.S. accounted for the highest non-resident shares. For example, applicants from Germany had the highest share of non-resident filings in France, whereas applicants from Japan accounted for highest share in China. Applicants from China accounted for low shares of non-resident filings at many offices. However, China's shares have increased in recent years. For example, the share of applicants from China at the EPO increased from 1.4% in 2010 to 3.6% in 2015. Similarly, China's share in India increased from 2.1% of all non-resident filings in 2010 to 3.7% in 2015.

How frequently were applications for the same invention filed at multiple jurisdictions?

Inventors traditionally file at their national offices and then subsequently abroad, so some inventions are recorded more than once. To take this into account, WIPO has developed indicators for patent families, and the trend in patent families mirrors that for patent applications. Over the past 10 years, the ratio of families to applications has remained more or less stable at around 0.52 (figure 5). This means that just over half of all applications are initial filings and the others are repetitive filings, mostly at foreign offices. Belgium, the Netherlands, Norway and Switzerland have low family-to-application ratios – around 0.2 for the period of 2011 to 2013, indicating substantial duplication due to high numbers of cross-border filings. China and the Russian Federation have high ratios of around 0.8, indicating less duplication due to low numbers of cross-border filings.

Figure 5. Patent applications and patent families worldwide



Patent families

Patent families are defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty (PCT) national phase entry, continuation, continuation-in-part, internal priority and addition or division. A special subset comprises foreign-oriented patent families – those patent families that have at least one filing office different from the office of the applicant's country of origin. Some foreign-related patent families include only one filing office because applicants may choose to file only with a foreign office. For example, if a Canadian applicant files a patent application directly with the USPTO without having previously filed with the patent office of Canada, that patent family will constitute a foreign-oriented patent family with just one office.

The size of patent families reflects their geographical coverage. Around 85% of patent families created worldwide between 2011 and 2013 were filed in fewer than three patent offices. Focusing purely on foreign-oriented patent families shows that around 15% of such patent families were single-office families – they were filed in only one foreign office, but not in the applicant's respective domestic office. However, there is considerable variation among the top origins. For example, applicants from Switzerland and the U.S. tend to cover four offices when filing abroad, whereas those from Canada cover two on average.

Who were the top patent applicants?

Panasonic of Japan was the top applicant for the period 2010-13, with 34,352 patent families worldwide. It was followed by Japanese companies Canon (29,036) and Toyota Jidosha (26,844), and by Samsung Electronics (26,647) of the Republic of Korea. The highest-ranking U.S. applicant was International Business Machines (IBM) – ranked eighth – while China's Ocean's King Lighting Science & Technology took ninth position.

Applicants from just nine origins make up the top 100 list for the period 2010-13. Japan had the highest number of applicants in this list, with 46, followed by China (20), the Republic of Korea (16), the U.S. (8), Germany (4), Taiwan, Province of China (3) and one each from France, the Russian Federation and Sweden. The top 100 list mainly comprises multinational companies. However, 11 Chinese universities and one Korean university and one Korean PRO feature among the top 100 applicants. Combined, these 13 applicants accounted for 8% of all patent families held by the top 100 applicants.

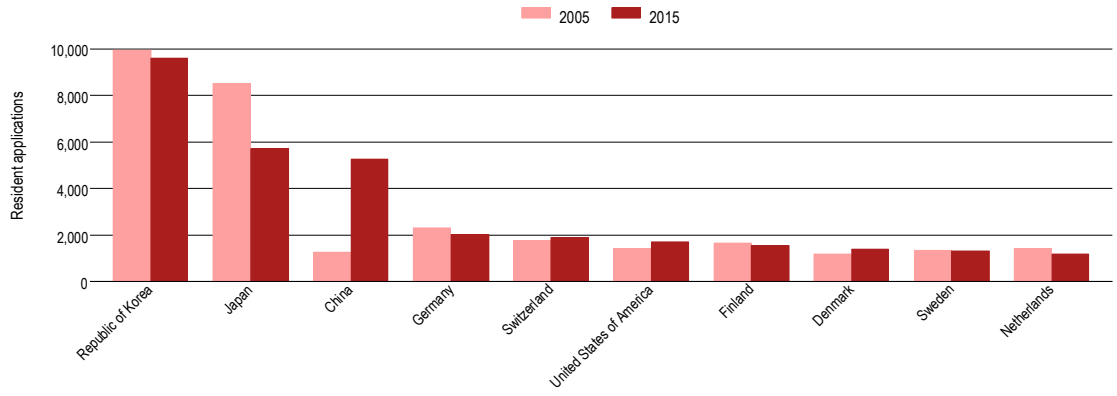
The Republic of Korea filed the highest number of patents per unit of GDP

Differences in patent activity may reflect both differences in the size of economies and their level of development, so it is interesting to express the number of resident patent applications relative to GDP, population, R&D spending and other variables. These are commonly referred to as "patent activity intensity" indicators.

The Republic of Korea has had the highest number of patent applications per unit of GDP since 2004. Its ratio of resident applications to GDP is considerably higher than those of Japan and China, ranked second and third, respectively (figure 6). Reflecting strong growth in resident applications, China's resident applications per unit of GDP increased from 1,263 in 2005 to 5,269 in 2015 – the fastest growth among the leading origins. In contrast, Japan saw a sharp decrease over the same period.

The top five ranking has remained unchanged since 2010, when China surpassed Germany. In addition, China has narrowed the gap with Japan, and if the current trend continues it will displace Japan within a year or two. The list of the top 20 origins is predominantly comprised of high-income countries. However, three middle-income countries – China, the Russia Federation and Ukraine – also feature. Large middle-income countries such as Brazil, India, Mexico, South Africa and Turkey exhibit low numbers of resident applications per unit of GDP. Brazil, with 154 resident applications per unit of GDP, is the highest-placed origin in the Latin America & the Caribbean region, and South Africa ranks highest in Africa. Patent activity is much more intensive in North-East Asia than in other parts of the world.

Figure 6. Resident patent applications per 100 billion USD GDP for the top 10 origins



Source: Standard figure A38.

The profile of resident applications per million population is similar to that adjusted by GDP, but shows some subtle differences. The top two origins – the Republic of Korea and Japan – are the same in both measures. But China is ranked lower on this measure because of its large population; it takes sixth position, just after Germany. The Nordic countries and Switzerland rank high when resident patent applications are adjusted by population or GDP.

Patent applications related to computer technology accounted for the largest share worldwide

In 2014, the latest year for which complete data are available due to the delay between application and publication, computer technology was the most frequently featured technology field in published patent applications worldwide, followed by electrical machinery, digital communication, measurement and medical technology.[1] Each of these technology fields had more than 100,000 published applications in 2014, and their combined share increased from 23.9% of all patent applications published in 2005 to 29.5% in 2014. Among the top 20 technology fields, digital communication and materials metallurgy saw the fastest annual growth between 2005 and 2014. Digital communication rose from 53,991 published applications in 2005 to 117,097 in 2014, while materials metallurgy increased from 29,329 to 58,033 over the same period.

Among selected origins in the period 2012-14, China, Japan and the Republic of Korea filed mainly in electrical machinery; France and Germany in transport; Canada and the U.S. in computer technology; the Russian Federation in food chemistry; the Netherlands in medical technology; and Sweden in digital communications. The combined share of the top three technologies for specific origins ranged from 20% for China to 34% for Sweden.

Among the large middle-income countries, applicants residing in India and Malaysia filed mainly in computer technology; Mexico and Turkey in pharmaceuticals; South Africa in chemical engineering; Ukraine in measurement; and Brazil in civil engineering. For each of these seven origins, the combined share of the top three technologies ranged from 18.3% for Brazil to 47.6% for India.

China surpassed the U.S. as the largest issuing patent office in the world

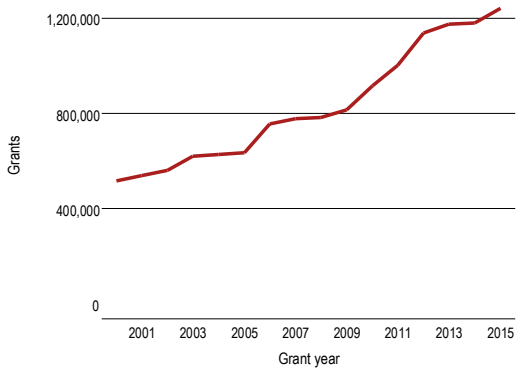
Offices carry out a formal or substantive examination to decide whether or not to issue a patent. The procedure for granting a patent varies across offices, and differences in the numbers of granted patents among offices depend on factors such as examination capacity and procedural delays. For this reason, application data for a given year should not be compared with grant data from the same year.

1. Data on patent applications by field of technology are based on published patent applications. There is a minimum delay of 18 months between a patent's application date and its date of publication, so 2014 is the latest year with statistics on patents by technology field.

Grants have followed a trend similar to that of applications, growing every year since 2001 and with a sharp increase from 2009 to 2012, after which growth slowed in 2013 and 2014, but returned to higher rates in 2015. In 2015, an estimated 1.24 million patents were granted worldwide, up 5.2% on 2014 (figure 7). Growth in 2015 was the fastest since 2012. This was due mainly to an increase at SIPO, which granted 126,088 more patents in 2015 than in 2014 and overtook the USPTO to become the largest office in terms of patents granted. SIPO granted 359,316 patents in 2015, compared to 298,407 by the USPTO. The JPO (189,358) was the third-largest office in terms of patent grants, followed by KIPO (101,873) and the EPO (68,431). Patents granted by SIPO grew by 54% in 2015, while those granted by the JPO and KIPO fell by 16.6% and 21.5%, respectively.

The top five offices increased their combined share of the world total from 74% in 2005 to 82% in 2015 due to substantial growth in the number of patents granted by SIPO and the USPTO over this period.

Figure 7. Patent grants worldwide



Source: Standard figure A3.

Among the top 20 offices, Singapore saw the second fastest growth (+27.4%), with grants increasing from 5,538 in 2014 to 7,054 in 2015. This reflected a substantial increase in the number of non-resident grants. Brazil (+24.1%), Australia (+19.7%) and Israel (+12.8%) were the three other top 20 offices to exhibit double-digit growth in 2015. Again, growth in non-resident grants drove overall growth for these offices. Beyond the top 20 list, Ukraine granted 3,014 patents in 2015, while the Islamic Republic of Iran and Malaysia granted 2,936 and 2,877 respectively.

How long are patents maintained?

Patent rights generally last up to 20 years from the date the application was filed. The estimated number of patents in force worldwide rose from 7.2 million in 2008 to 10.6 million in 2015. The USPTO recorded the most, with 2.64 million patents (24.9% of the world total), followed by the JPO with 1.95 million (18.3%). Patents in force at SIPO increased from 0.34 million in 2008 to 1.47 million in 2015. The top 20 list includes 15 offices from high-income countries and five from upper middle-income countries, namely China, the Russian Federation, Mexico, South Africa and Turkey. The highest-ranking lower middle-income country, India (21st), had just over 47,000 patents in force in its jurisdiction.

Holders must pay maintenance/renewal fees to maintain the validity of their patents and may opt to let a patent lapse before the end of its full term. For 70 offices that reported their in-force data broken down by year of filing, between 40% and 43% of the patents granted remained in force for at least 6–12 years after the date on which their applications were filed, and about one-sixth lasted the full 20 years.

Patent office workloads

Patent offices must assess whether the claims in applications meet the standards of novelty, non-obviousness and industrial applicability defined in national laws. Processing patents therefore consumes time and resources.

The number of applications that were potentially pending globally fell from 6.24 million in 2008 to 5.1 million in 2015. This estimate is based on data from 109 offices. However, the figure would be higher if data from SIPO were available. The decline in pending applications worldwide was driven mainly by Japan, which saw potentially pending applications decline from 2.4 million in 2008 to 0.9 million in 2015.

The USPTO had the most applications potentially pending in 2015, with 1.14 million, slightly fewer than the previous year's 1.17 million. The JPO had the second largest number with about 0.9 million, followed by the EPO (684,004) and KIPO (544,709). Among the top four offices, KIPO (+7.7%) saw the largest increase in potentially pending applications. The EPO (+2.6%)

also recorded a small increase, while both the JPO (-2.4%) and the USPTO (-2.6%) had fewer potentially pending applications in 2015 than in 2014. Among middle-income countries, India had the largest number of potentially pending applications, which more than doubled from around 100,000 in 2010 to 228,868 in 2015. Malaysia, Mexico and Viet Nam also showed substantial numbers of potentially pending applications in 2015.

A high proportion of potentially pending applications in India, Japan and Viet Nam did not enter the examination phase. This contrasts with Australia and the Russian Federation, where the bulk of potentially pending applications were being examined. This may reflect a difference among offices in the time limit that applicants have for filing requests for examination.

Potentially pending applications

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).

International cooperation

The Patent Cooperation Treaty (PCT) offers applicants an advantageous route for seeking patent protection internationally as an alternative to using the Paris Convention for the Protection of Industrial Property to pursue patent rights in different countries. For further information and statistics, see the *PCT Yearly Review, 2016*.

There were 217,231 PCT applications filed in 2015, which represents 1.4% growth on the previous year. The U.S. was the top country of origin for PCT filers, with 57,121 applications filed – 7.1% fewer than in 2014. Japan followed with 44,053 applications, up 3.9% on 2014. Applicants from China filed 29,837 applications, representing a 16.8% annual increase. India is the second-largest user of the PCT System among the BRIC countries, with 1,412 applications. China and India are the only two middle-income countries listed among the top 20 origins.

Increasingly, patent offices are entering into bilateral and multilateral agreements that enable applicants to request a fast-track examination whereby examiners can use the work of each other's offices – so-called patent prosecution highways (PPH). The JPO had the largest number of patent applications as office of first filings for which applicants subsequently filed PPH requests (8,928). Of these 8,928 applications, the USPTO was the office of later examination for 2,572 applications and SIPO for 2,182 applications. The USPTO was the second most popular office of first filing for PPH requests; of 8,320 such filings at the USPTO, applicants subsequently filed 1,705 PPH requests at the patent office of Canada, 1,628 at SIPO and 1,467 at the JPO. The use of the patent prosecution highway is skewed toward the JPO and the USPTO as offices of first filing, and the JPO, KIPO, SIPO and the USPTO as offices of later examination.

Utility model applications worldwide increased by 27% in 2015

Like a patent, a utility model protects an invention for a limited period, but with different terms and conditions than those for patents. Growth in utility model applications was strong between 2008 and 2013, mainly due to filings at SIPO. Utility model applications worldwide increased by 27% to about 1.21 million in 2015 – a reversal from the 3% decline seen in 2014, which marked the first decrease in applications for utility models in over a decade. The change was primarily due to a 29.8% increase in applications filed at SIPO. In 2015, SIPO received nearly 94% of all utility model applications filed in the world – the remaining 70 offices accounted for just 6% of the world total. Germany and the Russian Federation each received between 11,000 and 15,000 filings, while the number was close to 9,000 in both the Republic of Korea and Ukraine. Among the top 10 offices, applications received by Brazil, Germany, Japan and the Republic of Korea have declined over the past 10 years, while they have increased in the Russian Federation and Turkey.

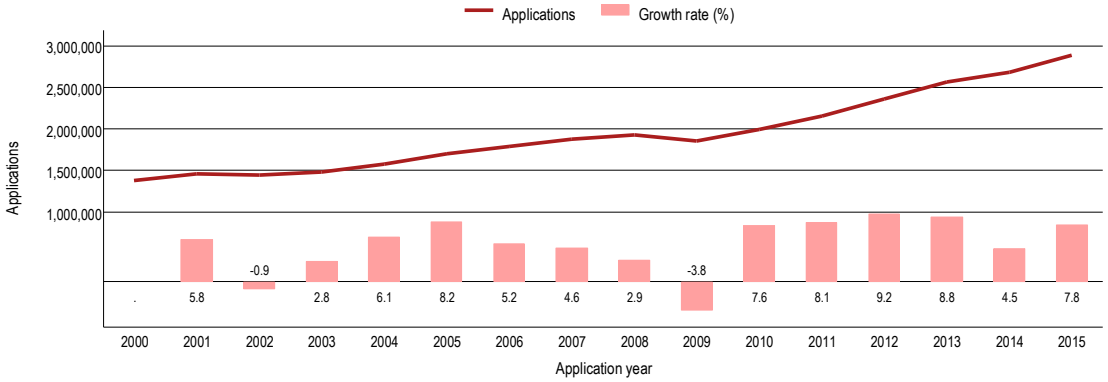
Utility model applications are rarely filed abroad: resident applications made up about 99% of all applications filed worldwide in 2015.

Compared to their use of patents, inventors in the Czech Republic, China Hong Kong (SAR), the Philippines, Slovakia and Ukraine are intense users of utility models.

Standard figures and tables

Patent applications and grants worldwide

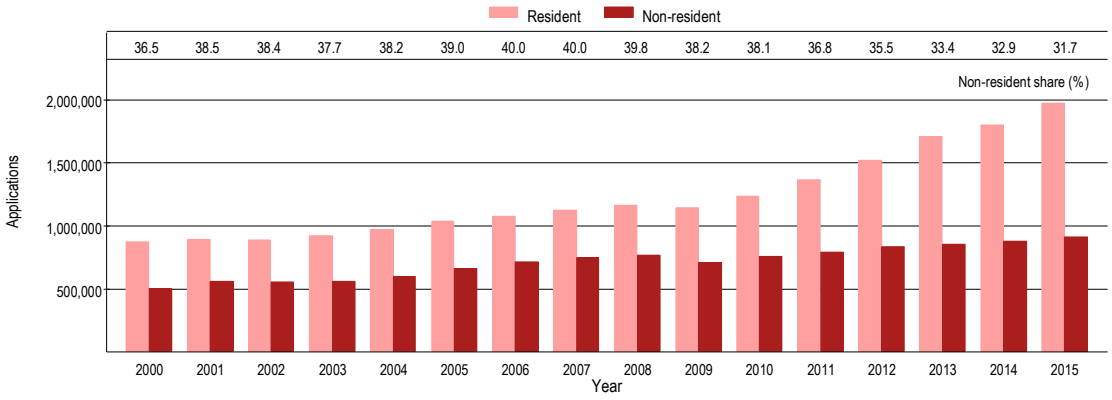
A1 Trend in patent applications worldwide



Note: World totals are WIPO estimates using data covering 150 patent offices. These totals include applications filed directly with national and regional offices and applications entering offices through the Patent Cooperation Treaty national phase (where applicable).

Source: WIPO Statistics Database, October 2016.

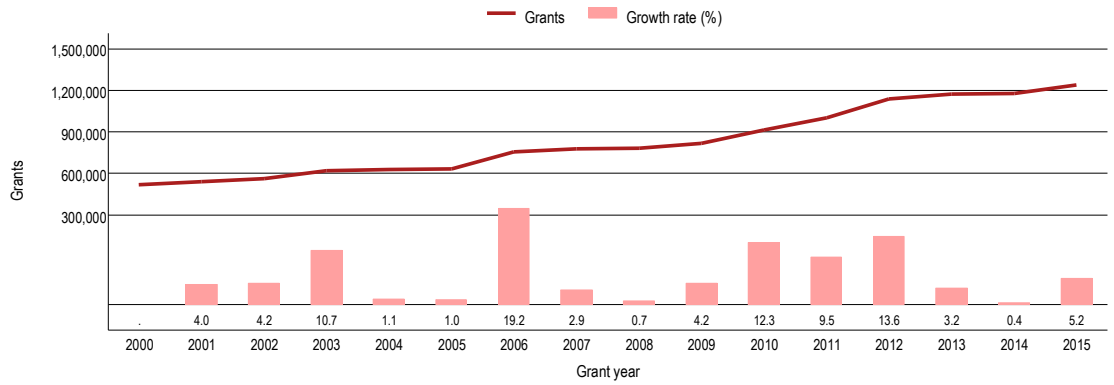
A2 Resident and non-resident patent applications worldwide



Note: World totals are WIPO estimates using data covering 150 patent offices. These totals include applications filed directly with national and regional offices and applications entering offices through the Patent Cooperation Treaty national phase (where applicable). See the glossary for definitions of resident and non-resident applications.

Source: WIPO Statistics Database, October 2016.

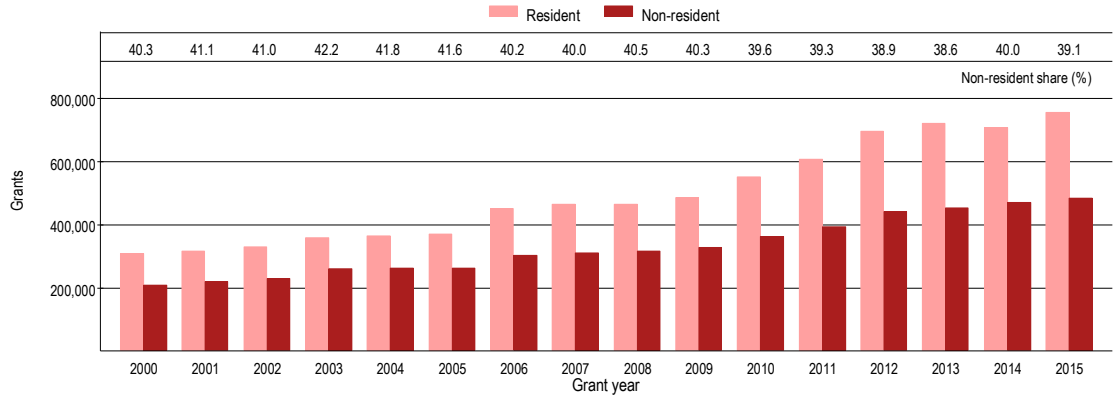
A3 Trend in patent grants worldwide



Note: World totals are WIPO estimates using data covering 136 patent offices. These totals include patent grants based on applications filed directly with national and regional offices and patents granted by offices on the basis of the Patent Cooperation Treaty national phase (where applicable).

Source: WIPO Statistics Database, October 2016.

A4 Resident and non-resident patent grants worldwide



Note: World totals are WIPO estimates using data covering 136 patent offices. These totals include patent grants based on applications filed directly with national and regional offices and patents granted by offices on the basis of the Patent Cooperation Treaty national phase (where applicable). See the glossary for definitions of resident and non-resident.

Source: WIPO Statistics Database, October 2016.

Patent applications and grants by office

A5 Patent applications by income group

	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
High-income	1,369,300	1,544,200	64.8	59.2	80.4	53.5	1.2
Upper middle-income	280,200	1,256,900	48.1	82.1	16.5	43.5	16.2
Lower middle-income	46,500	77,700	24.0	25.7	2.7	2.7	5.3
Low-income	6,800	10,000	88.3	85.4	0.4	0.3	3.9
World	**1,702,800**	**2,888,800**	**61.0**	**68.3**	**100.0**	**100.0**	**5.4**

Note: Totals by income group are WIPO estimates using data covering 150 offices. Each category includes the following number of offices: high-income countries/economies (56), upper middle-income (43), lower middle-income (37) and low-income (14). European Patent Office data are allocated to the high-income group because most of its member states are high-income countries. For similar reasons, data for the African Regional Intellectual Property Organization and the African Intellectual Property Organization are allocated to the low-income group, while those for the Eurasian Patent Organization are allocated to the lower middle-income group. For information on income group classification, see the Data description section.

Source: WIPO Statistics Database, October 2016.

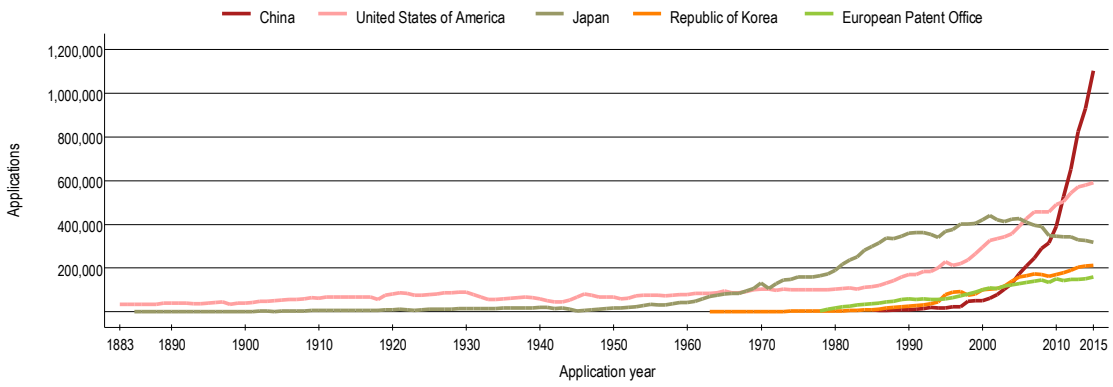
A6 Patent applications by region

	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
Africa	10,900	14,800	16.8	17.0	0.6	0.5	3.1
Asia	854,600	1,786,800	71.0	81.0	50.2	61.9	7.7
Europe	326,000	360,000	63.1	61.3	19.1	12.5	1.0
Latin America & the Caribbean	49,800	65,600	13.0	11.6	2.9	2.3	2.8
North America	430,600	626,400	49.5	46.7	25.3	21.7	3.8
Oceania	30,900	35,200	14.4	9.9	1.8	1.2	1.3
World	**1,702,800**	**2,888,800**	**61.0**	**68.3**	**100.0**	**100.0**	**5.4**

Note: Totals by geographic region are WIPO estimates using data covering 150 offices. Each region includes the following number of offices: Africa (26), Asia (43), Europe (44), Latin America & the Caribbean (30), North America (2) and Oceania (5).

Source: WIPO Statistics Database, October 2016.

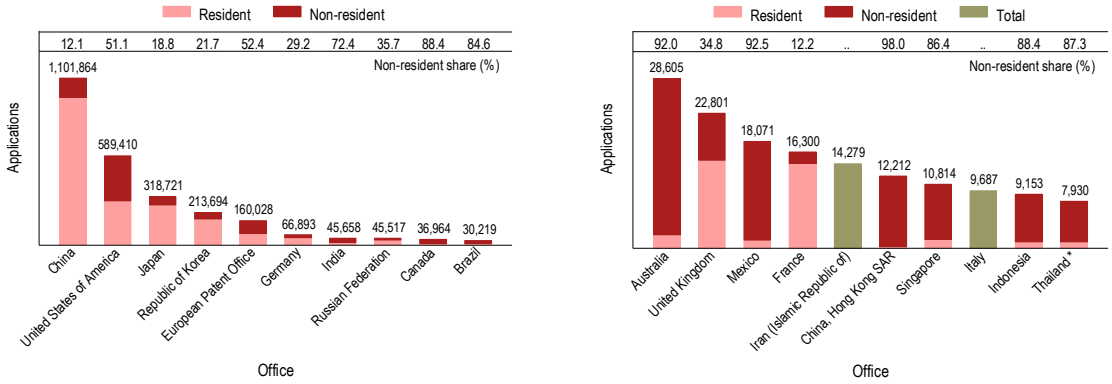
A7 Trend in patent applications for the top five offices



Note: The top five offices were selected based on their 2015 totals.

Source: WIPO Statistics Database, October 2016.

A8 Patent applications for the top 20 offices, 2015

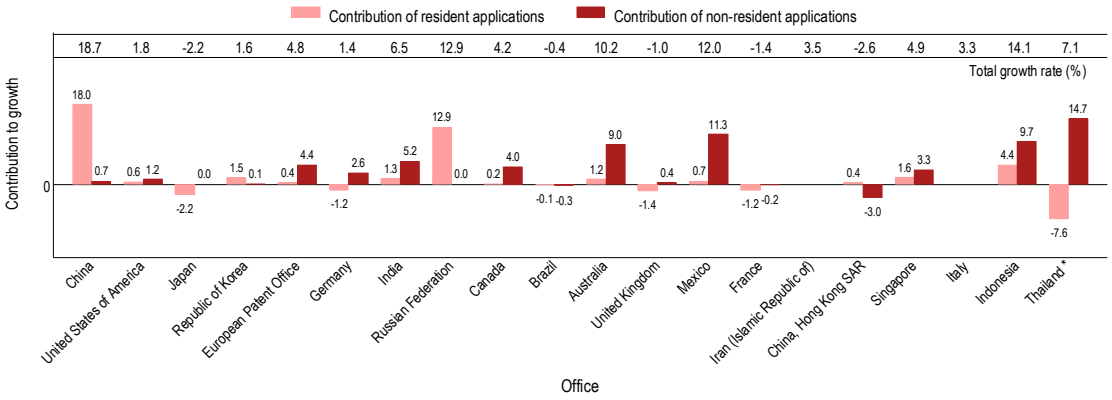


* indicates 2014 data.
.. indicates not available.

Note: In general, national offices of European Patent Office (EPO) member states receive lower volumes of applications because applicants may apply via the EPO to seek protection within any EPO member state. Resident and non-resident breakdown are not available for the Islamic Republic of Iran or Italy.

Source: WIPO Statistics Database, October 2016.

A9 Contribution of resident and non-resident applications to total growth for the top 20 offices, 2014-15

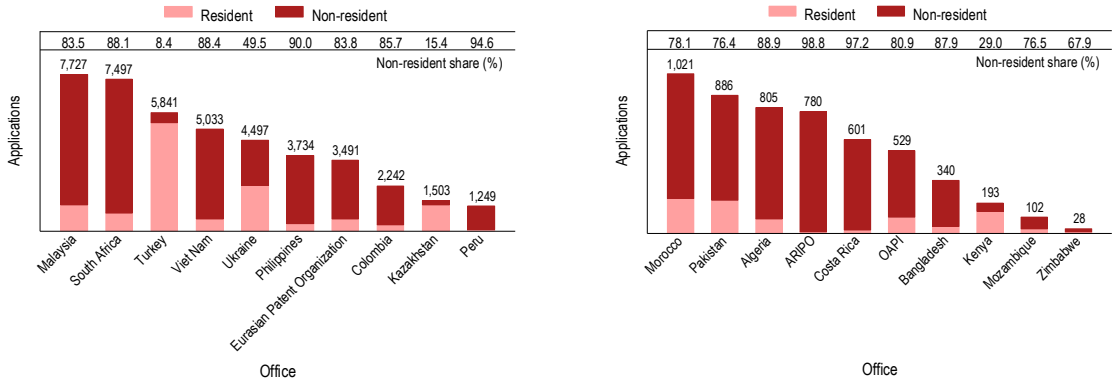


* indicates 2014 data.

Note: This figure shows total growth or decrease in applications broken down by the respective contributions of resident and non-resident applications. For example, applications filed in China grew 18.7%. Growth in resident applications accounted for 18 percentage points of this increase, whereas the remaining 0.7 percentage point is accounted for by growth in non-resident applications. Resident and non-resident breakdown are not available for the Islamic Republic of Iran or Italy.

Source: WIPO Statistics Database, October 2016.

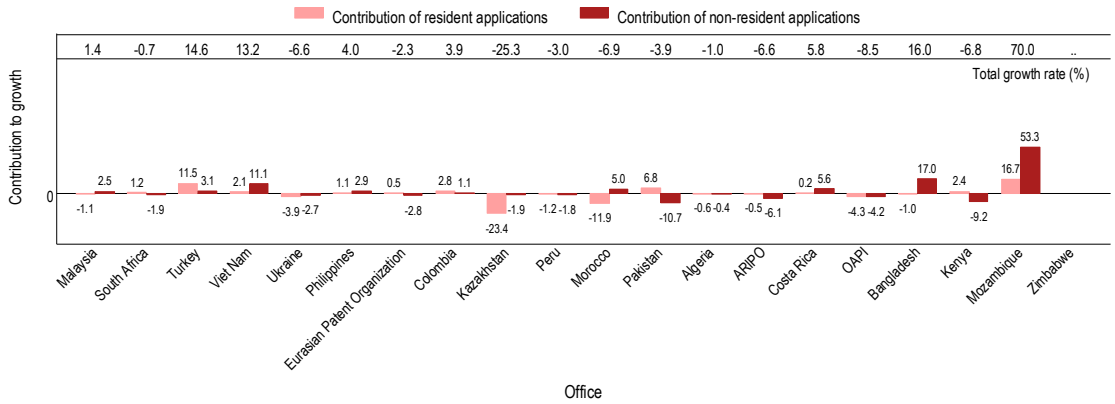
A10 Patent applications for offices of selected low- and middle-income countries, 2015



Note: ARIPO is the African Regional Intellectual Property Organization, and OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

A11 Contribution of resident and non-resident applications to total growth for offices of selected low- and middle-income countries, 2014-15



.. indicates not available.

Note: ARIPO is the African Regional Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Data for all available offices are in the statistical table at the end of this section. This figure shows total growth or decrease in applications broken down by the respective contributions of resident and non-resident applications. For example, applications filed in Turkey grew 14.6%. Growth in resident applications accounted for 11.5 percentage points of this increase, whereas the remaining 3.1 percentage points came from growth in non-resident applications.

Source: WIPO Statistics Database, October 2016.

A12 Patent grants by income group

	Number of grants		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
High-income	509,200	785,000	61.5	57.3	80.3	63.3	4.4
Upper middle-income	104,500	429,300	46.1	68.9	16.5	34.6	15.2
Lower middle-income	16,000	19,000	33.5	17.9	2.5	1.5	1.7
Low-income	4,200	7,800	85.4	87.1	0.7	0.6	6.4
World	**633,900**	**1,241,100**	**58.4**	**60.9**	**100.0**	**100.0**	**6.9**

Note: Totals by income group are WIPO estimates using data covering 136 offices. Each category includes the following number of offices: high-income countries/economies (52), upper middle-income (41), lower middle-income (31) and low-income (12). European Patent Office data are allocated to the high-income group because most of its member states are high-income countries. For similar reasons, data for the African Regional Intellectual Property Organization and the African Intellectual Property Organization are allocated to the low-income group, while those for the Eurasian Patent Organization are allocated to the lower middle-income group. For information on income group classification, see the Data description section.

Source: WIPO Statistics Database, October 2016.

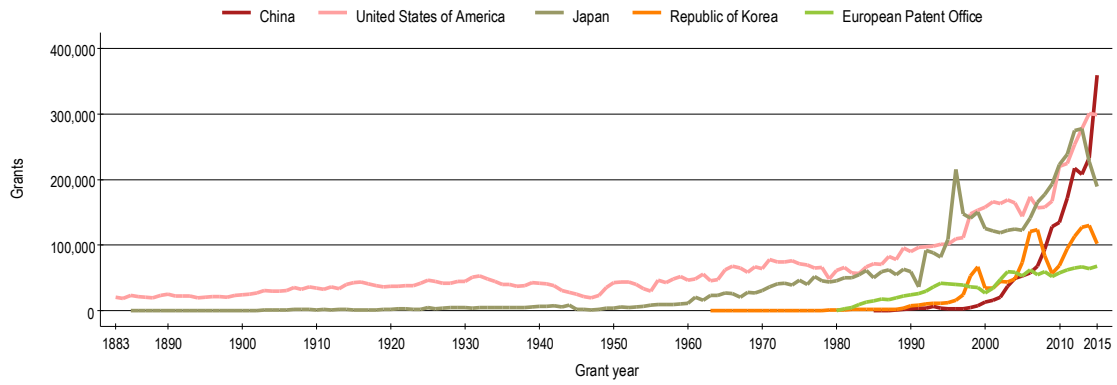
A13 Patent grants by region

	Number of grants		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
Africa	4,800	8,800	32.2	12.0	0.8	0.7	6.2
Asia	288,700	700,400	68.2	71.8	45.5	56.4	9.3
Europe	150,900	165,200	62.0	63.5	23.8	13.3	0.9
Latin America & the Caribbean	15,000	18,600	5.3	7.6	2.4	1.5	2.2
North America	159,300	320,600	47.8	44.9	25.1	25.8	7.2
Oceania	15,200	27,500	10.5	7.1	2.4	2.2	6.1
World	**633,900**	**1,241,100**	**58.4**	**60.9**	**100.0**	**100.0**	**6.9**

Note: Totals by geographic region are WIPO estimates using data covering 136 offices. Each region includes the following number of offices: Africa (21), Asia (40), Europe (43), Latin America & the Caribbean (26), North America (2) and Oceania (4).

Source: WIPO Statistics Database, October 2016.

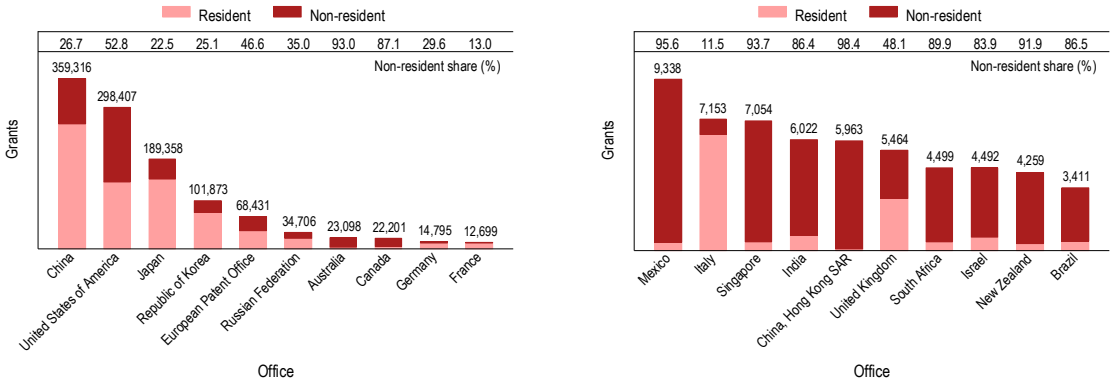
A14 Trend in patent grants for the top five offices



Note: The top five offices were selected based on their 2015 totals.

Source: WIPO Statistics Database, October 2016.

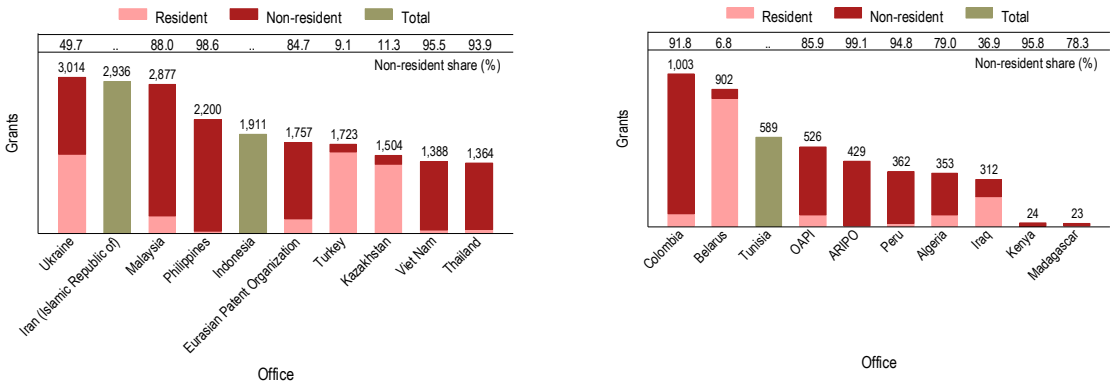
A15 Patent grants for the top 20 offices, 2015



Note: Offices undertake formal and/or substantive examination of applications received to decide whether or not to issue patent rights. The procedure for issuing patents varies across offices, and differences in the numbers of patents granted among offices depend on factors such as examination capacity and procedural delays. The examination process can also be lengthy, so there is a time lag between application and grant dates. For this reason, data on applications for a given year should not be compared with data on grants for the same year.

Source: WIPO Statistics Database, October 2016.

A16 Patent grants for offices of selected low- and middle-income countries, 2015



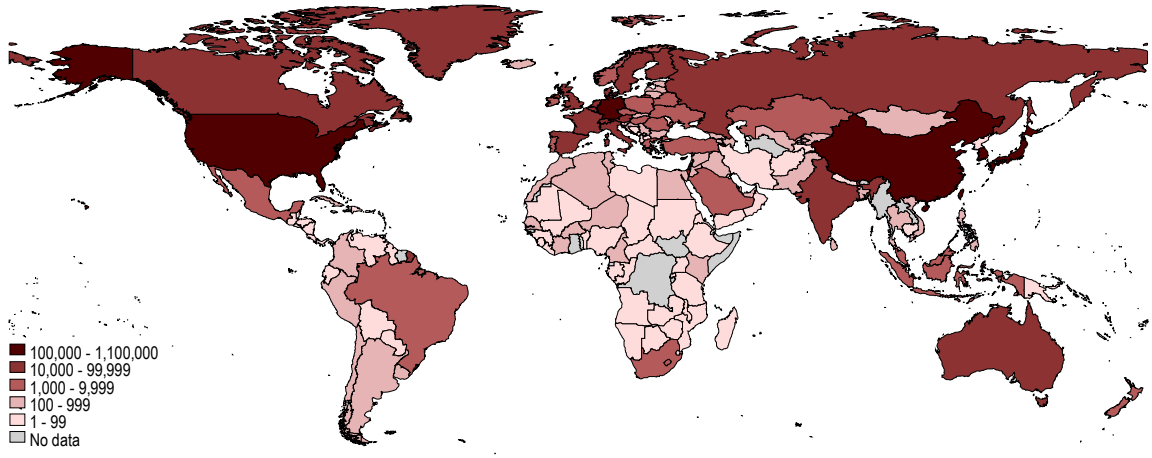
.. indicates not available.

Note: ARIPO is the African Regional Intellectual Property Organization, and OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

Patent applications and grants by origin

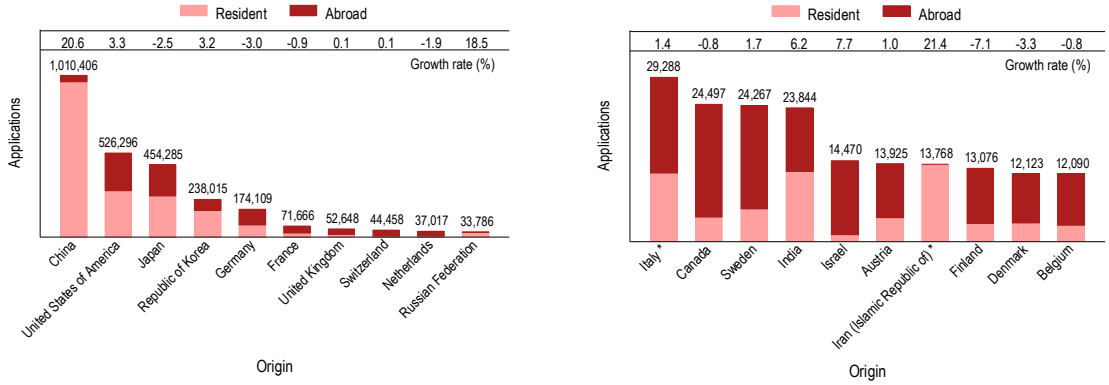
A17 Equivalent patent applications by origin, 2015



Note: 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. Applications filed at regional offices are considered equivalent to multiple applications in the relevant member states. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, October 2016.

A18 Equivalent patent applications for the top 20 origins, 2015



* indicates 2014 data.

Note: 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. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, October 2016.

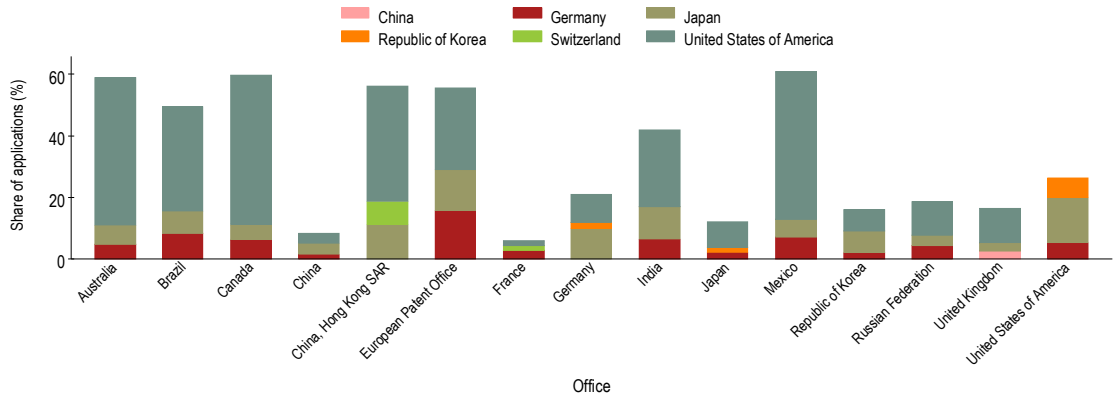
A19 Patent applications for the top 25 offices and origins, 2015

Origin	Office																								
	Australia	Brazil	Canada	China	China, Hong Kong SAR	European Patent Office	France	Germany	India	Indonesia	Israel	Japan	Malaysia	Mexico	New Zealand	Poland	Republic of Korea	Russian Federation	Singapore	South Africa	Turkey	Ukraine	United Kingdom	United States of America	Viet Nam
Australia	2,291	183	420	635	153	819	4	17	270	101	51	448	111	97	540	1	174	69	155	188	1	15	87	3,655	41
Austria	185	231	217	982	68	1,995	21	1,026	295	54	38	449	60	123	32	11	334	195	64	16	2	42	43	2,504	38
Belgium	301	308	302	638	88	2,039	96	37	263	72	74	460	56	125	60		229	141	89	10		41	201	2,376	42
Brazil	55	4,641	47	134	8	187	3	6	57	23	3	75	14	76	11	1	40	17	11	29	1	5	8	855	5
Canada	505	291	4,277	1,025	287	1,640	23	112	346	46	84	648	51	247	112	2	362	142	101	74	1	14	193	13,201	17
China	638	737	646	968,252	844	5,711	77	636	1,681	333	46	2,840	235	475	88	3	1,947	860	310	337	17	24	566	21,386	257
Denmark	236	238	280	845	96	1,926	3	13	313	73	51	389	67	157	61		170	138	65	17		46	70	2,290	31
Finland	180	195	284	1,041	141	2,002	8	67	230	99	17	353	32	75	20	2	273	168	64	81		21	110	3,219	39
France	829	1,709	1,743	4,701	313	10,779	14,306	259	1,293	314	316	3,369	215	676	128	2	1,984	1,060	318	119	5	111	174	12,327	117
Germany	1,339	2,500	2,237	13,851	830	24,833	442	47,384	2,901	444	423	6,430	490	1,265	285	29	4,087	1,954	539	652	34	304	468	30,016	212
India	177	147	168	235	30	577	1	23	12,579	80	38	235	78	107	71		139	67	83	149	2	20	37	7,976	34
Israel	352	193	374	700	138	1,098	3	44	333	22	1,285	516	17	128	39		271	148	132	82	3	31	107	7,882	14
Italy	352	695	550	1,430	182	3,988	63	142	584	110	125	765	79	285	87	7	469	470	100	121	4	69	48	4,839	67
Japan	1,733	2,143	1,873	40,078	1,347	21,418	169	6,425	4,857	2,548	201	258,839	1,420	1,031	212	3	15,283	1,525	1,674	239	77	72	578	86,359	1,341
Netherlands	481	1,259	532	3,032	146	7,092	48	165	1,466	311	101	2,208	159	475	126	1	824	1,006	151	55	1	43	243	5,113	125
Poland	35	27	43	81	9	574	4	27	42	4	11	62	8	19	8	4,676	30	50	10	18	4	34	11	507	3
Republic of Korea	657	432	349	12,907	139	6,410	50	1,423	1,664	432	35	5,222	247	354	40	2	167,275	551	187	151	40	20	64	38,205	527
Russian Federation	36	39	64	148	15	231	5	34	88	21	14	72	11	15	3	2	49	29,269	13	22		61	16	991	16
Singapore	98	41	69	714	65	393	2	171	113	57	17	490	87	59	13		156	37	1,469	8	1	4	92	1,833	25
Spain	146	234	226	342	72	1,522	108	27	200	39	56	243	26	215	48	3	146	100	44	106	2	27	51	1,671	
Sweden	473	641	453	1,948	150	3,836	77	527	882	143	73	990	139	227	95	4	659	433	100	193	6	40	192	5,159	54
Switzerland	1,087	1,368	1,342	3,432	909	7,096	244	887	1,422	410	396	2,551	341	904	342	14	1,365	920	487	481	8	235	337	5,118	189
Turkey	27	30	16	82	4	447		12	24	20	12	30	5	11	1	1	32	10	3	11	5,352	19	12	320	1
United Kingdom	1,155	730	1,182	2,221	471	5,037	56	242	1,116	242	188	1,715	245	380	269	6	922	456	310	454	4	103	14,867	13,296	41
United States of America	13,781	10,268	17,966	37,216	4,591	42,677	261	6,148	11,369	1,740	2,854	26,501	1,940	8,704	2,352	39	14,655	4,957	3,817	2,609	232	687	2,585	288,335	961
Others/Unknown	1,456	939	1,304	5,194	1,116	5,701	226	1,039	1,270	1,415	399	2,821	1,594	1,841	1,458	6	1,819	774	518	1,275	44	2,409	1,641	29,977	836
Total	**28,605**	**30,219**	**36,964**	**1,101,864**	**12,212**	**160,028**	**16,300**	**66,893**	**45,658**	**9,153**	**6,908**	**318,721**	**7,727**	**18,071**	**6,501**	**4,815**	**213,694**	**45,517**	**10,814**	**7,497**	**5,841**	**4,497**	**22,801**	**589,410**	**5,033**

Note: Origin data are based on absolute counts, not equivalent counts. The top 25 offices and origins are selected based on the availability of 2015 data broken down by country of origin.

Source: WIPO Statistics Database, October 2016.

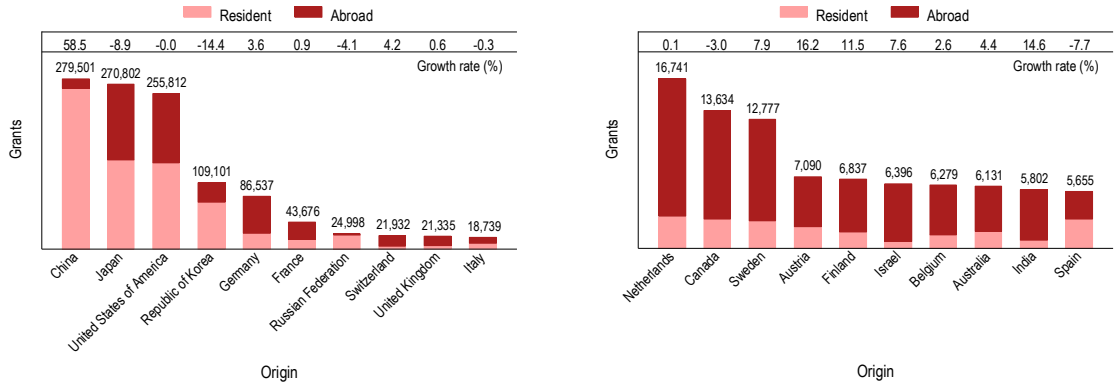
A20 Distribution of patent applications for the top 15 offices and selected non-resident origins, 2015



Note: Origin data are based on absolute counts, not equivalent counts.

Source: WIPO Statistics Database, October 2016.

A21 Equivalent patent grants for the top 20 origins, 2015

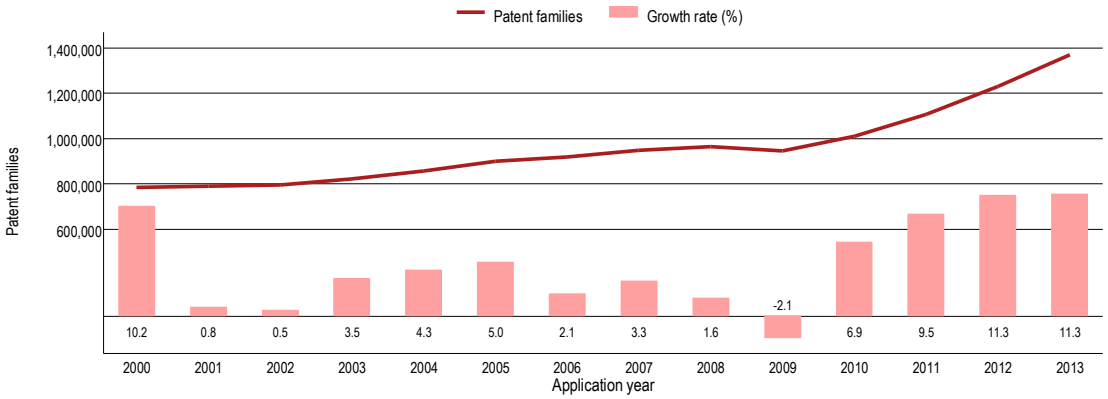


Note: See the glossary for the definition of equivalent grants.

Source: WIPO Statistics Database, October 2016.

Patent families

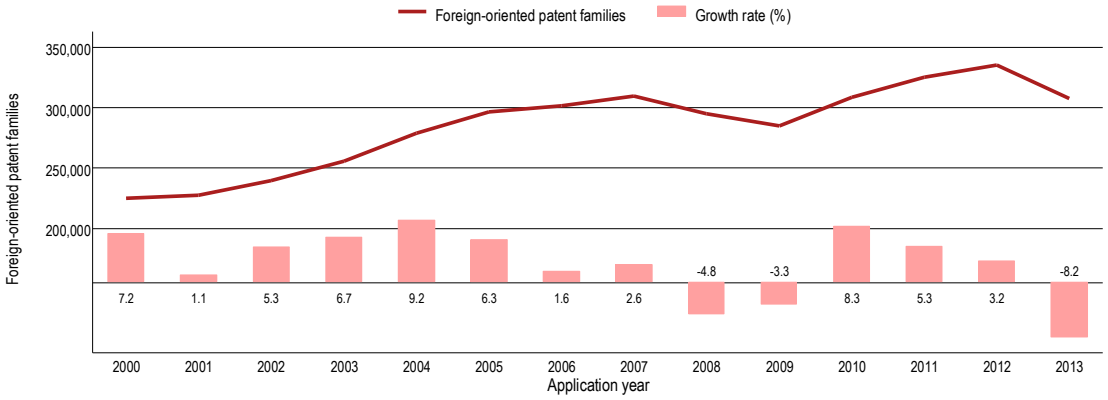
A22 Trend in patent families worldwide



Note: Applicants often file patent applications in multiple jurisdictions, so some inventions are recorded more than once. To take this into account, WIPO has indicators related to patent families, defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. A special subset comprises foreign-oriented patent families: this includes only patent families that have at least one filing office different from the office of the applicant's country of origin. Some foreign-related patent families include only one filing office, because 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 will form a foreign-oriented patent family.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

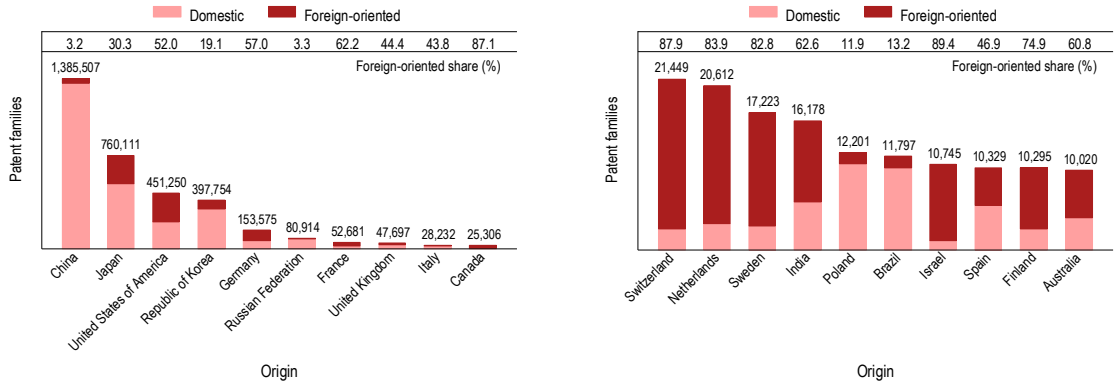
A23 Trend in foreign-oriented patent families worldwide



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. A 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. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. The sharp drop for 2013 could partly be due to a delay in reporting recent data.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

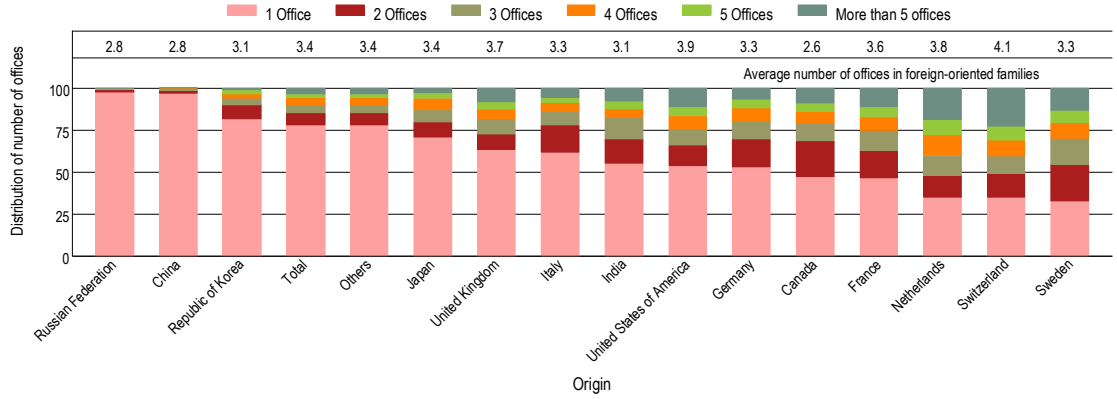
A24 Domestic and foreign-oriented patent families for the top origins, 2011-13



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

A25 Patent families by number of offices, 2011-13



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. This figure shows the distribution of total patent families for selected origins by the number of offices at which they exist. For example, 97% of families originating from China and the Russian Federation are single-office families, whereas around one-third of families originating from the Netherlands, Switzerland and Sweden are single-office families.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

A26 Top 100 patent applicants worldwide, based on total number of patent families

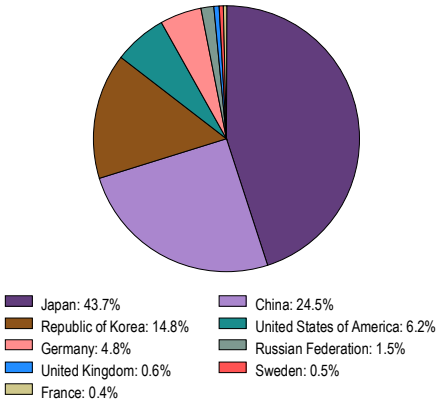
Applicant	Origin	2010	2011	2012	2013	Total number of patent families, 2010-13
Panasonic Corporation	Japan	10,780	10,284	8,295	4,993	34,352
Canon Inc	Japan	6,686	7,132	7,507	7,711	29,036
Toyota Jidosha KK	Japan	7,040	7,962	6,317	5,525	26,844
Samsung Electronics Co Ltd	Republic of Korea	5,873	5,865	6,666	8,243	26,647
Toshiba KK	Japan	6,087	6,055	6,030	5,422	23,594
Mitsubishi Electric Corporation	Japan	5,389	5,415	5,893	5,435	22,132
Honghai Precision Industry Co Ltd	Taiwan, Province of China	6,783	4,842	4,254	4,539	20,418
International Business Machines Corporation	United States of America	4,463	4,419	5,108	5,298	19,288
Ocean's King Lighting Science & Technology Co Ltd	China	1,755	2,310	5,028	9,914	19,007
Sharp Corporation	Japan	4,756	5,013	5,929	3,082	18,780
Seiko Epson Corporation	Japan	5,531	5,374	3,833	3,715	18,453
Ricoh Co Ltd	Japan	4,402	4,397	4,155	4,781	17,735
Robert Bosch GmbH	Germany	3,674	3,814	4,339	4,339	16,166
ZTE Corporation	China	5,065	4,521	3,577	2,219	15,382
Huawei Technologies Co Ltd	China	2,124	3,240	4,644	5,117	15,125
Fujitsu Ltd	Japan	3,488	3,768	3,663	3,562	14,481
Denso Corporation	Japan	3,337	3,435	3,460	3,694	13,926
State Grid Corporation of China	China	361	1,039	3,327	8,005	12,732
China Petroleum & Chemical Corporation	China	2,436	3,092	3,394	3,802	12,724
Honda Motor Co Ltd	Japan	3,533	3,156	3,019	2,992	12,700
Kvasenkov Oleg Ivanovich	Russian Federation	4,344	2,288	2,648	3,407	12,687
LG Electronics Inc	Republic of Korea	3,558	2,882	2,594	2,813	11,847
Sony Corporation	Japan	3,635	3,325	2,569	2,234	11,763
Siemens AG	Germany	2,524	3,083	2,979	2,769	11,355
Hitachi Ltd	Japan	2,917	2,839	2,938	2,602	11,296
Fujifilm Corporation	Japan	3,646	3,047	2,291	1,989	10,973
NEC Corporation	Japan	3,149	2,434	2,404	2,455	10,442
Hyundai Motor Co Ltd	Republic of Korea	2,149	2,604	2,569	2,706	10,028
Hongfujin Precision Industry (Shenzhen) Co Ltd	China	2,799	2,840	2,475	1,754	9,868
Zhejiang University	China	2,111	2,217	2,380	2,780	9,488
General Electric	United States of America	2,235	2,609	2,436	1,995	9,275
Korea Electronics Telecomm	Republic of Korea	1,752	1,996	2,694	2,558	9,000
Dainippon Printing Co Ltd	Japan	1,908	2,105	2,366	2,175	8,554
Nippon Telegraph & Telephone	Japan	2,009	2,099	2,067	2,262	8,437
Daimler AG	Germany	1,986	2,131	2,147	2,034	8,298
Sumitomo Electric Industries	Japan	1,895	2,031	1,959	1,820	7,705
Tsinghua University	China	1,643	1,779	2,125	2,060	7,607
LG Display Co Ltd	Republic of Korea	1,963	1,867	1,754	1,918	7,502
Brother Ind Ltd	Japan	1,951	2,000	1,766	1,719	7,436
Mitsubishi Heavy Ind Ltd	Japan	1,755	1,846	2,059	1,642	7,302
Samsung Electro Mech	Republic of Korea	1,659	1,868	1,926	1,702	7,155
Kyocera Corporation	Japan	1,923	1,956	1,798	1,461	7,138
LG Innotek Co Ltd	Republic of Korea	2,103	2,547	1,480	934	7,064
Microsoft Corporation	United States of America	2,291	1,978	1,357	1,409	7,035
Posco	Republic of Korea	1,314	1,723	1,973	1,798	6,808
Fuji Xerox Co Ltd	Japan	1,744	1,435	1,708	1,507	6,394
GM Global Tech Operations Inc	United States of America	1,597	1,742	1,546	1,236	6,121
Schaeffler Technologies GmbH & Co Kg	Germany	1,193	1,538	1,556	1,743	6,030
Nippon Kogaku KK	Japan	1,474	1,562	1,645	1,276	5,957
Harbin Institute Of Technology	China	1,168	1,146	1,574	2,065	5,953

Applicant	Origin	2010	2011	2012	2013	Total number of patent families, 2010-13
Shanghai Jiao Tong University	China	1,135	1,338	1,573	1,763	5,809
Nissan Motor	Japan	963	1,238	1,673	1,825	5,699
Southeast University	China	961	1,304	1,433	1,939	5,637
Hyun Dai Heavy Ind Co Ltd	Republic of Korea	747	1,393	1,946	1,437	5,523
Samsung Display Co Ltd	Republic of Korea	7	983	1,671	2,791	5,452
Sanyo Electric Co	Japan	2,033	1,887	931	510	5,361
Konica Corporation	Japan	646	327	2,211	2,147	5,331
Sumitomo Chemical Co	Japan	1,596	1,708	1,304	662	5,270
Toppan Printing Co Ltd	Japan	1,384	1,299	1,312	1,268	5,263
Hewlett Packard Development Co	United States of America	1,107	1,147	1,288	1,566	5,108
Tencent Technology (Shenzhen) Co Ltd	China	453	829	1,889	1,905	5,076
LG Chemical Ltd	Republic of Korea	643	903	1,345	2,178	5,069
JFE Steel KK	Japan	1,137	1,494	1,260	1,010	4,901
Sankyo Co	Japan	686	767	1,548	1,872	4,873
Google Inc	United States of America	435	1,189	1,828	1,421	4,873
Renesas Electronics Corporation	Japan	1,567	1,446	1,150	612	4,775
Sumitomo Wiring Systems	Japan	1,008	1,128	1,199	1,358	4,693
Tianjin University	China	749	1,015	1,294	1,572	4,630
Bridgestone Corporation	Japan	1,471	1,386	908	848	4,613
Peugeot Citroen Automobiles SA	France	1,209	1,213	1,149	970	4,541
Samsung Heavy Ind	Republic of Korea	1,039	1,050	1,314	1,131	4,534
Beihang University	China	1,007	1,112	1,128	1,262	4,509
Lenovo (Beijing) Co Ltd	China	260	608	1,854	1,786	4,508
South China University of Technology	China	773	955	1,231	1,450	4,409
Yazaki Corporation	Japan	1,074	1,093	1,021	1,116	4,304
Peking University	China	904	993	979	1,316	4,192
Olympus Corporation	Japan	1,197	1,188	911	884	4,180
Intel Corporation	United States of America	544	1,443	1,170	1,013	4,170
Jiangnan University	China	678	992	1,281	1,219	4,170
Casio Computer Co Ltd	Japan	1,226	929	1,008	998	4,161
Murata Manufacturing Co	Japan	940	1,026	1,009	1,157	4,132
Kyocera Document Solutions Inc	Japan	148	1,100	1,235	1,603	4,086
Telefonaktiebolaget LM Ericsson (Publ)	Sweden	831	1,009	1,121	1,058	4,019
Korea Advanced Inst Sci & Tech	Republic of Korea	1,015	1,006	1,101	856	3,978
Kao Corporation	Japan	1,025	972	1,016	906	3,919
Daikin Ind Ltd	Japan	838	1,008	1,140	856	3,842
Kyoraku Sangyo KK	Japan	1,157	865	741	1,076	3,839
Hyundai Mobis Co Ltd	Republic of Korea	859	847	1,228	880	3,814
Ford Global Tech LLC	United States of America	683	660	874	1,579	3,796
Taiwan Semiconductor MFG	Taiwan, Province of China	567	787	1,054	1,358	3,766
SK Hynix Inc	Republic of Korea	661	1,083	1,199	776	3,719
BOE Technology Group Co Ltd	China	139	474	1,233	1,863	3,709
JTEKT Corporation	Japan	731	942	1,004	973	3,650
Hyundai Steel Co	Republic of Korea	1,044	986	1,014	601	3,645
Toray Industries	Japan	810	898	959	970	3,637
Konica Minolta Business Tech	Japan	1,856	1,713	32	2	3,603
Inventec Corporation	Taiwan, Province of China	1,262	900	671	713	3,546
Nitto Denko Corporation	Japan	793	887	921	888	3,489
Jiangsu University	China	462	523	961	1,509	3,455
Toyota Ind Corporation	Japan	464	730	1,236	1,022	3,452

Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

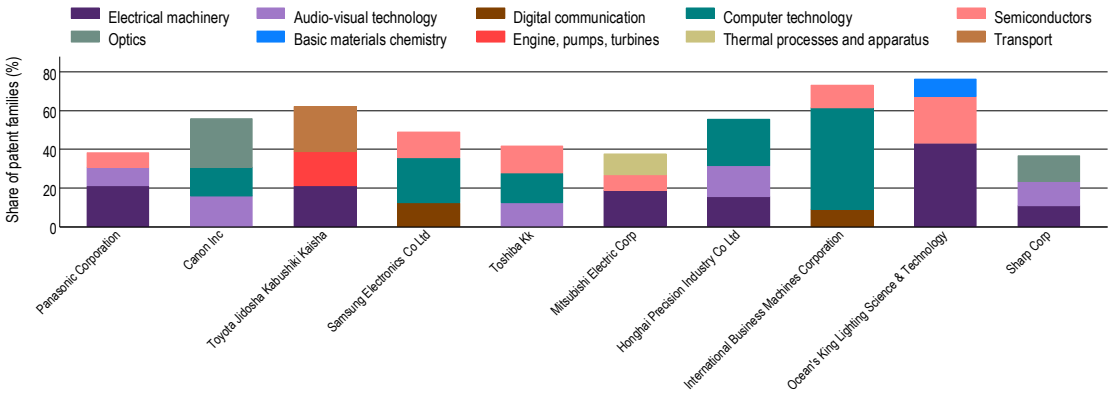
A27 Share of top 100 applicants by origin, based on total number of patent families, 2010-13



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

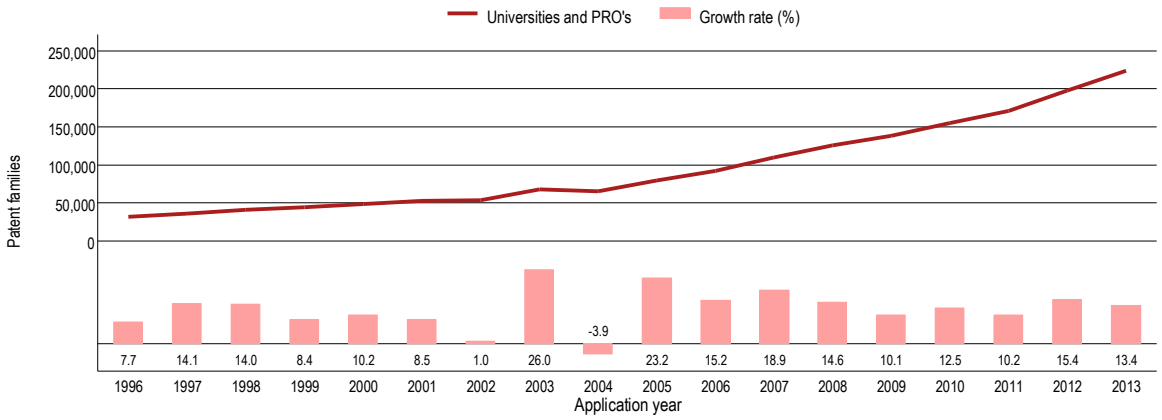
A28 Top three technology fields for each top 10 applicant, based on total patent families, 2010-13



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. Every patent application is assigned one or more International Patent Classification (IPC) symbols. If a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (fractional counting). Applications with no IPC symbol are not considered. Data refer to published patent applications. For details of the IPC technology concordance table see Annex A.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

A29 Trend in university and PRO patent families worldwide



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. PRO is an acronym for public research organization.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

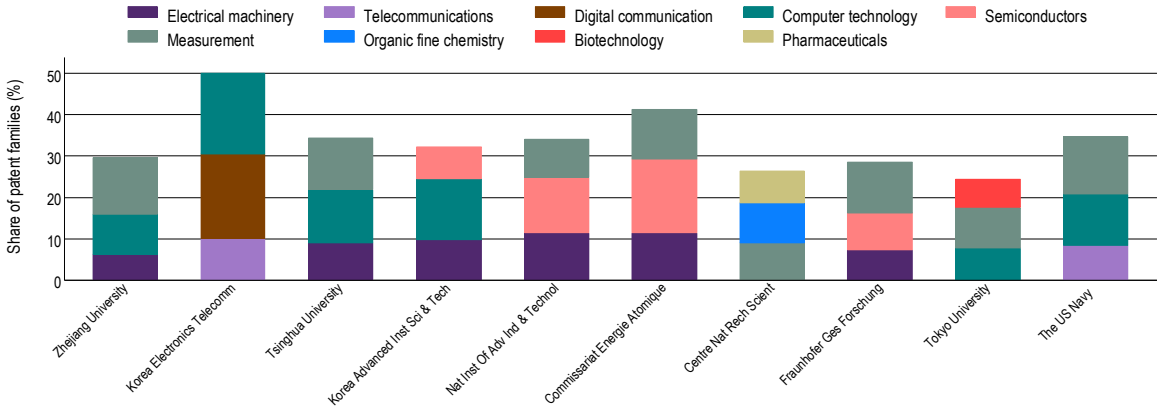
A30 Top 5 university and PRO patent applicants worldwide for selected origins

Applicant	Origin	2010	2011	2012	2013	Total number of patent families, 2010-13
Zhejiang University	China	2,111	2,217	2,380	2,780	9,488
Tsinghua University	China	1,643	1,779	2,125	2,060	7,607
Harbin Institute of Technology	China	1,168	1,146	1,574	2,065	5,953
Shanghai Jiao Tong University	China	1,135	1,338	1,573	1,763	5,809
Southeast University	China	961	1,304	1,433	1,939	5,637
Commissariat Energie Atomique	France	585	634	665	731	2,615
Centre Nat Rech Scient	France	484	485	516	532	2,017
Inst Nat Santé Rech Med	France	58	129	119	172	478
Univ Claude Bernard Lyon	France	39	31	52	49	171
Centre Nat ETD Spatiales	France	34	41	45	38	158
Fraunhofer Ges Forschung	Germany	434	441	491	523	1,889
Deutsches Zentrum für Luft und Raumfahrt	Germany	232	205	222	238	897
Univ Dresden Tech	Germany	75	78	78	26	257
Max Planck Gesellschaft	Germany	82	60	60	53	255
Karlsruher Inst Technologie	Germany	58	59	51	16	184
Nat Inst of Adv Ind & Tech	Japan	801	664	677	628	2,770
Tokyo University	Japan	379	364	327	408	1,478
Tohoku University	Japan	365	337	324	300	1,326
Osaka University	Japan	243	226	272	256	997
Kyoto University	Japan	212	210	224	235	881
Korea Electronics Telecomm	Republic of Korea	1,752	1,996	2,694	2,558	9,000
Korea Advanced Inst Sci & Tech	Republic of Korea	1,015	1,006	1,101	856	3,978
SNU R&DB Foundation	Republic of Korea	621	550	609	599	2,379
Yonsei University	Republic of Korea	535	552	577	611	2,275
Univ Korea Res & Bus Found	Republic of Korea	494	518	509	473	1,994
The USA as represented by the Secretary of the Navy	United States of America	231	204	92	65	592
Northwestern University	United States of America	73	103	91	167	434
The USA as represented by the Secretary of the Army	United States of America	165	126	61	64	416
Massachusetts Institute of Technology	United States of America	88	76	56	33	253
Wisconsin Alumni Res Found	United States of America	40	52	54	98	244

Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. PRO is an acronym for public research organization.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

A31 Top three technology fields for selected universities and PROs, 2010-13



Note: A patent family is defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. PRO is an acronym for public research organization. Every patent application is assigned one or more International Patent Classification (IPC) symbols. If a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (fractional counting). Applications with no IPC symbol are not considered. Data refer to published patent applications. For details of the IPC technology concordance table see Annex A. The US Navy refers to the U.S. as represented by the Secretary of the Navy.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

Published patent applications by field of technology

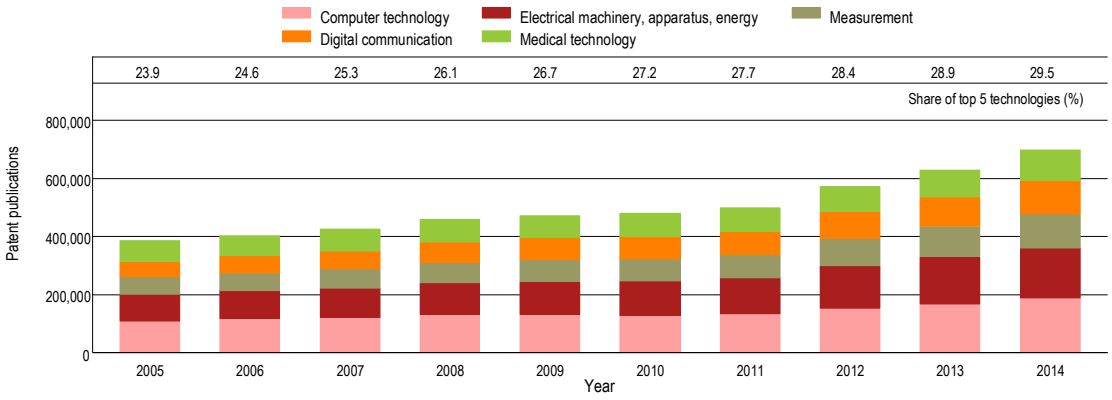
A32 Patent applications worldwide by field of technology

Field of technology	2005	2010	2014	Share (%), 2014	Average growth (%), 2005-14
Electrical engineering					
Electrical machinery, apparatus, energy	91,819	116,687	173,406	7.3	7.3
Audio-visual technology	89,360	78,564	76,308	3.2	-1.7
Telecommunications	61,790	56,352	51,033	2.2	-2.1
Digital communication	53,991	77,300	117,097	4.9	9.0
Basic communication processes	18,024	16,652	16,657	0.7	-0.9
Computer technology	107,841	129,330	188,038	7.9	6.4
IT methods for management	18,174	23,189	41,408	1.7	9.6
Semiconductors	70,396	77,025	88,686	3.7	2.6
Instruments					
Optics	70,805	64,214	64,692	2.7	-1.0
Measurement	62,163	77,648	114,091	4.8	7.0
Analysis of biological materials	12,541	11,527	14,448	0.6	1.6
Control	26,904	29,118	43,259	1.8	5.4
Medical technology	69,912	78,627	105,451	4.5	4.7
Chemistry					
Organic fine chemistry	56,673	54,383	58,235	2.5	0.3
Biotechnology	38,550	39,275	50,423	2.1	3.0
Pharmaceuticals	73,295	71,423	90,242	3.8	2.3
Macromolecular chemistry, polymers	27,610	28,527	41,096	1.7	4.5
Food chemistry	23,066	28,277	57,365	2.4	10.7
Basic materials chemistry	38,720	44,598	70,519	3.0	6.9
Materials, metallurgy	29,329	37,642	58,033	2.5	7.9
Surface technology, coating	27,874	33,073	40,498	1.7	4.2
Micro-structural and nano-technology	2,161	3,446	4,710	0.2	9.0
Chemical engineering	33,636	37,301	53,183	2.2	5.2
Environmental technology	21,021	25,918	36,955	1.6	6.5
Mechanical engineering					
Handling	43,486	43,041	60,383	2.6	3.7
Machine tools	36,860	43,585	66,274	2.8	6.7
Engines, pumps, turbines	41,533	48,745	62,339	2.6	4.6
Textile and paper machines	38,402	31,021	36,092	1.5	-0.7
Other special machines	47,125	49,909	75,168	3.2	5.3
Thermal processes and apparatus	24,446	29,677	38,354	1.6	5.1
Mechanical elements	43,005	46,657	63,748	2.7	4.5
Transport	66,364	67,566	95,927	4.1	4.2
Other fields					
Furniture, games	43,128	43,138	58,190	2.5	3.4
Other consumer goods	33,855	32,648	45,806	1.9	3.4
Civil engineering	51,813	56,959	81,073	3.4	5.1
Unknown	21,182	30,177	27,392	1.2	2.9
Total	**1,616,854**	**1,763,219**	**2,366,579**	**100.0**	**4.3**

Note: Every patent application is assigned one or more International Patent Classification (IPC) symbols. If a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (fractional counting). Applications with no IPC symbol are not considered. Data refer to published patent applications. There is a minimum delay of 18 months between the application date and the publication date. For details of the IPC technology concordance table see Annex A.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

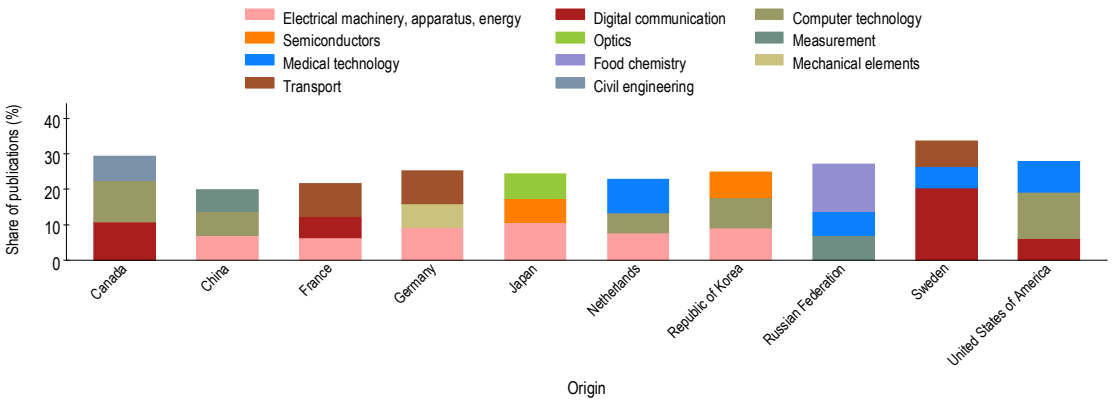
A33 Trend in patent applications for the top five technology fields



Note: Every patent application is assigned one or more International Patent Classification (IPC) symbols. If a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (fractional counting). Applications with no IPC symbol are not considered. Data refer to published patent applications. For details of the IPC technology concordance table see Annex A. The top five fields were selected based on their 2013 totals.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

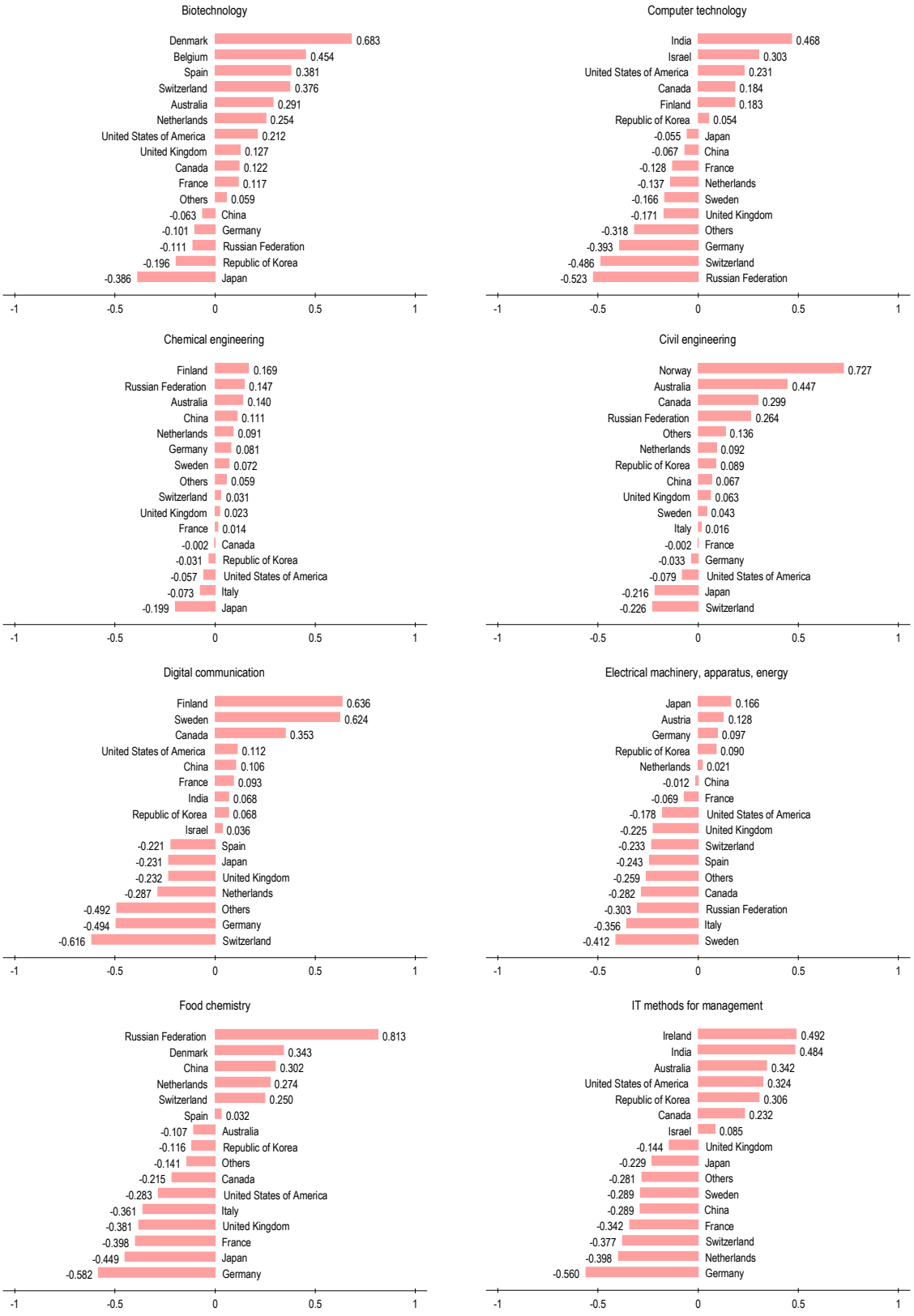
A34 Top three technology fields for selected origins, 2012-14 (% of total)

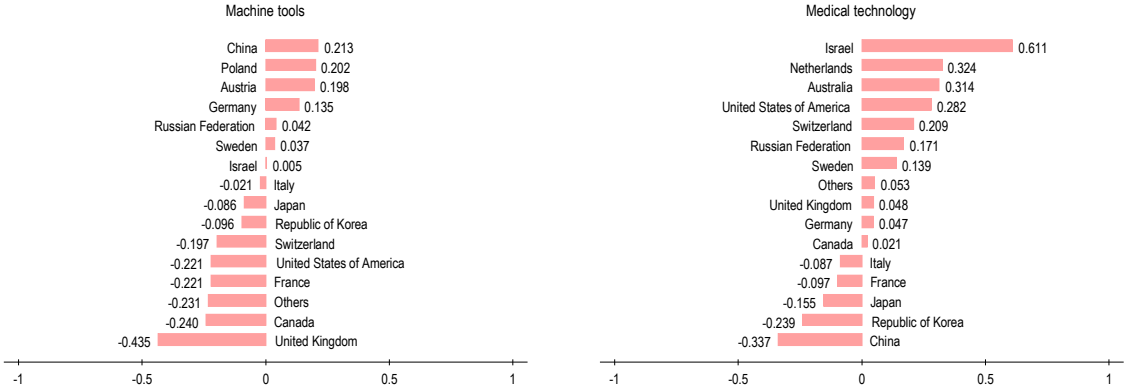


Note: Every patent application is assigned one or more International Patent Classification (IPC) symbols. If a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (fractional counting). Applications with no IPC symbol are not considered. Data refer to published patent applications. For details of the IPC technology concordance table see Annex A. The top three technology fields for each origin were selected from the total number of applications covering 2012-14.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

A35 Relative specialization index for patent applications for selected fields of technology, 2012-14





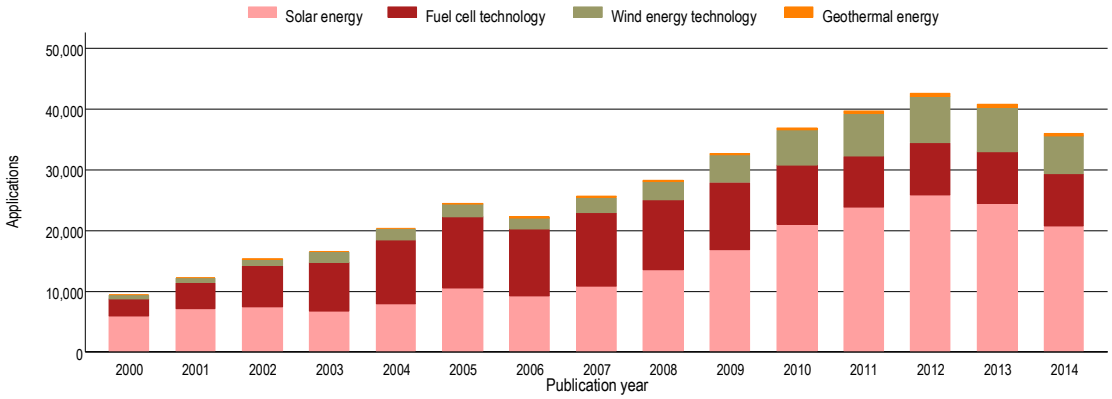
Note: This index corrects for the effects of country size and focuses on concentration in specific technology fields; it captures whether a country tends to have a lower or a higher propensity to file in certain technology fields. It is calculated using the following formula:

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

where F_c and F_T denote applications from country *C* and in technological field *T*. A positive value for a technology indicates that a country has a relatively high share of patent filings related to that field of technology. Every patent application is assigned one or more International Patent Classification (IPC) symbols. If a patent application relates to multiple fields of technology, it is divided into equal shares, each representing one field of technology (fractional counting). Applications with no IPC symbol are not considered. Data refer to published patent applications. For details of the IPC technology concordance table see Annex A.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

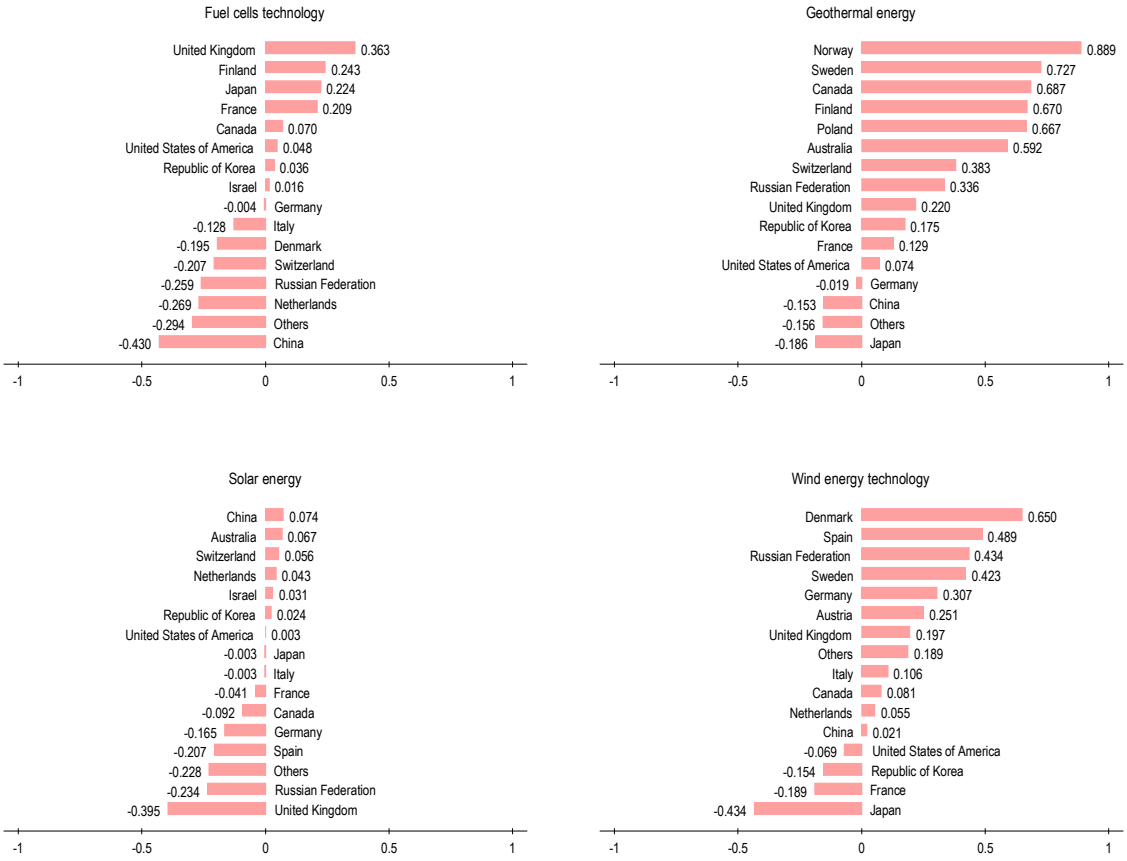
A36 Trend in patent applications in energy-related technologies



Note: For definitions of the technologies – fuel cells, geothermal, solar and wind energy – see Annex B. The correspondence between IPC symbols and technology fields is not always clear (there is no one-to-one relationship). It is thus difficult to capture all patents in a specific technology field. Even so, the IPC-based definitions are likely to capture the vast majority of patent applications in these areas. Data refer to published patent applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

A37 Relative specialization index for patent applications for selected energy-related technologies for the top origins, 2012-14



Note: For definitions of the technologies – fuel cells, geothermal, solar and wind energy – see Annex B. The correspondence between IPC symbols and technology fields is not always clear (there is no one-to-one relationship). This makes it difficult to capture all patents in a specific technology field. Even so, the IPC-based definitions are likely to capture the vast majority of patent applications in these areas. The index corrects for the effects of country size and focuses on concentration in specific technology fields; it captures whether a given country tends to have a lower or higher propensity to file in certain technology fields. The index is calculated using the following formula:

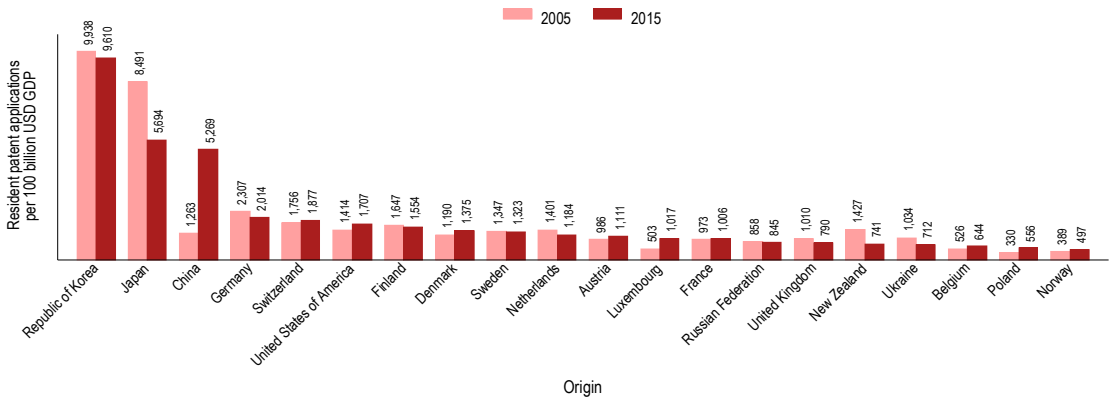
$$RSI = Log\left(\frac{F_{CT}\sum F_{CT}}{\sum F_C \sum F_T}\right)$$

where F_C and F_T denote applications from country C and in technological field T. A positive value for a technology indicates that a country has a relatively high share of patent filings related to that field of technology.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

Patent applications in relation to GDP and population

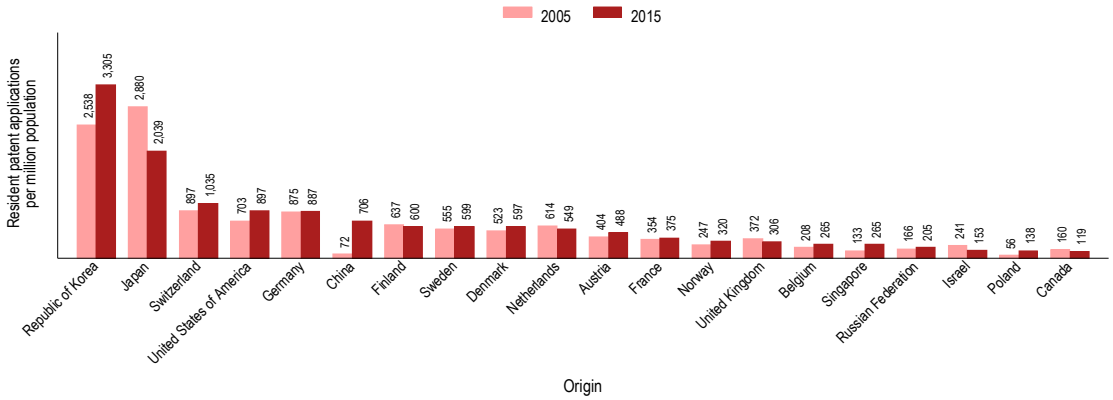
A38 Resident patent applications per 100 billion USD GDP for the top 20 origins



Note: GDP data are in 2011 US PPP dollars. The top 20 origins were included if they had a GDP greater than 25 billion USD PPP and more than 100 resident patent applications. Due to space constraints, only the top 20 origins that fulfil these criteria are presented.

Sources: WIPO Statistics Database and World Bank, October 2016.

A39 Resident patent applications per million population for the top 20 origins

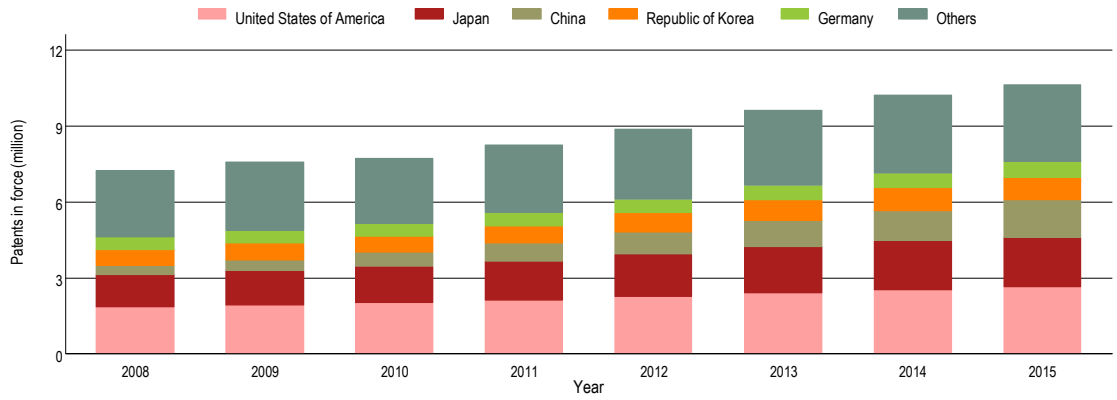


Note: The top 20 origins were included if they had a population greater than 5 million and if they had more than 100 resident patent applications. Due to space constraints, only the top 20 origins that fulfil these criteria are presented.

Sources: WIPO Statistics Database and World Bank, October 2016.

Patents in force

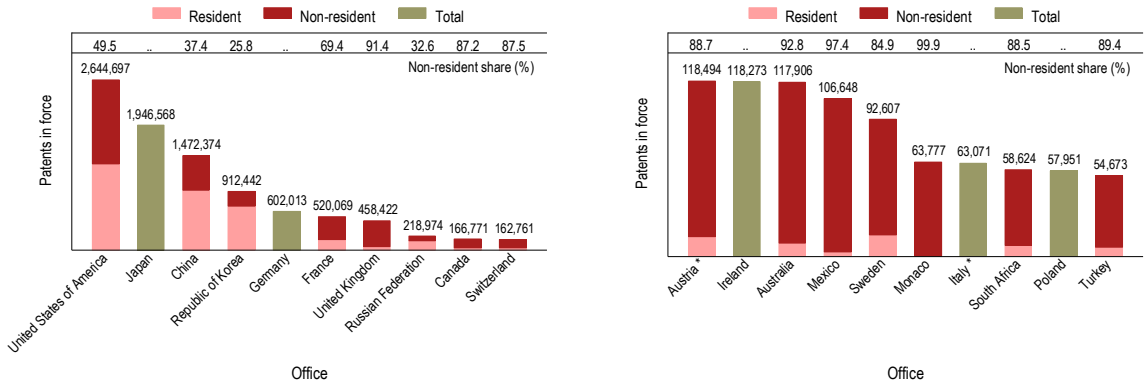
A40 Trend in patents in force worldwide



Note: World totals are WIPO estimates using data covering 108 patent offices.

Source: WIPO Statistics Database, October 2016.

A41 Patents in force at the top 20 offices, 2015

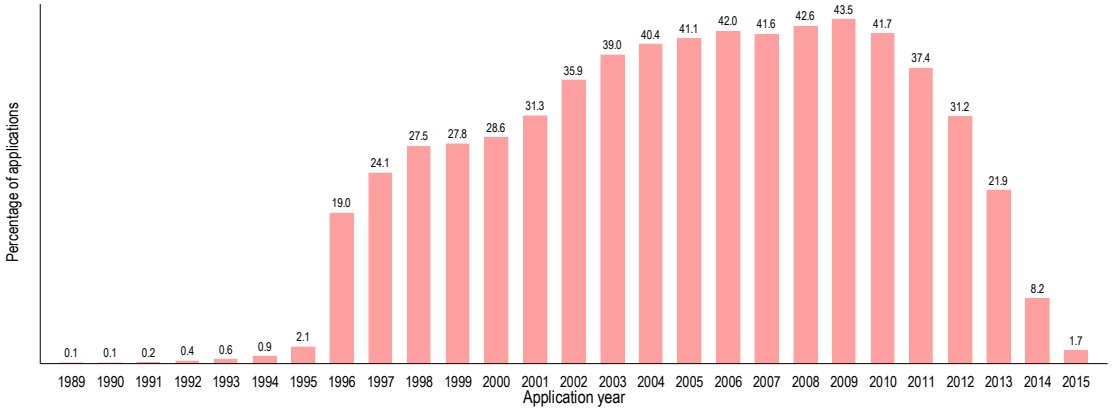


* indicates 2014 data.
.. indicates not available.

Note: Patent rights last for a limited period – generally 20 years from the date of filing. Patents in force provide information on the volume of patents currently valid, as well as the historical patent life cycle.

Source: WIPO Statistics Database, October 2016.

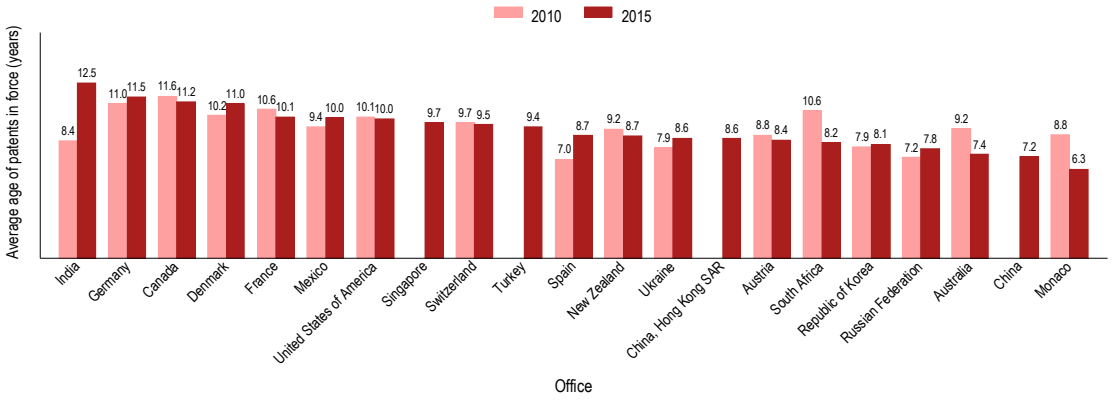
A42 Patents in force in 2015 as a percentage of total applications



Note: Percentages are calculated as the number of patent applications filed in year *t* and in force in 2015, divided by the total number of patent applications filed in year *t*. Patent holders must pay maintenance fees 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. This figure shows the distribution of patents in force in 2015 as a percentage of total applications in the year of filing. But not all offices provide these data. Data for 70 offices show that 40-42% of the applications for which patents were eventually granted remained in force for at least 6 to 12 years after the application date. About 19% of these patents lasted the full 20-year patent term.

Source: WIPO Statistics Database, October 2016.

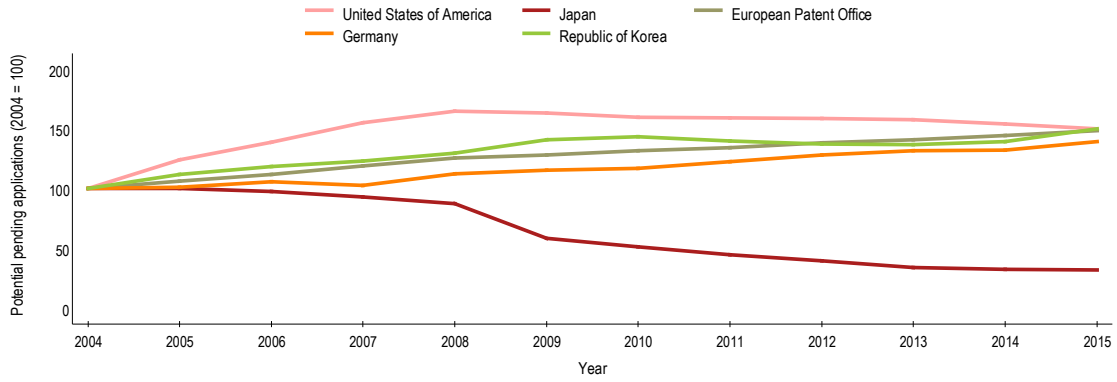
A43 Average age of patents in force at selected offices



Source: WIPO Statistics Database, October 2016.

Pending patent applications and pendency time

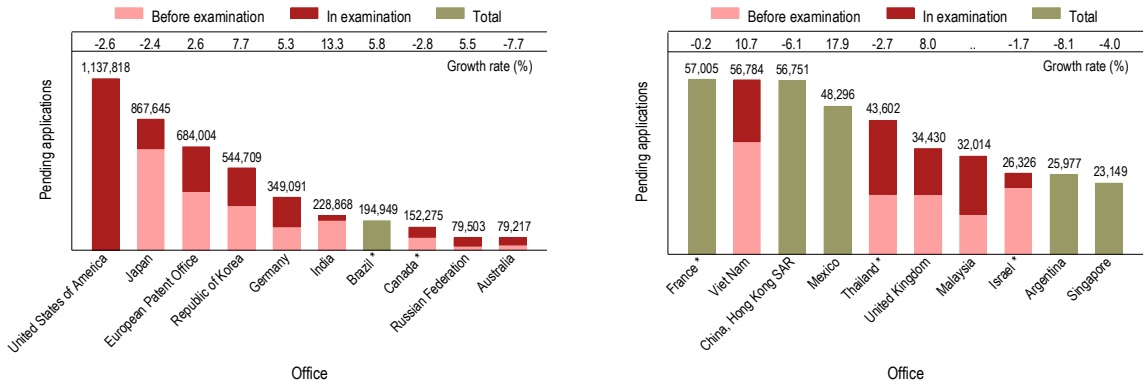
A44 Potentially pending applications at the top offices



Note: Application processing varies across offices, making it difficult to measure pending applications. In some offices patent applications automatically proceed to the examination stage unless applicants withdraw them; in others applications do not proceed to the examination stage unless applicants file a separate request for examination. To take account of procedural differences, pending application data are separated between (a) all patent applications, at any stage in the process, that are awaiting a final decision by a patent office, including those for which applicants have not filed a request for examination (where applicable) and (b) patent applications undergoing examination for which the applicant has requested examination (where such separate requests are necessary). Data for the State Intellectual Property Office of the People's Republic of China, the office that receives the most applications, were unavailable.

Source: WIPO Statistics Database, October 2016.

A45 Potentially pending applications at the top 20 offices, 2015



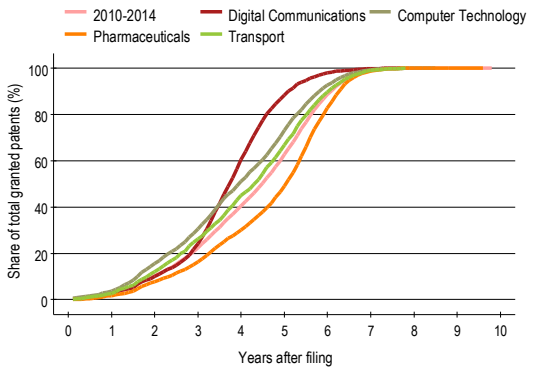
* indicates 2014 data.
.. indicates not available.

Note: Potentially pending applications include all patent applications, at any stage in the process, awaiting a final decision by a patent office, including those for which applicants have not filed a request for examination (where applicable). Data for Brazil include both pending patent and utility model applications, and so are not comparable with other offices.

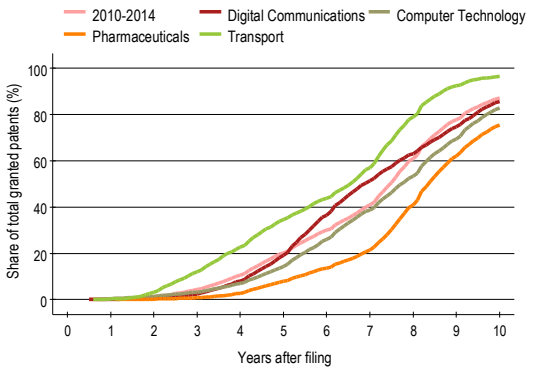
Source: WIPO Statistics Database, October 2016.

A46 Distribution of pendency time at selected offices

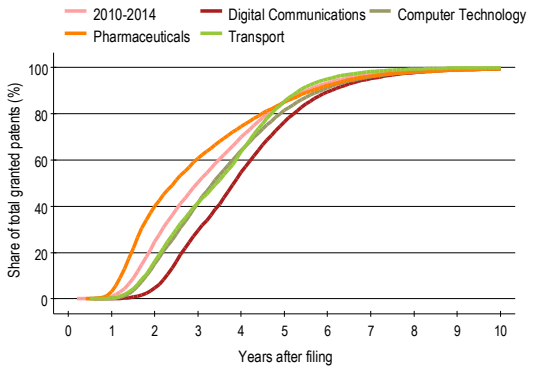
Australia



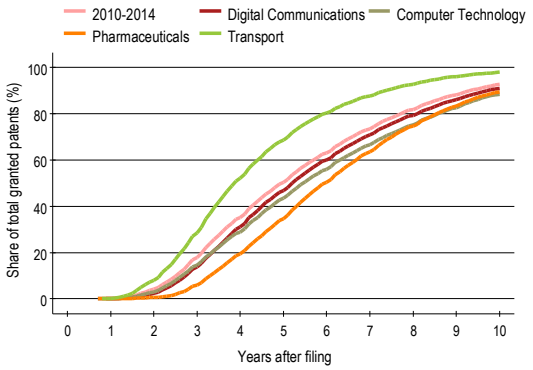
Canada



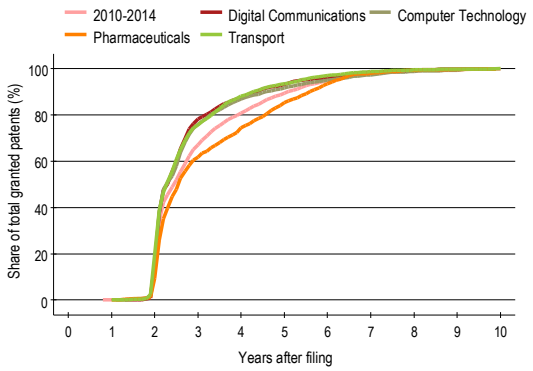
China



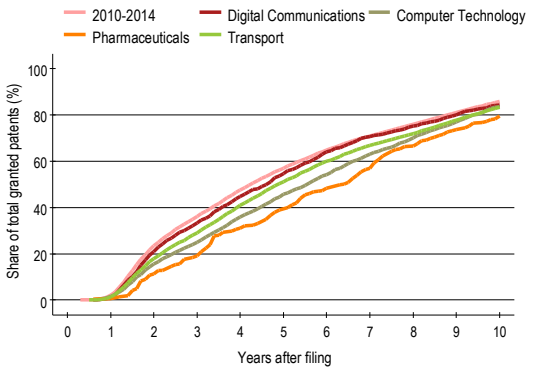
European Patent Office



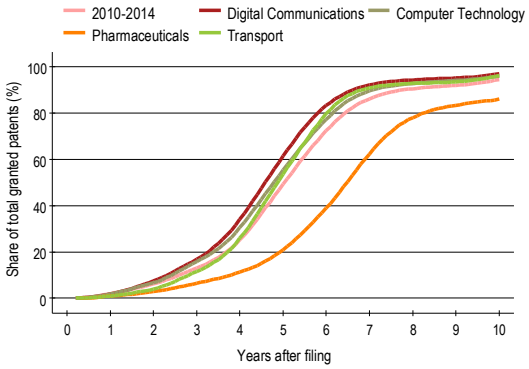
France



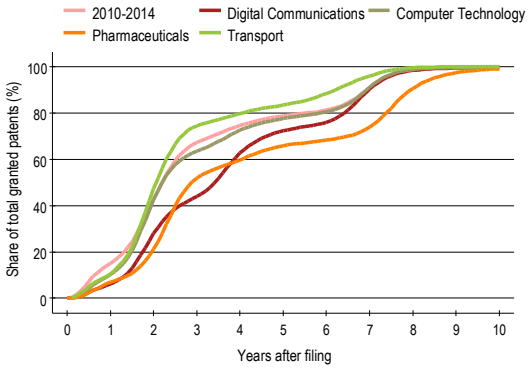
Germany



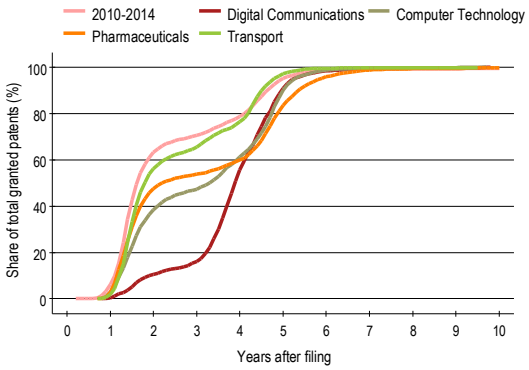
Japan



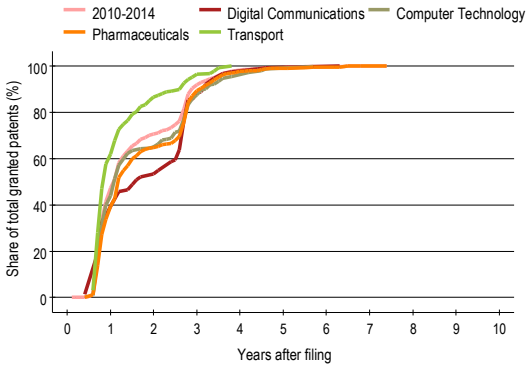
Republic of Korea



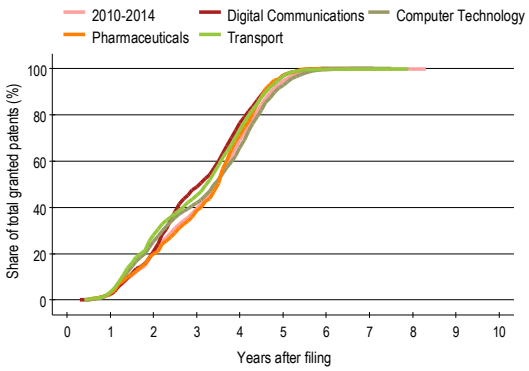
Russian Federation



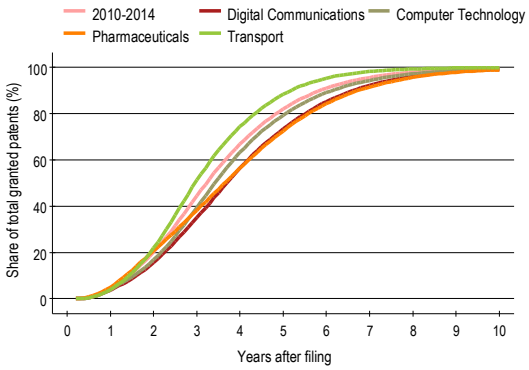
South Africa



United Kingdom



United States of America

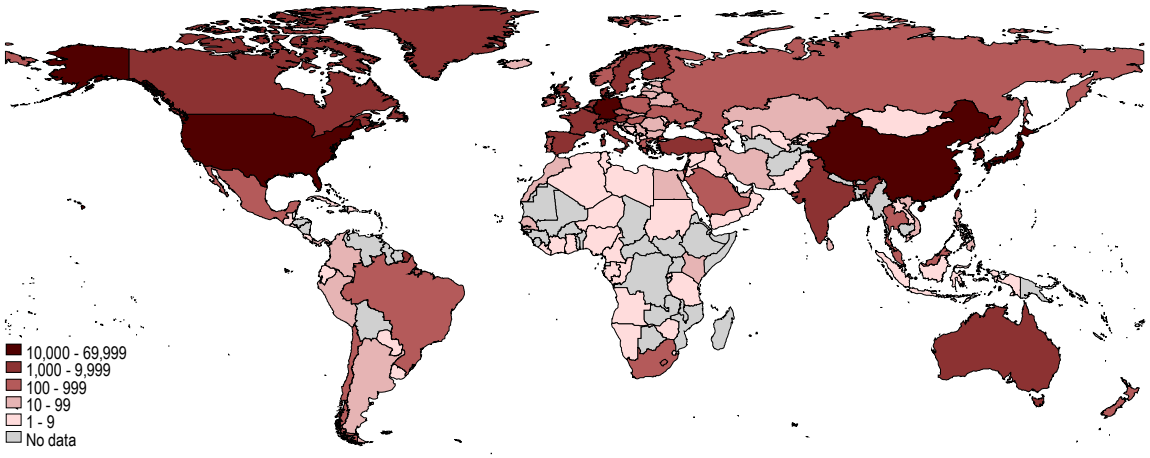


Note: Few offices report pendency time indicators, and there is no standard methodology for calculating such indicators. Here, a proxy for pendency time has been constructed using patent application and grant dates from the EPO PATSTAT database. One limitation of this approach is that the pendency time for patents withdrawn, abandoned or refused is not included due to data unavailability. Pendency time can vary among offices for several reasons; for example, an applicant may file an application and then decide to delay the request for examination. So comparing pendency times across offices can be misleading. For a more meaningful comparison, pendency times reported here should be compared across technologies for individual offices.

Sources: WIPO Statistics Database and EPO PATSTAT database, October 2016.

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

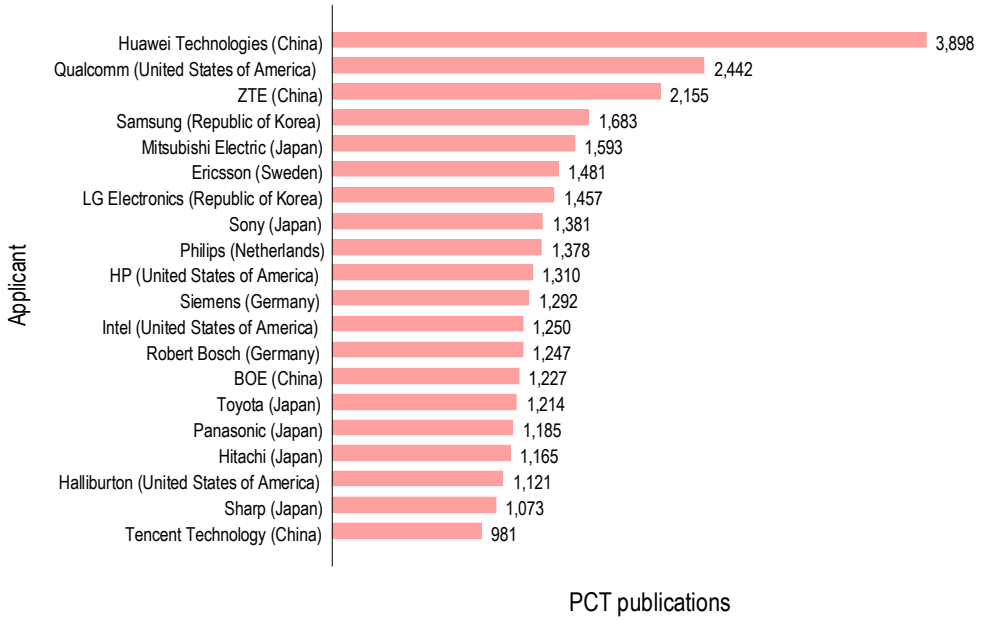
A47 PCT international applications by origin, 2015



Note: Data refer to the international phase of the Patent Cooperation Treaty System. Counts are based on the residency of the first-named applicant and the international application date.

Source: WIPO Statistics Database, October 2016.

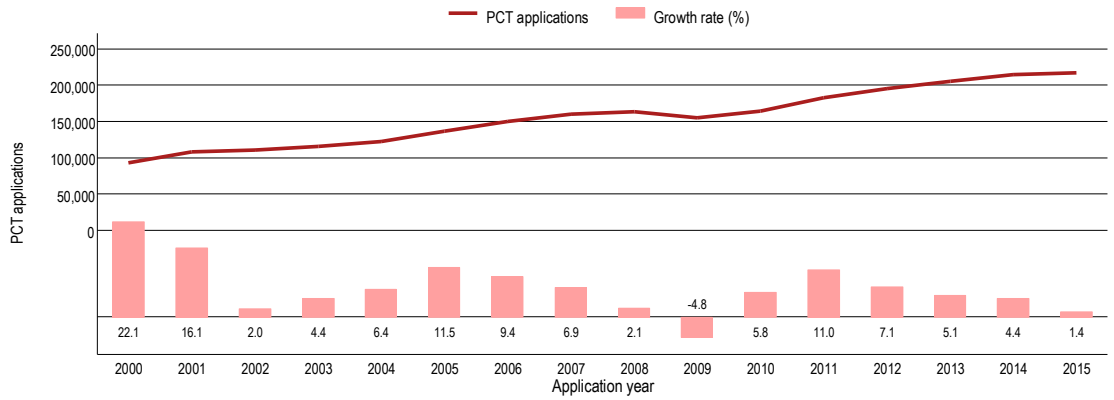
A48 Top PCT applicants, 2015



Note: Data refer to the international phase of the Patent Cooperation Treaty System. Due to confidentiality requirements, counts are based on publication date.

Source: WIPO Statistics Database, October 2016.

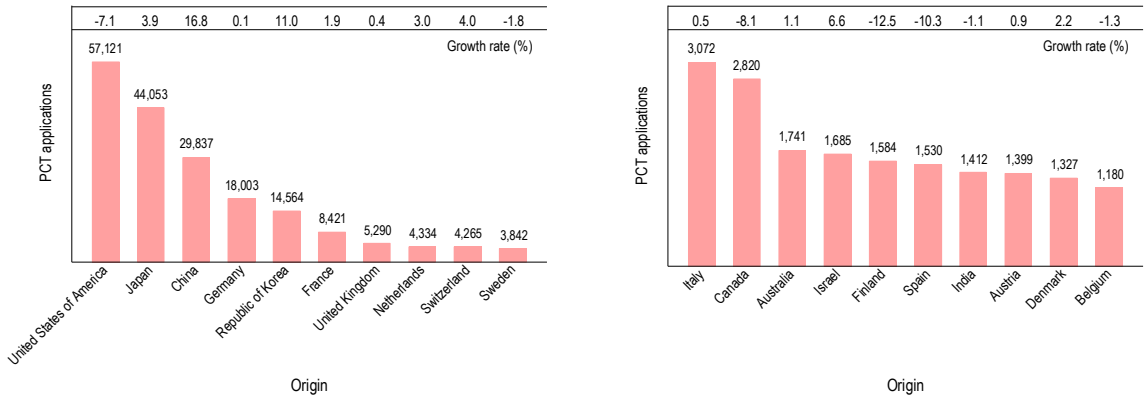
A49 Trend in PCT applications



Note: Data refer to the international phase of the Patent Cooperation Treaty System. Counts are based on the international application date.

Source: WIPO Statistics Database, October 2016.

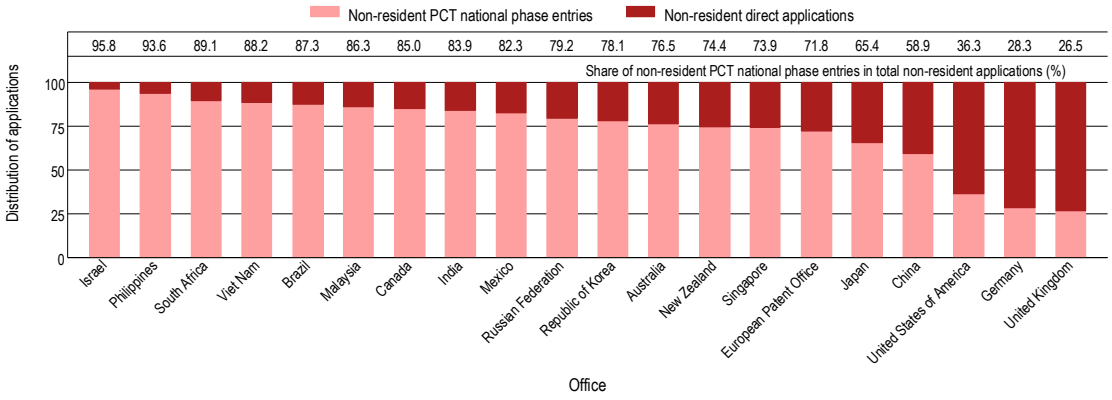
A50 PCT applications for the top 20 origins, 2015



Note: Data refer to the international phase of the Patent Cooperation Treaty System. Counts are based on the residency of the first-named applicant and the international application date.

Source: WIPO Statistics Database, October 2016.

A51 Non-resident applications by filing route for selected offices, 2015



Note: A patent office may receive patent applications filed either directly with the office (the "Paris route") or through the Patent Cooperation Treaty System (Patent Cooperation Treaty national phase entries).

Source: WIPO Statistics Database, October 2016.

Patent Prosecution Highway (PPH)

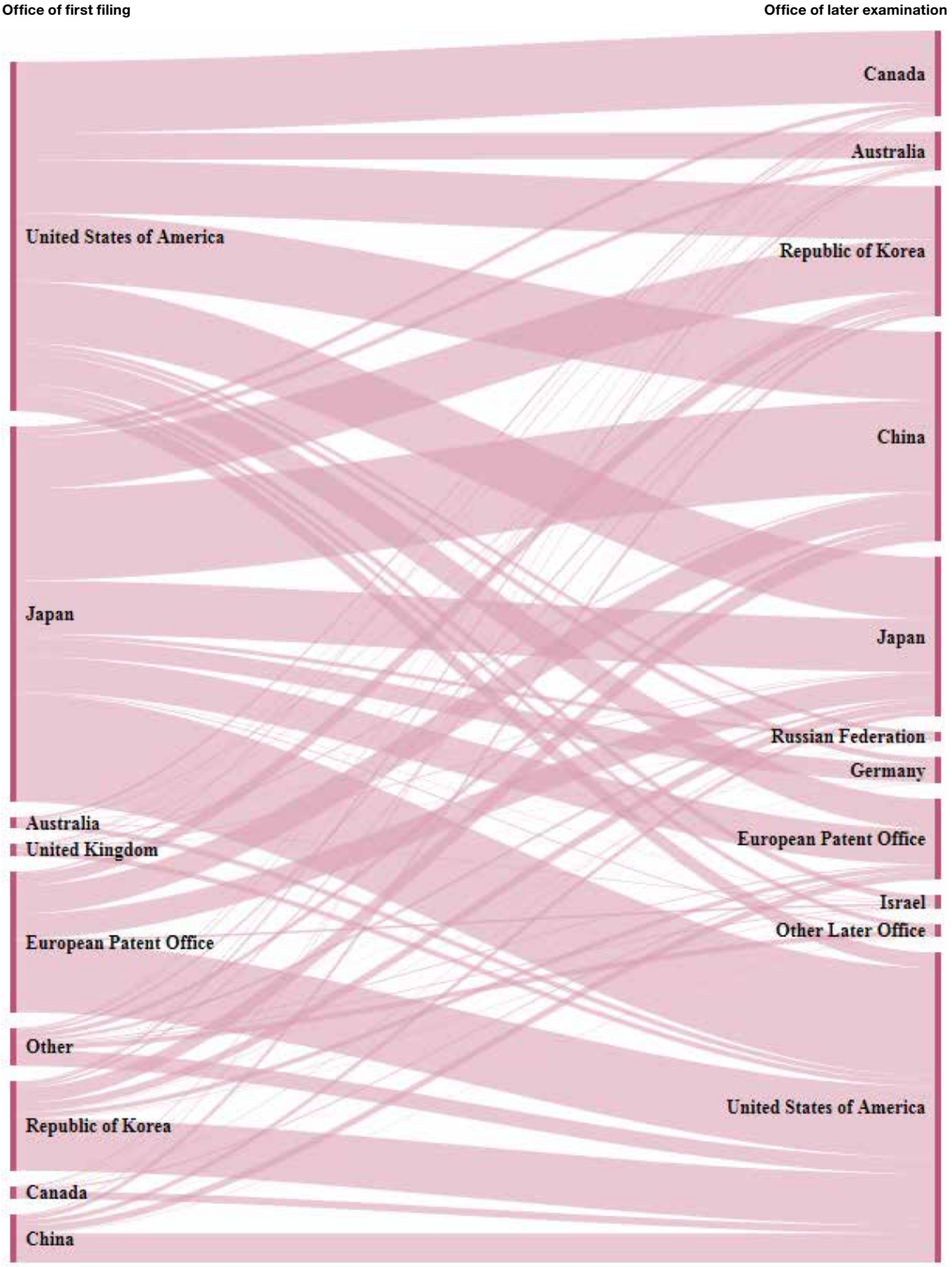
A52 PPH requests by office of first filing, 2015

Office of later examination	Office of first filing: Australia	Canada	China	Denmark	European Patent Office	Finland	Germany	Israel	Japan	New Zealand	Republic of Korea	Russian Federation	Sweden	United Kingdom	United States of America	Others/Unknown	Total
Australia		33		5		1	1	10	127		73	2	14	25	630	2	**923**
Canada	65		31	3	44	2	6	4	122		27	2		24	1,705	8	**2,043**
China		6		21	666	18	33	9	2,182		362	10	18	41	1,628	12	**5,006**
Estonia												2					**2**
Eurasian Patent Organization									3								**3**
European Patent Office		40	172					27	844		116				721	5	**1,925**
Finland									3						1		**4**
Germany	2	2	6			6			440		6			7	148	2	**619**
Hungary															1		**1**
Israel	20	5	4		57		1	17	13		18	6	4	1	161	1	**308**
Japan	15	21	112	16	586	8	19	4	1,262		207	8	10	29	1,467	27	**3,791**
New Zealand	2									120					26		**148**
Norway	1								1						17		**19**
Republic of Korea	29	14	109	6	297	8	13	8	1,234		56	3	14	22	1,263	13	**3,089**
Russian Federation		1	6		2	1			100		14		4	12	105	2	**247**
Singapore		1	8	1	2		1	1	10		3				9		**36**
Spain															6		**6**
Sweden									1					1			**2**
United Kingdom	2	2	6			1	1		14		3				65	1	**95**
United States of America	126	181	691	31	1,695	29	68	65	2,572		1,237	65	83	131	367	60	**7,401**
Total	**262**	**306**	**1,145**	**83**	**3,349**	**74**	**143**	**145**	**8,928**	**120**	**2,122**	**98**	**147**	**293**	**8,320**	**133**	**25,668**

Note: To avoid unnecessary duplication of work and improve the efficiency of the examination process, patent offices increasingly seek to use the search and examination results of other offices. Patent prosecution highways have institutionalized such cooperation between offices. A patent prosecution highway is a bilateral agreement between two offices that enables applicants to request a fast-track examination whereby patent examiners can use the work of the other office.

Source: WIPO Statistics Database, October 2016.

A53 PPH requests between offices of first filing and offices of later examination, 2015

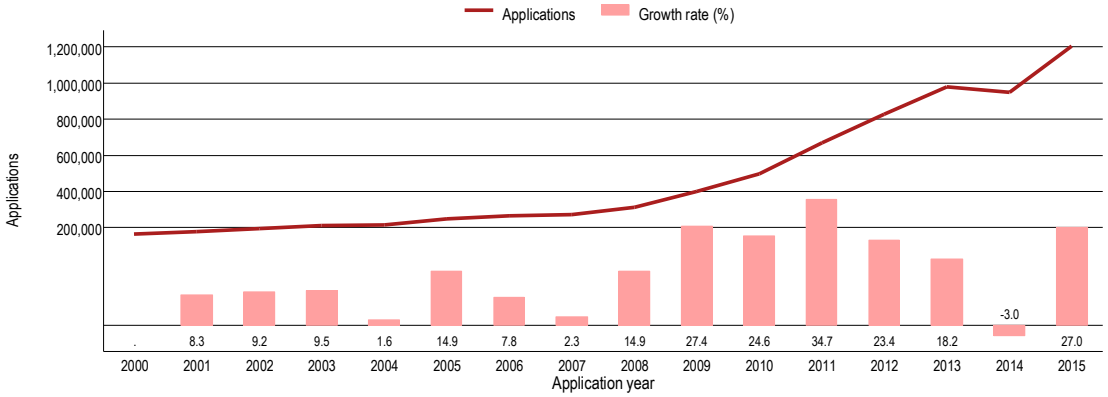


Note: To avoid unnecessary duplication of work and improve the efficiency of the examination process, patent offices increasingly seek to use the search and examination results of other offices. Patent prosecution highways have institutionalized such cooperation between offices. A patent prosecution highway is a bilateral agreement between two offices that enables applicants to request a fast-track examination whereby patent examiners can use the work of the other office. This graph shows the flows of PPH request between offices of first filing and offices of later examination.

Source: WIPO Statistics Database, October 2016.

Utility model applications

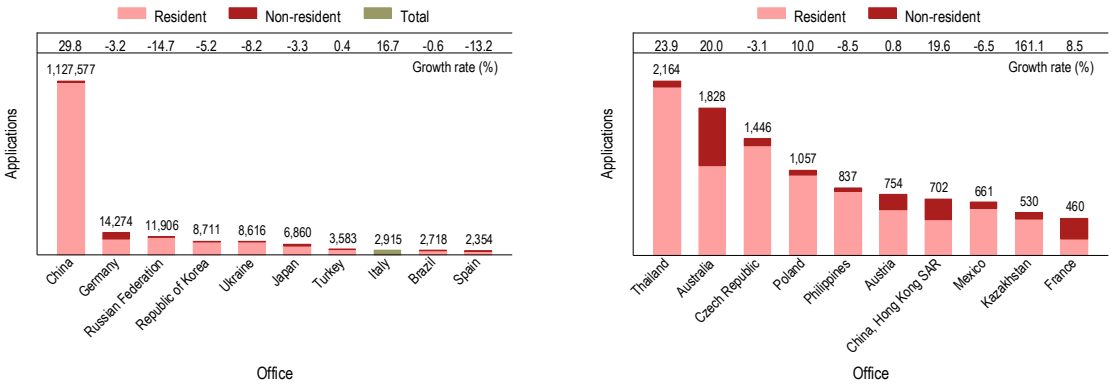
A54 Trend in utility model applications worldwide



Note: World totals are WIPO estimates using data covering 71 patent offices. These totals include applications filed directly with national and regional offices and applications entering offices through the Patent Cooperation Treaty national phase (where applicable).

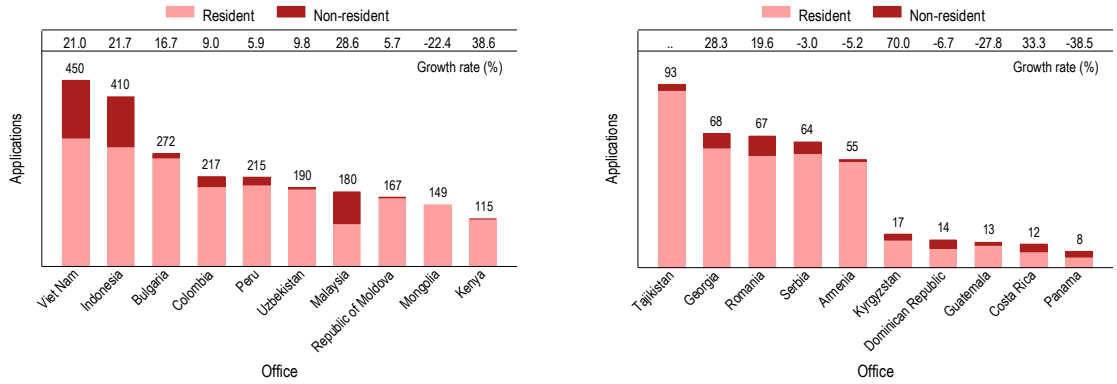
Source: WIPO Statistics Database, October 2016.

A55 Utility model applications for the top 20 offices, 2015



Source: WIPO Statistics Database, October 2016.

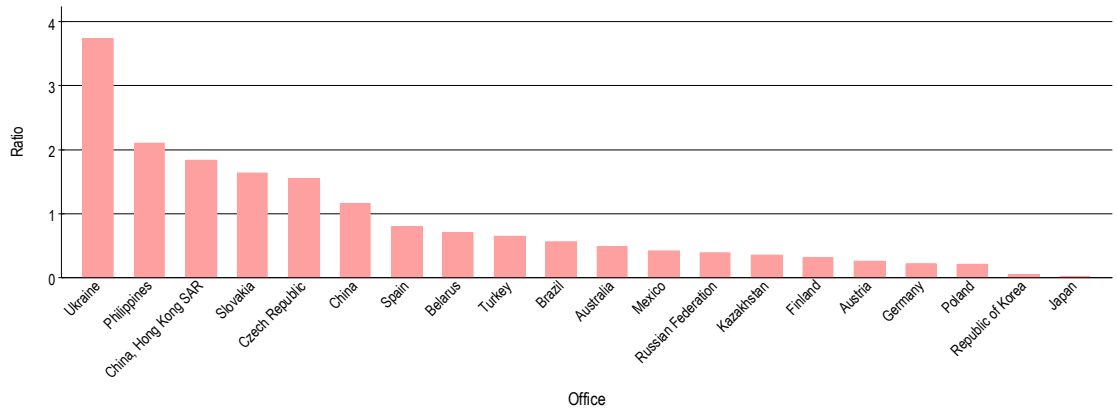
A56 Utility model applications for offices of selected low- and middle-income countries, 2015



.. indicates not available.

Source: WIPO Statistics Database, October 2016.

A57 Resident utility model applications in relation to resident patent applications, 2015

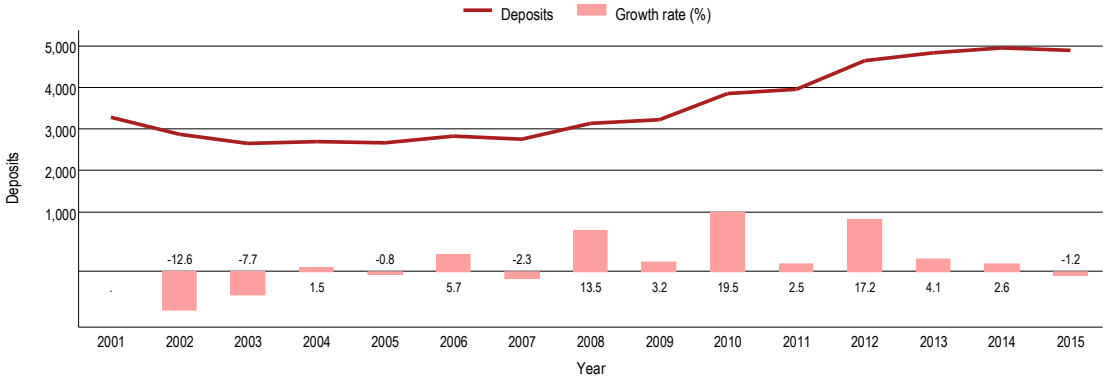


Note: A ratio greater than one indicates more intensive use of the utility model system than the patent system at an office.

Source: WIPO Statistics Database, October 2016.

Microorganisms

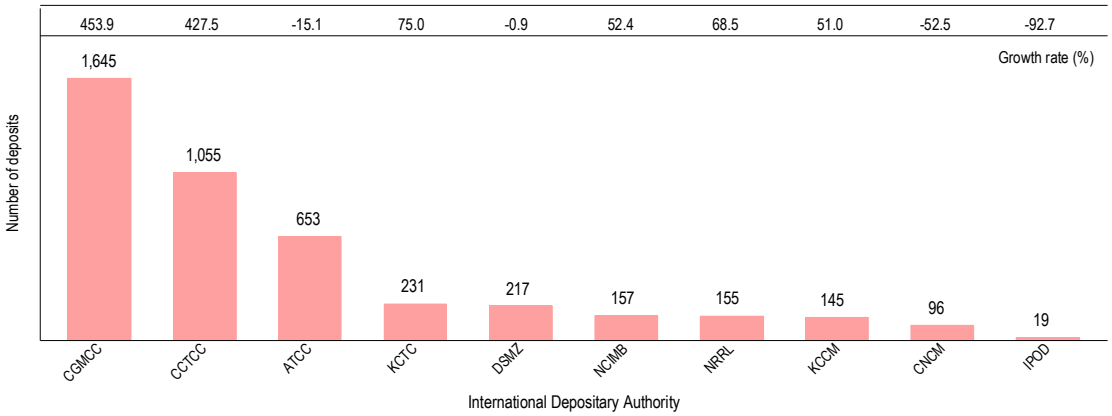
A58 Trend in microorganism deposits worldwide



Note: Deposits of microorganisms for patent procedures are important for biotechnological inventions. Disclosing an invention is a requirement for receiving a patent.

Source: WIPO Statistics Database, October 2016.

A59 Deposits at the top international depositary authorities, 2015



Note: ATCC is the American Type Culture Collection (United States of America), CCTCC is the China Center for Type Culture Collection, CGMCC is the China General Microbiological Culture Collection Center, CNCM is the Collection Nationale de Cultures de Micro-organismes (France), DSMZ is the Leibniz-Institut DSMZ (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH; Germany), IPOD is the International Patent Organism Depositary (Japan), KCCM is the Korean Culture Center of Microorganisms (Republic of Korea), KCTC is the Korean Collection for Type Cultures (Republic of Korea), NCIMB is the National Collection of Industrial, Food and Marine Bacteria (United Kingdom) and NRRL is the Agriculture Research Services Culture Collection (United States of America).

Source: WIPO Statistics Database, October 2016.

Statistical tables

A60 Patent applications by office and origin, 2015

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total (a)	Receiving office	Origin	Office	Origin
Afghanistan	..	..	..	3	n.a.	0	..	1
African Intellectual Property Organization	529	101	428	n.a.	1	n.a.	414	n.a.
African Regional Intellectual Property Organization	780	9	771	n.a.	0	n.a.	738	n.a.
Albania	19	14	5	15	2	2	2	..
Algeria	805	89	716	123	6	8	696	29
Andorra	..	..	..	10	n.a.	5	..	..
Angola (e)	..	..	..	4	n.a.	1	..	3
Antigua and Barbuda	10	0	10	2	0	0	10	..
Argentina	4,125	546	3,579	889	n.a.	29	..	130
Armenia	115	113	2	160	4	5	1	15
Australia	28,605	2,291	26,314	11,175	1,615	1,741	21,033	6,985
Austria	2,441	2,205	236	13,925	492	1,399	487	6,711
Azerbaijan	184	184	0	493	3	3	4	10
Bahamas (b,c)	113	2	111	143	n.a.	10	..	46
Bahrain	193	8	185	29	0	5	185	20
Bangladesh	340	41	299	112	n.a.	0	..	52
Barbados (e)	45	0	45	397	n.a.	125	45	324
Belarus	691	543	148	1,967	5	12	89	36
Belgium	1,097	949	148	12,090	71	1,180	..	6,665
Belize	26	0	26	31	0	0	26	22
Benin (f,i)	n.a.	n.a.	n.a.	85	n.a.	0	n.a.	..
Bermuda	..	..	..	156	n.a.	0	..	74
Bolivia (Plurinational State of) (b,c)	303	9	294	14	n.a.	0	..	2
Bosnia and Herzegovina (b,c)	43	41	2	55	3	4	2	6
Botswana (b,c)	9	4	5	14	0	0	5	1
Brazil	30,219	4,641	25,578	6,554	483	548	22,468	1,241
Brunei Darussalam (b,c)	117	26	91	39	0	5	..	2
Bulgaria	291	280	11	512	41	57	1	129
Burkina Faso (f,i)	n.a.	n.a.	n.a.	119	n.a.	0	n.a.	..
Cambodia	65	0	65	4	n.a.	0	..	..
Cameroon (f,i)	n.a.	n.a.	n.a.	460	n.a.	1	n.a.	..
Canada	36,964	4,277	32,687	24,497	1,986	2,820	29,393	9,431
Central African Republic (f,i)	n.a.	n.a.	n.a.	34	n.a.	0	n.a.	..
Chad (f,i)	n.a.	n.a.	n.a.	86	n.a.	0	n.a.	..
Chile	3,274	443	2,831	850	136	166	2,700	304
China	1,101,864	968,252	133,612	1,010,406	31,045	29,837	81,866	28,281
China, Hong Kong SAR	12,212	239	11,973	1,930	0	0	..	338
China, Macao SAR	65	3	62	97	n.a.	0	..	1
Colombia	2,242	321	1,921	558	12	87	1,855	190
Congo (f,i)	n.a.	n.a.	n.a.	85	n.a.	1	n.a.	..
Cook Islands	..	..	..	8	n.a.	0	..	8
Costa Rica	601	17	584	67	2	6	569	28
Côte d'Ivoire (f,i)	n.a.	n.a.	n.a.	409	n.a.	2	n.a.	..
Croatia	186	169	17	250	22	28	4	52
Cuba (b,c)	150	24	126	189	2	2	118	148
Curaçao	..	..	..	10	n.a.	0	..	5
Cyprus	7	6	1	350	1	51	..	206
Czech Republic	952	880	72	2,359	165	191	22	788
Democratic People's Republic of Korea	..	..	..	23	6	6	..	20
Denmark	1,732	1,462	270	12,123	464	1,327	82	6,956
Djibouti (b,c)	4	0	4	6	0	0	..	..
Dominica	..	..	..	2	n.a.	1	..	2
Dominican Republic	252	21	231	35	5	5	224	10
Ecuador	..	..	..	10	1	4	..	1
Egypt (b,c)	2,136	752	1,384	883	49	58	1,353	32
El Salvador	203	7	196	10	0	1	193	..
Eritrea	..	..	..	2	n.a.	0	..	1
Estonia	36	30	6	236	7	36	2	83
Ethiopia	..	..	..	2	n.a.	0	..	1
Eurasian Patent Organization	3,491	567	2,924	n.a.	2	n.a.	2,832	n.a.
European Patent Office	160,028	76,131	83,897	n.a.	34,157	n.a.	98,278	n.a.
Finland	1,416	1,289	127	13,076	1,005	1,584	43	7,380

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total (a)	Receiving office	Origin	Office	Origin
France	16,300	14,306	1,994	71,666	3,515	8,421	..	37,638
Gabon (f,i)	n.a.	n.a.	n.a.	20	n.a.	1	n.a.	1
Georgia	271	99	172	124	2	6	171	22
Germany	66,893	47,384	19,509	174,109	1,571	18,003	6,443	71,710
Ghana	..	..	..	..	1	1	..	..
Greece	573	550	23	1,151	65	121	..	347
Grenada	9	0	9	..	0	0	..	..
Guatemala	348	7	341	11	0	2	326	2
Guinea (f,i)	n.a.	n.a.	n.a.	17	n.a.	0	n.a.	..
Guyana (b,c)	20	0	20	1	n.a.	0	..	..
Haiti (b,c)	21	2	19	2	n.a.	0	..	..
Honduras	228	4	224	6	0	0	224	..
Hungary	633	569	64	1,487	105	148	10	677
Iceland	46	40	6	263	17	46	4	118
India	45,658	12,579	33,079	23,844	682	1,412	27,882	3,981
Indonesia	9,153	1,058	8,095	1,174	6	6	6	44
International Bureau	..	..	..	n.a.	10,326	n.a.	..	n.a.
Iran (Islamic Republic of) (c)	14,279	..	..	13,768	0	71	300	4
Iraq	437	335	102	343	n.a.	2	..	1
Ireland	440	250	190	5,310	21	453	..	2,616
Israel	6,908	1,285	5,623	14,470	1,326	1,685	5,907	6,697
Italy (c)	9,687	..	..	29,288	320	3,072	..	13,077
Jamaica	70	7	63	28	n.a.	1	..	8
Japan	318,721	258,839	59,882	454,285	43,097	44,053	60,431	119,487
Jordan	335	41	294	169	n.a.	1	..	100
Kazakhstan	1,503	1,271	232	1,797	23	24	..	45
Kenya	193	137	56	179	3	11	52	19
Kuwait (d)	228	..	..	86	n.a.	3	..	1
Kyrgyzstan	126	122	4	180	1	1	1	..
Lao People's Democratic Republic (e)	..	..	..	..	n.a.	2	..	..
Latvia	137	136	1	287	9	28	..	77
Lebanon	304	110	194	145	n.a.	7	..	16
Lesotho	..	..	..	1	0	0	..	..
Liberia	..	..	..	2	0	1	..	..
Libya	..	..	..	1	1	1	..	..
Liechtenstein (g)	..	..	..	1,262	n.a.	241	..	745
Lithuania	119	101	18	275	9	39	..	102
Luxembourg	247	128	119	2,734	0	403	..	1,707
Madagascar (e)	19	3	16	4	n.a.	0	..	1
Malawi	6	6	0	7	0	0	..	..
Malaysia	7,727	1,272	6,455	2,293	252	267	5,598	434
Mali (f,i)	n.a.	n.a.	n.a.	11	n.a.	0	n.a.	3
Malta	11	9	2	459	0	67	..	263
Marshall Islands	..	..	..	8	n.a.	1	..	7
Mauritania (f,i)	n.a.	n.a.	n.a.	53	n.a.	0	n.a.	..
Mauritius	..	..	..	117	n.a.	0	..	28
Mexico	18,071	1,364	16,707	2,508	225	317	13,787	568
Monaco	6	5	1	177	0	35	..	91
Mongolia	237	109	128	111	0	1	115	1
Montenegro (e)	23	23	0	30	0	0	..	..
Morocco	1,021	224	797	308	32	34	753	50
Mozambique (h)	102	24	78	24	n.a.	0	27	..
Namibia (h)	..	..	..	5	n.a.	5	..	..
Nepal	82	11	71	24	n.a.	0	..	11
Netherlands	2,494	2,207	287	37,017	962	4,334	..	21,964
New Zealand	6,501	1,184	5,317	3,264	262	358	3,998	1,510
Nicaragua (b,c)	146	1	145	2	0	0	140	..
Niger (f,i)	n.a.	n.a.	n.a.	104	n.a.	1	n.a.	2
Nigeria (e)	..	..	..	60	n.a.	5	..	1
Norway	1,805	1,153	652	5,601	292	678	556	3,230
Oman (e)	..	..	..	9	0	3	..	4
Pakistan	886	209	677	252	n.a.	2	..	1
Panama	403	14	389	63	3	15	372	39
Papua New Guinea	47	1	46	4	0	0	41	1
Paraguay	..	..	..	14	n.a.	1	..	9
Patent Office of the Cooperation Council for the Arab States of the Gulf (b,c)	2,543	326	2,217	n.a.	n.a.	n.a.	..	n.a.

	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
Name	Total	Resident	Non-resident	Total (a)	Receiving office	Origin	Office	Origin
Peru	1,249	67	1,182	117	26	27	1,117	32
Philippines	3,734	375	3,359	663	17	27	3,158	139
Poland	4,815	4,676	139	7,009	303	439	42	1,009
Portugal	945	925	20	1,624	61	161	11	509
Qatar (b,c)	482	5	477	174	4	19	464	87
Republic of Korea	213,694	167,275	46,419	238,015	14,592	14,564	37,170	23,197
Republic of Moldova	124	64	60	98	7	7	58	10
Romania	1,053	975	78	1,229	39	35	7	70
Russian Federation	45,517	29,269	16,248	33,786	951	876	12,951	2,145
Rwanda	6	5	1	5	0	1	..	..
Saint Kitts and Nevis	..	..	..	6	n.a.	1	..	3
Saint Lucia (e)	..	..	..	2	n.a.	1	..	2
Saint Vincent and the Grenadines (e)	7	0	7	13	n.a.	0	7	13
Samoa	4	1	3	25	n.a.	5	..	..
San Marino	..	..	..	10	0	3	..	3
Sao Tome and Principe (b,c,e)	3	0	3	..	n.a.	0	..	..
Saudi Arabia	2,406	715	1,691	2,338	22	276	1,635	860
Senegal (f,i)	n.a.	n.a.	n.a.	258	n.a.	16	n.a.	..
Serbia	191	178	13	248	28	38	4	41
Seychelles	..	..	..	47	0	7	..	16
Sierra Leone (h)	..	..	..	1	n.a.	0	..	1
Singapore	10,814	1,469	9,345	6,137	663	908	7,264	2,633
Slovakia	256	228	28	495	19	38	10	147
Slovenia	..	..	..	462	37	84	..	291
South Africa	7,497	889	6,608	2,064	95	313	6,116	1,109
Spain	3,020	2,799	221	10,777	1,143	1,530	138	4,813
Sri Lanka (e)	481	218	263	263	n.a.	14	263	22
Sudan (b,c)	8	0	8	8	0	5	8	2
Swaziland (h)	2	0	2	9	n.a.	3	..	3
Sweden	2,428	2,038	390	24,267	1,464	3,842	73	15,972
Switzerland	1,923	1,477	446	44,458	190	4,265	82	25,403
Syrian Arab Republic	198	198	0	224	2	1	..	10
T F Y R of Macedonia	..	..	..	1	2	2	..	..
Tajikistan	1	0	1	16	0	0	..	..
Thailand (b,c)	7,930	1,006	6,924	1,405	97	133	6,113	206
Trinidad and Tobago	168	3	165	13	0	4	165	1
Tunisia	589	180	409	218	4	8	407	18
Turkey	5,841	5,352	489	7,269	700	1,010	288	1,423
Uganda (h)	9	9	0	11	n.a.	0	..	..
Ukraine	4,497	2,271	2,226	2,878	130	139	1,992	212
United Arab Emirates (e)	1,753	15	1,738	364	n.a.	77	1,651	158
United Kingdom	22,801	14,867	7,934	52,648	4,100	5,290	2,418	24,405
United Republic of Tanzania (h)	..	..	..	3	n.a.	2	..	1
United States of America	589,410	288,335	301,075	526,296	57,595	57,121	137,331	199,874
Uruguay	558	26	532	102	n.a.	6	..	49
Uzbekistan	507	288	219	305	2	3	213	9
Vanuatu	..	..	..	3	n.a.	0	..	3
Venezuela (Bolivarian Republic of)	..	..	..	87	n.a.	0	..	46
Viet Nam	5,033	582	4,451	679	15	21	3,935	57
Yemen	30	5	25	7	n.a.	1	..	..
Zambia (b,c)	39	14	25	15	0	0	22	..
Zimbabwe	28	9	19	9	0	2	2	..
Others/Unknown	..	..	..	33,148	n.a.	161	..	4,319
Total (2015 estimates)	**2,888,800**	**1,974,100**	**914,700**	**n.a.**	**217,229**	**217,229**	**612,300**	**n.a.**

(a) Equivalent applications by origin data are incomplete because some offices do not report by origin.
(b) 2014 data are reported for applications by office.
(c) 2014 data are reported for equivalent applications by origin.
(d) The office did not report resident applications so the equivalent applications by origin data may be incomplete.
(e) The International Bureau acts as the receiving office for PCT applications.
(f) The African Intellectual Property Organization (OAPI) acts as the receiving office for PCT applications.
(g) The Swiss Federal Institute of Intellectual Property acts as the receiving office for PCT applications.
(h) The African Regional Intellectual Property Organization (ARIPO) acts as the receiving office for PCT applications.
(i) The African Intellectual Property Organization (OAPI) is the competent office for processing applications.
.. indicates not available
n.a. is not applicable

Source: WIPO Statistics Database, October 2016.

A61 Patent grants by office and origin, and patents in force, 2015

	Grants by office			Equivalent grants by origin	In force by office
Name	Total	Resident	Non-resident	Total (a)	Total
African Intellectual Property Organization	526	74	452	n.a.	..
African Regional Intellectual Property Organization	429	4	425	n.a.	2,964
Albania	10	9	1	12	..
Algeria	353	74	279	79	5,145
Andorra	..	..	..	7	..
Antigua and Barbuda	..	..	..	1	..
Argentina	1,559	214	1,345	375	..
Armenia	81	81	0	107	248
Aruba	..	..	..	1	..
Australia	23,098	1,614	21,484	6,131	117,906
Austria (d)	1,356	1,140	216	7,090	118,494
Azerbaijan	88	86	2	199	82
Bahamas (b,c,d)	120	1	119	155	1,536
Bahrain (d)	..	..	..	2	117
Bangladesh (c,d)	101	..	..	25	1,077
Barbados	10	0	10	288	..
Belarus	902	841	61	1,230	2,676
Belgium	567	474	93	6,279	..
Belize	8	0	8	8	128
Benin (e)	n.a.	n.a.	n.a.	68	..
Bermuda	..	..	..	134	..
Bolivia (Plurinational State of) (b,c,d)	97	4	93	5	601
Bosnia and Herzegovina (b,c,d)	5	1	4	2	503
Botswana (d)	..	..	..	3	883
Brazil	3,411	460	2,951	1,385	23,952
Brunei Darussalam (b)	71	..	..	9	..
Bulgaria	37	28	9	104	1,158
Burkina Faso (e)	n.a.	n.a.	n.a.	34	..
Cambodia	1	0	1	..	..
Cameroon (e)	n.a.	n.a.	n.a.	409	..
Canada	22,201	2,858	19,343	13,634	166,771
Chile	1,058	150	908	351	11,163
China	359,316	263,436	95,880	279,501	1,472,374
China, Hong Kong SAR	5,963	96	5,867	924	42,306
China, Macao SAR	36	1	35	20	470
Colombia	1,003	82	921	156	7,858
Congo (e)	n.a.	n.a.	n.a.	51	..
Cook Islands	..	..	..	1	..
Costa Rica	130	1	129	13	635
Côte d'Ivoire (e)	n.a.	n.a.	n.a.	323	..
Croatia	45	9	36	53	5,621
Cuba (b,c,d)	94	17	77	133	927
Curaçao	..	..	..	7	..
Cyprus	..	..	..	207	114
Czech Republic	749	576	173	1,104	6,853
Democratic People's Republic of Korea	..	..	..	9	..
Denmark	430	297	133	5,481	52,321
Dominican Republic	24	1	23	4	311
Ecuador	..	..	..	5	..
Egypt (b,c,d)	415	66	349	130	4,012
El Salvador (d)	35	0	35	1	1,642
Eritrea	..	..	..	1	..
Estonia	24	18	6	122	934
Ethiopia	..	..	..	17	..
Eurasian Patent Organization	1,757	268	1,489	n.a.	n.a.
European Patent Office	68,431	36,550	31,881	n.a.	n.a.
Finland	931	824	107	6,837	48,242
France	12,699	11,043	1,656	43,676	520,069

Name	Grants by office			Equivalent grants by origin	In force by office
	Total	Resident	Non-resident	Total (a)	Total
Gabon (e)	n.a.	n.a.	n.a.	17	..
Georgia	206	61	145	63	1,650
Germany	14,795	10,411	4,384	86,537	602,013
Ghana	..	..	..	19	..
Greece	262	255	7	480	3,172
Grenada	9	0	9	..	..
Guatemala	51	1	50	4	867
Guinea (e)	n.a.	n.a.	n.a.	17	..
Guyana (d)	..	..	..	1	1,442
Honduras	69	0	69	..	..
Hungary	365	128	237	628	4,278
Iceland	17	2	15	150	502
India	6,022	822	5,200	5,802	47,113
Indonesia	1,911	..	..	45	..
Iran (Islamic Republic of) (c)	2,936	..	..	2,923	..
Iraq	312	197	115	199	..
Ireland	126	87	39	2,417	118,273
Israel	4,492	723	3,769	6,396	28,666
Italy (d)	7,153	6,331	822	18,739	63,071
Jamaica	74	6	68	25	375
Japan	189,358	146,749	42,609	270,802	1,946,568
Jordan	83	15	68	30	427
Kazakhstan	1,504	1,334	170	1,534	3,934
Kenya	24	1	23	25	..
Kuwait	..	..	..	68	..
Kyrgyzstan	111	106	5	124	347
Latvia	147	140	7	223	6,938
Lebanon	279	85	194	104	..
Liberia	..	..	..	1	..
Liechtenstein	..	..	..	514	..
Lithuania	133	96	37	140	530
Luxembourg	153	100	53	1,589	19,040
Madagascar	23	5	18	5	414
Malawi	1	1	0	2	..
Malaysia	2,877	344	2,533	909	23,538
Mali (e)	n.a.	n.a.	n.a.	105	..
Malta	10	8	2	105	428
Marshall Islands	..	..	..	2	..
Mauritius	..	..	..	28	..
Mexico	9,338	410	8,928	872	106,648
Monaco	8	5	3	62	63,777
Mongolia	234	97	137	99	..
Montenegro	10	6	4	8	2,372
Morocco	..	..	..	41	..
Namibia	..	..	..	1	..
Nepal (d)	74	..	..	1	72
Netherlands (d)	1,377	1,165	212	16,741	12,518
New Zealand	4,259	344	3,915	1,143	40,802
Nicaragua (b,c,d)	62	0	62	1	387
Nigeria	..	..	..	1	..
Norway	1,446	458	988	3,043	23,087
Oman	..	..	..	4	..
Pakistan (d)	131	7	124	26	185
Panama (c)	78	..	..	45	1,684
Papua New Guinea	70	0	70	..	71
Paraguay	..	..	..	7	..
Patent Office of the Cooperation Council for the Arab States of the Gulf (b,c,d)	503	31	472	n.a.	16,586
Peru	362	19	343	41	2,643
Philippines	2,200	30	2,170	134	..

Name	Grants by office			Equivalent grants by origin	In force by office
	Total	Resident	Non-resident	Total (a)	Total
Poland	2,572	2,404	168	3,153	57,951
Portugal (d)	76	69	7	372	35,561
Qatar	..	..	..	30	..
Republic of Korea	101,873	76,319	25,554	109,101	912,442
Republic of Moldova (c)	61	..	..	100	348
Romania	305	291	14	397	17,089
Russian Federation	34,706	22,560	12,146	24,998	218,974
Rwanda	..	..	..	..	108
Saint Kitts and Nevis	..	..	..	3	..
Saint Vincent and the Grenadines	..	..	..	43	..
Samoa	64	0	64	14	64
San Marino	..	..	..	19	..
Saudi Arabia	763	163	600	786	2,664
Senegal (e)	n.a.	n.a.	n.a.	204	..
Serbia	86	62	24	82	3,329
Seychelles	..	..	..	35	..
Singapore	7,054	446	6,608	2,727	46,906
Slovakia	82	54	28	161	1,995
Slovenia	..	..	..	298	..
South Africa	4,499	453	4,046	1,190	58,624
Spain	2,561	2,313	248	5,655	38,891
Sri Lanka	262	38	224	50	..
Sudan (b,c)	8	0	8	..	..
Swaziland	2	0	2	33	..
Sweden	889	729	160	12,777	92,607
Switzerland	687	409	278	21,932	162,761
Syrian Arab Republic	14	14	0	17	..
T F Y R of Macedonia	..	..	..	2	..
Tajikistan	..	..	..	..	237
Thailand (d)	1,364	83	1,281	240	11,623
Togo (e)	n.a.	n.a.	n.a.	34	..
Trinidad and Tobago	33	0	33	11	..
Tunisia	589	..	..	11	..
Turkey	1,723	1,567	156	2,425	54,673
Turkmenistan	..	..	..	1	..
Uganda (b,c,d)	1	1	0	1	26
Ukraine	3,014	1,516	1,498	1,868	25,737
United Arab Emirates	177	0	177	94	653
United Kingdom	5,464	2,838	2,626	21,335	458,422
United Republic of Tanzania	..	..	..	1	..
United States of America	298,407	140,969	157,438	255,812	2,644,697
Uruguay	19	4	15	23	606
Uzbekistan	153	94	59	118	1,081
Venezuela (Bolivarian Republic of)	..	..	..	49	..
Viet Nam	1,388	63	1,325	88	16,149
Yemen	15	2	13	2	..
Zambia (b,c,d)	23	6	17	7	4,161
Zimbabwe	..	..	..	72	..
Others/Unknown	..	..	..	17,629	..
Total (2015 estimates)	**1,241,100**	**755,800**	**485,300**	**n.a.**	**10,618,000**

(a) Equivalent grants by origin data are incomplete because some offices do not report by origin.
(b) 2014 data are reported for grants by office.
(c) 2014 data are reported for equivalent grants by origin.
(d) 2014 data are reported for patents in force.
(e) The African Intellectual Property Organization (OAPI) is the competent office for issuing grants.
n.a. is not applicable
.. indicates not available

Source: WIPO Statistics Database, October 2016.

A62 Utility model applications and grants by office and origin, 2015

	Applications by office			Equivalent applications by origin	Grants by office		
Name	Total	Resident	Non-resident	Total (a)	Total	Resident	Non-resident
Albania	1	0	1	..	1	0	1
Andorra	..	..	..	2	..	..	..
Argentina	154	132	22	141	47	42	5
Armenia	55	54	1	58	50	44	6
Australia	1,828	1,108	720	1,204	1,815	1,026	789
Austria	754	567	187	989	604	429	175
Azerbaijan	7	0	7	2	13	10	3
Barbados	..	..	..	5	..	..	..
Belarus	455	381	74	465	379	331	48
Belgium	..	..	..	86	..	..	..
Belize	..	..	..	17	..	..	..
Bermuda	..	..	..	4	..	..	..
Bolivia (Plurinational State of) (b,c)	14	11	3	11	..	..	..
Botswana (b,c)	1	1	0	1	..	..	..
Brazil	2,718	2,606	112	2,637	479	466	13
Brunei Darussalam	..	..	..	1	..	..	..
Bulgaria	272	263	9	271	160	149	11
Cambodia	7	0	7	..	..	..	..
Canada	..	..	..	65	..	..	..
Chad	..	..	..	1	..	..	..
Chile	106	84	22	91	32	24	8
China	1,127,577	1,119,714	7,863	1,121,297	876,217	868,734	7,483
China, Hong Kong SAR	702	439	263	532	495	272	223
China, Macao SAR	20	4	16	42	15	1	14
Colombia	217	193	24	204	92	77	15
Costa Rica	12	8	4	9	1	1	0
Croatia	75	73	2	73	66	60	6
Cuba (b,c)	5	5	0	5	..	..	..
Cyprus	..	..	..	145	..	..	..
Czech Republic	1,446	1,364	82	1,505	1,356	1,296	60
Democratic People's Republic of Korea	..	..	..	1	..	..	..
Denmark	158	120	38	191	147	110	37
Dominican Republic	14	10	4	10	18	9	9
El Salvador	1	0	1	..	13	12	1
Estonia	87	76	11	83	53	45	8
Finland	436	409	27	579	353	323	30
France	460	205	255	617	..	..	..
Georgia	68	61	7	63	41	39	2
Germany	14,274	10,358	3,916	11,366	12,254	8,600	3,654
Greece	16	10	6	17	30	24	6
Guatemala	13	11	2	12	1	1	0
Honduras	3	3	0	3	3	0	3
Hungary	249	218	31	234	92	76	16
Iceland	..	..	..	2	..	..	..
India	..	..	..	34	..	..	..
Indonesia	410	290	120	290	54	42	12
Ireland	..	..	..	22	..	..	..
Israel	..	..	..	96	..	..	..
Italy	2,915	..	..	346	1,797	1,643	154
Japan	6,860	5,213	1,647	8,300	6,695	5,098	1,597
Kazakhstan	530	446	84	463	166	102	64
Kenya	115	114	1	114	22	22	0
Kyrgyzstan	17	14	3	14	13	12	1
Latvia	..	..	..	7	..	..	..
Lebanon	..	..	..	2	..	..	..
Liechtenstein	..	..	..	26	..	..	..
Lithuania	..	..	..	1	..	..	..
Luxembourg	..	..	..	70	..	..	..
Malaysia	180	103	77	136	31	16	15

	Applications by office			Equivalent applications by origin	Grants by office		
Name	**Total**	**Resident**	**Non-resident**	**Total (a)**	**Total**	**Resident**	**Non-resident**
Mali	..	..	..	2	..	..	..
Malta	..	..	..	17	..	..	..
Marshall Islands	..	..	..	3	..	..	..
Mexico	661	577	84	602	215	186	29
Monaco	..	..	..	4	..	..	..
Mongolia	149	149	0	149	137	136	1
Montenegro	..	..	..	1	..	..	..
Netherlands	..	..	..	241	..	..	..
New Zealand	..	..	..	34	..	..	..
Norway	..	..	..	17	..	..	..
Pakistan	..	..	..	1	..	..	..
Panama	8	5	3	16	4	3	1
Paraguay	..	..	..	1	..	..	..
Peru	215	197	18	203	75	63	12
Philippines	837	789	48	802	585	543	42
Poland	1,057	994	63	1,042	606	562	44
Portugal	150	117	33	123	71	45	26
Republic of Korea	8,711	8,294	417	9,095	3,253	3,073	180
Republic of Moldova	167	166	1	171	128	126	2
Romania	67	57	10	64	39	25	14
Russian Federation	11,906	11,403	503	11,672	9,008	8,390	618
Rwanda	5	5	0	5	..	..	..
Samoa	..	..	..	9	..	..	..
Saudi Arabia	..	..	..	6	..	..	..
Serbia	64	58	6	61	31	30	1
Seychelles	..	..	..	20	..	..	..
Singapore	..	..	..	116	..	..	..
Slovakia	419	373	46	433	322	261	61
Slovenia	..	..	..	3	..	..	..
South Africa	..	..	..	11	..	..	..
Spain	2,354	2,227	127	2,503	2,382	2,267	115
Swaziland	..	..	..	13	..	..	..
Sweden	..	..	..	141	..	..	..
Switzerland	..	..	..	511	..	..	..
Tajikistan	93	90	3	90	83	81	2
Thailand	2,164	2,079	85	2,104	1,560	1,492	68
Trinidad and Tobago (b,c)	1	1	0	1	..	..	..
Turkey	3,583	3,451	132	3,498	2,767	2,681	86
Uganda	..	..	..	..	1	1	0
Ukraine	8,616	8,486	130	8,663	8,153	8,035	118
United Arab Emirates	2	0	2	5	..	..	..
United Kingdom	..	..	..	244	..	..	..
United States of America	..	..	..	3,523	..	..	..
Uruguay	54	41	13	43	15	12	3
Uzbekistan	190	186	4	188	76	73	3
Venezuela (Bolivarian Republic of)	..	..	..	3	..	..	..
Viet Nam	450	310	140	314	117	86	31
Yemen (b,c,d)	2	2	0	2	1	1	0
Zambia	..	..	..	1	..	..	..
Others/Unknown	..	..	..	2,505	..	..	..
Total (2015 estimates)	**1,205,300**	**1,187,600**	**17,700**	**n.a.**	**..**	**..**	**..**

(a) Equivalent applications by origin data are incomplete because some offices do not report by origin.
(b) 2014 data are reported for applications by office.
(c) 2014 data are reported for equivalent applications by origin.
(d) 2014 data are reported for grants by office.
n.a. is not applicable
.. indicates not available

Source: WIPO Statistics Database, October 2016.

Trademarks

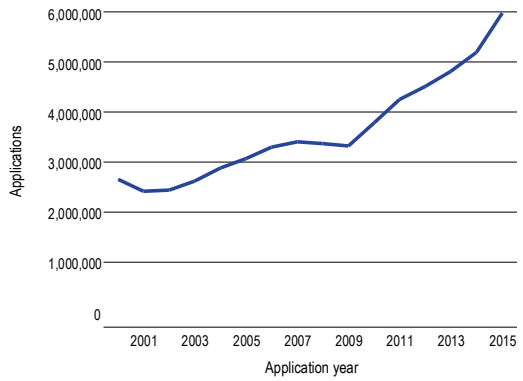
Highlights

Applications increased by 15% in 2015

An estimated 5.98 million trademark applications were filed worldwide in 2015, 15.3% more than in 2014 (figure 8), representing the highest growth rate since 2000. There are now twice as many applications being filed around the world than in 2000 – applications increased every year but three during that period, but only four years saw annual growth exceed 10%.

Trademark applications dipped in 2001 before returning to growth. After stagnating in 2007 and experiencing slight declines in 2008 and 2009, they rebounded in 2010 and have continued to increase year on year. Since 2010, the large numbers of applications filed in China have accounted for between 50% and 85% of the sharp increase in overall growth.

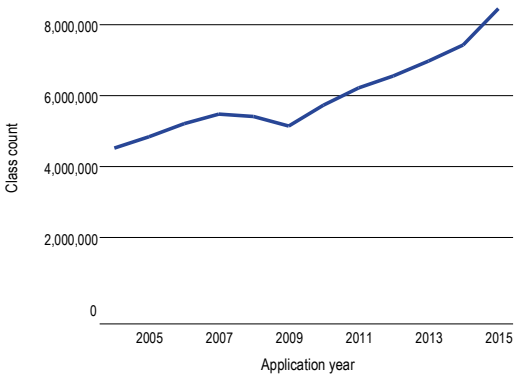
Figure 8. Trademark applications worldwide



Source: Standard figure B1.

When differences in filing systems across national and regional offices are harmonized using the application class count, trademark filing activity in 2015 still saw a double-digit increase of 13.7% on the previous year. Excluding the 2015 application class count for China, trademark filing activity grew by a more modest 7.9% in the rest of the world. The total number of classes specified in applications reached an estimated 8.45 million – an increase of 87% on the 4.52 million recorded in 2004 (figure 9).

Figure 9. Trademark application class counts worldwide



Source: Standard figure B2.

Class count

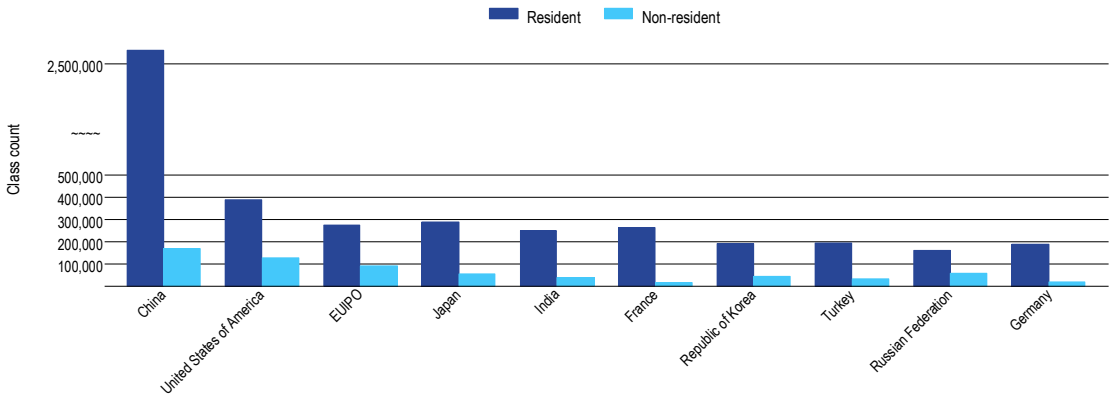
A trademark application may refer to different classes of goods or services. Many offices use the Nice Classification, an international classification of goods and services for registering trademarks and service marks. Applications received by these offices are classified in one or more of the 45 Nice classes (see *www.wipo.int/classifications/nice*). Some offices allow single-class filing only, meaning that applicants have to file a separate application for each class. Others permit multi-class filings, enabling applicants to file a single application in which a number of classes can be specified. To improve international comparisons of the numbers of applications received, it helps to compare class counts across offices. Class counts are also used to make trademark registration activity internationally comparable. This method for comparing offices began in 2004, the first year in which complete class count data were available.

Offices with the most filing activity

As with other forms of intellectual property (IP), the increase in trademark filing activity (measured in application class counts) largely reflects trademark holders seeking protection in China. In 2015, the trademark office of China accounted for 60% of the annual increase in global trademark filing activity. It was followed by the offices of Japan and India, which accounted for 10% and 5% of total growth respectively.

The office of China's class count of approximately 2.83 million was followed by a count of 517,297 at the United States Patent and Trademark Office (USPTO) (figure 10). They have been the top two offices since

Figure 10. Trademark application class counts for the top 10 offices, 2015



Source: Standard figure B10.

the early 2000s, but since 2005 China's class count has grown from nearly twice that of the United States of America (U.S.) to over five times as much. These two offices were followed by the European Union Intellectual Property Office (EUIPO; 366,383) and those of Japan (345,070) and India (289,843). The top five offices accounted for 51% all trademark filing activity in 2015, up from 35% in 2005.

Among the top 20 offices, 18 had more trademark filing activity in 2015 than in 2014, with the largest increases recorded in Japan (+43%), Italy (+32.6%), China (+27.4%), India (+21.9.%) and the Republic of Korea (+13.9%). Conversely, the offices of Turkey (-1.9%) and the Russian Federation (-8.6%) saw declines.

At most offices, trademark applications are filed mainly by residents seeking protection within their domestic jurisdiction. In 2015, residents accounted for 78% of global filing activity. In fact, domestic filing is becoming more pronounced as a share of total filing activity, with the world resident application class count having increased by almost 16.7% on the previous year; in contrast, that for non-residents increased by only 4.2%.

Due largely to the high number of resident trademark applications in China, the global non-resident share declined by almost 12 percentage points from a peak of 33.3% in 2004 to 21.8% in 2015. However, when the figures for China are excluded, the non-resident share only fell by around 7 percentage points over the same period.

Of the top 20 offices, eight had non-resident filing shares of 25% or greater, with China Hong Kong (SAR) (62.2%), Switzerland (56.3%), Canada (46.2%) and Australia (37.8%) recording the highest. The lowest non-resident shares were recorded at the offices of China (6%), France (6.2%) and Germany (9.3%). The low non-resident shares for France and Germany can be explained by the fact that many non-resident applicants file for protection in these two countries via the EUIPO.

Resident filing activity drove the double-digit growth in China, India, Japan and the Republic of Korea as well as growth at most of the other top 20 offices, whereas non-resident filing activity accounted for most of the total growth in Canada and all the growth in China Hong Kong (SAR). In the Russian Federation and Turkey, declines in filing activity can be attributed mainly to a drop in resident applications.

The top 20 offices in 2015 were the same as in 2014, but with a somewhat different ranking. For the first time, India ranked among the top five offices in trademark filing activity, moving up from seventh position in 2014 to fifth in 2015. The Republic of Korea also moved up two spots, to number seven. Conversely, France dropped down the ranking from fourth position in 2014 to sixth in 2015, and the Russian Federation saw its rank decrease from sixth to ninth.

Among offices located in low- and middle-income countries, annual growth in 2015 was particularly high in Rwanda (+44.7%), Jamaica (+42.8%), Namibia (+37.4%) and Zimbabwe (+35.1%). The offices of Colombia, Costa Rica, Thailand, Ukraine and Viet Nam saw double-digit growth of 10-15%.

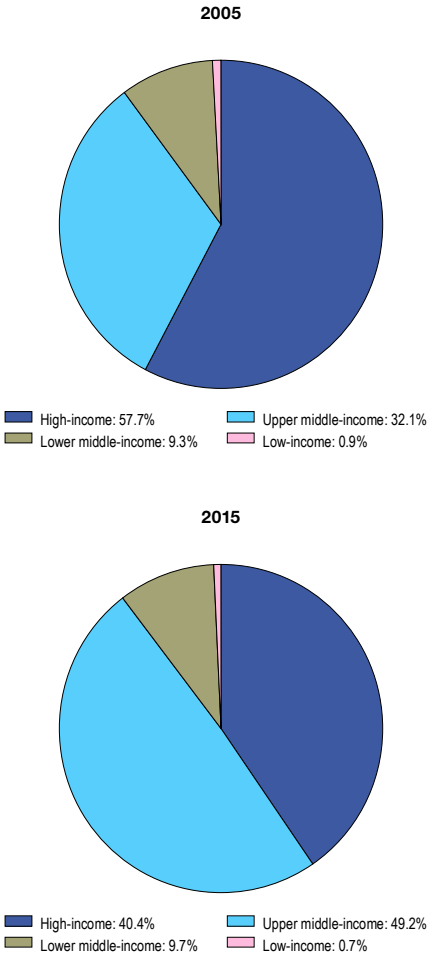
Total application class counts at offices of high-income economies grew only slightly (+2%) between 2005 and

2015, lower than the average annual growth rates for all other income groups.

While almost three-quarters of the top 20 offices are in high-income economies, five are in upper middle-income countries (Brazil, China, Mexico, the Russian Federation and Turkey) and one is in a lower middle-income country (India). Offices of high-income countries received 40.4% of all filing activity worldwide, down from 57.7% in 2005. In contrast, the share accounted for by offices of upper middle-income countries rose from 32.1% in 2005 to 49.2% in 2015, with high average annual growth of 10.3% (figure 11). When China's statistics are removed from the upper middle-income group, the class count for the other upper middle-income countries still grew between 2005 and 2015, but at a lower rate of 4.2%. However, their combined share of the world total actually decreased from 18.2% to 15.7%. The shares of total filing activity for lower middle-income (9.7% in 2015) and low-income countries (0.7%) did not change much during this period.

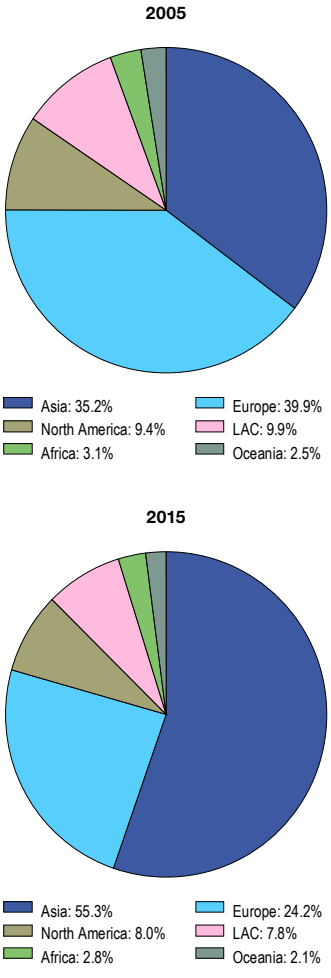
Nine of the top 20 offices in 2015 were located in Europe, and six in Asia. Offices in Asia accounted for 55.3% of all trademark filing activity, up from 35.2% in 2005. This in part explains the decline in overall shares of the other five geographical regions in the same period (figure 12). Offices in Europe accounted for 24.2% of the world total in 2015, followed by North America (8%) and Latin America & the Caribbean (LAC; 7.8%) – holding almost equal shares – and by Africa (2.8%) and Oceania (2.1%).

Figure 11. Trademark application class counts by income group



Source: Standard figure B7.

Figure 12. Trademark application class counts by region

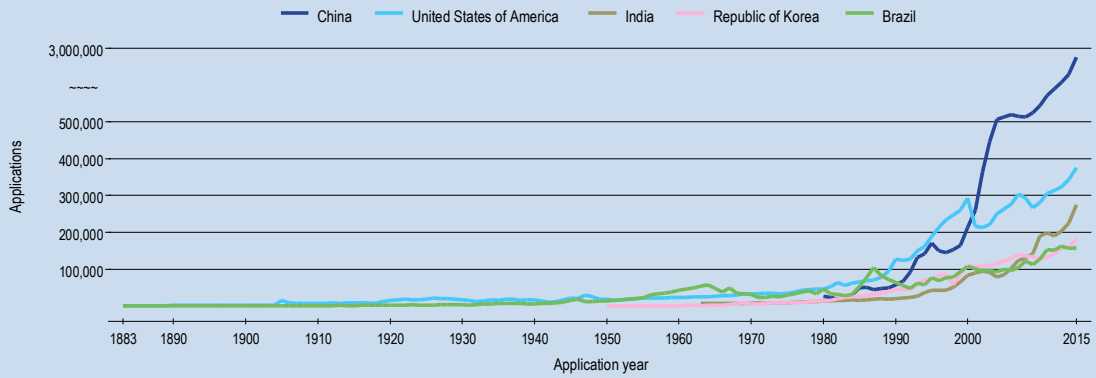


Source: Standard figure B8.

Trademark filings since 1883

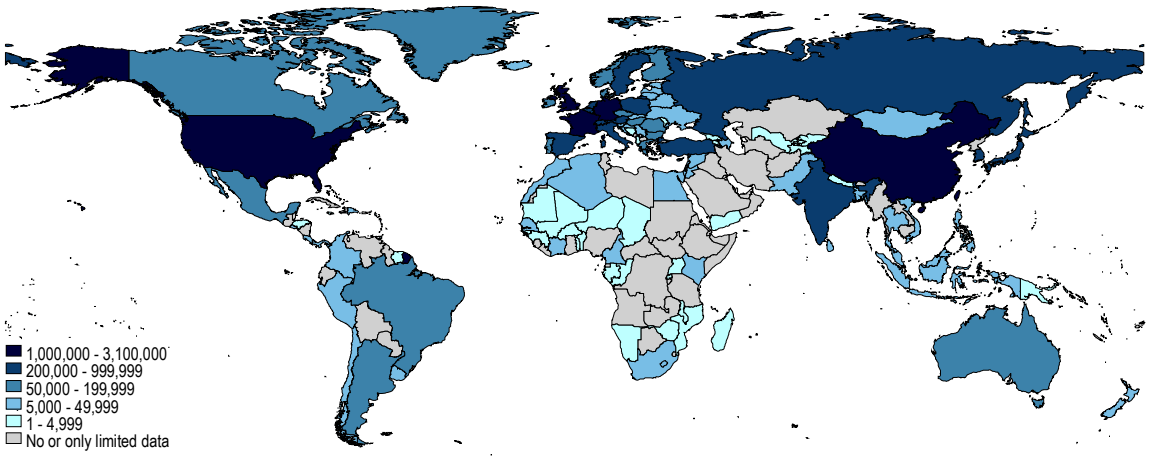
Trademark filings were fairly low and stable until the mid-1980s. Filings at China's office took off in the 1990s, and in 2001 they exceeded those received by the USPTO, making China's office the largest in terms of applications received. Nevertheless, filings at the USPTO have doubled since the mid-1990s despite declines at the end of the dot-com era in 2001 and 2002 and during the financial crisis in 2008 and 2009. Having remained below 100,000 until 2006, India's trademark filings are now rapidly approaching 300,000.

Trend in trademark applications for the top five offices



Source: Standard figure B9

Map 2. Equivalent trademark application class counts by origin, 2015



Source: Standard map B16.

Equivalent application class count

Applications at some regional IP offices are equivalent to multiple applications in the countries that are members of the organizations establishing these offices. For example, to calculate the number of equivalent applications for the EUIPO, each application is multiplied by the corresponding number of EU member states. So an application filed with the EUIPO by an applicant residing outside the EU is counted as 28 applications abroad – equivalent to the membership of the EU, which in 2015 numbered 28 countries. An application filed by an applicant residing in an EU country is counted as 1 resident application and 27 applications abroad. The same multiplier is applied to the classes specified in these applications. The equivalent application class count concept is used for reporting data by origin.

German applicants filed the most applications abroad

Trademark applications received by offices from resident and non-resident applicants are referred to as office data, whereas applications filed by applicants at a national/regional office (resident applications) or at foreign offices (applications abroad) are referred to as origin data. Here, trademark statistics based on the origin of the residence of the applicant are reported to complement the picture of trademark filing activity worldwide.

When considering filing activity abroad based on equivalent class count, applicants from Germany seek protection for their marks outside their country more than those of any other origin, a position Germany has held since 2006. In 2015, German filing activity abroad reached an equivalent application class count of about 2.01 million, followed by applicants from the U.S. (1,284,405), the U.K. (1,200,838) and Italy (810,024).[1] The high equivalent class counts for applications abroad from these origins can be explained not only by their high application class counts at numerous offices abroad, but also their frequent use of the EUIPO – with its multiplier effect – to seek protection within the EU as a whole.

Looking at absolute counts – and so removing the EUIPO's multiplier effect – 96% of all filing activity (application class counts) by China-based applicants was in China alone, with only 4% attributed to those seeking protection abroad. These shares were similar in relation to resident filing and filing abroad by applicants from Brazil, India and Indonesia. Applicants residing in Argentina, Egypt, the Philippines, Uganda and Viet Nam also dedicated less than 10% of their trademark filing activity to seeking protection abroad.

Among the top 20 origins, about 72% of filing activity by Switzerland-based applicants occurred outside their country. That high share of applications abroad as a proportion of total filing activity was followed by that of applicants from the U.S. (46%) and Germany (40%).

Applicants from the upper middle-income countries Panama (45%) and Serbia (49%) sought protection abroad for a considerable share of their trademark filing activity. For the upper middle-income country Malaysia and the lower-middle income country the Republic of Moldova, the share was roughly a quarter.

When deciding where to seek trademark protection, applicants consider such factors as market size and geographical proximity. For example, almost a third of all non-resident filing activity in Brazil in 2015 came from U.S. applicants, about one-tenth from applicants in Germany, and 6% from applicants in France (figure 13). Applicants from China (13%) and the U.K. (12%) accounted for the largest shares of non-resident trademark filing activity in the U.S, followed by applicants from Germany (10%). In China, the three origins accounting for the largest shares of non-resident filing activity were the U.S. (21%), the Republic of Korea (11%) and Japan (9%).

In 2015, applicants from China surpassed those from Switzerland to become the most active foreign filers in France, accounting for 12% of application class counts in filings the French office received from abroad.

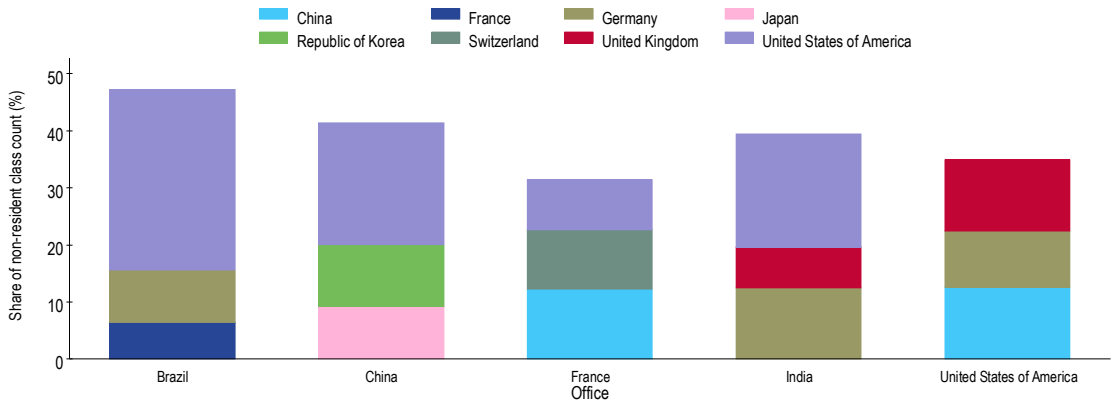
Adjusting for GDP and population

Differences in trademark filing activity across countries may reflect both the size of their economies and their level of economic development. To compare trademark filing intensity across countries, it helps to measure resident application class counts relative to GDP or population level.

When resident trademark applications are viewed as class counts and adjusted by GDP, countries with a lower number of classes specified in resident applications (such as Portugal and Latvia) may rank higher than some countries that otherwise show higher class counts (for example Australia and Germany). Of se-

1. Equivalent application class counts differ from absolute class counts, which are presented in figure B17 and do not take into the account the multiplying effect of regional offices.

Figure 13: Share of total non-resident filing activity by origin at selected offices



Source: Standard figure B21.

lected origins, China (14,469), followed by the Republic of Korea (11,001), Portugal (10,024) and Latvia (7,943) exhibited among the highest resident application class count-to-GDP ratios in 2015 (figure 14). Portugal and the U.K. saw particularly large increases in resident application class count per unit of GDP between 2005 and 2015. In the case of Portugal, this was due to resident filing activity doubling over this ten-year period, coupled with a decrease in GDP of 1.7%. As for the U.K., the increase in the ratio was largely due to an increase in resident filing activity, which in 2015 was two-and-half times the level recorded in 2005. In 2015, Madagascar and Panama each had a ratio of about 6,000 even though Panama residents' filing activity was over twice that of residents of Madagascar.

The data reflecting application class count per million population present a somewhat different picture. Switzerland – with a population of 8.3 million – reported a resident application class count of 4,652 per million, the most intensive among selected origins. The Republic of Korea (3,783), Australia (3,397) and Germany (3,173) also ranked high. China and Spain had a similar ratio of about 2,000 each, while the ratio for Costa Rica and the U.S. was about 1,200. (See standard figure B30.)

Which classes and industries saw the most filing activity?

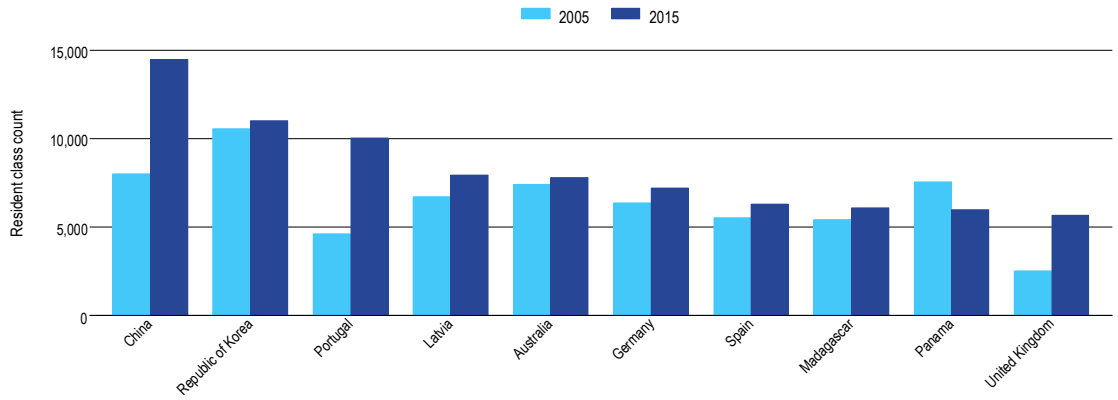
Nice Classification statistics offer insights into the relative importance of different goods and services. Service class 35 (advertising, business management, business administration and office functions) has been number one since 2004 – when complete class counts first became available – and in 2015 was represented in 10.5% of all reported trademark filing activity by class. Nice Class 35 is followed by goods class 9 (7.1%), which includes scientific, photographic, measuring instruments, recording equipment, computers and software; service class 41 (5.9%), which refers to education, entertainment and sporting activities; and goods class 25 (5.7%), which includes articles of clothing.

The 11 service-related classes accounted for about 38% of all Nice classes specified in applications filed in 2015, up from 30% in 2004. Services classes accounted for about a third of all filing activity in China, the Russian Federation and Viet Nam, but more than half of the total in the Benelux Office for Intellectual Property (BOIP) and the offices of France and Spain.

It is useful to group the 45 Nice classes into 10 industry sectors. Agriculture, research & technology, and business services were the top three sectors in 2015, each accounting for between 13% and 17% of global trademark filing activity. In contrast, industries relating to chemicals (2.5%) and transportation (5.2%) accounted for the smallest shares. The distribution of total trademark applications across industries has remained stable for more than a decade.

Consistent with the global top industry in terms of trademark filing activity, agriculture was also the top sector at the offices of China, the Republic of Korea and the Russian Federation. At the EUIPO and the offices of France, Germany, Japan and the U.S., the top

Figure 14. Resident trademark application class count per 100 billion USD GDP for selected origins



Source: Standard figure B29.

industry sector was research & technology, with leisure & education and business services ranking second or third. In Turkey, business services topped the list of industry sectors. Among the top 10, only the offices of India and the Republic of Korea listed health among their top three industry sectors for trademark filing.

Trademark registrations approached 4.5 million

After examination, an office may decide to register a trademark. The number of registrations issued can fluctuate greatly from year to year, due in part to the resources that offices dedicate to examining trademark applications. For this reason, one should not compare the number of applications filed at an office in a given year with the number of registrations issued by that office in the same year.

The estimated 4.44 million trademark registrations recorded worldwide in 2015 represented a considerable increase of 26.6%, or about 930,000, on the previous year's total.

Just as class counts make application activity internationally comparable, so they also permit more meaningful comparison of registrations. In 2015, an estimated 6.22 million classes were specified in trademark registrations – a 21% increase on 2014 and the second consecutive year of double-digit growth. China accounted for 79% of this annual increase, while the EUIPO and the offices of the Republic of Korea and the U.S. each accounted for 2-3% of total growth. In 2015, China's office saw growth of 62.3% in trademark registration activity and was responsible for more than a third of all registration activity worldwide – measured in class counts – so a big change at this office can have a large impact on global growth. When China's registration activity is excluded from global totals, growth in 2015 was a much more modest 5.9%.

In 2015, China's office registered trademarks in which about 2.23 million classes were specified, followed distantly by the EUIPO (321,165), the USPTO (306,504) and the office of Turkey (192,950).

Along with the very high annual growth in China, several other offices among the top 20 experienced large increases in registration activity, including Canada (+28.3%), India (+21.7%) and the Republic of Korea (+18.9%).

Globally, 27% of the total registration class count in 2015 was attributed to non-residents. But eight of the top 20 offices reported lower shares than this, in particular China, Germany, Italy and Spain where non-residents accounted for between 7% and 12% only of registration activity. China Hong Kong (SAR), Switzerland and Australia had non-resident shares of 50% or more.

Many offices of EU countries – including the BOIP – have witnessed decreases in filing and registration activity in recent years. This is due in part to the alternative offered by the EUIPO, which provides a route to seek protection for trademarks not only in individual EU member countries, but in the EU as a whole.

Active trademarks increased by 8.5%

Unlike most forms of IP, trademarks can be maintained indefinitely by payment of renewal fees at defined time intervals. In 2015, there were an estimated 36.5 million active trademark registrations at 130 offices worldwide, representing an increase of 8.5% on 2014.

Once again, the office of China accounted for the most trademark registrations in force in 2015, with about 10.34 million – a 23.3% increase on 2014. It was followed by the USPTO (2.02 million) and the offices of Japan (1.83 million) and India (1.04 million). The office the Republic of Korea (1.02 million) and the EUIPO (964,185) also had high numbers of active trademarks. There were between 923,000 and 965,000 registrations in force at the EUIPO and at each of the offices of Germany and Mexico.

At slightly more than 800,000, Argentina edged in front of Spain's approximately 788,000 active trademark registrations to rank ninth, just after Mexico. Like China, the offices of the Republic of Korea and Turkey saw double-digit one-year growth. The EUIPO (-6.4%) and the offices of Germany (-0.6%) and Spain (-0.8%), however, saw decreases.

About 11.9 million trademark registrations that were in force at 62 offices in 2015 can be distributed according to the year in which they were initially registered. This represents 53% of the approximately 22.3 million trademark registrations recorded at these offices between 1982 and 2015.

Sixteen percent of trademarks registered in 1982 were still in force in 2015, reflecting the enduring value of marks. For those registered in 2005 and later, the percentage rises above 50%. Half these 11.9 million have been registered since 2008.

Use of the Madrid route continued to grow

To obtain trademark protection in multiple countries or jurisdictions, applicants can either file their applications directly at each individual office – the Paris route – or file an application for international registration through the Madrid System: the Madrid route (see the glossary). In addition to the increased use of the Madrid System that took place in 2015, the System also continued to grow geographically, with four new members joining in 2015, Cambodia, Algeria, the Gambia and Lao People's Democratic Republic.

Madrid international applications totaled 48,910 in 2015, up 0.9% on 2014, marking the sixth consecutive year of growth and, once again, the highest number of international applications ever filed. In fact, since 2000, the number of applications has increased in all but three years, each coinciding with economic downturns in the early 2000s and 2009. This prevailing growth is partly due to the expanding membership of the Madrid System and a general upward trend in trademark application volumes worldwide.

In 2015, for the second consecutive year the highest number of international applications was filed by applicants domiciled in the U.S. (7,361), up 11.2% on the previous year. They were followed by applicants from Germany (6,759) and France (4,143). Together, more than one-third of all international applications came from these three countries, which have been the top three origins of Madrid applications since 2005.

For the fifth consecutive year, pharmaceutical company Novartis of Switzerland was the most active user of the Madrid System, filing 193 international applications in 2015. German retailer Lidl filed 142, making it the second largest applicant, followed by French cosmetics and beauty company L'Oréal (130).

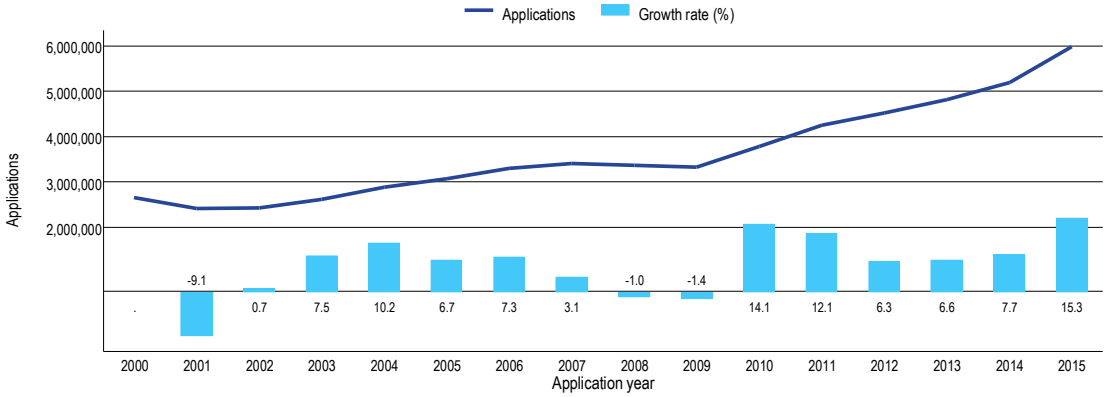
Between 2004 and 2015, applicants for international registrations accounted for between 56% and 68% of all non-resident trademark filing activity emanating from Madrid member jurisdictions at IP offices of all Madrid members combined.

For many Madrid member offices, over half of their non-resident trademark filing activity (application class counts) is received through the Madrid route. In 2015, this was the case for the offices of India (64.4%), Japan (57.8%), the Russian Federation (64.9%), Switzerland (76.5%) and Turkey (69.5%), to name a few. The EUIPO (25.9%) and the offices of China (31.2%) and the U.S. (38.5%), however, received comparatively lower shares of total non-resident filing activity via the Madrid route. For further information and statistics, see the *Madrid Yearly Review, 2016*.

Standard figures and tables

Trademark applications and registrations worldwide

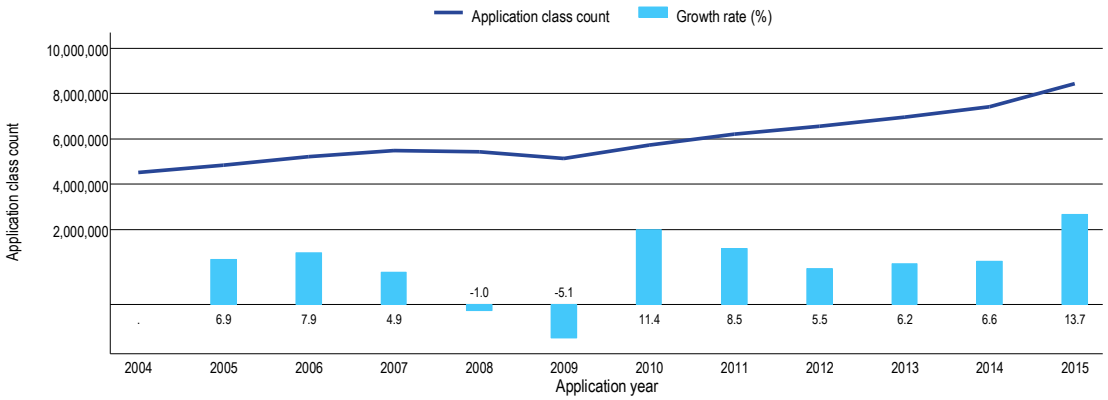
B1 Trend in trademark applications worldwide



Note: World totals are WIPO estimates using data covering 161 IP offices. These totals include the numbers of applications filed directly with national and regional offices (the "Paris route") as well as the numbers of designations received by offices via the Madrid System (where applicable).

Source: WIPO Statistics Database, October 2016.

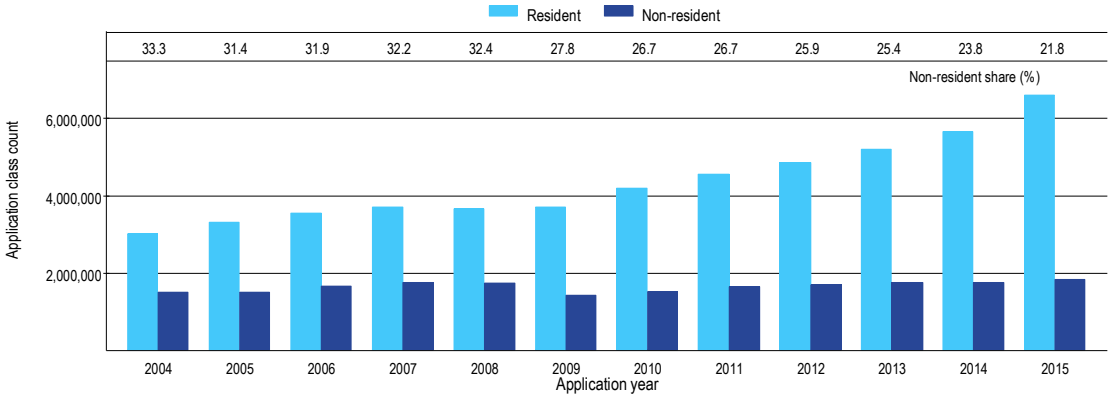
B2 Trend in trademark application class counts worldwide



Note: World totals are WIPO estimates using data covering 159 IP offices. These totals include class counts in applications filed directly with national and regional offices (the "Paris route") as well as class counts in designations received by offices via the Madrid System (where applicable). See the glossary for the definition of class count.

Source: WIPO Statistics Database, October 2016.

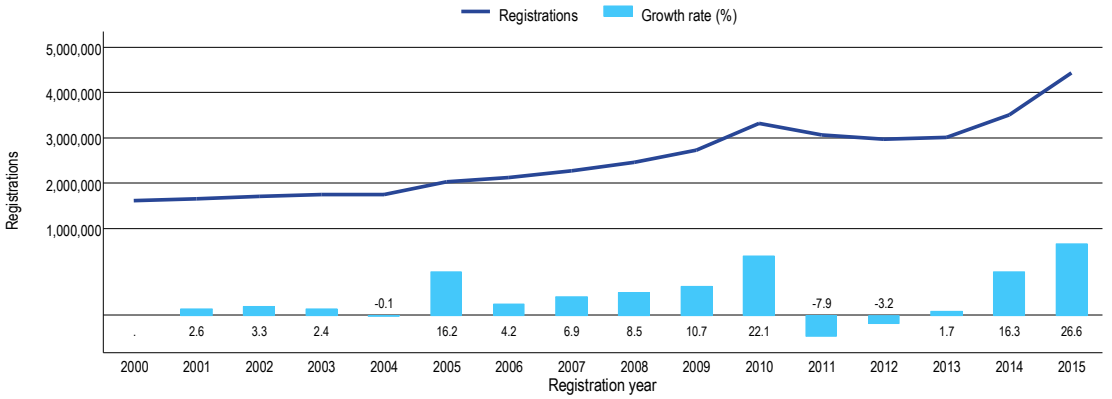
B3 Resident and non-resident trademark application class counts worldwide



Note: World totals are WIPO estimates using data covering 159 IP offices. These totals include class counts in applications filed directly with national and regional offices (the "Paris route") as well as class counts in designations received by offices via the Madrid System (where applicable). See the glossary for definitions of class count and for resident and non-resident.

Source: WIPO Statistics Database, October 2016.

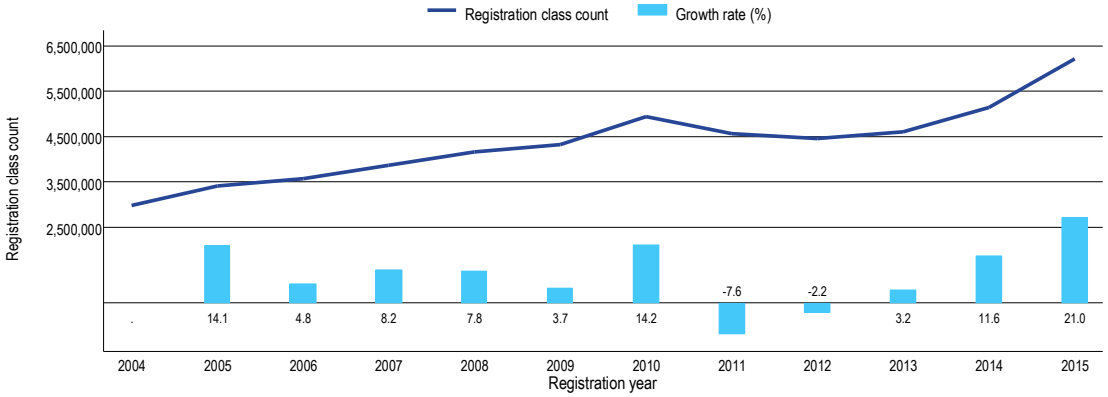
B4 Trend in trademark registrations worldwide



Note: World totals are WIPO estimates using data covering 160 IP offices. These totals include the numbers of registrations issued by national and regional offices for applications filed directly with offices (the "Paris route") as well as for designations received by offices via the Madrid System (where applicable).

Source: WIPO Statistics Database, October 2016.

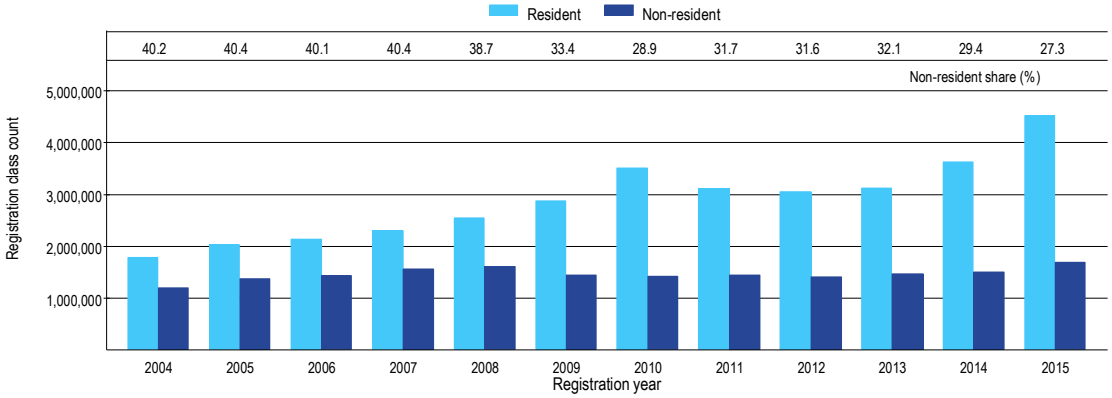
B5 Trend in trademark registration class counts worldwide



Note: World totals are WIPO estimates using data covering 158 IP offices. These totals include class counts in registrations issued by national and regional offices for applications filed directly with offices (the "Paris route") as well as for designations received by offices via the Madrid System (where applicable). See the glossary for the definition of class count.

Source: WIPO Statistics Database, October 2016.

B6 Resident and non-resident trademark registration class counts worldwide



Note: World totals are WIPO estimates using data covering 158 IP offices. These totals include class counts in registrations issued by national and regional offices for applications filed directly with offices (the "Paris route") as well as for designations received by offices via the Madrid System (where applicable). See the glossary for definitions of class count and for resident and non-resident.

Source: WIPO Statistics Database, October 2016.

Trademark applications and registrations by office

B7 Trademark application class counts by income group

	Application class count		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
High-income	2,791,900	3,414,300	68.7	73.0	57.7	40.4	2.0
Upper middle-income	1,553,400	4,155,700	72.5	85.3	32.1	49.2	10.3
...Upper middle-income without China	*878,300*	*1,327,400*	*60.6*	*66.6*	*18.2*	*15.7*	*4.2*
Lower middle-income	449,300	815,800	57.0	66.0	9.3	9.7	6.1
Low-income	41,900	59,500	46.7	44.2	0.9	0.7	3.6
World	**4,836,500**	**8,445,300**	**68.6**	**78.2**	**100.0**	**100.0**	**5.7**

Note: Totals by income group are WIPO estimates using data covering 159 IP offices. Each category includes the following number of offices: high-income (57), upper middle-income (45), lower middle-income (39) and low-income (18). Data for the European Union Intellectual Property Office are allocated to the high-income group because most EU member states are high-income countries. For similar reasons, data for the African Regional Intellectual Property Organization and the African Intellectual Property Organization are allocated to the low-income group. For information on income group classification, see the Data description section.

Source: WIPO Statistics Database, October 2016.

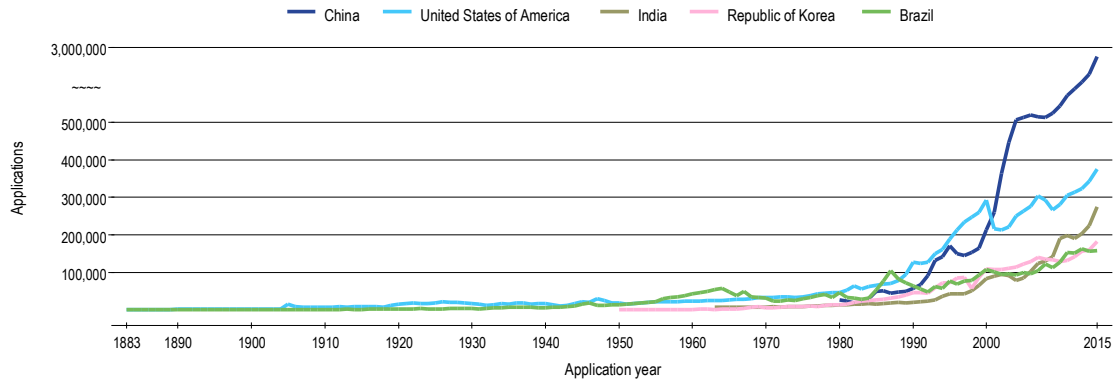
B8 Trademark application class counts by region

	Application class count		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
Africa	148,800	233,200	45.1	46.3	3.1	2.8	4.6
Asia	1,702,800	4,669,800	74.3	84.9	35.2	55.3	10.6
Europe	1,927,750	2,041,400	65.8	75.3	39.9	24.2	0.6
Latin America & the Caribbean	477,800	654,800	64.6	64.3	9.9	7.8	3.2
North America	456,450	672,400	74.2	70.1	9.4	8.0	4.0
Oceania	122,900	173,700	58.1	55.7	2.5	2.1	3.5
World	**4,836,500**	**8,445,300**	**68.6**	**78.2**	**100.0**	**100.0**	**5.7**

Note: Totals by geographical region are WIPO estimates using data covering 159 IP offices. Each region includes the following number of offices: Africa (33), Asia (46), Europe (42), Latin America & the Caribbean (32), North America (2) and Oceania (4).

Source: WIPO Statistics Database, October 2016.

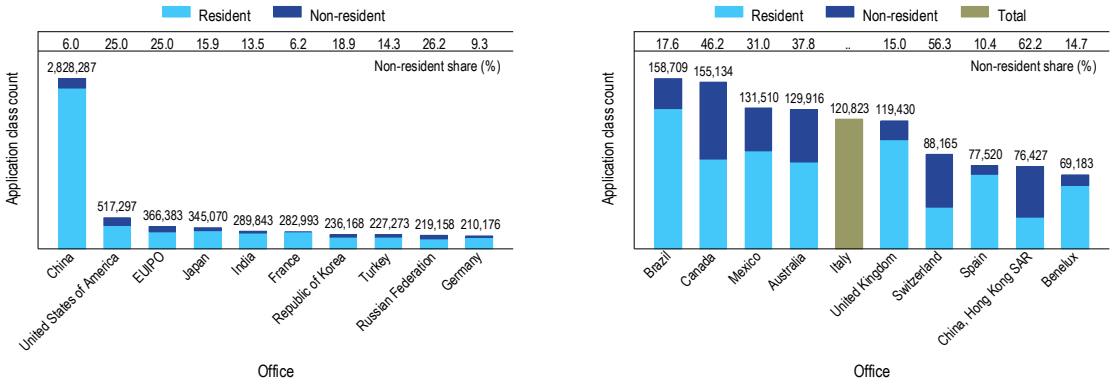
B9 Trend in trademark applications for the top five offices



Note: Data are based on the numbers of applications filed; that is, differences between single-class and multi-class filing systems across IP offices are not taken into account. The top five offices were selected based on their 2015 totals.

Source: WIPO Statistics Database, October 2016.

B10 Trademark application class counts for the top 20 offices, 2015

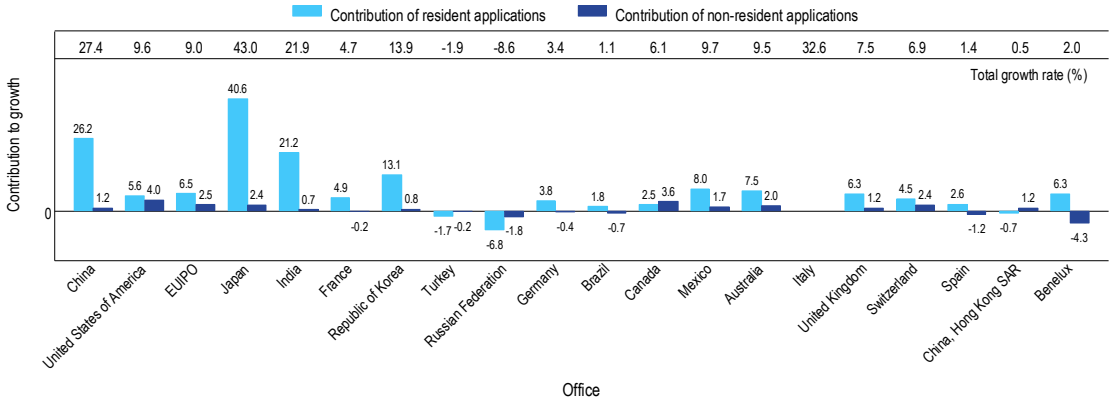


.. indicates not available.

Note: EUIPO is the European Union Intellectual Property Office. For the office of Italy, only an aggregate total is provided as no breakdown according to the residency of applicants is available.

Source: WIPO Statistics Database, October 2016.

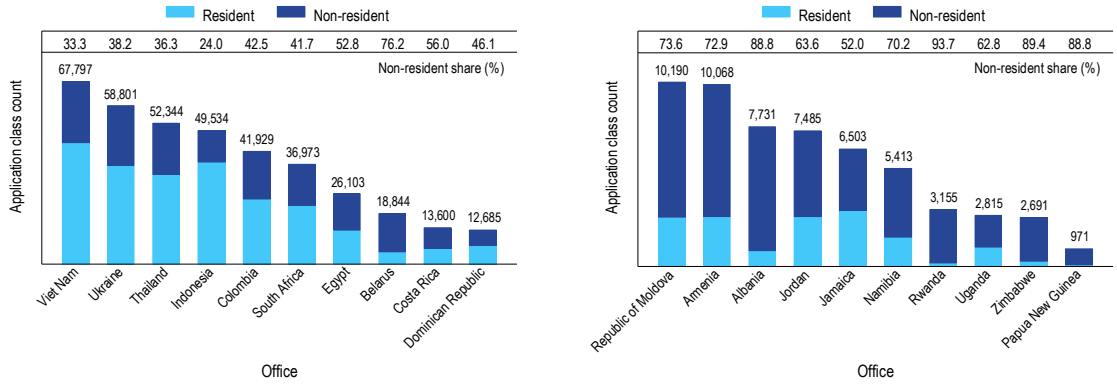
B11 Contribution of resident and non-resident application class counts to total growth for the top 20 offices, 2014-15



Note: EUIPO is the European Union Intellectual Property Office. This figure shows, for each office, total growth or decreases in application class counts broken down by the respective contributions of resident and non-resident filing activity. For example, the total number of classes specified in trademark applications in Mexico grew by 9.7%. Growth in resident applications accounted for 8 percentage points of this increase, whereas the remaining 1.7 percentage point is attributed to non-resident filing activity. Only the total growth rate can be provided for Italy due to a lack of information regarding the residency of applicants filing at this office.

Source: WIPO Statistics Database, October 2016.

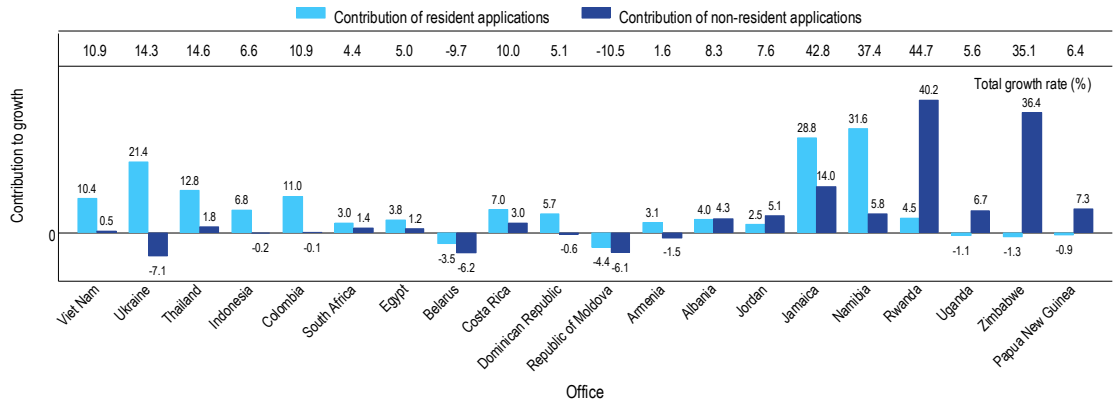
B12 Trademark application class counts for offices of selected low- and middle-income countries, 2015



Note: The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are presented in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

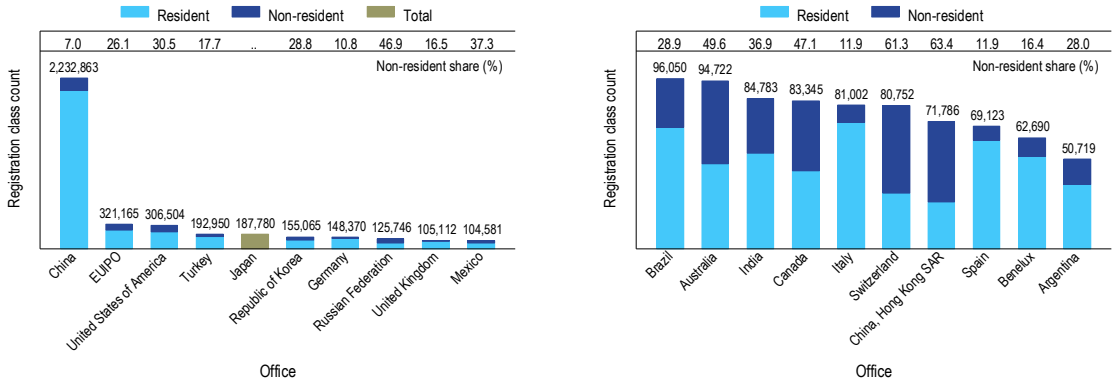
B13 Contribution of resident and non-resident application class counts to total growth for offices of selected low- and middle-income countries, 2014-15



Note: The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are presented in the statistical table at the end of this section. This figure shows, for each office, total growth or decrease in application class counts broken down by the respective contributions of resident and non-resident applications. For example, the total number of classes specified in trademark applications at the IP office of South Africa grew by 4.4%. Growth in resident applications accounted for 3 percentage points of this increase, whereas the remaining 1.4 percentage point is attributed to non-resident filing activity.

Source: WIPO Statistics Database, October 2016.

B14 Trademark registration class counts for the top 20 offices, 2015

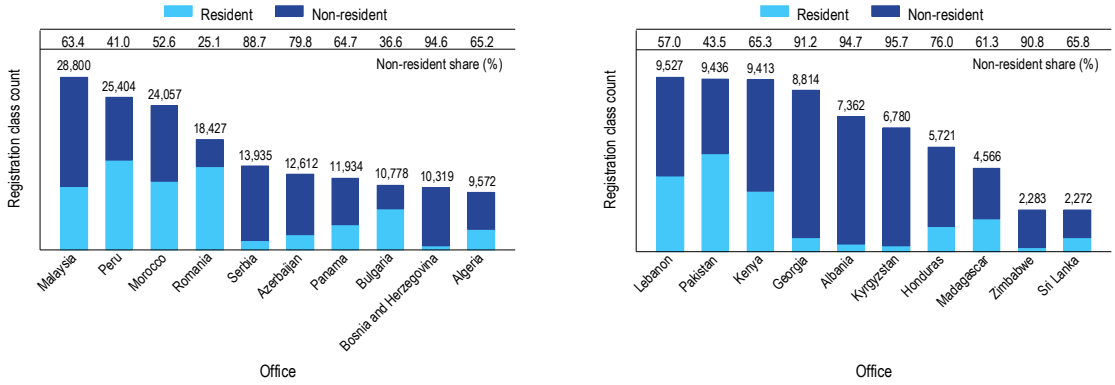


.. indicates not available.

Note: EUIPO is the European Union Intellectual Property Office. For the office of Japan, only an aggregate total is provided as no breakdown according to the residency of applicants is available. Figures for the office of France are not presented here because their data were not available. On the basis of an examination, a registration may be issued for a trademark application. The number of registrations issued may fluctuate greatly from one year to the next, in part reflecting the resources that IP offices dedicate to examining trademark applications.

Source: WIPO Statistics Database, October 2016.

B15 Trademark registration class counts for offices of selected low- and middle-income countries, 2015

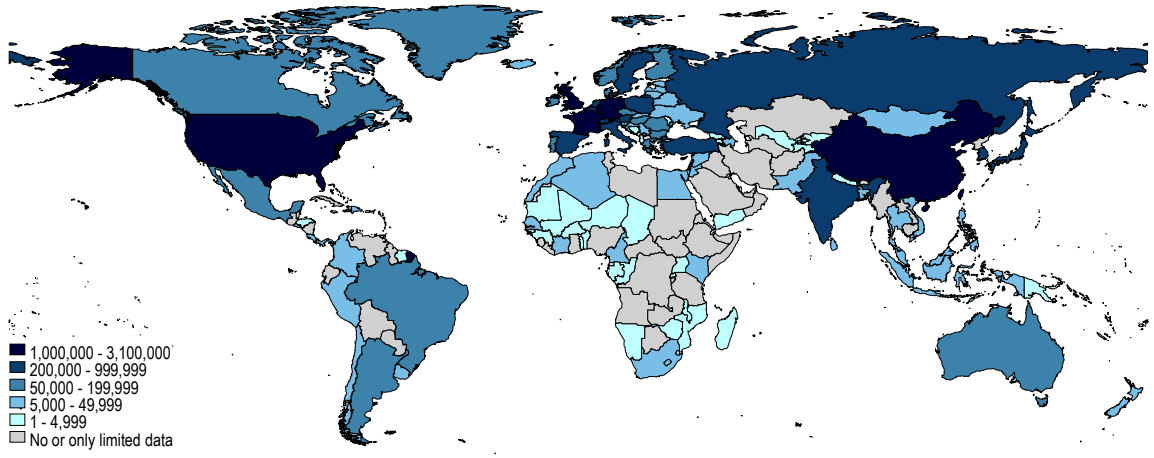


Note: The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are presented in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

Trademark applications by origin

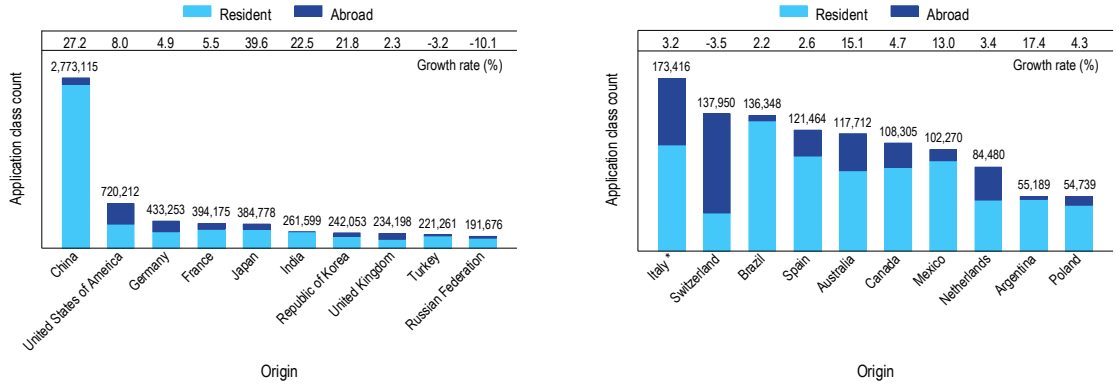
B16 Equivalent trademark application class counts by origin, 2015



Note: Trademark filing activity by origin includes resident applications and applications filed abroad. The origin of a trademark application is determined by the residence of the applicant. Applications filed at regional offices are considered equivalent to multiple applications in the relevant member states. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, October 2016.

B17 Trademark application class counts for the top 20 origins, 2015

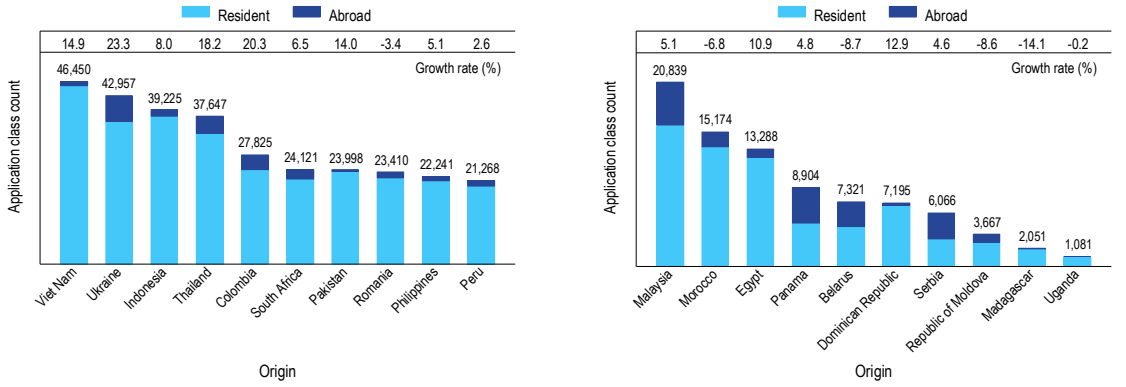


*indicates 2014 data.

Note: Trademark application filing activity by origin includes resident applications and applications filed abroad, and is based on absolute count, not equivalent count. The origin of a trademark application is determined by the residence of the applicant. An application filed at a regional office is considered a resident filing if the applicant is a resident of one of the relevant member states.

Source: WIPO Statistics Database, October 2016.

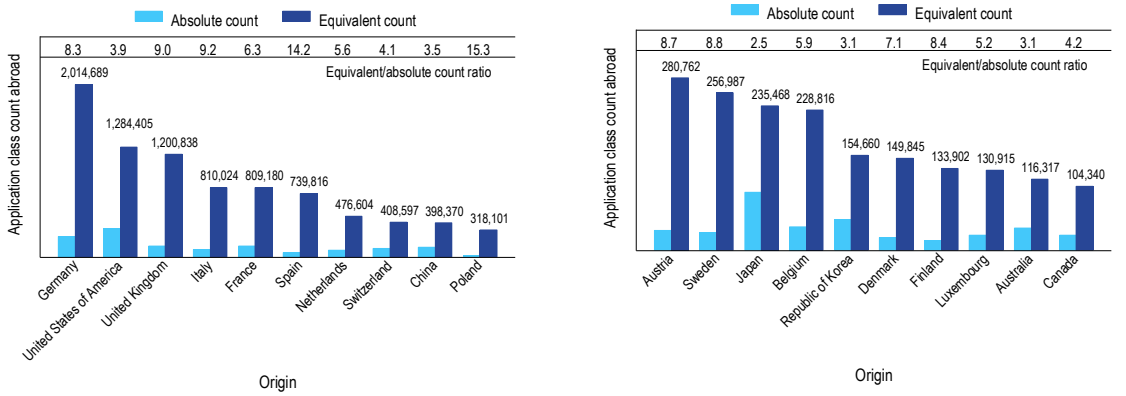
B18 Trademark application class counts for selected low- and middle-income origins, 2015



Note: Trademark application filing activity by origin includes resident applications and applications filed abroad, and is based on absolute count, not equivalent count. The origin of a trademark application is determined by the residence of the applicant. The selected origins are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all origins are presented in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

B19 Trademark application class counts abroad for the top 20 origins, 2015



Note: This figure distinguishes between absolute counts and equivalent counts for filing activity abroad – that is, resident applications are excluded. Based on equivalent application class counts, applicants from Germany had the highest level of trademark filing activity abroad. This was due not only to their high application class counts at numerous foreign offices, but also to their frequent use of the European Union Intellectual Property Office (EUIPO) – with its multiplier effect – in order to seek trademark protection within the entire EU. See the glossary for the definition of equivalent application. The origin of a trademark application is determined by the residence of the applicant.

Source: WIPO Statistics Database, October 2016.

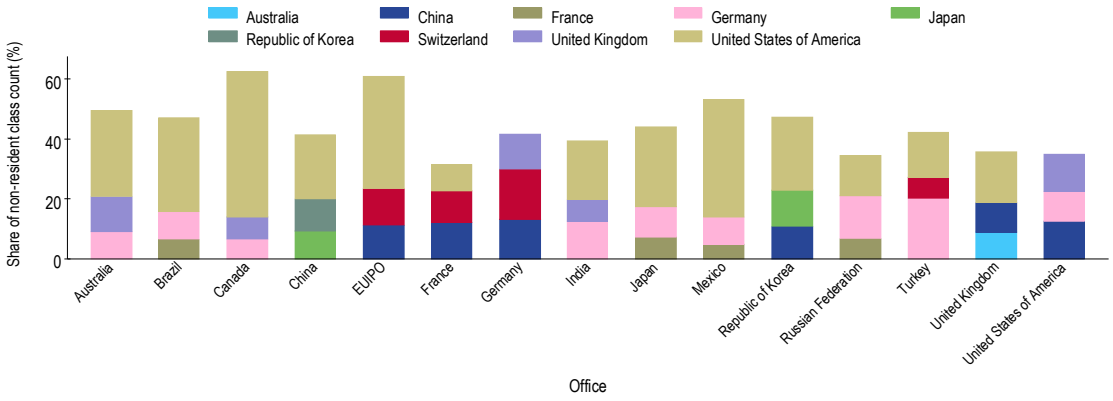
B20 Trademark application class counts for the top 25 offices and origins, 2015

Origin	Office																								
	China	United States of America	EUIPO	Japan	India	France	Republic of Korea	Turkey	Russian Federation	Germany	Brazil	Canada	Mexico	Australia	United Kingdom	Switzerland	Spain	China, Hong Kong SAR	Benelux	Viet Nam	Argentina	Ukraine	Thailand	Indonesia	Chile
Argentina	127	251	211	46	10		8	3	32	5	309	61	145	13	13	6	20	6	2	1	52,208	9	1	7	384
Australia	5,318	5,449	2,911	1,262	1,129	268	921	219	540	199	249	1,517	355	80,778	1,599	217	86	1,075	73	594	120	34	425	282	165
Austria	1,272	1,345	9,527	443	585	183	361	800	1,131	1,215	226	486	302	424	137	2,523	120	184	199	109	76	637	85	28	101
Brazil	628	833	566	97	13	32	88	10	71	31	130,720	199	362	43	22	44	17	60	22	14	401	10	36	21	313
Canada	2,492	11,577	2,911	498	183	146	576	166	287	59	269	83,504	585	936	229	252	11	389	103	123	158	40	87	84	171
China	2,658,724	16,264	10,121	3,877	2,517	2,131	4,830	1,253	2,727	2,567	1,441	2,998	1,474	2,392	1,749	1,302	766	13,964	564	1,699	655	699	2,070	1,324	676
China, Hong Kong SAR	37	2,903	2,649	824	269	394	59	168	691	416	192	960	152	893	424	337	13	28,916	87	500	73	109	298	313	79
France	8,963	7,390	25,028	3,932	2,679	265,507	2,635	1,718	3,833	1,344	1,811	3,905	1,944	2,155	1,359	5,648	1,356	1,892	2,892	1,343	849	1,321	899	556	857
Germany	13,926	12,696	67,749	5,607	4,884	970	4,359	6,517	8,242	190,536	2,536	4,625	3,763	4,452	867	16,474	700	2,023	1,665	1,817	985	3,358	982	648	1,012
India	501	967	688	187	250,586	36	88	164	305	29	128	273	259	257	146	81	22	71	9	374	153	337	110	148	99
Italy	6,688	5,032	27,674	2,575	1,893	478	1,877	1,837	3,442	317	1,001	1,602	1,257	1,559	252	2,760	269	941	184	579	426	1,077	375	234	301
Japan	15,689	6,340	5,046	290,238	1,854	602	5,412	1,240	1,772	372	1,184	2,154	1,436	2,065	477	1,226	186	4,050	159	2,453	553	644	3,419	1,513	545
Mexico	487	2,477	691	125	83	44	86	47	66	12	649	352	90,684	63	49	32	82	76	9	22	669	17	36	26	524
Netherlands	2,819	2,866	13,557	1,053	846	493	831	1,114	1,318	677	733	1,230	740	955	377	1,407	186	603	37,738	559	374	507	298	305	256
Poland	809	585	11,421	168	212	54	105	318	685	127	54	128	125	116	105	207	65	41	53	101	20	576	21	7	25
Republic of Korea	18,056	4,430	3,819	3,173	398	190	191,470	386	1,290	248	871	735	1,008	1,238	239	267	137	1,832	74	1,487		164	761	697	239
Russian Federation	1,487	778	703	283	464	397	239	490	161,681	611	57	45	111	180	425	372	344	73	260	216	28	1,439	40	2	27
Spain	2,241	2,312	26,349	644	499	263	519	514	1,003	287	626	682	1,672	462	192	560	69,460	294	113	181	415	235	154	120	739
Sweden	1,854	2,185	8,745	684	528	82	540	431	900	73	389	738	373	665	71	787	28	327	25	163	123	212	212	80	187
Switzerland	5,431	5,553	11,132	3,187	1,967	1,836	2,072	2,328	3,360	3,296	1,459	2,024	1,920	2,165	1,001	38,551	686	1,280	813	978		1,680	768	487	845
Turkey	744	921	1,835	322	463	373	208	194,769	1,232	577	58	166	166	197	395	252	276	59	292	186	18	574	46	55	29
Ukraine	188	213	252	44	84	128	38	96	926	202	6	24	16	17	102	74	68	8	55	80		36,339		2	
United Kingdom	10,810	16,048	40,909	3,506	2,818	898	2,617	1,982	3,037	2,312	1,365	5,369	1,455	5,739	101,482	2,238	353	2,405	508	724	548	888	860	379	574
United States of America	36,332	388,119	34,454	14,614	7,759	1,516	10,923	4,878	7,765	1,654	8,858	34,791	15,982	14,153	3,055	6,247	782	7,507	939	3,641	4,323	2,470	3,279	2,251	3,911
Viet Nam	268	109	43	60	35	24	38	16	21	33	1	26	15	55	16	3	6	19	7	45,230		6	70	19	1
Others	32,396	19,654	57,392	7,621	7,085	5,948	5,268	5,809	12,801	2,977	3,517	6,540	5,209	7,944	4,647	6,298	1,481	8,332	22,338	4,623	3,103	5,419	37,012	39,946	30,904
Total	**2,828,287**	**517,297**	**366,383**	**345,070**	**289,843**	**282,993**	**236,168**	**227,273**	**219,158**	**210,176**	**158,709**	**155,134**	**131,510**	**129,916**	**119,430**	**88,165**	**77,520**	**76,427**	**69,183**	**67,797**	**66,278**	**58,801**	**52,344**	**49,534**	**42,964**

Note: EUIPO is the European Union Intellectual Property Office. Office and origin data consist of absolute application class counts rather than equivalent application class counts. Among the top IP offices, data for Italy are not shown as a detailed breakdown of the origin of the applications it received is not available.

Source: WIPO Statistics Database, October 2016.

B21 Distribution of trademark application class counts for the top 15 offices and selected non-resident origins, 2015



Note: EUIPO is the European Union Intellectual Property Office. Office and origin data consist of absolute application class counts rather than equivalent application class counts. Among the top IP offices, data for Italy are not shown as a detailed breakdown of the origin of the applications it received is not available.

Source: WIPO Statistics Database, October 2016.

Trademark applications by Nice class and industry sector

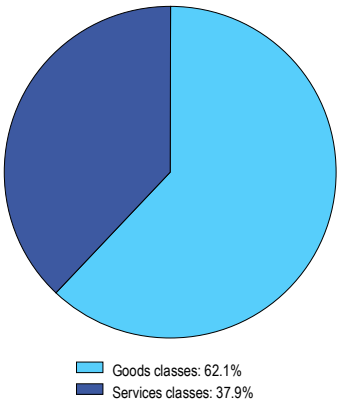
B22 Distribution of trademark applications by top Nice classes, 2015

Rank	Class		Class share (%)
1	35	Advertising and business management	10.5
2	9	Scientific, photographic, measuring instruments; recording equipment; computers and software	7.1
3	41	Education, entertainment, and sporting activities	5.9
4	25	Clothing	5.7
5	42	Scientific and technological services, design and development of computer hardware and software	4.8
6	30	Coffee, tea, cocoa, rice, flour, bread, pastry and confectionery, sugar, honey, yeast, salt, mustard, vinegar, sauces (condiments) and spices	4.6
7	5	Pharmaceutical preparations, baby food, dietary supplements for humans and animals, disinfectants, fungicides and herbicides	4.4
8	43	Services for providing food and drink; temporary accommodation	3.8
9	3	Bleaching preparations and other substances for laundry use; cleaning and abrasive preparations; soaps, perfumery and cosmetics	3.7
10	29	Foodstuffs of animal origin and vegetables	3.3
		Remaining classes	**46.2**

Note: These figures are based on filing data from 125 IP offices. Some classes listed are abbreviated. See Annex C for full definitions.

Source: WIPO Statistics Database, October 2016.

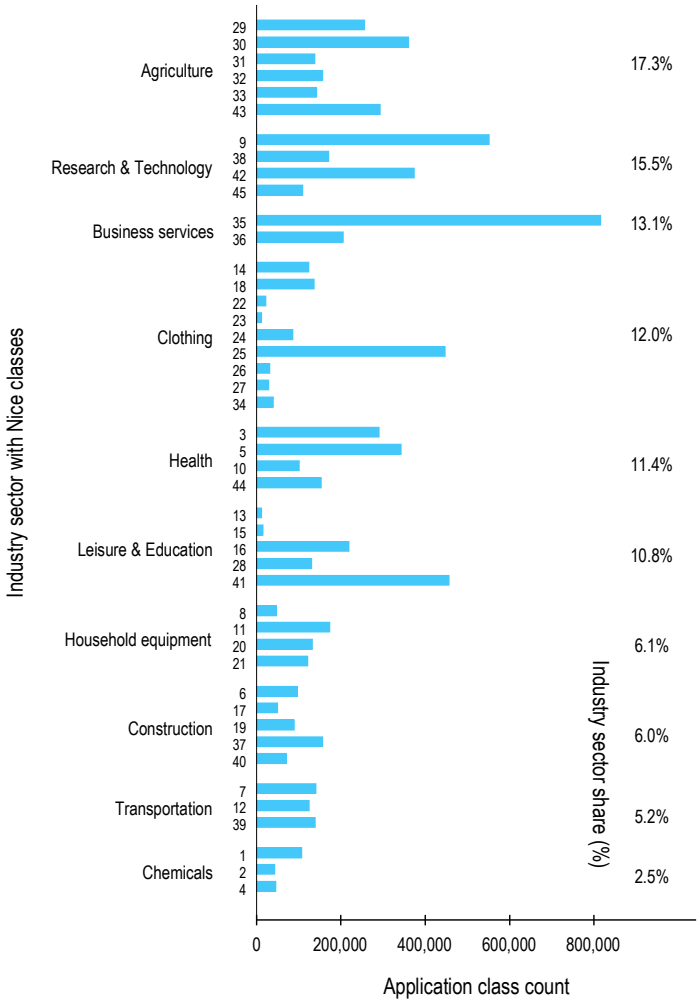
B23 Trademark applications by goods and services classes, 2015



Note: In the 45-class Nice Classification, the first 34 classes indicate goods and the remaining 11 refer to services. Together, the services-related classes accounted for about 38% of all classes specified in applications filed in 2015, demonstrating the importance that applicants place on protecting their brands in service-oriented industries. See Annex C for full definitions of classes. These figures are based on filing data from 125 IP offices.

Source: WIPO Statistics Database, October 2016.

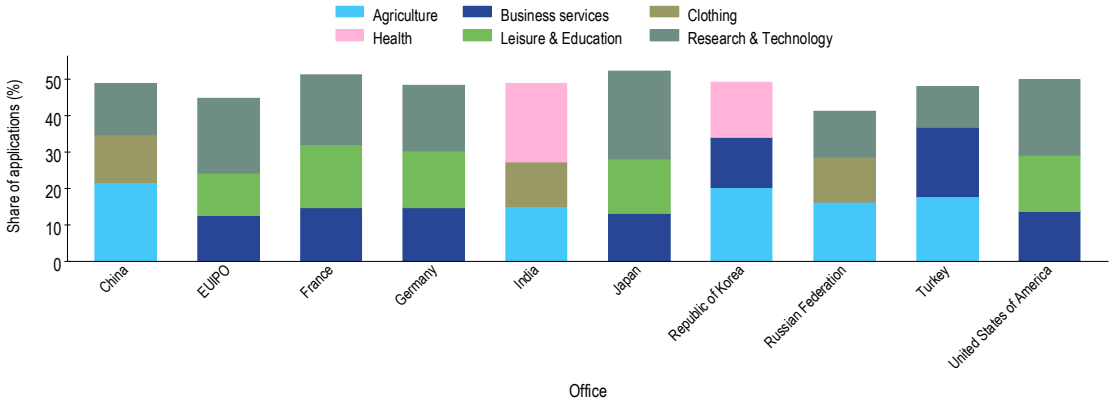
B24 Trademark applications by industry sector, 2015



Note: Industry sectors based on class groups are those defined by Edital. Some industry sectors are abbreviated. See Annex C for full definitions. The distribution of trademark applications across industries has remained stable between 2004 and 2015. Like class rankings, the shares of class groups differ across offices. These figures are based on filing data from 125 IP offices.

Source: WIPO Statistics Database, October 2016.

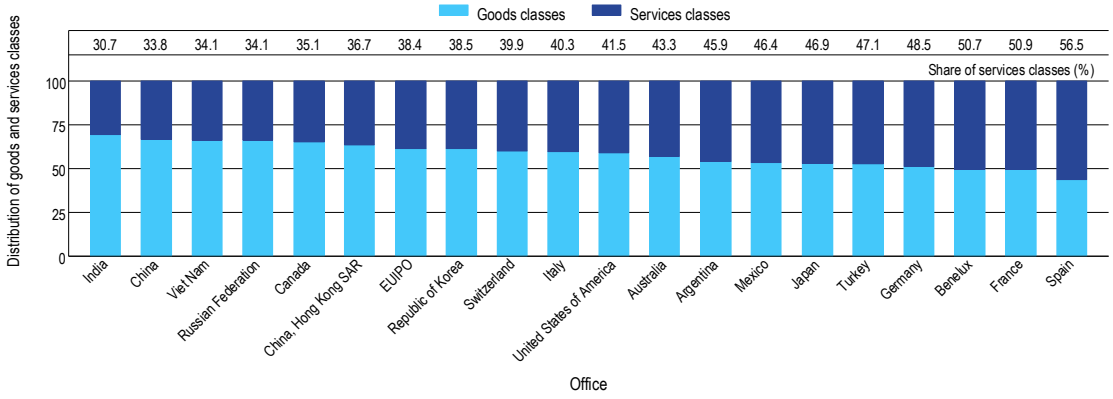
B25 Trademark applications by top three sectors at the top offices, 2015



Note: Industry sectors based on class groups are those defined by Edital. Some industry sectors are abbreviated. See Annex C for full definitions. EUIPO is the European Union Intellectual Property Office. The top three sectors and top offices were selected based on their 2015 totals.

Source: WIPO Statistics Database, October 2016.

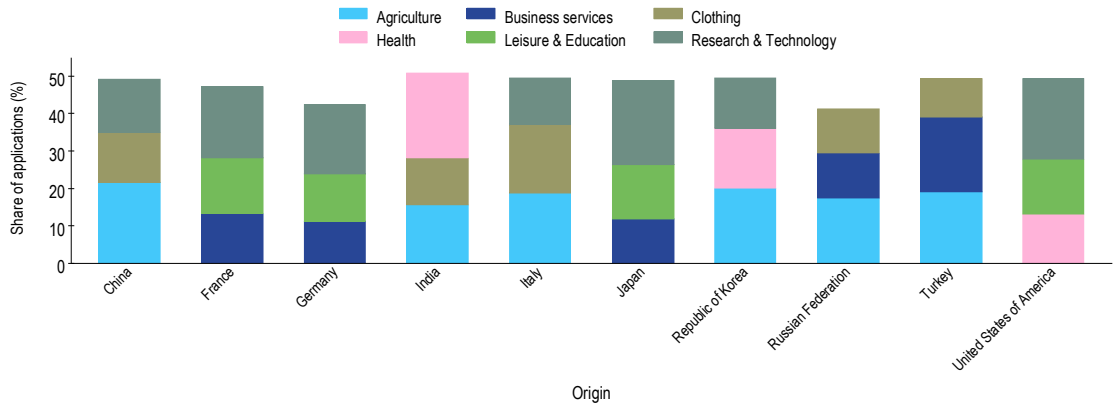
B26 Distribution of trademark applications by goods and services at the top offices, 2015



Note: EUIPO is the European Union Intellectual Property Office.

Source: WIPO Statistics Database, October 2016.

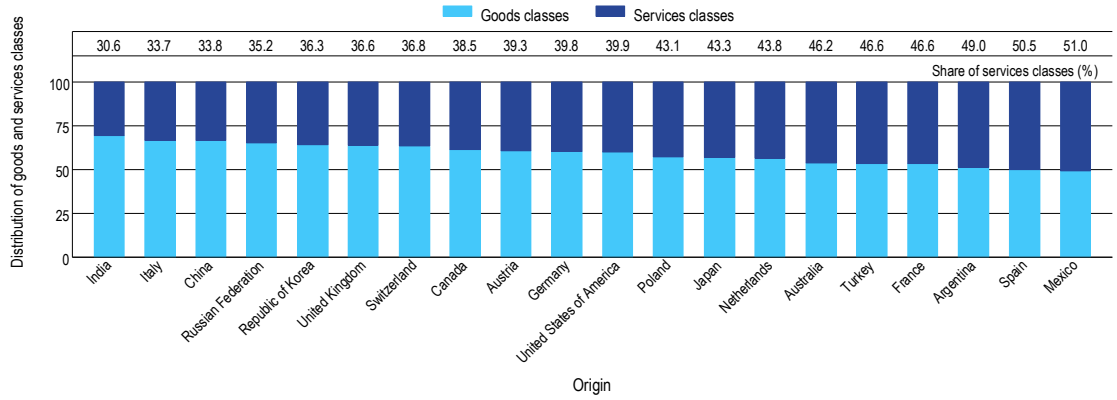
B27 Trademark applications by top three sectors for the top origins, 2015



Note: Industry sectors based on class groups are those defined by Edital. Some industry sectors are abbreviated. See Annex C for full definitions. The top three sectors and top origins were selected based on their 2015 totals.

Source: WIPO Statistics Database, October 2016.

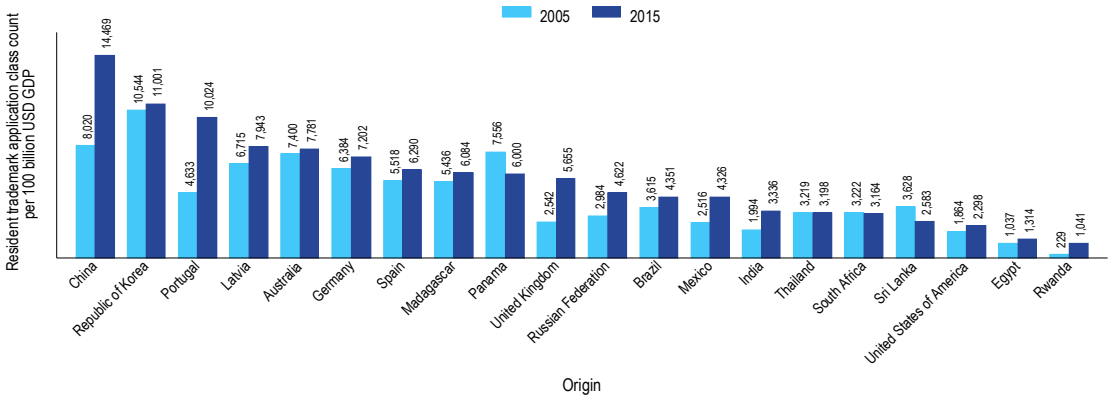
B28 Distribution of trademark applications by goods and services for selected origins, 2015



Source: WIPO Statistics Database, October 2016.

Trademark application class count in relation to GDP and population

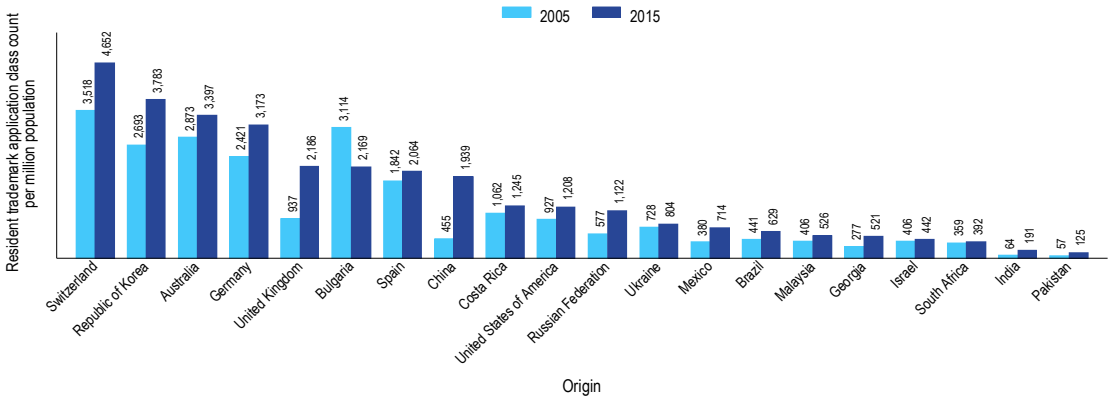
B29 Resident trademark application class count per 100 billion USD GDP for selected origins



Note: GDP data are in constant 2011 US PPP dollars. This figure does not provide an overall ranking of all origins; rather, it provides a selection across geographical regions and income groups.

Sources: WIPO Statistics Database and World Bank, October 2016.

B30 Resident trademark application class count per million population for selected origins

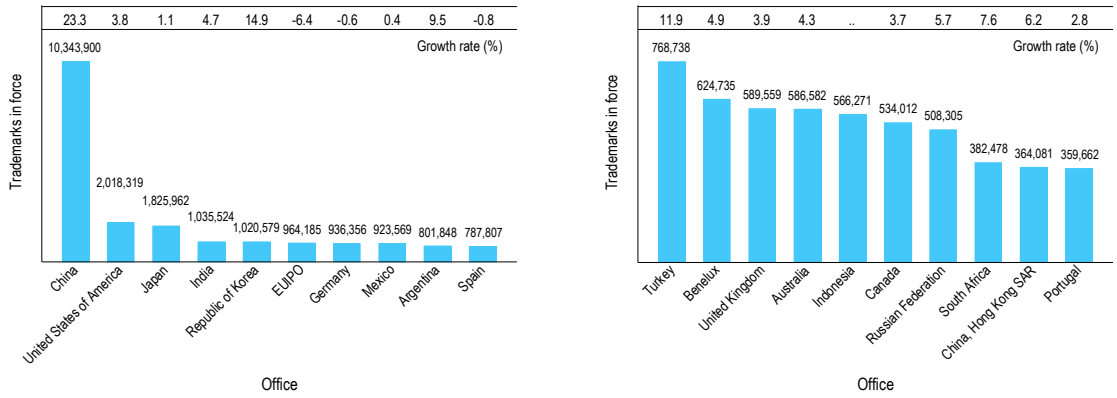


Note: This figure does not provide an overall ranking of all origins; rather, it provides a selection across geographical regions and income groups.

Sources: WIPO Statistics Database and World Bank, October 2016.

Trademarks in force

B31 Trademarks in force at selected offices, 2015

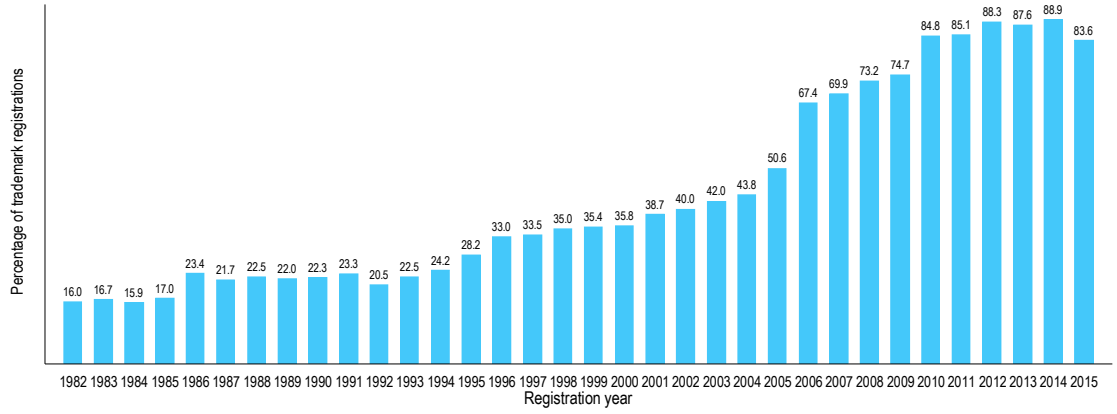


.. indicates not available.

Note: EUIPO is the European Union Intellectual Property Office. Data refer to the number of trademark registrations in force and not the number of classes specified in those registrations. Trademark rights can be maintained indefinitely by paying renewal fees at defined time intervals. Trademarks in force provide information on the volume of trademark registrations currently active as well as the historical trademark life cycle.

Source: WIPO Statistics Database, October 2016.

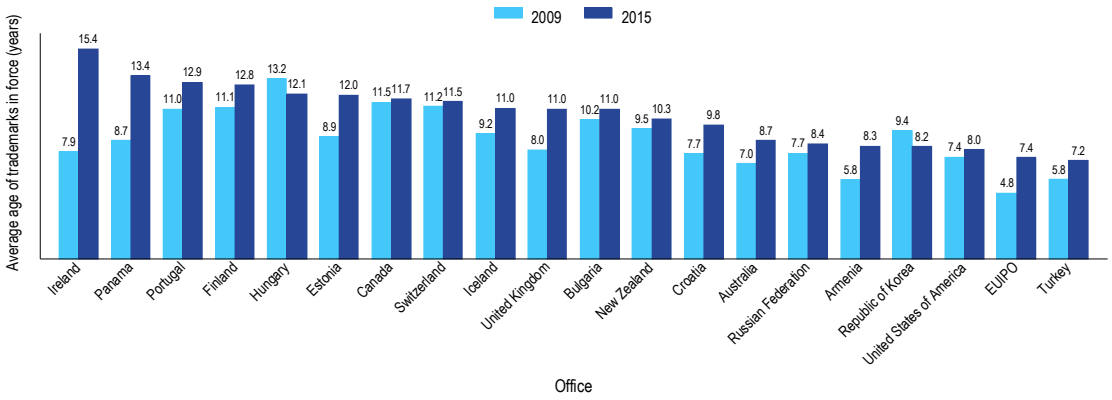
B32 Trademarks in force in 2015 as a percentage of total registrations



Note: Percentages are calculated as follows: the number of trademark registrations issued in year *t* and in force in 2015 divided by the total number of trademark registrations issued in year *t*. Trademark holders must pay renewal fees to maintain the validity of their marks, which in most cases can be maintained indefinitely. This figure is based on about 11.9 million active trademark registrations reported by 62 offices that provided a breakdown by year of registration. Detailed data for several larger offices, such as those of Brazil, China and Japan, were not available.

Source: WIPO Statistics Database, October 2016.

B33 Average age of trademarks in force at selected offices, 2015

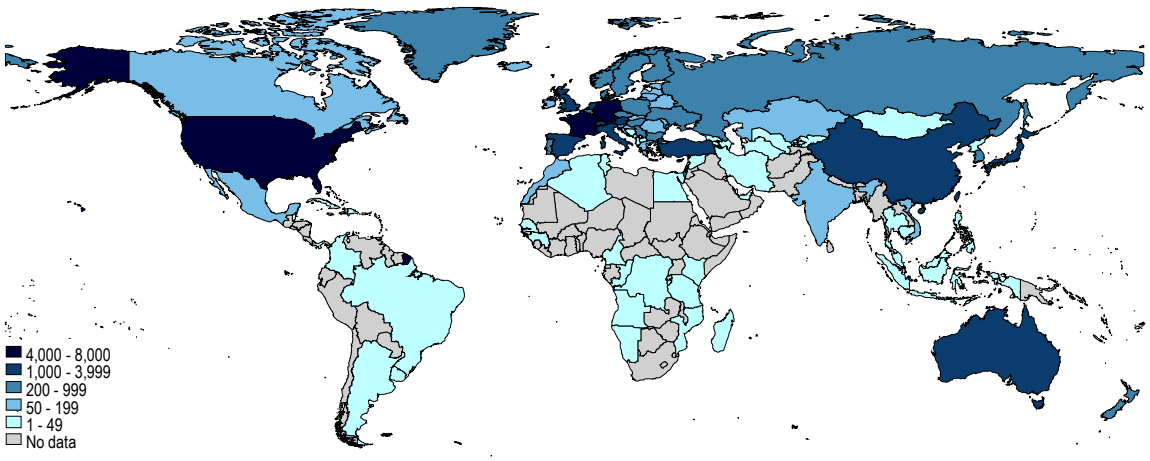


Note: EUIPO is the European Union Intellectual Property Office.

Source: WIPO Statistics Database, October 2016.

Trademark applications and registrations through the Madrid System

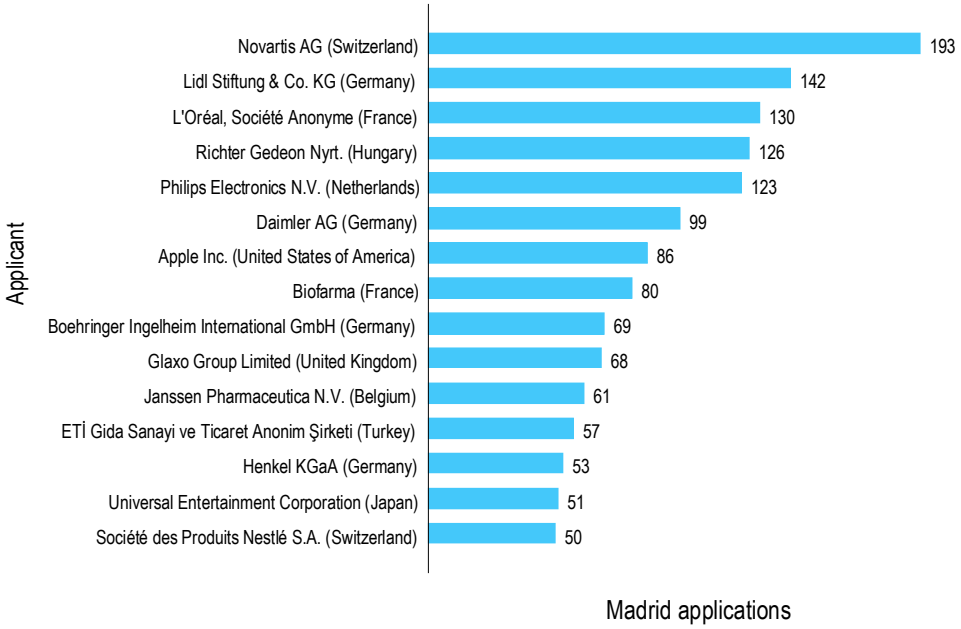
B34 Madrid international applications by origin, 2015



Note: Counts are based on the residency of the applicant, not the office of origin. See the glossary for information on the Madrid System.

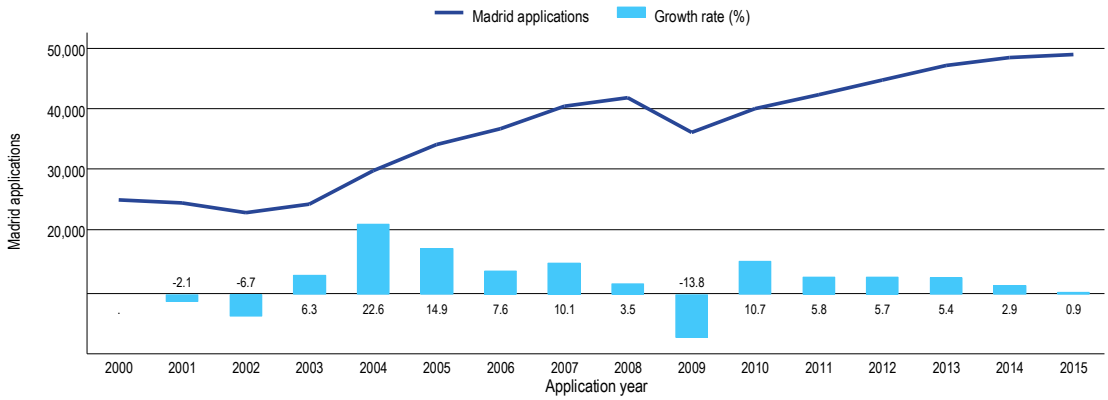
Source: WIPO Statistics Database, October 2016.

B35 Top Madrid applicants, 2015



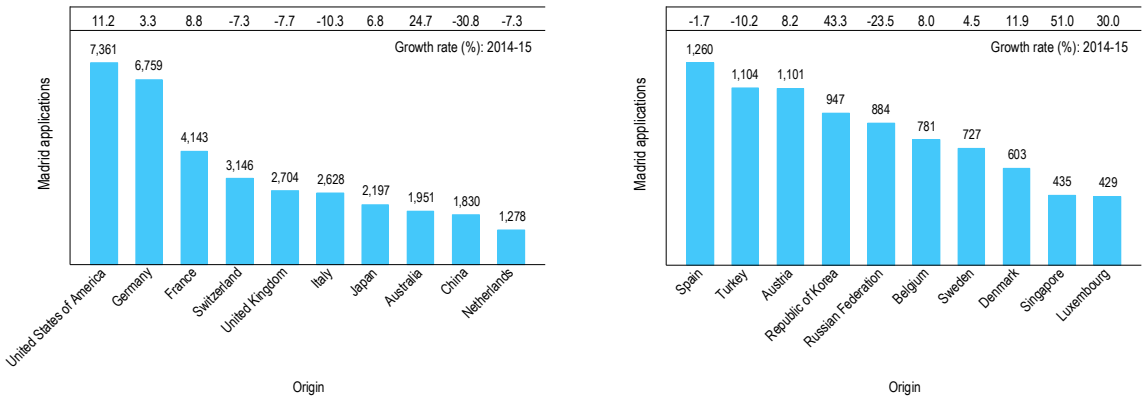
Source: WIPO Statistics Database, October 2016.

B36 Trend in Madrid international applications



Source: WIPO Statistics Database, October 2016.

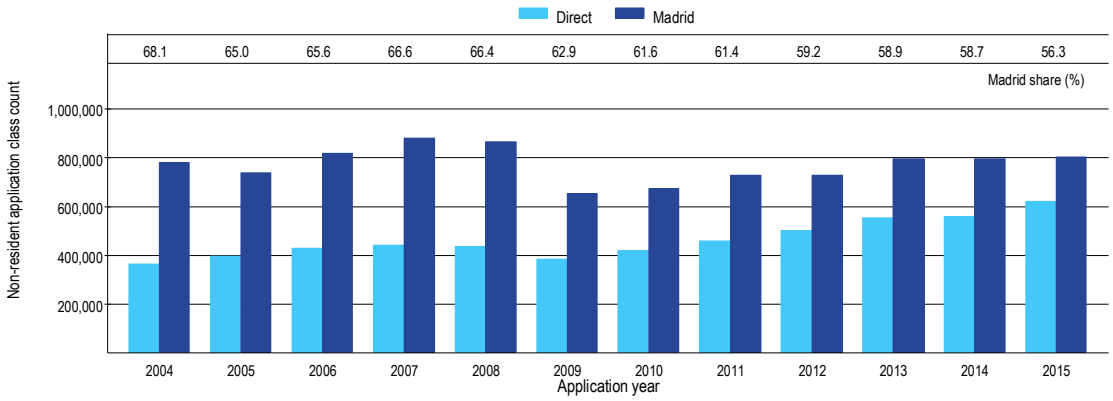
B37 Madrid applications for the top 20 origins, 2015



Note: Origin is defined as the country of the stated residence of the applicant in an international application.

Source: WIPO Statistics Database, October 2016.

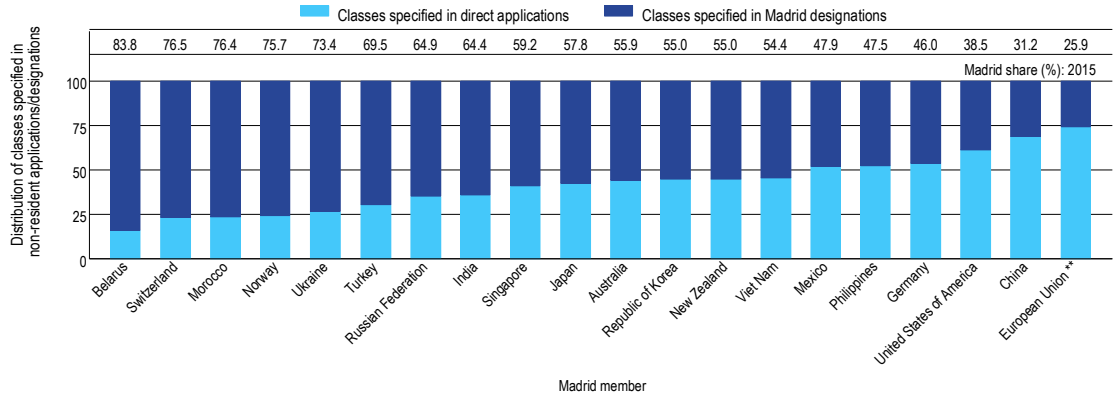
B38 Trend in non-resident filing activity by filing route (direct and Madrid)



Note: The direct route refers to classes specified in applications filed by non-residents of Madrid member origins directly with national or regional IP offices of Madrid members. The Madrid route refers to classes specified in designations received by offices via the Madrid System. For the sake of simplicity, designations are referred to as non-resident applications received via the Madrid System.

Source: WIPO Statistics Database, October 2016.

B39 Madrid share of non-resident filing activity for selected designated Madrid members, 2015



Note: **European Union indicates trademark activity occurring at the European Union Intellectual Property Office (EUIPO) and not within the IP offices of individual EU member states.
The direct route refers to classes specified in applications filed only by non-residents of all origins – irrespective of Madrid membership – directly with the Madrid member office. The Madrid route refers to classes specified in designations received by the Madrid member office.

Source: WIPO Statistics Database, October 2016.

Statistical tables

B40 Trademark applications by office and origin, 2015

	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 (a)	Total (a)	Origin (h)	Designated Madrid member
Afghanistan	..	..	..	48	48	..	n.a.
African Intellectual Property Organization	9,843	2,659	7,184	n.a.	n.a.	n.a.	1,127
African Regional Intellectual Property Organization	499	138	361	n.a.	n.a.	n.a.	n.a.
Albania	7,731	866	6,865	957	1,227	5	2,096
Algeria	26,471	14,483	11,988	14,627	14,886	10	1,641
Andorra	2,467	514	1,953	827	5,093	6	n.a.
Angola	..	..	..	72	709	3	n.a.
Antigua and Barbuda (d)	1,776	..	1,776	12	39	..	702
Argentina	66,278	52,208	14,070	55,189	60,938	2	n.a.
Armenia	10,068	2,728	7,340	3,063	3,511	23	2,459
Aruba	..	..	..	16	286	..	n.a.
Australia	129,916	80,778	49,138	117,712	197,095	1,951	11,993
Austria	23,361	15,209	8,152	47,503	305,498	1,101	2,375
Azerbaijan	12,135	2,801	9,334	5,409	8,021	5	3,102
Bahamas (b,c)	1,124	171	953	1,457	5,754	8	n.a.
Bahrain	10,714	380	10,334	599	950	2	2,125
Bangladesh	9,322	9,322	0	9,450	9,585	..	n.a.
Barbados	1,337	159	1,178	1,289	3,403	9	n.a.
Belarus	18,844	4,489	14,355	7,321	8,546	160	4,517
Belgium (e)	n.a.	n.a.	n.a.	38,702	253,217	781	n.a.
Belize	..	..	..	969	3,752	23	n.a.
Benelux (f)	69,183	59,022	10,161	n.a.	n.a.	n.a.	2,397
Benin (j)	n.a.	n.a.	n.a.	195	3,406	..	n.a.
Bermuda	..	..	..	844	6,778	7	n.a.
Bhutan (d)	1,649	..	1,649	4	4	..	648
Bolivia (Plurinational State of) (b,c)	8,032	2,467	5,565	2,557	2,557	..	n.a.
Bonaire, Sint Eustatius and Saba (d)	1,371	..	1,371	2	56	..	566
Bosnia and Herzegovina	9,958	689	9,269	997	1,651	19	2,955
Botswana (c,i)	3,278	..	..	383	383	..	822
Brazil	158,709	130,720	27,989	136,348	152,154	3	n.a.
Brunei Darussalam	..	..	..	93	174	..	n.a.
Bulgaria	17,630	13,632	3,998	20,030	73,000	274	1,320

	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 (a)	Total (a)	Origin (h)	Designated Madrid member
Burkina Faso (j)	n.a.	n.a.	n.a.	98	1,666	..	n.a.
Burundi	..	..	..	1	1	..	n.a.
Cabo Verde	..	..	..	1	1	..	n.a.
Cambodia (b,c)	4,888	1,182	3,706	1,219	1,408	1	674
Cameroon (j)	n.a.	n.a.	n.a.	603	9,267	10	n.a.
Canada	155,134	83,504	71,630	108,305	187,844	66	n.a.
Chad (j)	n.a.	n.a.	n.a.	10	122	..	n.a.
Chile	42,964	28,903	14,061	32,891	36,815	..	n.a.
China	2,828,287	2,658,724	169,563	2,773,115	3,057,094	1,830	21,087
China, Hong Kong SAR	76,427	28,916	47,511	47,437	119,774	43	n.a.
China, Macao SAR	13,140	1,833	11,307	2,315	2,747	..	n.a.
Colombia	41,929	24,119	17,810	27,825	30,275	33	3,570
Comoros	..	..	..	3	51	..	n.a.
Congo (j)	n.a.	n.a.	n.a.	62	884	4	n.a.
Cook Islands	..	..	..	17	17	..	n.a.
Costa Rica	13,600	5,985	7,615	6,831	7,589	..	n.a.
Côte d'Ivoire (j)	n.a.	n.a.	n.a.	772	12,836	..	n.a.
Croatia	7,905	4,062	3,843	8,986	24,185	166	1,416
Cuba (b,c)	5,322	1,845	3,477	2,120	2,516	3	1,535
Curaçao	2,573	0	2,573	221	3,193	8	668
Cyprus	2,466	708	1,758	9,018	46,417	160	655
Czech Republic	23,560	19,211	4,349	32,097	118,314	337	1,537
Democratic People's Republic of Korea (d)	2,003	..	2,003	1,219	1,219	6	784
Democratic Republic of the Congo	..	..	..	74	397	1	n.a.
Denmark	8,116	4,572	3,544	25,563	159,316	603	1,108
Djibouti	..	..	..	2	2	..	n.a.
Dominica	..	..	..	65	173	1	n.a.
Dominican Republic	12,685	6,842	5,843	7,195	8,059	4	n.a.
Ecuador	..	..	..	562	1,642	..	n.a.
Egypt	26,103	12,327	13,776	13,288	15,218	26	3,916
El Salvador	11,449	4,419	7,030	4,977	5,247	..	n.a.
Estonia	4,909	2,199	2,710	4,495	29,273	79	1,036
Ethiopia	..	..	..	29	29	..	n.a.
European Union Intellectual Property Office (g)	366,383	274,844	91,539	n.a.	n.a.	n.a.	19,352
Fiji	..	..	..	1,211	1,292	3	n.a.
Finland	10,377	7,063	3,314	23,099	145,492	426	991
France	282,993	265,507	17,486	394,175	1,099,715	4,143	3,000
Gabon (j)	n.a.	n.a.	n.a.	71	855	..	n.a.
Gambia (d)	40	..	40	33	481	..	24
Georgia	9,428	1,915	7,513	2,454	2,880	32	2,657
Germany	210,176	190,536	19,640	433,253	2,272,974	6,759	3,833
Ghana (i)	5,121	..	..	48	144	..	1,170
Greece (d)	2,414	..	2,414	3,995	62,328	87	1,047
Grenada	599	9	590	10	10	..	n.a.
Guatemala	..	..	..	1,799	1,961	..	n.a.
Guinea (j)	n.a.	n.a.	n.a.	228	3,604	1	n.a.
Guinea-Bissau (j)	n.a.	n.a.	n.a.	22	374	..	n.a.
Guyana (b,c)	748	20	728	37	37	..	n.a.
Haiti (b,c)	1,649	460	1,189	478	482	..	n.a.
Holy See	..	..	..	25	700	..	n.a.
Honduras	7,754	2,043	5,711	2,348	2,348	..	n.a.
Hungary	11,995	7,796	4,199	14,352	54,167	266	1,361
Iceland	7,853	1,332	6,521	3,570	8,304	74	2,230
India	289,843	250,586	39,257	261,599	282,641	152	10,210
Indonesia	49,534	37,657	11,877	39,225	40,779	2	n.a.
Iran (Islamic Republic of) (d)	6,873	..	6,873	3,379	6,305	44	2,885
Iraq	..	..	..	211	373	..	n.a.
Ireland (i)	6,731	..	..	10,398	92,062	170	919
Israel	18,650	3,707	14,943	8,838	30,675	246	4,456
Italy (c,i)	120,823	..	..	173,416	867,051	2,628	2,768
Jamaica	6,503	3,120	3,383	3,631	3,982	..	n.a.
Japan	345,070	290,238	54,832	384,778	525,706	2,197	13,533
Jordan	7,485	2,725	4,760	3,406	5,790	..	n.a.
Kazakhstan (d)	11,275	..	11,275	1,519	1,552	71	4,525
Kenya	10,901	4,684	6,217	4,922	5,656	5	1,559

	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 (a)	Total (a)	Origin (h)	Designated Madrid member
Kiribati	..	..	..	2	2	..	n.a.
Kuwait (i)	13,051	..	..	384	1,680	..	n.a.
Kyrgyzstan	6,693	341	6,352	358	358	1	2,355
Lao People's Democratic Republic	..	..	..	16	16	..	n.a.
Latvia	6,196	3,122	3,074	4,976	16,746	101	1,170
Lebanon	1,537	1,253	284	2,083	6,817	5	n.a.
Lesotho (d)	1,679	..	1,679	5	5	..	654
Liberia (d)	1,733	..	1,733	..	..	..	735
Libya	..	..	..	15	231	..	n.a.
Liechtenstein	8,066	428	7,638	3,576	12,316	84	2,312
Lithuania	6,645	3,599	3,046	5,097	20,789	92	1,190
Luxembourg (e)	n.a.	n.a.	n.a.	24,963	138,265	429	n.a.
Madagascar	4,959	2,025	2,934	2,051	2,051	1	861
Malawi	1,264	1,264	0	1,264	1,264	..	n.a.
Malaysia	35,923	15,940	19,983	20,839	24,167	3	n.a.
Maldives	..	..	..	2	2	..	n.a.
Mali (j)	n.a.	n.a.	n.a.	210	3,314	..	n.a.
Malta	704	410	294	5,059	37,647	34	n.a.
Marshall Islands	..	..	..	359	1,250	1	n.a.
Mauritania (j)	n.a.	n.a.	n.a.	82	680	..	n.a.
Mauritius	..	..	..	1,218	5,108	16	n.a.
Mexico	131,510	90,684	40,826	102,270	121,105	98	8,453
Monaco	8,095	1,251	6,844	3,105	16,336	65	2,171
Mongolia	11,658	7,034	4,624	7,134	7,134	3	1,660
Montenegro (d)	7,540	3	7,537	99	261	7	2,529
Morocco	26,041	13,534	12,507	15,174	20,038	87	3,584
Mozambique	4,463	285	4,178	342	693	1	1,026
Myanmar	..	..	..	159	159	..	n.a.
Namibia	5,413	1,611	3,802	1,793	1,841	1	879
Nauru	..	..	..	8	8	..	n.a.
Nepal	4,276	2,464	1,812	2,494	2,494	..	n.a.
Netherlands (e)	n.a.	n.a.	n.a.	84,480	527,899	1,278	n.a.
New Zealand	42,221	15,769	26,452	23,136	38,204	395	6,033
Nicaragua	..	..	..	349	754	..	n.a.
Niger (j)	n.a.	n.a.	n.a.	34	338	..	n.a.
Nigeria	..	..	..	158	535	..	n.a.
Norway	39,760	11,440	28,320	18,016	51,935	280	7,919
Oman (d)	5,051	..	5,051	69	258	..	2,054
Pakistan	28,056	23,544	4,512	23,998	26,026	..	n.a.
Palau	..	..	..	1	1	..	n.a.
Panama	12,570	4,924	7,646	8,904	13,171	6	n.a.
Papua New Guinea	971	109	862	162	162	..	n.a.
Paraguay	..	..	..	151	253	..	n.a.
Peru	32,300	19,907	12,393	21,268	22,963	..	n.a.
Philippines	42,936	20,991	21,945	22,241	22,904	29	4,470
Poland	40,347	33,930	6,417	54,739	363,452	417	2,042
Portugal	28,898	24,607	4,291	32,253	116,280	236	1,282
Qatar (b,c)	7,608	1,405	6,203	3,207	6,872	4	n.a.
Republic of Korea	236,168	191,470	44,698	242,053	346,130	947	10,456
Republic of Moldova	10,190	2,688	7,502	3,667	4,113	84	2,649
Romania	24,506	19,950	4,556	23,410	75,397	92	1,511
Russian Federation	219,158	161,681	57,477	191,676	211,769	884	14,805
Rwanda	3,155	200	2,955	219	219	1	674
Saint Kitts and Nevis	..	..	..	101	695	2	n.a.
Saint Lucia	..	..	..	171	198	2	n.a.
Saint Vincent and the Grenadines	..	..	..	30	354	2	n.a.
Samoa	452	15	437	647	1,376	..	n.a.
San Marino (d)	2,901	10	2,891	430	4,669	16	1,077
Sao Tome and Principe	1,444	6	1,438	6	6	..	566
Saudi Arabia	..	..	..	2,141	9,057	..	n.a.
Senegal (j)	n.a.	n.a.	n.a.	446	7,522	1	n.a.
Serbia	15,686	3,127	12,559	6,066	9,879	212	3,865
Seychelles	..	..	..	826	1,798	5	n.a.
Sierra Leone (b,c)	2,331	350	1,981	414	418	..	759
Singapore	42,107	8,447	33,660	25,548	43,575	435	8,264

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 (a)	Total (a)	Origin (h)	Designated Madrid member
Sint Maarten (Dutch Part) (b,c)	1,944	0	1,944	..	..	..	640
Slovakia	14,590	9,459	5,131	13,732	45,508	126	1,219
Slovenia (d)	2,934	..	2,934	4,700	31,619	175	1,176
Solomon Islands	..	..	..	16	394	..	n.a.
Somalia	..	..	..	3	3	..	n.a.
South Africa	36,973	21,543	15,430	24,121	37,932	..	n.a.
Spain	77,520	69,460	8,060	121,464	835,625	1,260	2,388
Sri Lanka	9,415	5,983	3,432	6,366	7,424	..	n.a.
Sudan (d)	2,583	..	2,583	19	19	..	1,065
Suriname	1,377	766	611	808	1,258	..	n.a.
Swaziland (i)	2,468	..	..	854	854	..	700
Sweden	21,529	17,727	3,802	46,910	283,459	727	1,270
Switzerland	88,165	38,551	49,614	137,950	447,148	3,146	13,071
Syrian Arab Republic	13,057	10,204	2,853	10,478	11,204	1	1,182
T F Y R of Macedonia (d)	7,526	..	7,526	442	907	14	2,648
Tajikistan	5,705	220	5,485	222	222	..	2,034
Thailand	52,344	33,347	18,997	37,647	42,802	2	n.a.
Togo (j)	n.a.	n.a.	n.a.	135	1,655	..	n.a.
Trinidad and Tobago	3,186	767	2,419	902	902	..	n.a.
Tunisia (i)	13,252	..	..	645	1,744	15	2,332
Turkey	227,273	194,769	32,504	221,261	274,510	1,104	8,602
Turkmenistan (d)	4,616	..	4,616	47	92	1	2,062
Uganda	2,815	1,046	1,769	1,081	1,081	..	n.a.
Ukraine	58,801	36,339	22,462	42,957	49,903	409	6,330
United Arab Emirates (b,c)	20,321	6,992	13,329	12,321	30,350	31	n.a.
United Kingdom	119,430	101,482	17,948	234,198	1,343,229	2,704	3,549
United Republic of Tanzania	..	..	..	80	452	1	n.a.
United States of America	517,297	388,119	129,178	720,212	1,672,524	7,361	19,248
Uruguay	9,463	3,655	5,808	4,502	5,825	1	n.a.
Uzbekistan	10,780	4,584	6,196	4,713	4,777	1	2,188
Vanuatu	..	..	..	61	196	..	n.a.
Venezuela (Bolivarian Republic of)	..	..	..	764	1,850	..	n.a.
Viet Nam	67,797	45,230	22,567	46,450	47,641	63	5,259
Yemen	3,292	1,323	1,969	1,390	1,390	..	n.a.
Zambia (b,c)	3,933	527	3,406	536	536	..	881
Zimbabwe	2,691	285	2,406	307	307	..	483
Others/Unknown	3	0	3	67,018	183,375	332	1
Total (2015 estimates)	**8,445,300**	**6,600,810**	**1,844,496**	**8,445,300**	**n.a.**	**48,910**	**331,684**

a. Data on application class count by origin are incomplete, because some offices do not report detailed statistics containing the origin of application class counts.
b. 2014 data are reported for application class count by office.
c. 2014 data are reported for application class count by origin.
d. Only Madrid designation data are available, so application class count by office and origin data may be incomplete.
e. This country does not have a national trademark office. All applications for trademark protection are filed at the Benelux Office for Intellectual Property or the European Union Intellectual Property Office.
f. Resident applications include those filed by residents of Belgium, Luxembourg and the Netherlands.
g. Resident applications include those filed by residents of EU member states.
h. Origin is defined as the country/territory of the stated residence of the applicant in an international application.
i. Total includes an aggregate direct application class count that cannot be broken down into direct and non-resident components.
j. The African Intellectual Property Office (OAPI) is the competent office for processing applications.
n.a. indicates not applicable.
.. indicates not available.

Source: WIPO Statistics Database, October 2016.

B41 Trademark registrations by office and origin, and trademarks in force, 2015

	Registration class count by office			Registration class count by origin	Equivalent registration class count by origin	Madrid international registrations	In force by office
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (i)	Total
Afghanistan	..	..	..	66	66	..	..
African Intellectual Property Organization (b,c,e)	9,294	1,981	7,313	n.a.	n.a.	n.a.	45,299
African Regional Intellectual Property Organization	338	54	284	n.a.	n.a.	n.a.	1,377
Albania	7,362	389	6,973	509	756	5	2,009
Algeria	9,572	3,335	6,237	3,459	3,758	1	37,044
Andorra (e)	2,433	517	1,916	726	4,128	2	20,011
Angola	..	..	..	67	472	3	..
Antigua and Barbuda (d)	1,967	..	1,967	13	175	..	..
Argentina	50,719	36,506	14,213	38,966	43,720	2	801,848
Armenia	9,129	1,624	7,505	1,874	2,063	19	18,699
Aruba	..	..	..	9	144	..	..
Australia	94,722	47,776	46,946	80,438	163,093	2,206	586,582
Austria	21,556	13,355	8,201	41,739	261,825	1,064	104,505
Azerbaijan	12,612	2,543	10,069	2,798	2,887	8	..
Bahamas (b,c,e)	1,126	30	1,096	1,245	3,955	8	32,767
Bahrain	7,496	119	7,377	211	454	2	..
Bangladesh (b,c)	4,172	865	3,307	918	999	..	45,740
Barbados	172	15	157	989	3,340	11	..
Belarus	28,551	11,390	17,161	14,036	15,177	163	43,318
Belgium (f)	n.a.	n.a.	n.a.	32,802	220,468	770	n.a.
Belize	..	..	..	858	3,375	22	3,235
Benelux (g)	62,690	52,379	10,311	n.a.	n.a.	n.a.	624,735
Benin (k)	n.a.	n.a.	n.a.	22	508	..	..
Bermuda	..	..	..	660	5,271	7	..
Bhutan (d)	1,770	..	1,770	..	..	..	..
Bolivia (Plurinational State of) (b,c,e)	7,940	2,428	5,512	2,525	2,579	..	59,528
Bonaire, Sint Eustatius and Saba (d)	1,581	..	1,581	..	..	..	..
Bosnia and Herzegovina	10,319	554	9,765	683	1,142	13	14,993
Botswana (c,e,j)	2,663	..	..	191	191	..	40,040
Brazil	96,050	68,280	27,770	72,473	88,032	5	..
Brunei Darussalam	..	..	..	101	101	..	..
Bulgaria	10,778	6,831	3,947	12,586	51,753	194	51,978
Burundi	..	..	..	2	2	..	..
Cabo Verde	..	..	..	6	93	..	..
Cambodia (b,c,e)	4,215	786	3,429	790	817	1	53,887
Cameroon (k)	n.a.	n.a.	n.a.	55	55	10	..
Canada	83,345	44,114	39,231	61,726	132,149	81	534,012
Chile	35,970	21,278	14,692	24,557	27,990	1	221,719
China	2,232,863	2,077,067	155,796	2,167,538	2,373,118	2,276	10,343,900
China, Hong Kong SAR	71,786	26,303	45,483	38,879	106,734	45	364,081
China, Macao SAR	12,129	1,485	10,644	1,890	2,349	..	88,198
Colombia	33,448	16,952	16,496	19,671	21,835	9	315,255
Congo (k)	n.a.	n.a.	n.a.	18	216	4	..
Cook Islands	..	..	..	30	30	..	..
Costa Rica	9,636	3,621	6,015	4,163	4,489	..	179,841
Côte d'Ivoire (k)	n.a.	n.a.	n.a.	14	203	..	..
Croatia	7,847	3,666	4,181	6,729	14,319	124	126,877
Cuba (b,c,e)	3,444	615	2,829	964	2,248	1	14,848
Curaçao	2,676	0	2,676	724	4,269	22	21,996
Cyprus	2,394	457	1,937	9,988	41,670	189	58,519
Czech Republic	29,834	24,840	4,994	34,519	102,829	269	122,154
Democratic People's Republic of Korea (d)	2,389	..	2,389	510	780	5	..
Democratic Republic of the Congo	..	..	..	20	371	..	..
Denmark	10,317	6,566	3,751	25,703	146,253	616	88,470
Djibouti (e)	..	..	..	3	57	..	769
Dominica	..	..	..	37	172	1	..
Dominican Republic (e)	11,072	5,476	5,596	5,648	6,188	3	103,822
Ecuador	..	..	..	474	1,323	..	..

	Registration class count by office			Registration class count by origin	Equivalent registration class count by origin	Madrid international registrations	In force by office
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (i)	Total
Egypt	15,912	3,532	12,380	4,145	5,328	25	115,646
El Salvador	2,338	2,338	0	2,734	2,950	..	81,521
Eritrea	..	..	..	98	98	..	..
Estonia	4,809	1,926	2,883	3,922	25,641	77	58,069
Ethiopia	..	..	..	24	24	..	..
European Union Intellectual Property Office (h)	321,165	237,358	83,807	n.a.	n.a.	n.a.	964,185
Fiji	..	..	..	47	182	3	..
Finland	9,852	6,878	2,974	25,292	128,561	450	104,945
France (d)	7,160	7	7,153	122,539	749,277	4,121	..
Gambia	..	..	..	1	1	..	..
Georgia (e)	8,814	775	8,039	1,122	1,570	33	53,199
Germany	148,370	132,407	15,963	363,910	1,934,455	7,126	936,356
Ghana (j)	4,117	..	..	9	90	..	..
Greece (d)	2,642	..	2,642	3,969	50,215	95	..
Grenada	569	9	560	12	12	..	225
Guatemala	..	..	..	1,090	1,198	..	..
Guinea (k)	n.a.	n.a.	n.a.	30	273	2	..
Guyana	..	..	..	15	15	..	..
Haiti	..	..	..	7	34	..	..
Honduras	5,721	1,372	4,349	1,534	1,858	..	81,523
Hungary	12,174	7,923	4,251	15,295	49,138	300	55,628
Iceland	8,107	947	7,160	3,532	9,881	98	57,659
India	84,783	53,520	31,263	62,269	79,452	133	1,035,524
Indonesia	46,588	31,770	14,818	33,224	34,871	2	566,271
Iran (Islamic Republic of) (d,e)	6,877	4	6,873	2,862	5,265	40	81,440
Iraq	..	..	..	139	220	..	..
Ireland (j)	5,560	..	..	8,209	79,861	158	82,571
Israel (b,c)	14,849	2,385	12,464	7,239	26,483	278	128,181
Italy	81,002	71,338	9,664	156,403	826,027	2,801	..
Jamaica	4,341	1,690	2,651	1,789	2,005	..	16,797
Japan (j)	187,780	..	..	93,786	243,806	2,451	1,825,962
Jordan	5,794	1,522	4,272	1,859	3,051	..	15,293
Kazakhstan (j)	23,169	..	..	1,016	1,097	52	..
Kenya	9,413	3,268	6,145	3,456	3,807	5	43,865
Kuwait (j)	7,670	..	..	303	789	..	..
Kyrgyzstan	6,780	291	6,489	302	302	1	9,847
Lao People's Democratic Republic	..	..	..	13	175	..	..
Latvia	5,012	1,932	3,080	3,752	13,728	94	25,431
Lebanon	9,527	4,098	5,429	4,600	6,705	5	..
Lesotho (d)	1,941	..	1,941	..	..	..	..
Liberia (d)	1,874	..	1,874	63	63	4	..
Libya	..	..	..	9	9	..	..
Liechtenstein (b,c,e)	7,543	706	6,837	5,190	13,110	99	96,015
Lithuania	6,407	3,274	3,133	4,675	17,672	91	36,173
Luxembourg (f)	n.a.	n.a.	n.a.	21,041	129,235	424	n.a.
Madagascar	4,566	1,769	2,797	1,775	1,775	1	..
Malawi	..	..	..	11	11	..	..
Malaysia	28,800	10,529	18,271	14,441	17,128	7	267,815
Maldives	..	..	..	10	10	..	..
Mali (k)	n.a.	n.a.	n.a.	8	8	..	..
Malta	793	444	349	5,381	33,931	53	21,754
Marshall Islands	..	..	..	164	677	1	..
Mauritania (k)	n.a.	n.a.	n.a.	54	108	..	..
Mauritius	..	..	..	1,029	4,335	14	..
Mexico	104,581	65,606	38,975	73,410	87,143	92	923,569
Monaco	8,432	1,092	7,340	3,127	18,432	65	10,508
Mongolia	10,887	5,724	5,163	5,760	5,760	1	15,033
Montenegro (d)	7,778	3	7,775	355	463	11	46,226
Morocco	24,057	11,394	12,663	13,058	16,142	100	..

	Registration class count by office			Registration class count by origin	Equivalent registration class count by origin	Madrid international registrations	In force by office
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (i)	Total
Mozambique (d)	2,808	..	2,808	73	775	1	..
Myanmar	..	..	..	44	44	..	..
Namibia	2,491	3	2,488	181	208	1	3,062
Nauru	..	..	..	6	6	..	..
Nepal	2,553	1,101	1,452	1,122	1,203	..	39,017
Netherlands (f)	n.a.	n.a.	n.a.	80,403	461,621	1,410	n.a.
New Zealand	39,135	13,359	25,776	19,904	35,512	438	251,271
Nicaragua	..	..	..	207	558	..	..
Niger (k)	n.a.	n.a.	n.a.	24	24	..	..
Nigeria	..	..	..	100	592	..	..
Norway	36,713	7,983	28,730	15,169	52,541	318	210,049
Oman (d)	5,098	..	5,098	601	682	..	..
Pakistan	9,436	5,336	4,100	5,668	7,101	..	112,737
Panama	11,934	4,210	7,724	6,876	11,212	11	184,770
Papua New Guinea	545	72	473	87	87	..	9,206
Paraguay	..	..	..	197	332	..	..
Peru	25,404	14,982	10,422	16,070	16,583	..	..
Philippines	36,017	14,235	21,782	15,176	15,947	30	..
Poland	27,592	21,098	6,494	37,352	252,209	408	236,505
Portugal	25,692	20,891	4,801	27,503	98,462	229	359,662
Qatar (b,c)	6,533	1,168	5,365	2,115	4,986	4	..
Republic of Korea	155,065	110,482	44,583	142,738	195,816	951	1,020,579
Republic of Moldova	9,941	1,839	8,102	2,610	3,056	76	19,526
Romania	18,427	13,804	4,623	16,571	56,348	80	92,735
Russian Federation	125,746	66,771	58,975	99,930	119,179	969	508,305
Rwanda (b,c)	1,511	101	1,410	101	101	1	2,335
Saint Kitts and Nevis	..	..	..	69	339	1	..
Saint Lucia	..	..	..	159	456	3	..
Saint Vincent and the Grenadines	..	..	..	27	189	2	..
Samoa	152	15	137	314	908	..	3,998
San Marino (d)	3,191	10	3,181	361	3,412	11	..
Sao Tome and Principe (b,c)	1,147	13	1,134	14	14	..	..
Saudi Arabia	..	..	..	1,589	5,450	1	..
Senegal (k)	n.a.	n.a.	n.a.	46	424	1	..
Serbia	13,935	1,574	12,361	4,732	8,694	219	29,265
Seychelles	..	..	..	897	3,165	10	..
Sierra Leone (b,c,e)	2,026	350	1,676	354	354	1	528
Singapore	46,201	9,230	36,971	22,555	42,505	449	286,672
Sint Maarten (Dutch Part) (b,c,e)	1,718	0	1,718	..	..	..	19,381
Slovakia	11,954	7,109	4,845	11,328	35,687	119	48,380
Slovenia (d)	3,329	8	3,321	4,981	30,285	144	..
Solomon Islands	..	..	..	18	396	..	..
South Africa	27,206	14,547	12,659	16,373	25,407	..	382,478
Spain	69,123	60,916	8,207	106,498	718,219	1,214	787,807
Sri Lanka	2,272	777	1,495	1,106	2,348	..	..
Sudan (d)	2,742	..	2,742	9	9	..	..
Suriname	2,393	1,311	1,082	1,351	1,884	..	9,721
Swaziland (j)	2,008	..	..	36	36	..	1,358
Sweden	15,246	11,365	3,881	39,043	249,789	776	..
Switzerland	80,752	31,272	49,480	129,350	435,104	3,255	228,370
Syrian Arab Republic	5,984	2,864	3,120	3,060	3,330	..	..
T F Y R of Macedonia (d)	7,868	..	7,868	246	705	13	..
Tajikistan (d)	5,144	..	5,144	16	16	1	638
Thailand	21,177	11,247	9,930	15,270	20,383	3	347,624
Timor-Leste	..	..	..	111	111	..	..
Togo (k)	n.a.	n.a.	n.a.	18	99	..	..
Trinidad and Tobago	2,410	495	1,915	539	539	..	21,372
Tunisia (j)	13,309	..	..	271	711	11	..
Turkey	192,950	158,882	34,068	188,759	236,152	1,238	768,738

	Registration class count by office			Registration class count by origin	Equivalent registration class count by origin	Madrid international registrations	In force by office
Name	**Total**	**Resident**	**Non-resident**	**Total (a)**	**Total (a)**	**Origin (i)**	**Total**
Turkmenistan (d)	5,248	..	5,248	67	67	..	..
Uganda	2,255	806	1,449	811	811	..	10,440
Ukraine	39,889	16,253	23,636	22,324	27,975	389	167,166
United Arab Emirates (b,c)	19,040	5,522	13,518	9,462	23,957	33	..
United Kingdom	105,112	87,802	17,310	208,393	1,189,076	3,079	589,559
United Republic of Tanzania	..	..	..	34	412	..	..
United States of America	306,504	212,915	93,589	499,048	1,384,317	8,355	2,018,319
Uruguay	6,390	2,421	3,969	3,249	4,464	..	92,931
Uzbekistan	9,767	3,002	6,765	3,114	3,178	2	18,852
Vanuatu	..	..	..	52	187	..	..
Venezuela (Bolivarian Republic of)	..	..	..	595	1,627	..	..
Viet Nam	42,112	21,971	20,141	23,201	24,180	77	210,080
Yemen	3,104	1,195	1,909	1,227	1,227	..	..
Zambia (b,c,e)	2,716	332	2,384	363	363	..	31,437
Zimbabwe	2,283	210	2,073	316	316	..	65,154
Others/Unknown	..	..	..	56,284	154,122	129	..
Total (2015 estimates)	**6,215,121**	**4,520,640**	**1,694,481**	**6,215,121**	**n.a.**	**51,938**	**36,538,300**

a. Data on registration class count by origin are incomplete, because some offices do not report detailed statistics containing the origin of registration class counts.
b. 2014 data are reported for registration class count by office.
c. 2014 data are reported for registration class count by origin.
d. Only Madrid designation data are available, so registration class count by office and origin data may be incomplete.
e. 2014 data are reported for trademarks in force.
f. This country does not have a national trademark office. All trademark registrations for this country are issued by the Benelux Office for Intellectual Property or the European Union Intellectual Property Office.
g. Resident registrations include those issued to residents of Belgium, Luxembourg and the Netherlands.
h. Resident registrations include those issued to residents of EU member states.
i. Origin is defined as the country/territory of the stated residence of the holder of an international registration.
j. Total includes an aggregate direct registration class count that cannot be broken down into direct and non-resident components.
k. The African Intellectual Property Office (OAPI) is the competent office for issuing registrations.

n.a. indicates not applicable.
.. indicates not available.

Source: WIPO Statistics Database, October 2016.

Industrial Designs

Highlights

Applications rebounded to 872,800

An estimated 872,800 applications were filed worldwide in 2015. With annual growth of 2.3%, industrial design applications worldwide rebounded after experiencing a sharp drop of 10.2% in 2014 (figure 15). This decline was due mainly to a pronounced decrease in filings in China, which has accounted for about two-thirds of the world total since 2010. The 2015 recovery resulted mainly from filing increases in China, the Republic of Korea and the U.S. Compared to 2014, those three offices received between 3,500 and 4,500 additional filings each.

The total number of designs contained in applications (design count) increased modestly by 0.6% to about 1.14 million in 2015 (figure 16). Designs contained in non-resident applications increased by 1.8%, a faster increase than for those contained in resident applications (+0.4%).

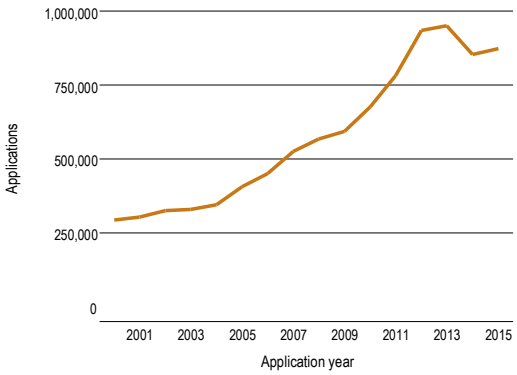
Design count

In an industrial design application or registration, some offices allow applications to contain more than one design for the same good or in the same class – others allow only one design per application. To capture the differences in application filing systems across offices, one needs to compare their respective application and registration design counts.

Designs in applications filed in China accounted for half the global total

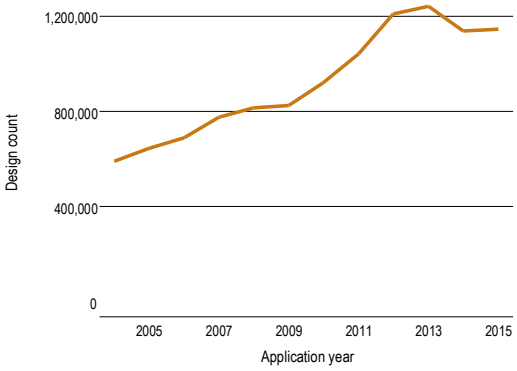
The State Intellectual Property Office of China (SIPO) received applications containing a total of 569,059 designs, up 0.8% from 2014. Designs in applications filed by residents increased by 0.6% and accounted for 97% of SIPO's total, while those filed by non-residents grew by 9%. SIPO remained by far the office with the largest design count, receiving half of all designs in applications filed worldwide in 2015. It was followed by the European Union Intellectual Property Office (EUIPO; 98,162) and the Korean Intellectual Property Office (KIPO; 72,458).

Figure 15. Industrial design applications worldwide



Source: Standard figure C1.

Figure 16. Number of designs in industrial design applications worldwide

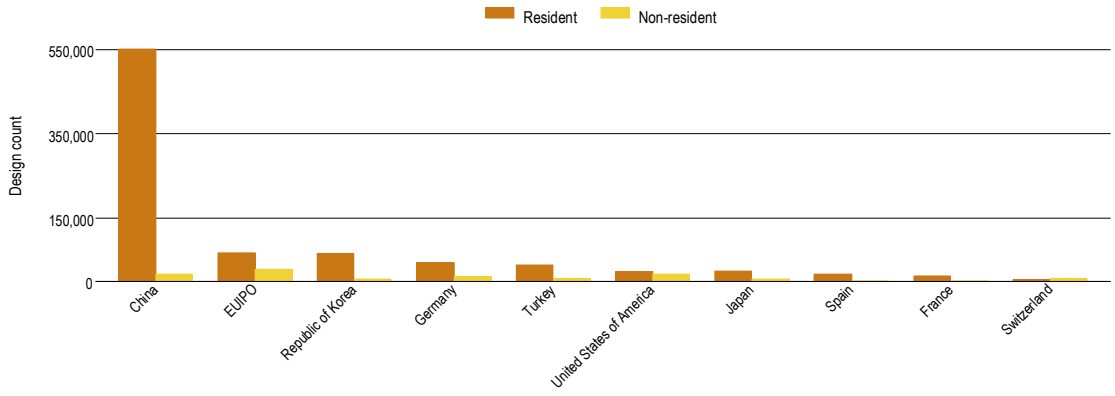


Source: Standard figure C2.

The top 20 offices combined accounted for 90% of designs in total applications.[1] Of these offices, 11 saw increases in application design counts. The offices of the Islamic Republic of Iran (+33.8%), China, Hong Kong (SAR) (+15.7%), the U.S. (+13.4%) and India (+10.5%) saw double-digit growth. Seven of the nine offices that saw declines in design counts were located in Europe, such as the offices of the Russian Federation (-17.9%), Ukraine (-11.2%), France (-9.8%) and Germany (-7.5%). The offices of Brazil (-8.4%) and Turkey (-6%) also received fewer design counts in 2015 than the previous year.

1. Design count data for the office of Italy were not available for 2015. In 2014, the office of Italy ranked seventh in the world on this measure.

Figure 17. Application design counts for the top 10 offices, 2015



Source: Standard figure C10.

The contribution of non-resident designs was the primary driver of growth at six of the top 20 offices and had a positive impact overall on the rates of 12 offices. This contribution was particularly high in China, Hong Kong (SAR) and Morocco. The increase in resident and non-resident design counts contributed at a similar level to overall growth at the offices of Australia, SIPO and the United States Patent and Trademark Office (USPTO).

The top 20 list features 11 offices located in high-income countries, six in upper middle-income countries and three in lower middle-income countries. The offices of all upper middle-income countries combined received 58.1% of all designs contained in applications filed in 2015 (figure 18). China accounted for the vast majority of this share, with the other upper middle-income countries generating only 8.4% of the world total. The share of high-income countries stood at 37.6%. Offices of lower middle-income countries received 4.1% of the total, and those of low-income countries only 0.2%.

Between 2005 and 2015, average annual growth was 13.3% for China and 3.7% for the other upper middle-income countries. Over the same period, offices in high-income (+1.5%), lower middle-income (+1.7%) and low-income (-3.6%) countries had much lower growth rates.

Asia accounted for a large majority (68%) of all designs in applications filed worldwide in 2015 (figure 19). It was followed by Europe (24.5%) and North America (4%).

Of all geographical regions, Asia (+9.4%) and North America (+4.3%) had the highest average annual growth between 2005 and 2015. In contrast, Africa (-0.8%), Europe (+0.9%), Latin America & the Caribbean (LAC; -0.2%) and Oceania (+0.5%) had average annual growth rates close to zero.

Equivalent design count

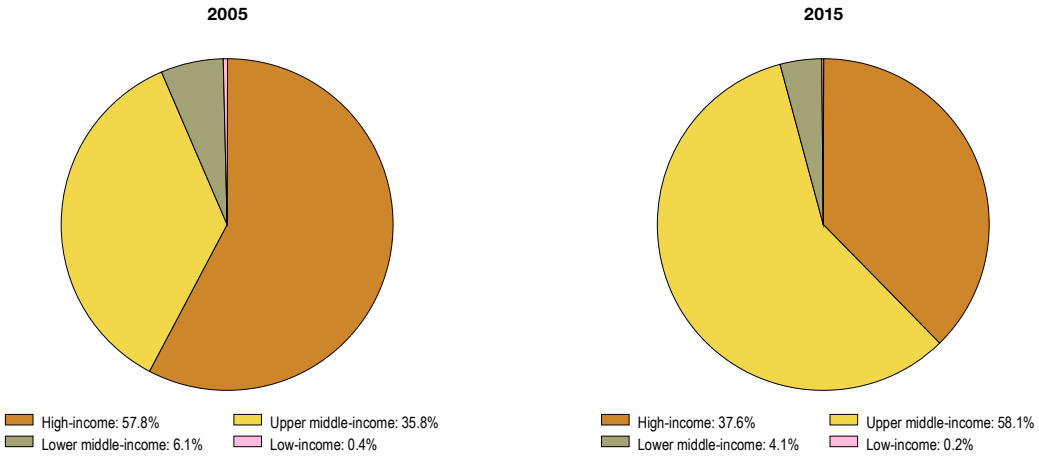
Designs in applications filed at regional offices are equivalent to multiple designs in applications filed in the respective member states of those offices. To calculate the number of equivalent designs for the African Intellectual Property Organization (OAPI, which has 17 member states), the Benelux Office for Intellectual Property (3) and EUIPO (28), each design is multiplied by the corresponding number of member states. However, 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 as one resident application and one application abroad if the applicant resides in a member state.

China topped the list by origin

Applications received by offices from resident and non-resident applicants are referred to as office data, whereas applications filed by applicants at a national/regional office (resident applications) or at foreign offices (applications abroad) are referred to as origin data. Here, industrial design statistics based on the origin of the residence of the first-named applicant are reported to complement the picture of industrial design activity worldwide.

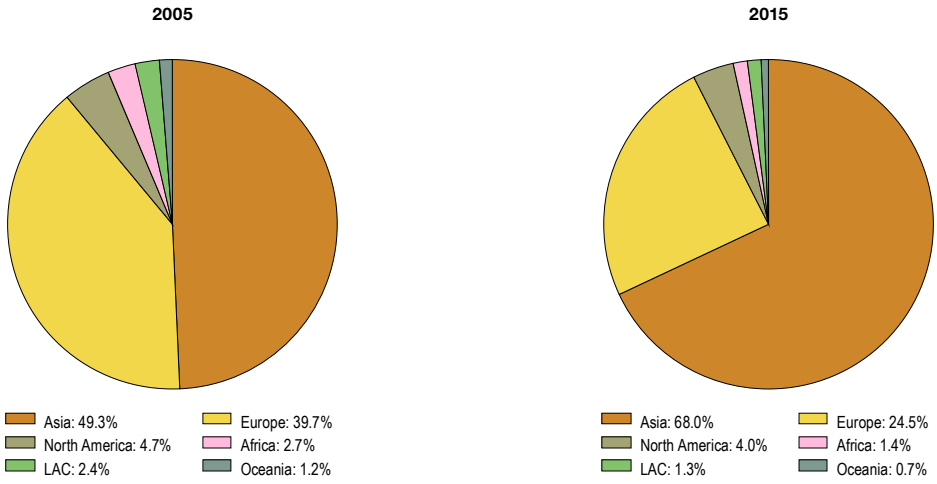
Applicants from China had the highest equivalent design counts in 2015, with 729,340 (map 3). They were followed by applicants residing in Germany (573,268),

Figure 18. Application design counts by income group



Source: Standard table C7.

Figure 19. Application design counts by region



Source: Standard table C8.

Italy (284,093), the U.S. (278,814) and France (212,376). Equivalent designs in applications filed abroad accounted for between 89% and 96% of the total for applicants from all of these countries, except for those from China, whose designs in applications filed at SIPO accounted for 76% of the total.

Among the top 20 origins, 13 saw their equivalent design counts decrease compared to 2014, including double-digit drops for Turkey (-13.9%), Bulgaria (-12.9%), Germany (-11.6%) and the Netherlands (-11%). The sharpest increases came from applicants residing in Denmark (+16.7%), Poland (+10.4%) and China (+8.3%).

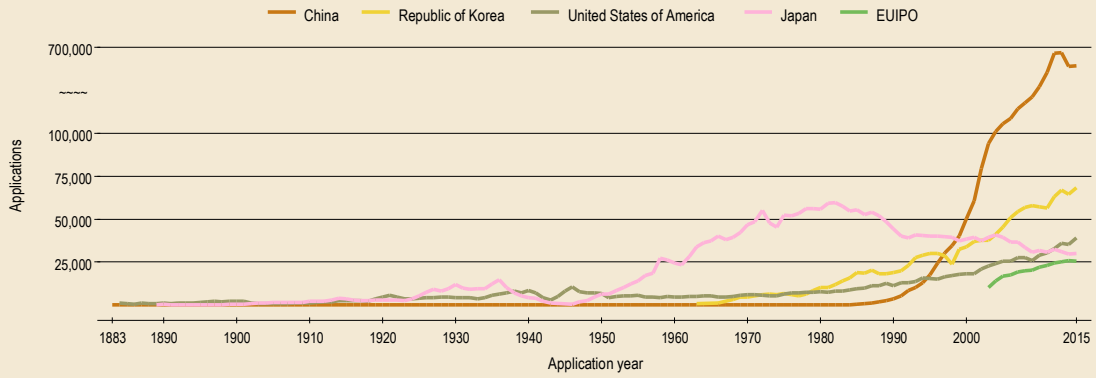
European origins dominated the top 20 ranking, with 15 countries, followed by four located in Asia and one in North America. In terms of income categories, 17 belonged to the high-income group, and there were three upper middle-income countries – Bulgaria, China and Turkey – included in this list of top origins.

Applicants from Germany (509,658), Italy (274,142) and the U.S. (256,183) had the highest number of equivalent designs in applications filed abroad. Six of the top 10 origins in terms of equivalent designs in applications filed abroad saw growth in 2015. Applicants from China saw the sharpest increase (+42.2%), overtaking the United Kingdom (U.K.) to rank sixth. In contrast, Germany (-12.2%) experienced the most pronounced decline.

Industrial design applications filed since 1883

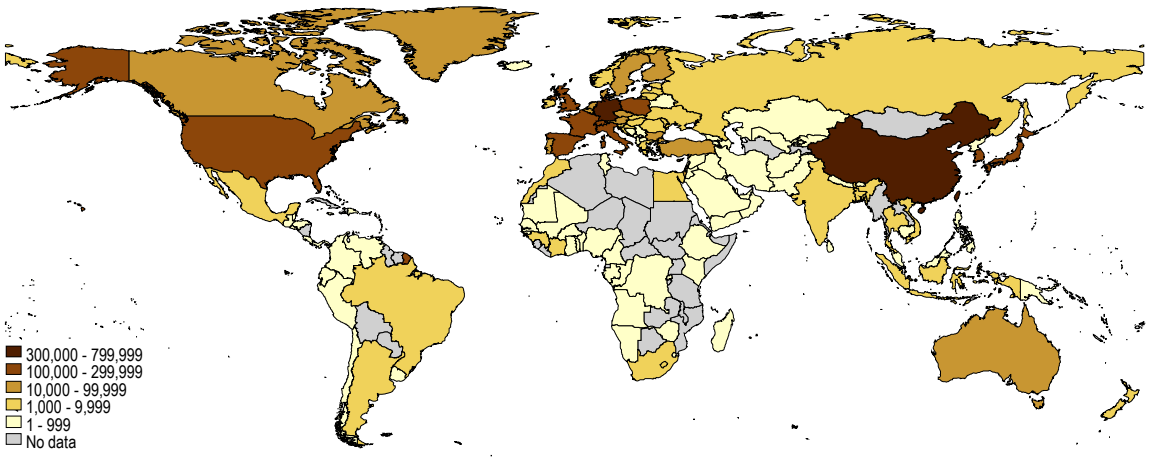
Between 1883 and the early 1950s, the Japan Patent Office (JPO) and the USPTO averaged similar numbers of applications, rarely exceeding 10,000. The JPO received the largest number of applications from the 1950s to the late 1990s, reaching about 50,000 annual filings at its peak. SIPO began receiving applications in 1985 and saw unprecedented growth, from 640 in 1985 to 660,000 in 2013. It experienced its first drop in 2014. KIPO surpassed the JPO in 2004, and has remained the second-largest office since then. In 2012, the USPTO moved ahead of the JPO to become the third largest. The fifth-largest office is the EUIPO, which began receiving applications in 2003 and reached a plateau in its number of filings, at around 25,000, in 2013. Unlike the other four offices, the EUIPO has a multiple design system. Applications filed at the EUIPO contained 98,162 designs in 2015.

Trend in industrial design applications for the top five offices



Source: Standard figure C9.

Map 3. Equivalent design counts by origin, 2015



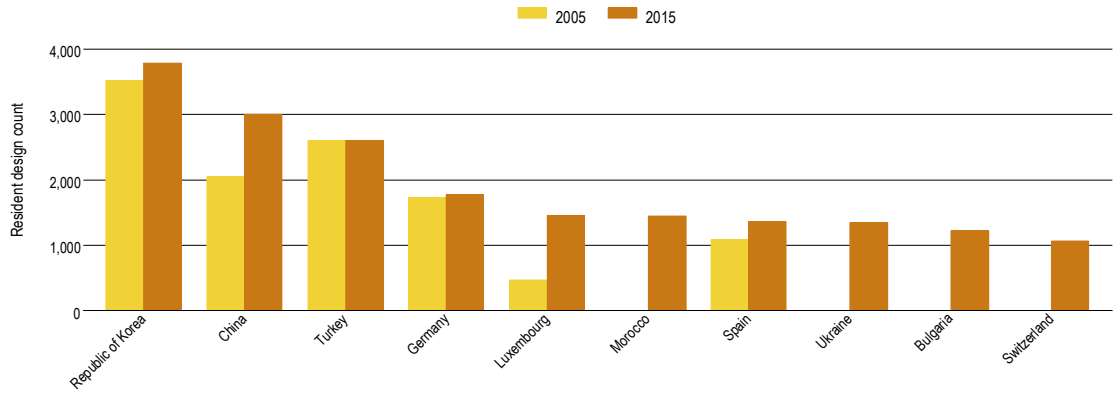
Source: Standard figure C16.

Adjusting for GDP and population

The Republic of Korea had the highest resident design count per 100 billion US dollars (USD) of gross domestic product (GDP) in 2015 (figure 20). It was followed by China and Turkey. This top three ranking is unchanged from 2014. Most of the remaining 17 were European countries, except Morocco (at number 6) and Madagascar (15) from Africa, and Japan (20) from Asia. In Europe, the three countries with the highest resident design count per unit of GDP were Germany (4), Luxembourg (5) and Spain (7).

Similarly, the Republic of Korea remained by far the country with the highest resident design count per million population in 2015. It was followed by Germany and Switzerland. China overtook Austria to rank in sixth position. As with resident design counts per unit of

Figure 20. Resident application design counts per 100 billion USD GDP for the top 10 origins



Source: Standard figure C25.

GDP, Brazil, India and the U.S. do not appear among the top 20 origins. Compared with 2005, the resident design count per million population in 2015 sharply increased for China, Portugal and the Republic of Korea, but dropped dramatically for China, Hong Kong (SAR), Japan, Belgium and the Czech Republic.

Furnishing and articles of clothing were the most recorded classes

The Locarno classification includes 32 classes of industrial designs. In 2015, the classes that accounted for the largest shares of the world total were furnishings (9.4%), articles of clothing (8.3%) and packages and containers (7%).

Grouping the Locarno classes into 12 industry sectors shows that applications filed at most of the top 10 offices are concentrated in three sectors, although these three sectors vary from office to office. For example, textiles and accessories appeared as the main sector at the EUIPO and the offices of Australia, Germany, India and the Republic of Korea. The tools and machines sector accounted for the largest share in Canada and the Russian Federation. By contrast, the most recorded sector was ICT and audiovisual in China Hong Kong (SAR), and furniture and household goods in Turkey.

Among the top 15 origins, France, Germany, Turkey and the U.K. had most applications belonging to one of the three following sectors: advertising, furniture and household goods, and textiles and accessories. In fact, the furniture and household goods sector and the textiles and accessories sector both appeared among the top three sectors for 11 of the top 15 origins in 2015. The textiles and accessories sector also accounted for the largest share of the total for eight of the top 15 origins, including Austria, India, Italy, the Republic of Korea and Spain.

Sharp increase in registrations

An estimated 729,800 industrial designs were registered worldwide in 2015, up 21.3% on 2014. This sharp increase was mainly due to strong growth in registrations at SIPO, which registered 482,659 industrial designs – about 121,000 more than in 2014, and 96% of which related to resident applicants. As a result, applications registered to residents increased much faster worldwide (+23.6%) than those registered to non-residents (+8.1%).

About 989,400 designs were contained in applications registered in 2015, up 14.6% on 2014. Designs contained in resident registrations increased by 16.8%, while those contained in non-resident registrations increased by 5.1%. China accounted for nearly half of all designs in applications registered worldwide, and the top 20 offices combined recorded nearly 90% of the total. Among these offices, five saw double-digit growth, including the Russian Federation (+46.2%), China (+33.5%) and the U.S. (+16.9%). By contrast, eight experienced decreases compared to 2014, with the sharpest falls in Canada (-8.2%), Spain (-4.6%) and Switzerland (-4.1%).

Industrial designs in force rose to 3.4 million

In 2015, 3.4 million industrial design registrations were in force worldwide, representing annual growth of 2.8%. With 1.24 million active industrial design registrations, China accounted for 36% of the world total. The Republic of Korea (318,027), the U.S. (293,596), Japan (251,121) and the EUIPO (182,853) completed the list of the top five offices.[2]

Among the top 20 offices, the Russian Federation (+12.6%), Indonesia (+12.1%) and Turkey (+9.5%) saw the sharpest increases, whereas active registrations decreased most markedly in Malaysia (-23%), Spain (-20.6%) and at the EUIPO (-13%).

Hague filings grew sharply

The Hague System offers applicants an advantageous route for seeking industrial design protection internationally as an alternative to using the Paris Convention for the Protection of Industrial Property to pursue industrial design rights in different countries. For further information and statistics on this System, see the *Hague Yearly Review, 2016*.

In 2015, the Hague System received 4,111 international applications, up 40.6% on 2014. These applications contained 16,435 designs, representing annual growth of 13.8%. The increase in international applications in 2015 was the fastest since 2008. This growth was partly due to the accessions to the System of the Republic of Korea in 2014 and of Japan and the U.S. in 2015.

With 3,453 designs in applications, applicants residing in Germany remained the largest users of the Hague System. They were followed by applicants from Switzerland (3,316 designs), France (1,317), the Republic of Korea (1,282) and Italy (1,186). Combined, these five origins accounted for 64% of the total. Three of these five origins experienced growth in filings. There was sharp growth in the number of designs in international applications originating from applicants residing in the Republic of Korea, which became a Hague member in July 2014: design counts jumped from 125 in the second half of 2014 to 1,282 in 2015. Applicants from Italy (+30.9%) and Switzerland (+4%) also saw growth. By contrast, designs in filings from Germany and France decreased by 10.7% and 15.5%, respectively.

With 1,132 designs in applications, Samsung Electronics of the Republic of Korea displaced Swatch AG of Switzerland (511 designs) to become the largest user of the Hague System in 2015. Fonkel Meubelmarketing of the Netherlands (438), Volkswagen of Germany (418) and Procter & Gamble of the U.S. (369) completed the list of the top five applicants.

Since 2010, the European Union has received the largest number of designs contained in designations each year; it recorded 13,354 designs in 2015. It was followed by Switzerland (9,525) and Turkey (6,207). Twelve of the top 20 designated Hague members recorded double-digit annual growth.

In 2015, 54% of non-resident applications filed at offices of Hague members were filed via the Hague System – an increase of just 0.4 percentage points on the 2014 share of 53.6%.[3]

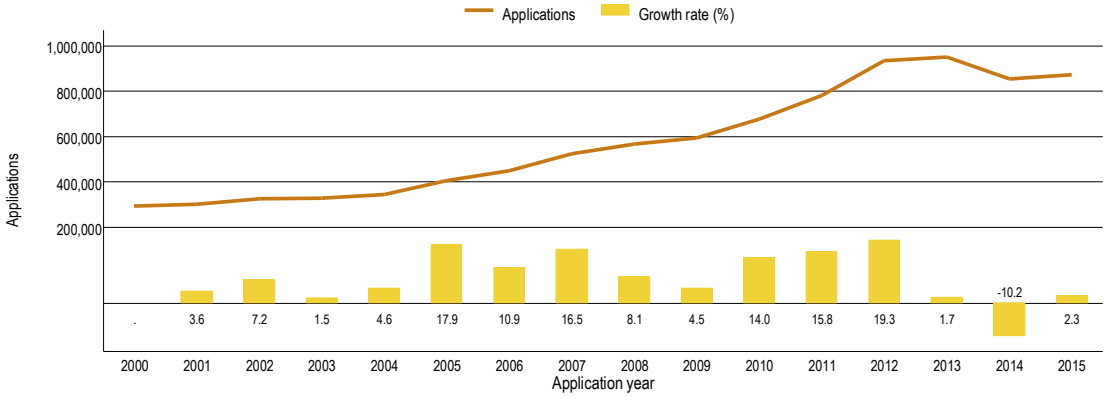
2. Active industrial design registration data for the office of France were not available for 2015. In 2014, the office of France ranked second in the world.

3. The JPO and the USPTO are not included in this calculation as their countries became member of the Hague System in the course of 2015.

Standard figures and tables

Industrial design applications and registrations worldwide

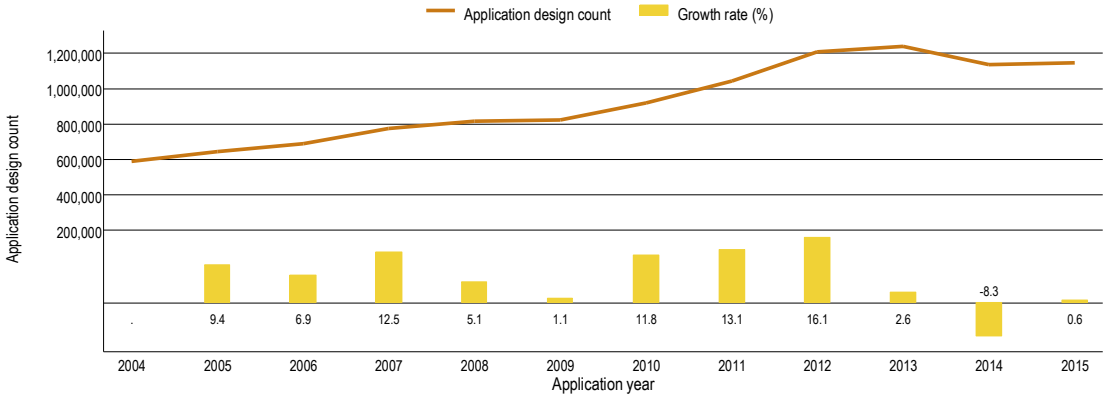
C1 Trend in industrial design applications worldwide



Note: WIPO estimates cover 151 IP offices and include direct national and regional applications as well as designations received via the Hague System.

Source: WIPO Statistics Database, October 2016.

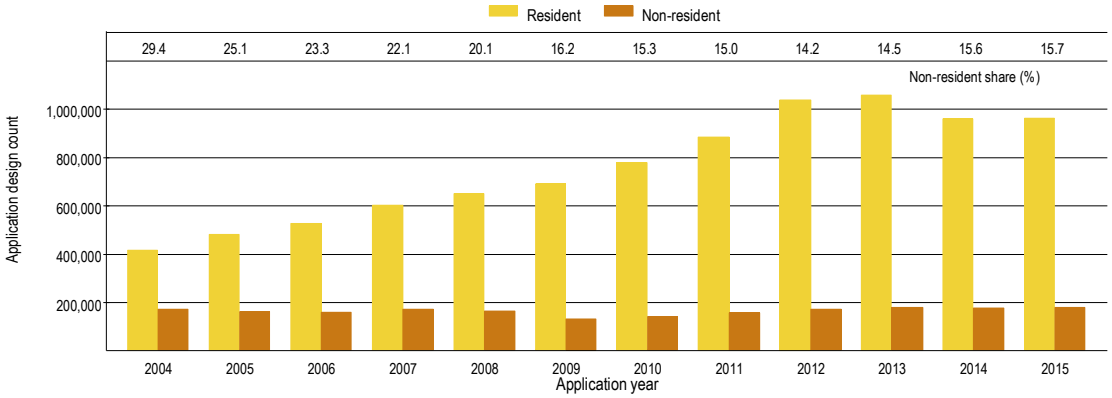
C2 Trend in application design counts worldwide



Note: WIPO estimates cover 135 IP offices and include direct national and regional applications as well as designations received via the Hague System.

Source: WIPO Statistics Database, October 2016.

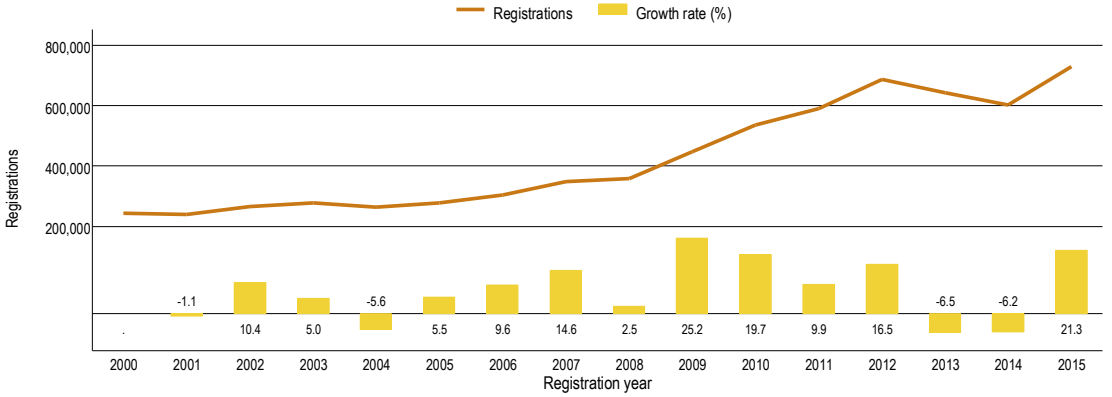
C3 Resident and non-resident application design counts worldwide



Note: WIPO estimates cover 135 IP offices and include direct national and regional applications as well as designations received via the Hague System.

Source: WIPO Statistics Database, October 2016.

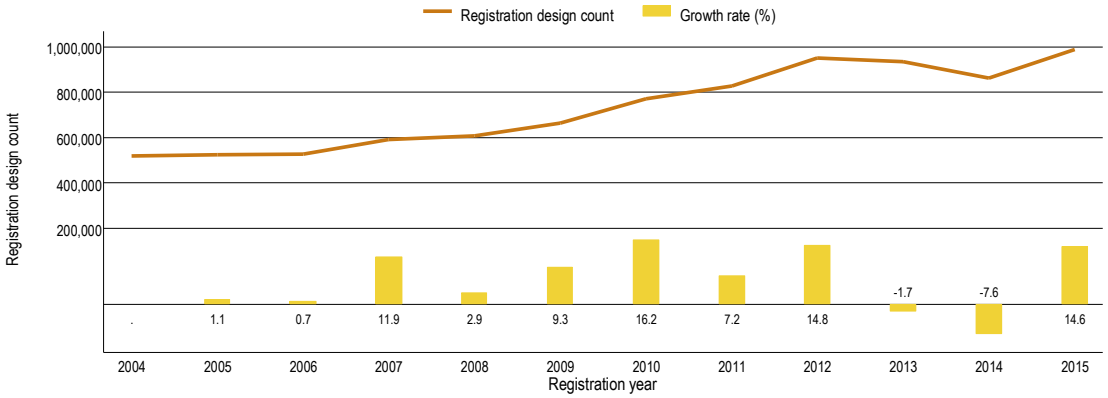
C4 Trend in industrial design registrations worldwide



Note: WIPO estimates cover 146 IP offices and include registrations issued for direct applications and designations received via the Hague System.

Source: WIPO Statistics Database, October 2016.

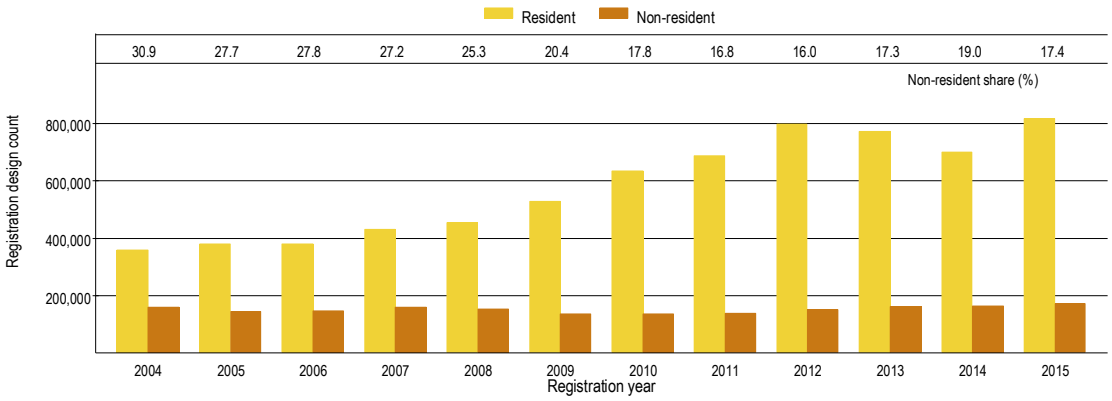
C5 Trend in registration design counts worldwide



Note: WIPO estimates cover 130 IP offices and include registrations issued for direct applications and designations received via the Hague System.

Source: WIPO Statistics Database, October 2016.

C6 Resident and non-resident registration design counts worldwide



Note: WIPO estimates cover 130 offices and include registrations issued for direct applications and designations received via the Hague System.

Source: WIPO Statistics Database, October 2016.

Industrial design applications and registrations by office

C7 Application design counts by income group

	Number of designs in applications		Resident share (%)		Share of world total (%)		Average growth (%)
Income group	**2005**	**2015**	**2005**	**2015**	**2005**	**2015**	**2005-15**
High-income	372,500	430,800	71.7	73.8	57.8	37.6	1.5
Upper middle-income	230,600	665,700	85.7	92.9	35.8	58.1	11.2
...Upper middle-income without China	*67,200*	*96,600*	*68.7*	*69.2*	*10.4*	*8.4*	*3.7*
Lower middle-income	39,100	46,500	45.8	59.2	6.1	4.1	1.7
Low-income	2,600	1,800	20.1	40.3	0.4	0.2	-3.6
World	**644,800**	**1,144,800**	**74.9**	**84.3**	**100.0**	**100.0**	**5.9**

Note: WIPO estimates cover 135 offices. Each category includes the following number of IP offices: high-income (52), upper middle-income (38), lower middle-income (35) and low-income (10). European Union Intellectual Property Office data are allocated to the high-income group because most European Union member states are high-income countries. African Intellectual Property Organization data are similarly allocated to the low-income group.

Source: WIPO Statistics Database, October 2016.

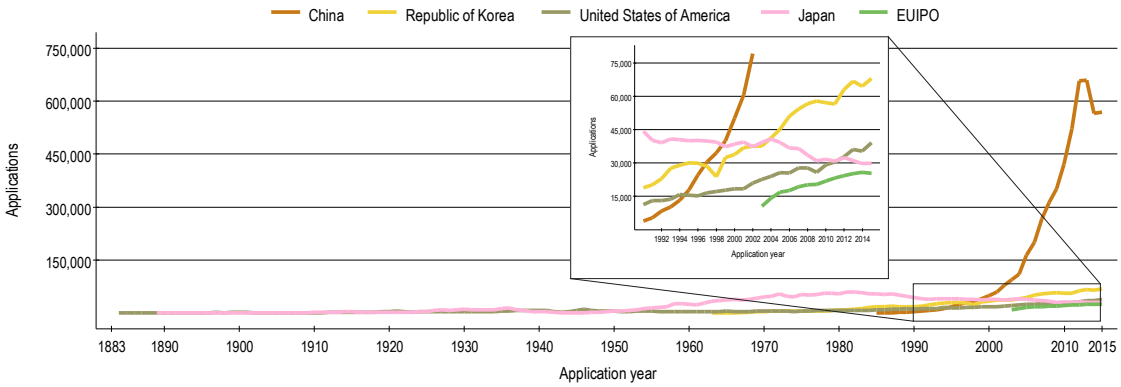
C8 Application design counts by region

	Number of designs in applications		Resident share (%)		Share of world total (%)		Average growth (%)
Region	**2005**	**2015**	**2005**	**2015**	**2005**	**2015**	**2005-15**
Africa	17,700	16,300	37.2	54.1	2.7	1.4	-0.8
Asia	317,900	778,100	87.4	92.1	49.3	68.0	9.4
Europe	255,700	281,000	67.8	73.2	39.7	24.5	0.9
Latin America & the Caribbean	15,300	15,000	41.9	46.7	2.4	1.3	-0.2
North America	30,200	46,000	50.0	50.9	4.7	4.0	4.3
Oceania	8,000	8,400	46.1	37.7	1.2	0.7	0.5
Total	**644,800**	**1,144,800**	**74.9**	**84.3**	**100.0**	**100.0**	**5.9**

Note: WIPO estimates are based on data covering 135 offices and include the following number of offices: Africa (22), Asia (38), Europe (42), Latin America & the Caribbean (26), North America (2) and Oceania (5).

Source: WIPO Statistics Database, October 2016.

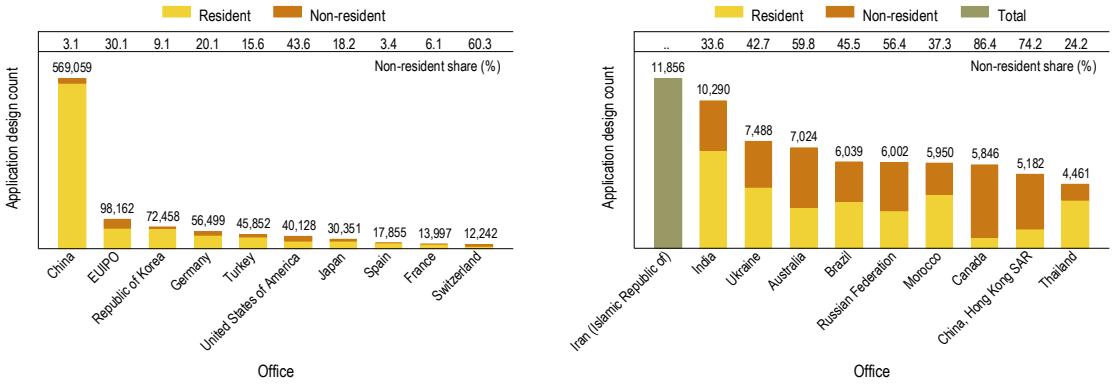
C9 Trend in industrial design applications for the top five offices



Note: EUIPO is the European Union Intellectual Property Office. Data are based on the numbers of applications filed; that is, differences between single-design and multiple-design filing systems across IP offices are not taken into account. The top five offices were selected based on their 2015 totals.

Source: WIPO Statistics Database, October 2016.

C10 Application design counts for the top 20 offices, 2015

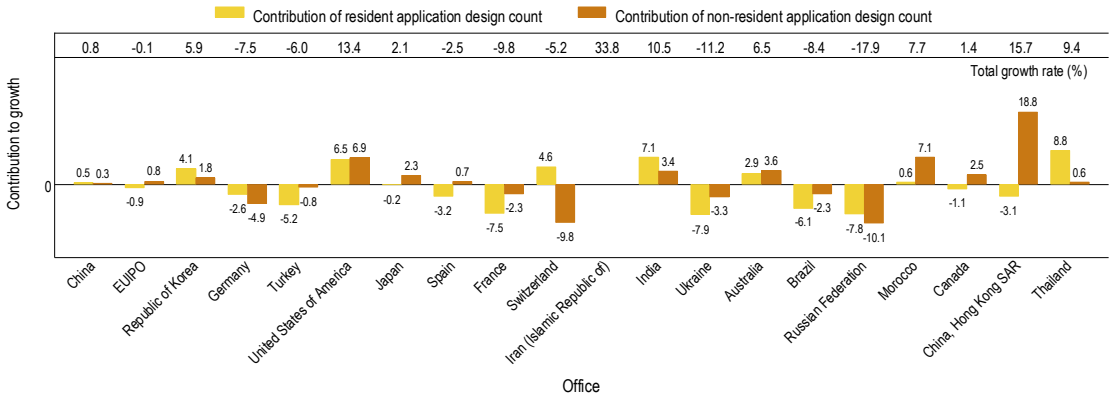


.. indicates not available.

Note: EUIPO is the European Union Intellectual Property Office. Application design count data for Italy and the United Kingdom were not available.

Source: WIPO Statistics Database, October 2016.

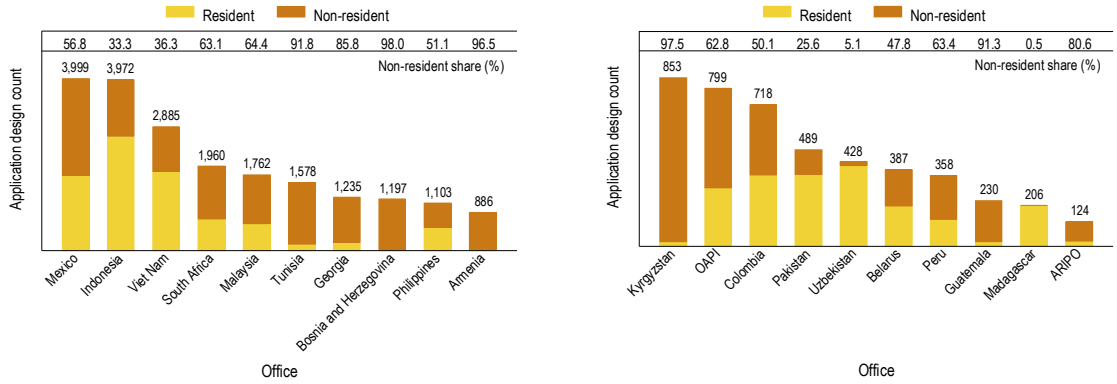
C11 Contribution of resident and non-resident application design counts to total growth for the top 20 offices, 2014-15



Note: EUIPO is the European Union Intellectual Property Office. This figure shows total growth in application design counts broken down by the respective contributions of resident and non-resident filings. For example, design counts in Australia grew by 6.5%, and resident applicants contributed 2.9 percentage points to this total growth. The resident and non-resident breakdown was not available for the office of the Islamic Republic of Iran.

Source: WIPO Statistics Database, October 2016.

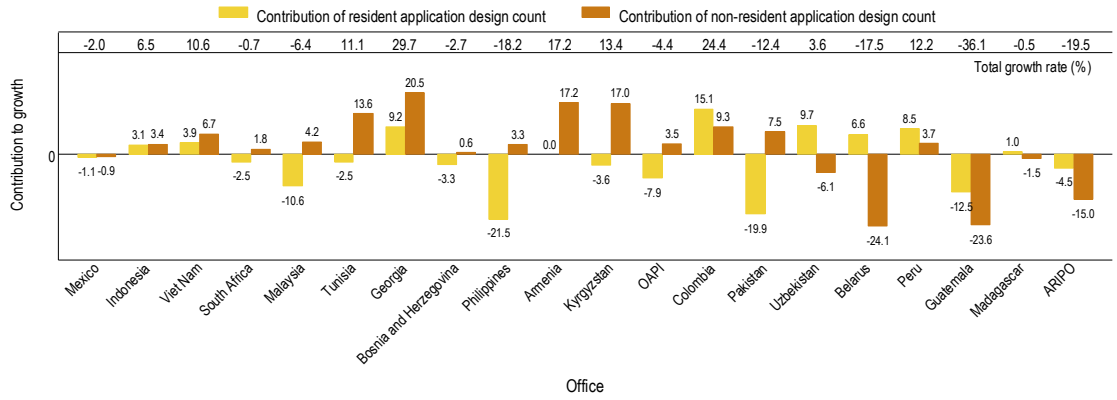
C12 Application design counts for offices of selected low- and middle-income countries, 2015



Note: ARIPO is the African Regional Intellectual Property Organization. OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

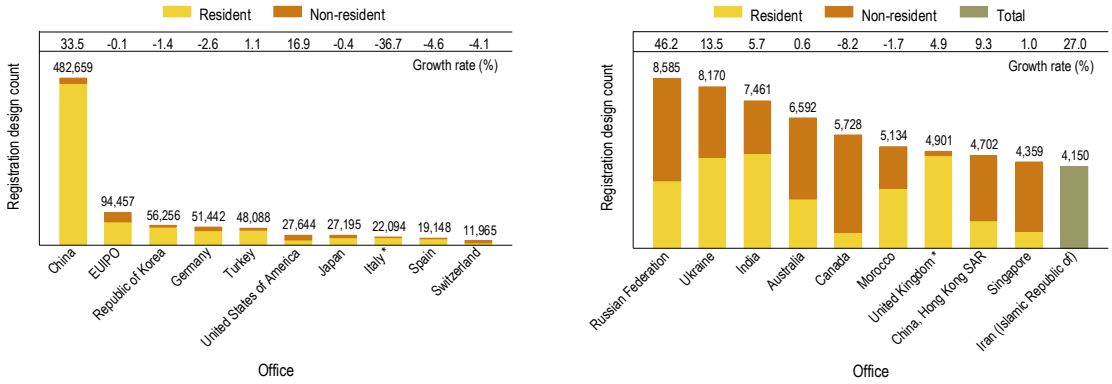
C13 Contribution of resident and non-resident application design counts to total growth for offices of selected low- and middle-income countries, 2014-15



Note: ARIPO is the African Regional Intellectual Property Organization. OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are in the statistical table at the end of this section. This figure shows total growth in design counts broken down by the respective contributions of resident and non-resident filings. For example, the design count in Indonesia grew by 6.5%, and resident applicants contributed 3.1 percentage points to this growth.

Source: WIPO Statistics Database, October 2016.

C14 Registration design counts for the top 20 offices, 2015

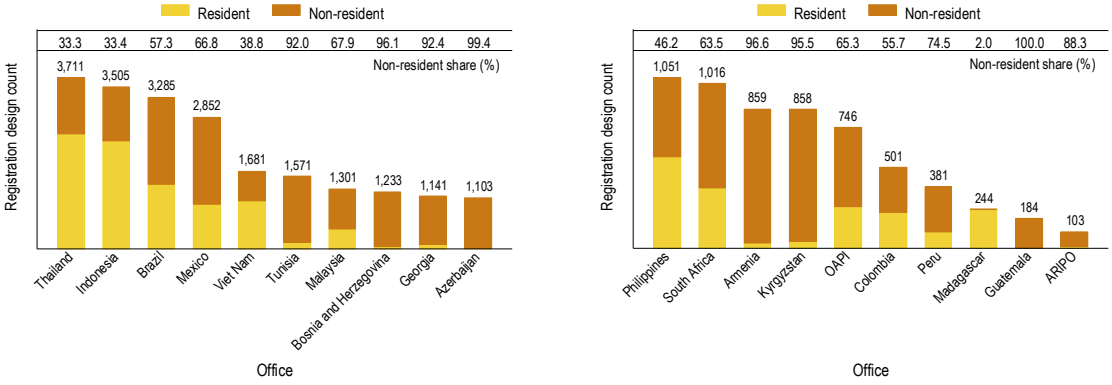


* Indicates 2014 data.

Note: EUIPO is the European Union Intellectual Property Office. Registration design count data for France were not available.

Source: WIPO Statistics Database, October 2016.

C15 Registration design counts for offices of selected low- and middle-income countries, 2015

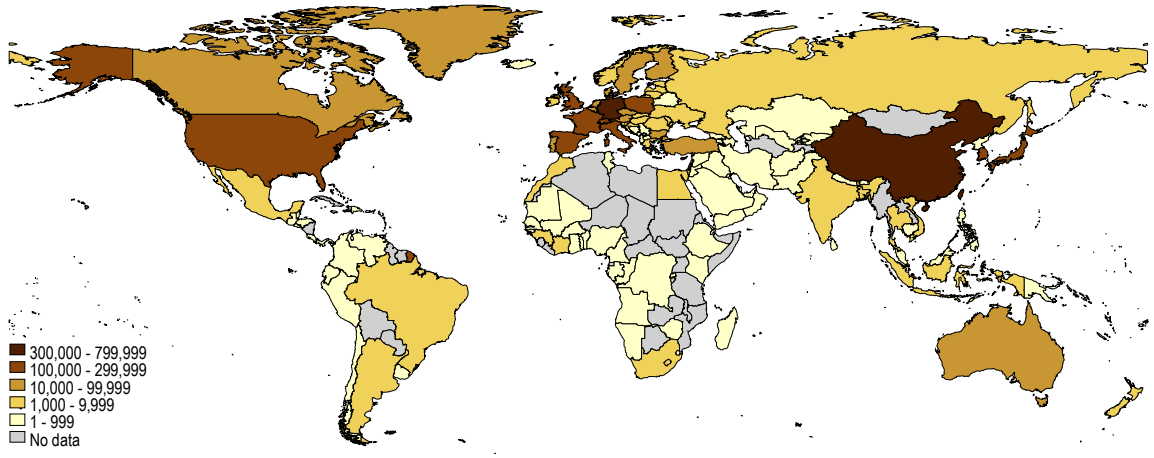


Note: ARIPO is the African Regional Intellectual Property Organization. OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are presented in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

Application design counts by origin

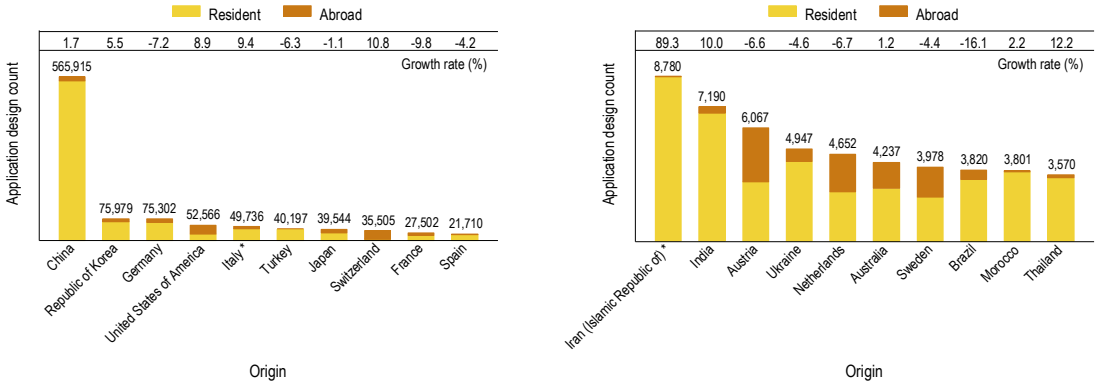
C16 Equivalent application design counts by origin, 2015



Note: Equivalent application design count includes resident applications and applications filed abroad. The origin of an industrial design application is determined by the residence of the first-named applicant. Applications filed at some regional offices are considered equivalent to multiple applications in the member states of those offices. See the glossary for the full definition of equivalent application.

Source: WIPO Statistics Database, October 2016.

C17 Application design counts for the top 20 origins, 2015

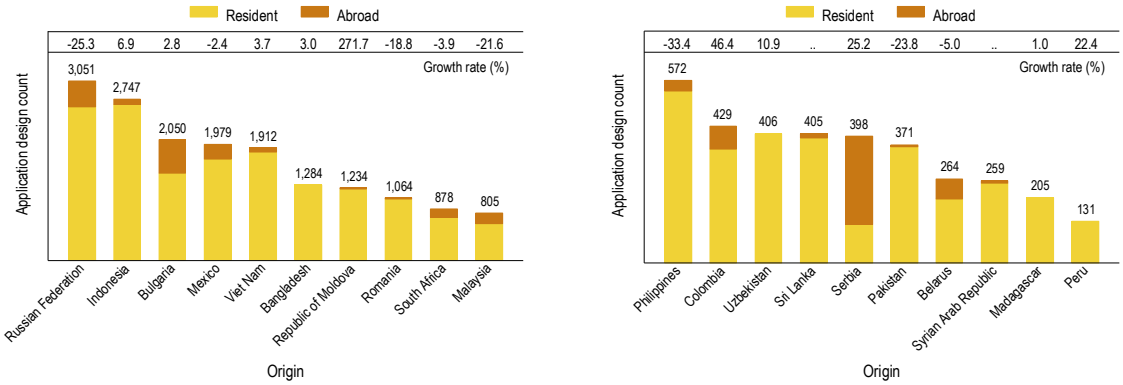


* Indicates 2014 data.

Note: Data are based on absolute count, not equivalent count. Application design counts by origin include resident applications and applications filed abroad. The origin of an industrial design application is determined by the residence of the first-named applicant. 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 2016.

C18 Application design counts for selected low- and middle-income origins, 2015

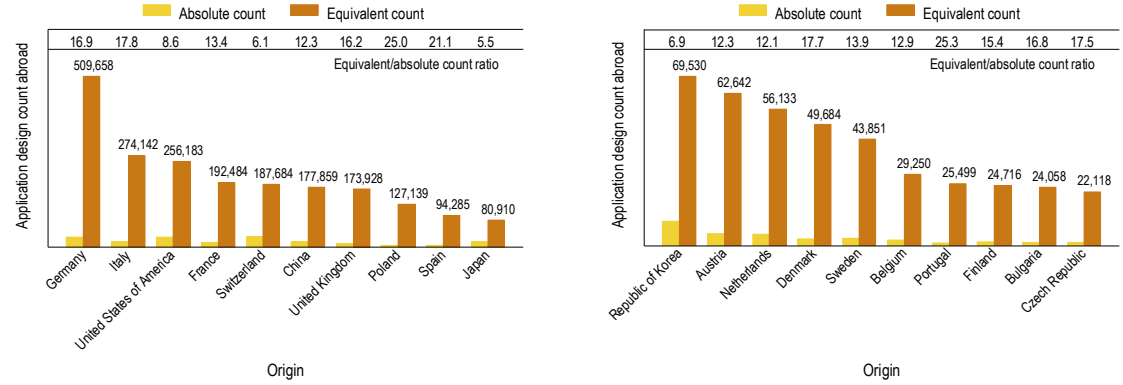


.. indicates not available.

Note: Data are based on absolute count, not equivalent count. The selected origins are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all origins are presented in the statistical table at the end of this section. The origin of an industrial design application is determined by the residence of the first-named applicant.

Source: WIPO Statistics Database, October 2016.

C19 Application design counts abroad for the top 20 origins, 2015



Note: Application design counts abroad exclude resident applications. Applications filed at some regional offices are considered equivalent to multiple applications in the member states of those offices (see the glossary for the full definition of equivalent application). The origin of an industrial design application is determined by the residence of the first-named applicant.

Source: WIPO Statistics Database, October 2016.

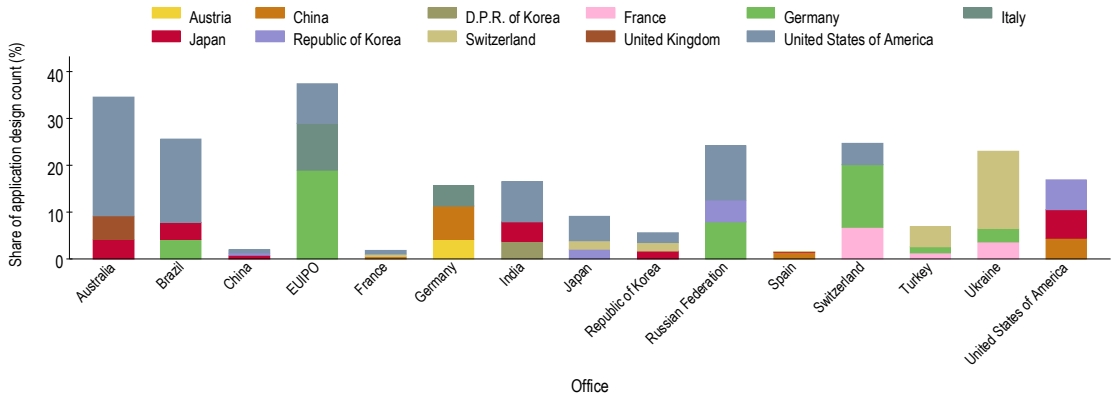
C20 Application design counts for the top 25 offices and origins, 2015

Origin	Office																								
	China	EUIPO	Republic of Korea	Germany	Turkey	United States of America	Japan	Spain	France	Switzerland	Iran (Islamic Republic of)	India	Ukraine	Australia	Brazil	Morocco	Russian Federation	Canada	China, Hong Kong SAR	Thailand	Norway	Singapore	Mexico	Indonesia	Viet Nam
Australia	183	312	15		2	323	50			5		26	2	2,821	23		8	61	22	1	3	32	3	4	8
Austria	62	2,214	7	2,272	26	139	16			107		19		29	17		23	18	3		13		7	5	
Brazil	30	209	10	1		93	14					8		7	3,289			15	3			5	17	5	
China	551,481	6,047	251	4,105	53	1,687	333	228	45	1		138	22	209	68		63	78	379	66	59	98	36	53	44
China, Hong Kong SAR		700	17	254		272	56		4	9		8		79	6		12	59	1,335	2		10	7	12	9
Denmark	135	1,803	24	1	72	197	47	1		152		32	1	31	13		25	16	21		197	4	12	2	
France	663	6,752	256	37	520	690	308	6	13,140	812		201	258	109	184	436	155	126	125	8	259	286	91	22	26
Germany	1,623	18,440	395	45,170	661	1,588	453	1	36	1,658		359	214	209	245	152	472	194	336	7	354	201	131	47	34
India	36	74	1	1	3	105	1		1	5		6,829	5	2	6	1	8	16	8	2		1	9	13	2
Indonesia	3	1		86																1		2		2,651	
Italy	549	9,950	64	2,447	127	595	140		17	182		145	12	115	110		192	103	107	1	6	8	57	46	37
Japan	3,827	2,450	1,184	86	131	2,515	24,818	16	14	71		438	24	278	226	1	276	180	272	411	8	193	172	505	352
Morocco	34	1		12		1		1	13	3						3,728									
Netherlands	252	1,949	280	1	40	218	177	1		8		137	17	77	110	2	119	17	83			17	96	99	31
Poland	6	4,694	3	138	8	43	2			1			39		1		74	3			39	2			
Republic of Korea	2,818	2,186	65,891	23	82	2,575	616	5	14	13		8	1	138	174		278	93	140	51	3	74	137	71	172
Russian Federation	25	88	8	3		25	5			17		6	144	5	1		2,616	8				1	2		
Spain	139	3,448	17	110	39	157	23	17,249	31	46		22	9	23	28	67	62	13	17	1	22	4	33	3	
Sweden	210	1,565	50	11	28	324	81		19	15		60	7	81	59	11	76	82	20	6	76	1	34	8	3
Switzerland	840	5,781	1,195	790	1,965	538	515	11	69	4,858		164	1,253	139	117	1,074	208	192	637	20	1,102	1,291	82	43	18
Thailand	16	44	9	2	2	26	11					4		9	3		1	1	2	3,383	1	8	3	9	10
Turkey	36	437	11	62	38,713	46	8	11	19	15		1	47	6		7	30	4			15	9	1	3	
Ukraine		88	14	3	15	12	1	2	2	18			4,289			18	52	2			14	18			1
United Kingdom	696	6,274	180	34	129	1,252	176		1	47		243	8	355	138	1	183	171	87		14	52	71	67	13
United States of America	3,952	8,376	1,623	223	344	22,631	1,622	4	133	551		877	74	1,798	1,073	30	703	3,260	990	155	109	257	1,145	198	231
Unknown/Others	1,443	14,279	953	627	2,892	4,076	878	319	439	3,648	11,856	565	1,062	504	148	422	366	1,134	595	346	1,859	1,688	1,853	106	1,894
Total	**569,059**	**98,162**	**72,458**	**56,499**	**45,852**	**40,128**	**30,351**	**17,855**	**13,997**	**12,242**	**11,856**	**10,290**	**7,488**	**7,024**	**6,039**	**5,950**	**6,002**	**5,846**	**5,182**	**4,461**	**4,153**	**4,262**	**3,999**	**3,972**	**2,885**

Note: EUIPO is the European Union Intellectual Property Office. Data are based on absolute count, not equivalent count.

Source: WIPO Statistics Database, October 2016.

C21 Distribution of application design counts for the top 20 offices and selected origins

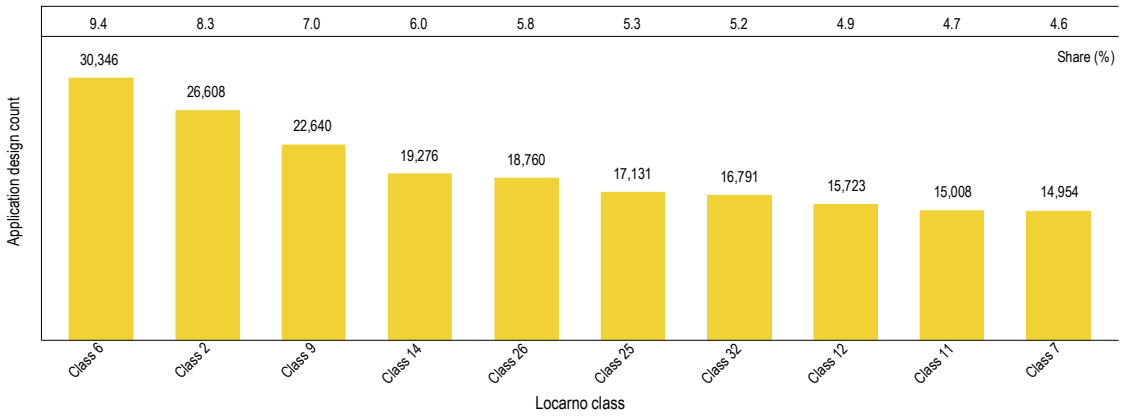


Note: EUIPO is the European Union Intellectual Property Office. D.P.R. of Korea is the Democratic People's Republic of Korea. Data are based on absolute count, not equivalent count.

Source: WIPO Statistics Database, October 2016.

Application design counts by Locarno class

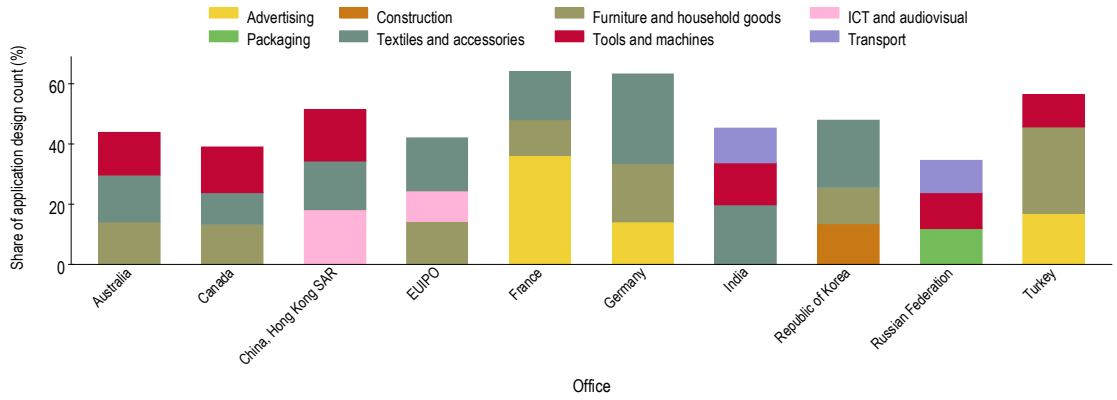
C22 Application design counts by Locarno class, 2015



Note: See Annex D for definitions. These figures are based on data from 103 IP offices. Class data were not available for the offices of China, Japan and the U.S.

Source: WIPO Statistics Database, October 2016.

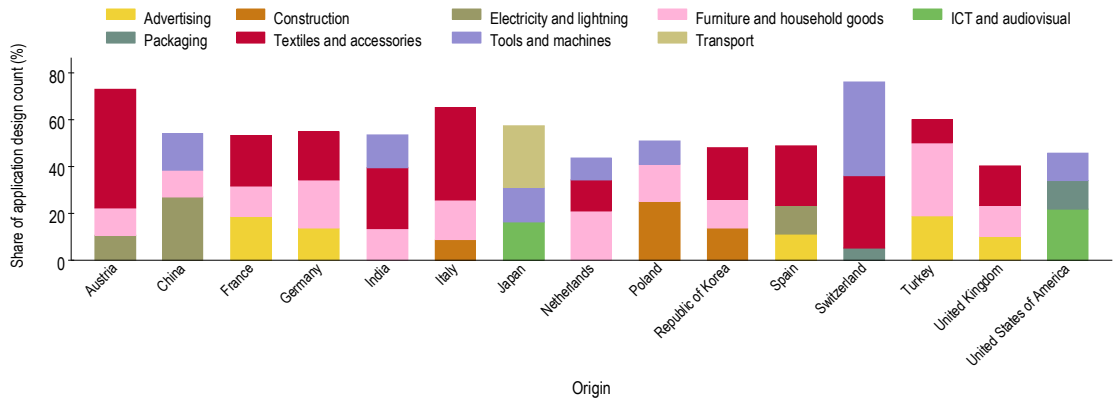
C23 Distribution of application design counts by the top three sectors for the top 10 offices, 2015



Note: EUIPO is the European Union Intellectual Property Office. A concordance table produced by the Organisation for Economic Co-operation and Development (OECD) was used to convert the 32 classes into 12 industry sectors (see Annex D for definitions). The top three sectors and top 10 offices were selected based on their 2015 totals. Data for several large offices are missing or unavailable, including the offices of China, Japan and the U.S.

Source: WIPO Statistics Database, October 2016.

C24 Distribution of application design counts by the top three sectors for the top 15 origins, 2015

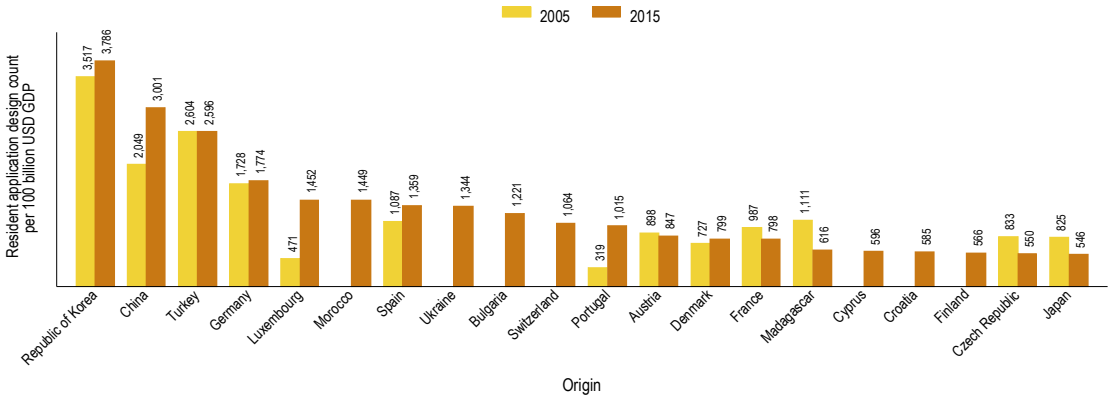


Note: A concordance table produced by the Organisation for Economic Co-operation and Development (OECD) was used to convert the 32 classes into 12 industry sectors (see Annex D for definitions). The top three sectors and top 15 origins were selected based on their 2015 totals. These figures are based on data from 103 IP offices. Class data were not available for the offices of China, Japan and the U.S.

Source: WIPO Statistics Database, October 2016.

Application design count in relation to GDP and population

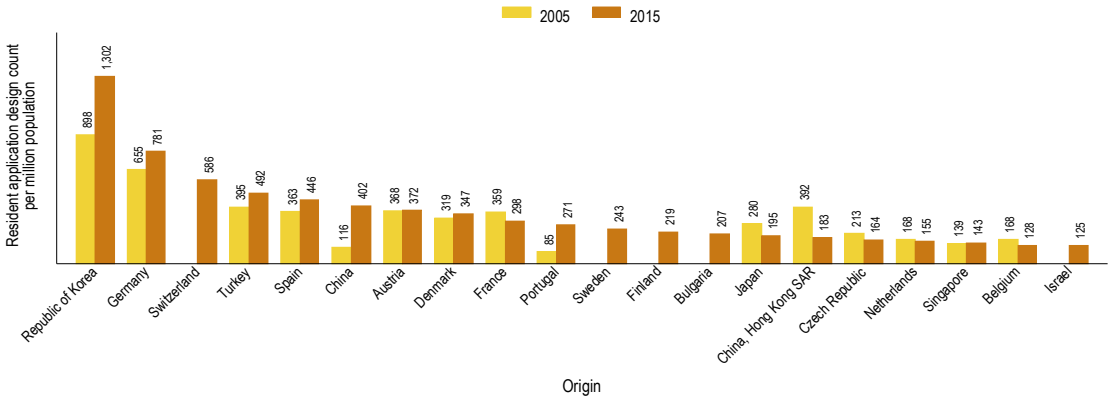
C25 Resident application design count per 100 billion of USD GDP for the top 20 origins



Note: GDP data are in constant 2011 US PPP dollars. Origins were selected if they had a GDP greater than 25 billion PPP dollars and received resident applications containing more than 100 designs. Due to space constraints, only the top 20 origins that fulfil these criteria are presented.

Sources: WIPO Statistics Database and World Bank, October 2016.

C26 Resident application design count per million population for the top 20 origins



Note: Origins were selected if they had a population greater than five million and received resident applications containing more than 100 designs. Due to space constraints, only the top 20 origins that fulfil these criteria are presented.

Sources: WIPO Statistics Database and World Bank, October 2016.

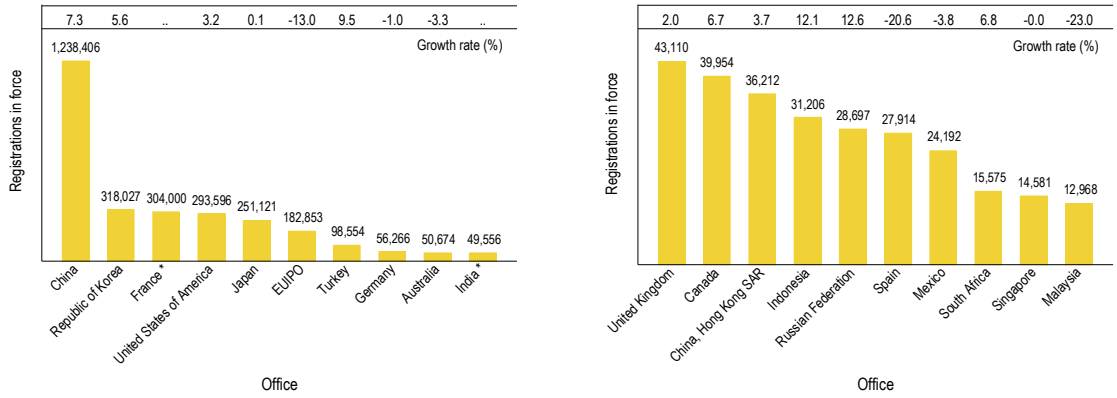
Industrial design registrations in force

C27 Industrial design registrations in force worldwide

Note: WIPO estimates cover 97 IP offices and include direct national and regional applications as well as designations received via the Hague System. Data refer to the number of industrial design registrations in force and not the number of designs contained in registrations.

Source: WIPO Statistics Database, October 2016.

C28 Industrial design registrations in force for the top 20 offices, 2015

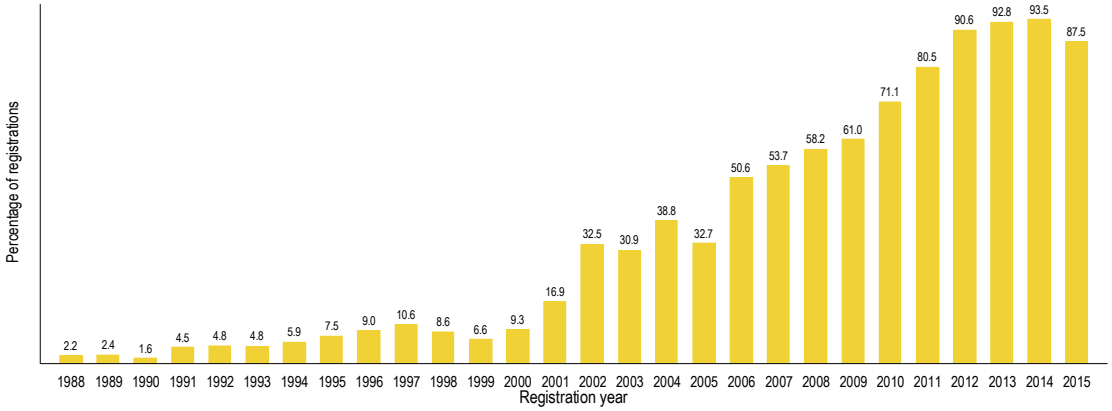


.. indicates not available.
* Indicates 2014 data.

Note: EUIPO is the European Union Intellectual Property Office. Data refer to the number of industrial design registrations in force and not the number of designs contained in registrations. Registration in force data were not available for Brazil or Italy.

Source: WIPO Statistics Database, October 2016.

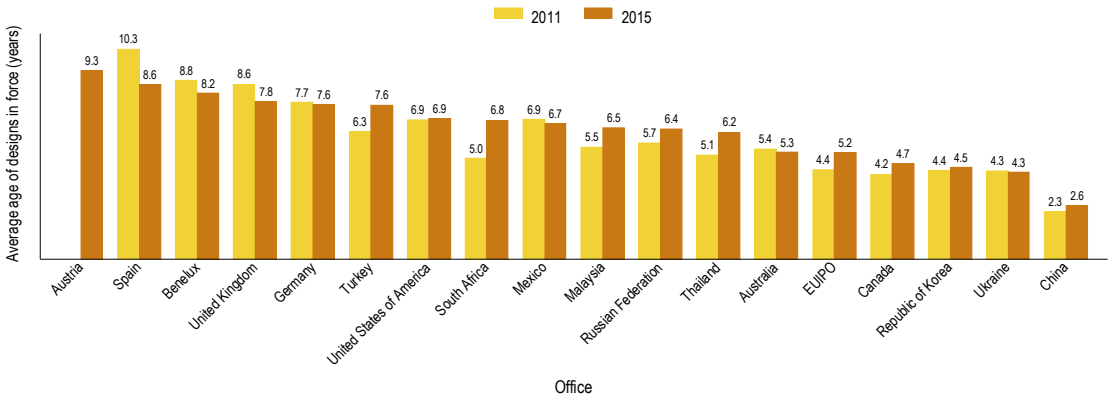
C29 Industrial design registrations in force in 2015 as a percentage of total registrations



Note: Percentages are calculated using the number of industrial designs registered in year *t* and in force in 2015 divided by the total number of industrial designs registered in year *t*. The graph is based on data from 74 offices (including most large offices, with the exception of Brazil, 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 2016.

C30 Average age of industrial design registrations in force at selected offices

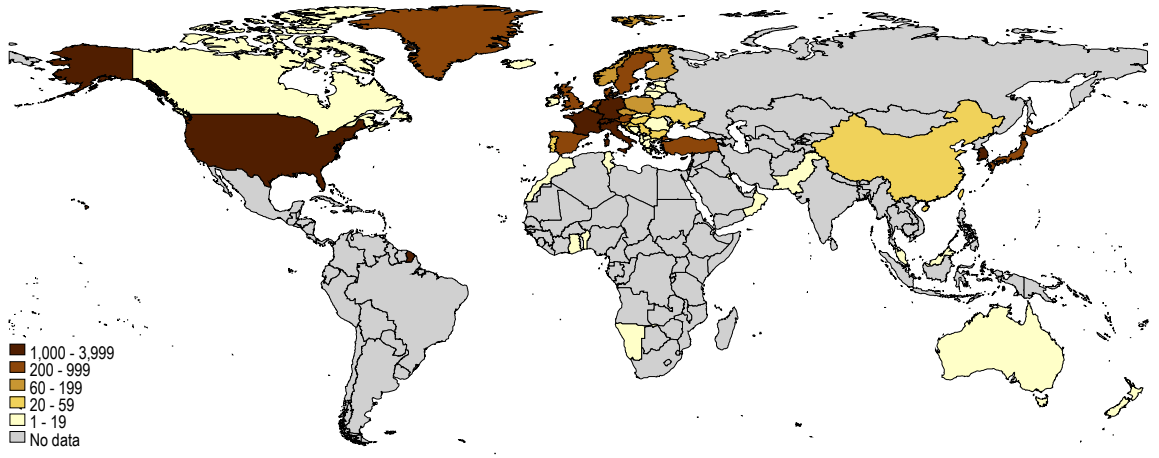


Note: EUIPO is the European Union Intellectual Property Office.

Source: WIPO Statistics Database, October 2016.

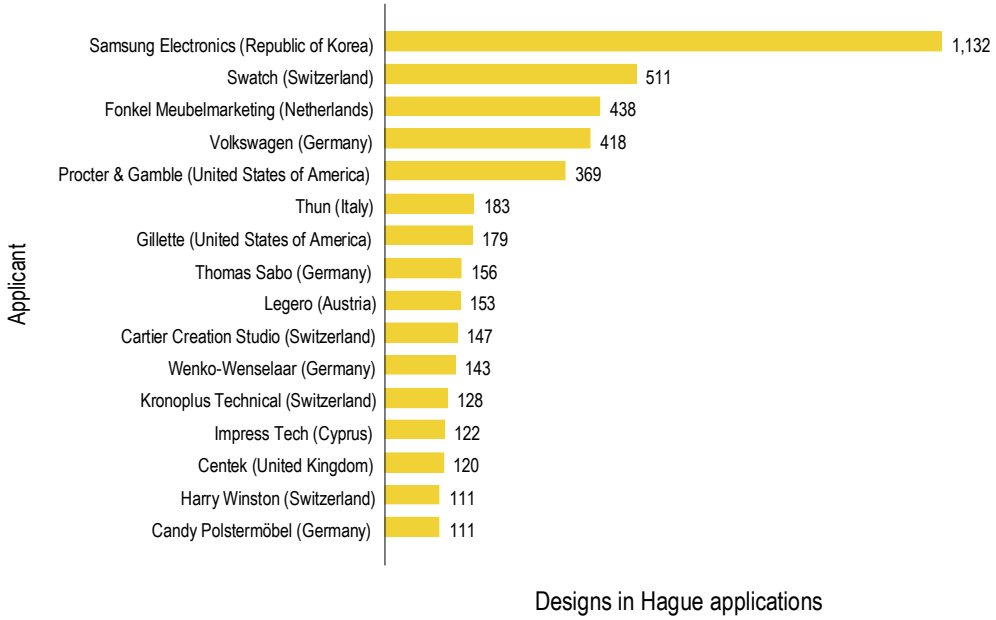
Industrial design applications and registrations through the Hague System

C31 Designs contained in Hague international applications by origin, 2015



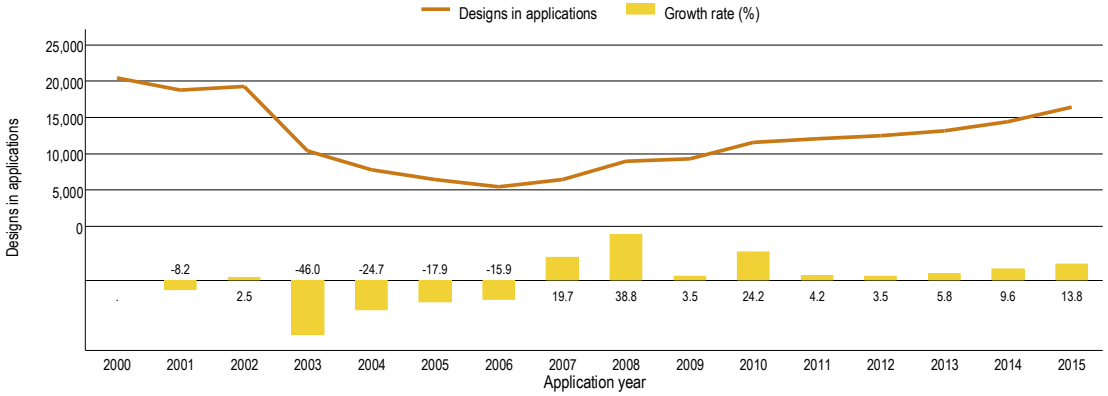
Source: WIPO Statistics Database, October 2016.

C32 Top Hague applicants based on number of designs, 2015



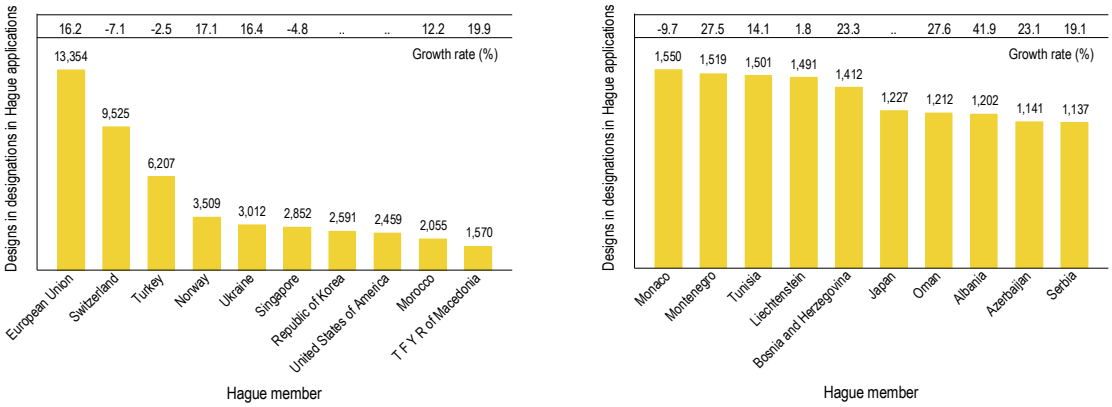
Source: WIPO Statistics Database, October 2016.

C33 Trend in designs contained in Hague international applications



Source: WIPO Statistics Database, October 2016.

C34 Designs contained in designations in Hague international applications for the top 20 designated Hague members, 2015

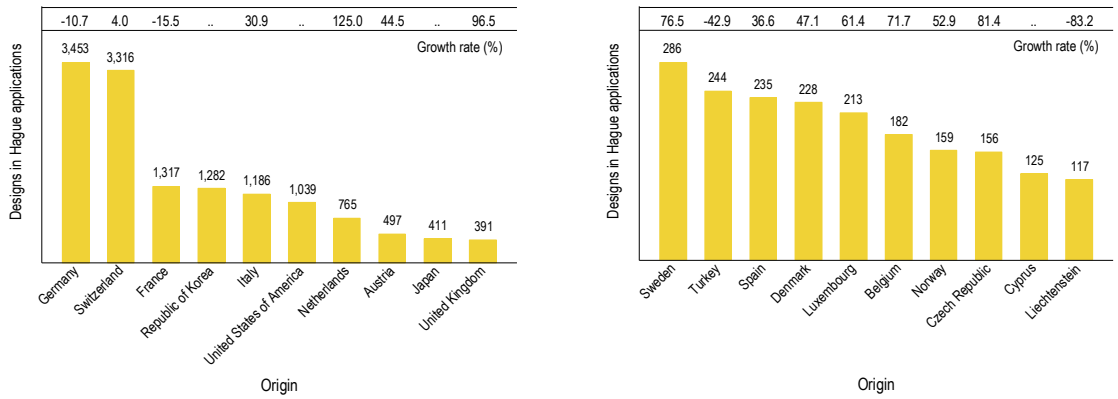


.. indicates not available.

Note: TFYR of Macedonia is The Former Yugoslav Republic of Macedonia. No growth rate is given for Japan, the Republic of Korea or the U.S., as they are new Hague members and so no historical data are available for comparison.

Source: WIPO Statistics Database, October 2016.

C35 Designs contained in Hague international applications for the top 20 origins, 2015



.. indicates not available.

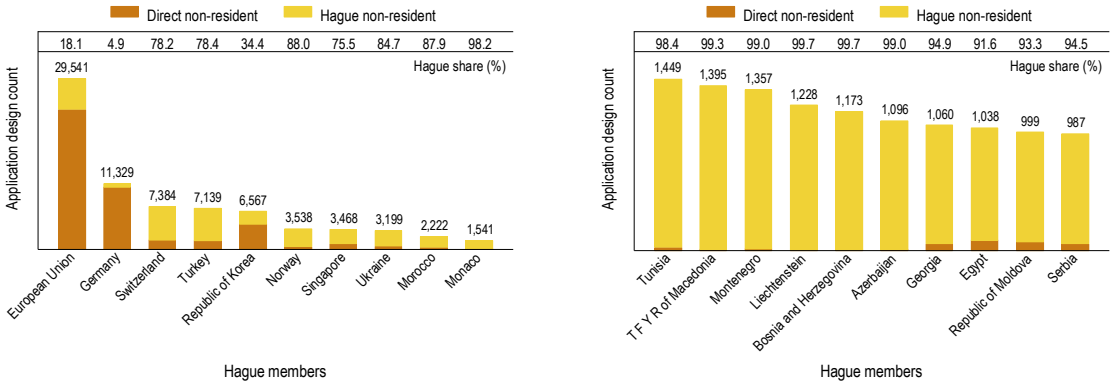
Note: Origin is defined as the country of the stated residence of the applicant in an international application. No growth rate is given for Japan, the Republic of Korea and the U.S., as they are new Hague members and so no historical data are available for comparison.

Source: WIPO Statistics Database, October 2016.

C36 Trend in active Hague international registrations

Source: WIPO Statistics Database, October 2016.

C37 Designs contained in non-resident applications by filing route for selected Hague members, 2015



Note: TFYR of Macedonia is The Former Yugoslav Republic of Macedonia.

Source: WIPO Statistics Database, October 2016.

Statistical tables

C38 Industrial design applications by office and origin, 2015

	Application design count by office			Application design count by origin	Equivalent application design count by origin	Hague international application design count	
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Designated Hague member
Afghanistan	..	..	..	1	1	..	n.a.
African Intellectual Property Organization	799	297	502	n.a.	n.a.	n.a.	438
African Regional Intellectual Property Organization	124	24	100	n.a.	n.a.	n.a.	n.a.
Albania (b,c)	855	14	841	306	1,169	2	1,202
Algeria (b,c)	920	825	95	825	825	..	n.a.
Andorra	..	..	..	3	84	..	n.a.
Angola	..	..	..	1	1	..	n.a.
Antigua and Barbuda	1	0	1	..	..	..	n.a.
Argentina	1,581	1,016	565	1,048	1,102	..	n.a.
Armenia	886	31	855	59	59	..	880
Australia	7,024	2,821	4,203	4,237	12,661	4	n.a.
Austria	2,170	989	1,181	6,067	65,845	497	n.a.
Azerbaijan	1,107	11	1,096	13	67	..	1,141
Bahamas (b,c)	24	23	1	65	470	..	n.a.
Bahrain	64	3	61	8	8	..	n.a.
Bangladesh	1,376	1,284	92	1,284	1,284	..	n.a.
Barbados	4	1	3	132	942	..	n.a.
Belarus	387	202	185	264	264	..	n.a.
Belgium	n.a.	n.a.	n.a.	2,261	30,689	182	n.a.
Belize (d)	733	..	733	11	11	..	773
Benelux	1,593	1,159	434	n.a.	n.a.	n.a.	399
Benin (d,f)	n.a.	n.a.	n.a.	8	136	4	43
Bermuda	..	..	..	9	198	..	n.a.
Bhutan	..	..	..	1	1	..	n.a.
Bolivia (Plurinational State of) (b,c)	60	26	34	27	27	..	n.a.
Bosnia and Herzegovina	1,197	24	1,173	32	86	3	1,412
Botswana (b,c)	93	12	81	12	12	..	61
Brazil	6,039	3,289	2,750	3,820	9,463	..	n.a.
Brunei Darussalam (b,c)	92	4	88	7	7	..	103
Bulgaria	758	620	138	2,050	25,544	47	125

	Application design count by office			Application design count by origin	Equivalent application design count by origin	Hague international application design count	
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Designated Hague member
Burkina Faso (f)	n.a.	n.a.	n.a.	5	85	..	n.a.
Cambodia	69	9	60	23	23	..	n.a.
Cameroon (f)	n.a.	n.a.	n.a.	26	442	..	n.a.
Canada	5,846	797	5,049	2,472	13,083	3	n.a.
Chile	402	43	359	83	137	..	n.a.
China	569,059	551,481	17,578	565,915	729,340	35	n.a.
China, Hong Kong SAR	5,182	1,335	3,847	2,888	21,788	..	n.a.
China, Macao SAR	249	21	228	54	513	..	n.a.
Colombia	718	358	360	429	429	..	n.a.
Congo (f)	n.a.	n.a.	n.a.	1	17	..	n.a.
Costa Rica	58	10	48	13	13	..	n.a.
Côte d'Ivoire (d,f)	n.a.	n.a.	n.a.	133	2,229	..	39
Croatia	962	406	556	668	3,341	37	625
Cuba (b,c)	11	8	3	9	9	..	n.a.
Curaçao	..	..	..	..	..	9	n.a.
Cyprus	123	123	0	336	1,119	125	n.a.
Czech Republic	993	928	65	2,194	23,848	156	n.a.
Democratic People's Republic of Korea (d)	124	..	124	379	379	..	109
Democratic Republic of the Congo	..	..	..	13	13	..	n.a.
Denmark	281	166	115	2,972	51,653	228	203
Djibouti (b,c)	2	0	2	..	..	..	n.a.
Dominica	..	..	..	1	1	..	n.a.
Dominican Republic	85	48	37	50	50	..	n.a.
Ecuador	..	..	..	2	2	..	n.a.
Egypt	2,663	1,625	1,038	1,627	1,670	..	1,006
El Salvador	38	11	27	12	12	..	n.a.
Estonia	80	49	31	180	3,177	11	74
Ethiopia	..	..	..	3	3	..	n.a.
European Union Intellectual Property Office	98,162	68,621	29,541	n.a.	n.a.	n.a.	13,354
Finland	450	310	140	1,912	25,915	78	159
France	13,997	13,140	857	27,502	212,376	1,317	686
Gabon (d,f)	n.a.	n.a.	n.a.	3	35	..	13
Georgia	1,235	175	1,060	184	184	..	1,056
Germany	56,499	45,170	11,329	75,302	573,268	3,453	830
Ghana (d)	101	..	101	1	17	1	101
Greece	1,330	943	387	1,326	8,454	15	322
Guatemala	230	20	210	27	27	..	n.a.
Guinea (f)	n.a.	n.a.	n.a.	71	1,207	..	n.a.
Guinea-Bissau (f)	n.a.	n.a.	n.a.	5	85	..	n.a.
Honduras	22	7	15	10	10	..	n.a.
Hungary	730	674	56	894	5,511	27	96
Iceland	261	16	245	36	187	2	295
India	10,290	6,829	3,461	7,190	9,254	..	n.a.
Indonesia	3,972	2,651	1,321	2,747	2,774	..	n.a.
Iran (Islamic Republic of) (c)	11,856	..	..	8,780	8,834	..	n.a.
Iraq	..	..	..	2	2	..	n.a.
Ireland	178	115	63	507	8,310	1	n.a.
Israel	1,538	1,049	489	1,880	10,196	..	n.a.
Italy (b,c)	30,905	30,394	511	49,736	296,667	1,186	381
Jamaica	66	65	1	66	66	..	n.a.
Japan	30,351	24,818	5,533	39,544	105,728	411	1,227
Jordan	110	55	55	61	61	..	n.a.
Kazakhstan	217	94	123	101	101	..	n.a.
Kenya	85	73	12	75	75	..	n.a.
Kiribati	..	..	..	1	1	..	n.a.
Kuwait	..	..	..	3	3	1	n.a.
Kyrgyzstan	853	21	832	23	23	..	881
Latvia	151	102	49	201	2,604	2	41

Name	Application design count by office			Application design count by origin	Equivalent application design count by origin	Hague international application design count	
	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Designated Hague member
Lebanon	..	..	..	23	185	..	n.a.
Liechtenstein	1,289	61	1,228	531	6,552	117	1,491
Lithuania	421	87	334	185	2,183	14	331
Luxembourg	n.a.	n.a.	n.a.	1,100	20,548	213	n.a.
Madagascar	206	205	1	205	205	..	n.a.
Malaysia	1,762	627	1,135	805	859	4	n.a.
Maldives	..	..	..	1	1	..	n.a.
Mali (d,f)	n.a.	n.a.	n.a.	24	328	..	14
Malta (b,c)	10	10	0	207	4,986	1	n.a.
Marshall Islands	..	..	..	2	2	..	n.a.
Mauritania (f)	n.a.	n.a.	n.a.	1	17	..	n.a.
Mauritius	..	..	..	6	6	..	n.a.
Mexico	3,999	1,729	2,270	1,979	3,059	..	n.a.
Monaco	1,587	46	1,541	166	3,190	2	1,550
Mongolia (b,c)	930	257	673	257	257	..	840
Montenegro	1,365	8	1,357	8	8	..	1,519
Morocco	5,950	3,728	2,222	3,801	3,866	9	2,055
Namibia (d)	96	1	95	29	72	1	87
Nepal	35	16	19	16	16	..	n.a.
Netherlands	n.a.	n.a.	n.a.	4,652	58,761	765	n.a.
New Zealand	1,329	345	984	717	3,174	1	n.a.
Nicaragua (b,c)	9	0	9	..	..	..	n.a.
Niger (d,f)	n.a.	n.a.	n.a.	..	..	..	13
Nigeria	..	..	..	20	101	..	n.a.
Norway	4,153	615	3,538	1,450	7,508	159	3,509
Oman (d)	1,185	5	1,180	5	5	4	1,212
Pakistan	489	364	125	371	371	1	n.a.
Panama	97	19	78	48	183	..	n.a.
Papua New Guinea	39	3	36	10	10	..	n.a.
Peru	358	131	227	131	131	..	n.a.
Philippines	1,103	539	564	572	599	..	n.a.
Poland (d)	62	1	61	5,080	131,834	117	98
Portugal	1,950	1,862	88	2,869	28,303	51	n.a.
Qatar	..	..	..	7	34	..	n.a.
Republic of Korea	72,458	65,891	6,567	75,979	135,421	1,282	2,591
Republic of Moldova	2,206	1,207	999	1,234	1,346	..	1,035
Romania	1,016	830	186	1,064	6,869	8	228
Russian Federation	6,002	2,616	3,386	3,051	5,427	..	n.a.
Rwanda	69	5	64	5	5	..	57
Saint Lucia	..	..	..	1	1	..	n.a.
Saint Vincent and the Grenadines (b,c)	2	0	2	..	..	..	n.a.
Samoa (b,c)	20	15	5	23	23	..	n.a.
San Marino	..	..	..	12	336	..	n.a.
Sao Tome and Principe (d)	50	..	50	..	..	..	55
Saudi Arabia	824	321	503	333	333	..	n.a.
Senegal (d,f)	n.a.	n.a.	n.a.	23	391	..	43
Serbia	1,109	122	987	398	688	27	1,137
Seychelles	..	..	..	39	93	..	n.a.
Singapore	4,262	794	3,468	1,366	4,444	29	2,852
Sint Maarten (Dutch Part)	..	..	..	..	..	1	n.a.
Slovakia	258	201	57	401	4,075	14	n.a.
Slovenia (d)	402	19	383	358	5,380	63	455
South Africa	1,960	723	1,237	878	2,125	..	n.a.
Spain	17,855	17,249	606	21,710	114,982	235	393
Sri Lanka	457	390	67	405	405	..	n.a.
Sudan (c)	173	..	..	545	545	..	n.a.
Suriname (d)	73	..	73	..	..	..	65
Swaziland	..	..	..	59	59	..	n.a.

Name	Application design count by office			Application design count by origin	Equivalent application design count by origin	Hague international application design count	
	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Designated Hague member
Sweden	848	821	27	3,978	46,237	286	n.a.
Switzerland	12,242	4,858	7,384	35,505	192,542	3,316	9,525
Syrian Arab Republic	326	251	75	259	259	..	91
T F Y R of Macedonia	1,443	48	1,395	111	273	6	1,570
Tajikistan	131	0	131	..	..	..	150
Thailand	4,461	3,383	1,078	3,570	4,766	..	n.a.
Togo (f)	n.a.	n.a.	n.a.	4	68	..	n.a.
Trinidad and Tobago	40	18	22	20	20	..	n.a.
Tunisia	1,578	129	1,449	136	325	14	1,501
Turkey	45,852	38,713	7,139	40,197	52,236	244	6,207
Ukraine	7,488	4,289	3,199	4,947	7,559	34	3,012
United Arab Emirates (b,c)	804	91	713	252	1,742	..	n.a.
United Kingdom	..	..	..	10,756	180,202	391	n.a.
United States of America	40,128	22,631	17,497	52,566	278,814	1,039	2,459
Uruguay	57	8	49	10	10	..	n.a.
Uzbekistan	428	406	22	406	406	..	n.a.
Venezuela (Bolivarian Republic of)	..	..	..	14	14	..	n.a.
Viet Nam	2,885	1,839	1,046	1,912	3,478	..	n.a.
Yemen	8	4	4	4	4	..	n.a.
Zambia (b,c)	40	29	11	29	29	..	n.a.
Zimbabwe	..	..	..	1	1	..	n.a.
Others/Unknown	..	..	..	26,497	56,392	150	n.a.
Total (2015 estimates)	**1,144,800**	**964,500**	**180,300**	**1,144,800**	**n.a.**	**16,435**	**74,220**

a. Design count by origin is incomplete, as some offices do not report the origin of applications.
b. 2014 data are reported for application design count by office.
c. 2014 data are reported for application design count by origin.
d. Only Hague designation data are available and/or the office has not reported the origin of applications, so design count by office and origin data may be incomplete.
e. Origin is defined as the country of the stated address of residence of the applicant in an international application.
f. The African Intellectual Property Organization (OAPI) is the competent office for processing applications.
n.a. indicates not applicable
.. indicates not available

Source: WIPO Statistics Database, October 2016.

C39 Industrial design registrations by office and origin, and industrial designs in force, 2015

	Registration design count by office			Registration design count by origin	Equivalent registration design count by origin	Hague international registration design count	In force by office
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Total
African Intellectual Property Organization	746	259	487	n.a.	n.a.	n.a.	..
African Regional Intellectual Property Organization	103	12	91	n.a.	n.a.	n.a.	741
Albania (b,c)	848	6	842	296	1,159	1	23
Algeria (b,c,e)	121	115	6	117	117	..	2,017
Andorra	..	..	..	6	87	..	..
Angola	..	..	..	1	1	..	..
Argentina	1,482	899	583	918	945	..	..
Armenia	859	29	830	62	197	..	343
Australia	6,592	2,516	4,076	4,022	13,769	4	50,674
Austria	2,690	1,203	1,487	5,070	60,150	367	10,226
Azerbaijan	1,103	7	1,096	9	63	..	202
Bahamas (b,c)	24	23	1	40	337	..	..
Bahrain	38	3	35	4	4	..	1,484
Bangladesh	771	681	90	681	681	..	..
Barbados	3	1	2	88	817	..	..
Belarus	388	191	197	288	288	..	1,584
Belgium	n.a.	n.a.	n.a.	1,987	29,873	176	n.a.
Belize (d)	733	..	733	235	235	..	..
Benelux	1,596	1,167	429	n.a.	n.a.	n.a.	4,168
Benin (d,f)	n.a.	n.a.	n.a.	5	85	..	..
Bermuda	..	..	..	12	120	..	..
Bhutan	..	..	..	1	1	..	..
Bolivia (Plurinational State of) (b,c,e)	56	23	33	24	24	..	550
Bosnia and Herzegovina	1,233	48	1,185	56	110	3	370
Botswana (b,c)	84	4	80	6	6	..	..
Brazil	3,285	1,402	1,883	2,106	7,803	..	..
Brunei Darussalam (d)	91	..	91	3	3	..	..
Bulgaria	523	470	53	1,890	24,979	42	2,380
Burkina Faso (f)	n.a.	n.a.	n.a.	4	68	..	..
Cambodia	99	31	68	32	32	..	..
Cameroon (f)	n.a.	n.a.	n.a.	20	340	..	..
Canada	5,728	785	4,943	2,287	13,519	3	39,954
Chile	427	30	397	62	89	..	2,542
China	482,659	464,807	17,852	477,272	633,127	22	1,238,406
China, Hong Kong SAR	4,702	1,360	3,342	2,777	21,245	..	36,212
China, Macao SAR	120	12	108	39	309	..	842
Colombia	501	222	279	275	275	..	3,943
Costa Rica	34	3	31	8	8	..	599
Côte d'Ivoire (d,f)	n.a.	n.a.	n.a.	123	2,091	..	..
Croatia	873	322	551	571	2,677	29	5,109
Cuba (b,c,e)	8	4	4	6	6	..	51
Curaçao	..	..	..	..	..	9	..
Cyprus	123	123	0	364	1,120	124	62
Czech Republic	1,033	1,022	11	2,185	23,812	105	3,355
Democratic People's Republic of Korea (d)	124	..	124	10	10	..	..
Democratic Republic of the Congo	..	..	..	6	6	..	..
Denmark	211	98	113	2,788	47,473	191	1,415
Djibouti (b,c,e)	2	0	2	..	..	..	9
Dominican Republic (e)	50	11	39	12	12	..	321
Ecuador	..	..	..	2	2	..	..
Egypt	1,627	646	981	651	678	1	..
El Salvador	28	6	22	7	7	..	553
Estonia	77	48	29	203	3,092	11	1,327
European Union Intellectual Property Office	94,457	66,359	28,098	n.a.	n.a.	n.a.	182,853
Finland	292	190	102	1,856	23,861	55	2,528
France (d,e)	518	32	486	13,887	192,832	1,239	304,000
Gabon (d,f)	n.a.	n.a.	n.a.	2	34	..	..
Georgia	1,141	87	1,054	88	88	..	259

	Registration design count by office			Registration design count by origin	Equivalent registration design count by origin	Hague international registration design count	In force by office
Name	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Total
Germany	51,442	39,389	12,053	69,094	552,766	3,144	56,266
Ghana (d)	101	..	101	1	17	1	..
Greece	1,400	1,048	352	1,368	7,767	8	1,491
Guatemala	184	0	184	2	2	..	450
Guinea (f)	n.a.	n.a.	n.a.	61	1,037	..	..
Guinea-Bissau (f)	n.a.	n.a.	n.a.	4	68	..	..
Honduras	11	1	10	1	1	..	266
Hungary	782	726	56	924	4,785	28	4,090
Iceland	260	16	244	41	192	5	794
India (e)	7,461	4,801	2,660	5,116	6,997	..	49,556
Indonesia	3,505	2,334	1,171	2,350	2,377	..	31,206
Iran (Islamic Republic of) (c,e)	4,150	..	..	3,169	3,169	..	11,221
Iraq	..	..	..	1	1	..	29
Ireland	149	104	45	523	8,569	1	1,066
Israel	1,744	1,068	676	1,764	9,891	..	..
Italy (b,c)	22,094	21,566	528	36,223	258,487	1,123	..
Jamaica	71	70	1	70	70	..	..
Japan	27,195	21,966	5,229	36,441	103,543	252	251,121
Jordan	87	29	58	33	33	..	2,113
Kazakhstan	282	94	188	99	99	..	1,004
Kenya	57	52	5	52	52	..	..
Kuwait	..	..	..	3	3	1	..
Kyrgyzstan	858	39	819	39	39	..	145
Latvia	120	71	49	157	2,290	2	393
Lebanon	..	..	..	19	181	..	..
Liechtenstein (b,c)	1,490	67	1,423	1,759	25,978	109	85
Lithuania	395	72	323	173	2,171	11	319
Luxembourg	n.a.	n.a.	n.a.	1,000	18,049	178	n.a.
Madagascar	244	239	5	239	239	..	1,382
Malaysia	1,301	418	883	594	621	4	12,968
Mali (d,f)	n.a.	n.a.	n.a.	19	259	..	..
Malta (b,c)	10	8	2	248	5,787	1	76
Mauritius	..	..	..	19	35	..	..
Mexico	2,852	948	1,904	1,180	2,287	..	24,192
Monaco	1,594	55	1,539	129	1,992	2	400
Mongolia (b,c)	754	76	678	76	76	..	1,053
Montenegro	1,406	8	1,398	8	8	..	117
Morocco	5,134	3,020	2,114	3,092	3,157	14	..
Myanmar	..	..	..	4	4	..	..
Namibia (d)	96	1	95	27	70	1	..
Nepal	1	0	1	..	..	..	10
Netherlands	n.a.	n.a.	n.a.	4,833	59,480	612	n.a.
New Zealand	1,317	293	1,024	677	3,053	1	10,194
Nicaragua (b,c,e)	17	0	17	5	5	..	114
Niger (d,f)	n.a.	n.a.	n.a.	..	..	..	..
Nigeria	..	..	..	10	91	..	..
Norway	4,030	536	3,494	1,365	7,477	149	9,039
Oman (d)	1,185	5	1,180	19	19	4	..
Pakistan	309	238	71	241	241	..	5,712
Panama	104	21	83	45	180	..	496
Papua New Guinea	28	1	27	5	5	..	4
Peru	381	97	284	99	99	..	2,734
Philippines	1,051	565	486	598	652	..	..
Poland (d)	60	1	59	4,746	119,566	108	10,516
Portugal	2,124	1,957	167	2,809	24,112	41	4,445
Qatar	..	..	..	8	35	..	..
Republic of Korea	56,256	49,967	6,289	59,901	120,796	1,083	318,027
Republic of Moldova	1,481	544	937	567	679	2	3,386
Romania	1,565	1,363	202	1,598	7,376	4	4,120

Name	Registration design count by office			Registration design count by origin	Equivalent registration design count by origin	Hague international registration design count	In force by office
	Total	Resident	Non-resident	Total (a)	Total (a)	Origin (e)	Total
Russian Federation	8,585	3,405	5,180	3,950	6,299	..	28,697
Rwanda	69	5	64	5	5	..	140
Samoa	1	1	0	5	5	..	19
San Marino	..	..	..	4	112	..	..
Sao Tome and Principe (d)	50	..	50	..	..	..	..
Saudi Arabia	869	348	521	369	639	..	3,535
Senegal (d,f)	n.a.	n.a.	n.a.	20	340	..	..
Serbia	1,020	66	954	339	629	23	3,875
Seychelles	..	..	..	47	101	..	..
Singapore	4,359	829	3,530	1,422	4,581	40	14,581
Sint Maarten (Dutch Part)	..	..	..	..	..	1	..
Slovakia	301	259	42	466	5,328	17	859
Slovenia (d)	402	19	383	371	5,933	62	..
South Africa	1,016	371	645	514	1,691	..	15,575
Spain	19,148	18,537	611	22,719	110,726	174	27,914
Sri Lanka	246	179	67	185	185	..	..
Sudan (c,e)	111	..	..	247	247	..	120
Suriname (d)	73	..	73	..	..	..	..
Swaziland	..	..	..	2	2	..	..
Sweden	506	485	21	3,793	44,297	285	5,547
Switzerland	11,965	4,703	7,262	34,834	175,374	3,183	9,688
Syrian Arab Republic	154	114	40	125	125	..	..
T F Y R of Macedonia	1,397	12	1,385	75	237	7	2,706
Tajikistan	135	0	135	..	..	..	48
Thailand	3,711	2,476	1,235	2,616	3,858	..	12,453
Togo (f)	n.a.	n.a.	n.a.	4	68	..	..
Trinidad and Tobago (b,c)	57	29	28	31	31	..	..
Tunisia	1,571	126	1,445	133	322	..	..
Turkey	48,088	40,907	7,181	42,293	53,144	234	98,554
Ukraine	8,170	4,599	3,571	5,306	7,918	42	12,041
United Arab Emirates (b,c)	368	6	362	145	1,765	..	..
United Kingdom (b,c)	4,901	4,697	204	13,343	166,698	340	43,110
United States of America	27,644	14,354	13,290	41,673	259,613	805	293,596
Uruguay	47	5	42	6	6	..	659
Uzbekistan	318	271	47	271	271	..	502
Vanuatu	..	..	..	2	56	..	..
Venezuela (Bolivarian Republic of)	..	..	..	9	9	..	..
Viet Nam	1,681	1,029	652	1,195	2,788	..	9,401
Yemen	8	4	4	4	4	..	38
Zambia (b,c)	22	15	7	15	15	..	..
Others/Unknown	..	..	..	25,757	48,215	..	..
Total (2015 estimates)	**989,400**	**817,100**	**172,300**	**989,400**	**n.a.**	**14,484**	**3,402,900**

a. Design count by origin is incomplete, as some offices do not report the origin of registrations.
b. 2014 data are reported for registration design counts by office.
c. 2014 data are reported for registration design counts by origin.
d. Only Hague designation data are available and/or the office has not reported the origin of registrations, so design count by office and origin data may be incomplete.
e. Origin is defined as the country of the stated address of residence of the holder in an international registration.
f. The African Intellectual Property Organization (OAPI) is the competent office for registering applications.
n.a. indicates not applicable
.. indicates not available

Source: WIPO Statistics Database, October 2016.

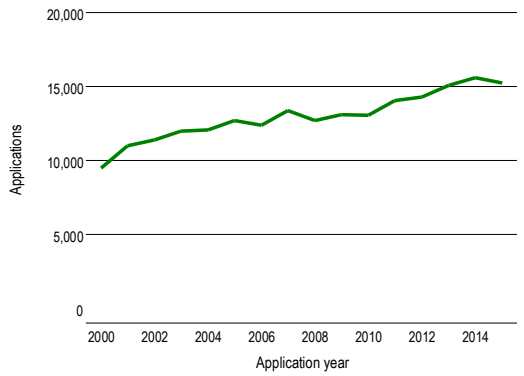
Plant Varieties

Highlights

Following four consecutive years of growth, applications declined by 2.3% in 2015

Around 15,240 plant variety applications were filed worldwide in 2015, down 2.3% on 2014. This is the first decline since 2010. The Community Plant Variety Office (CPVO) of the European Union and the office of the Ukraine accounted for most of this decrease.

Figure 21. Plant variety applications worldwide



Source: Standard figure D1.

Offices with the most plant variety filings

With 3,111 applications received in 2015, the CPVO remained the top filing office. China was the second-largest office in terms of plant variety filings with 2,342, followed by the United States of America (U.S., 1,634), Ukraine (1,075) and Japan (914).[1] Among these top five offices, China (+15.6%) and the U.S. (+4.3%) recorded growth, while the other three saw sharp declines – Ukraine (-25.7%), the CPVO (-14.2%) and Japan (-10.2%). Growth in China was driven by both resident and non-resident filings. For the U.S., growth resulted from a rise in resident filings despite declining non-resident filings. The decrease in filings at the CPVO and in Japan was due to a drop in both resident and non-resident filings. In contrast, Ukraine's large decline was driven entirely by a large decline in non-resident filings despite an increase in resident filings.

1. Throughout this section, U.S. data refer to a combination of Plant Variety Protection Act and Plant Patent Act data. However, separate data relating to each Act are given in statistical table D16.

The combined share of the top five offices' applications worldwide decreased slightly, from around 62% in 2014 to 60% in 2015, due to the declines experienced by the CPVO, Ukraine and Japan.

Eight of the top 10 offices received more applications from residents than from non-residents. Among these offices, China's resident share (89.2%) was the highest. Australia and Ukraine received more than half their filings from non-resident applicants.

Offices of high-income economies accounted for the largest proportion (60%) of plant variety applications received in 2015, down from 73.8% in 2005. Offices in the upper middle-income group saw their combined share increase from 19% in 2005 to 30.5% in 2015, mostly driven by the increase in filings in China. The share held by the lower middle-income group likewise increased, from 7.3% in 2005 to 9.5% in 2015.

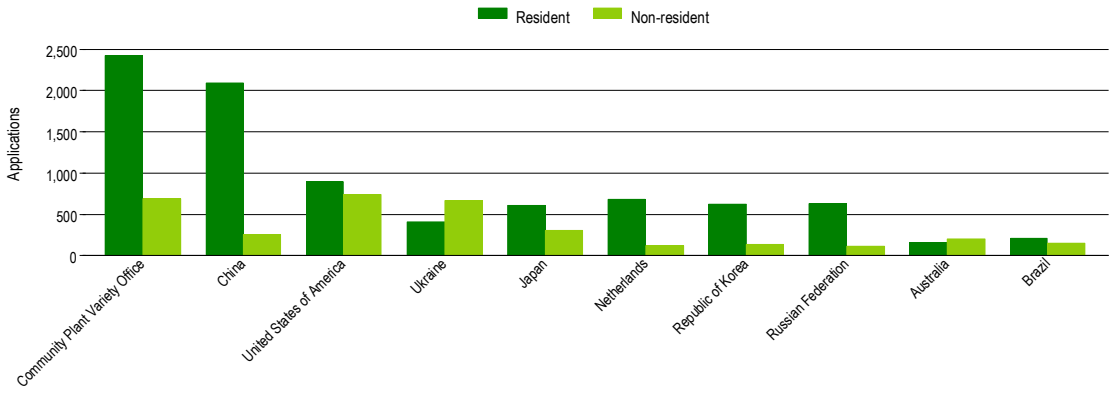
Offices in Europe received 42.9% of all plant variety applications in 2015, somewhat less than 10 years ago (45.8%). Asia saw its share increase from 24% in 2005 to 29.7% in 2015 at the expense of a five percentage-point drop in North America. The share held by Latin America and Caribbean (LAC) countries increased slightly on 2005, rising from 5.9% to 8.3%, driven by growth in filings in Argentina, Brazil and Mexico. Shares for Africa and Oceania were largely unchanged.

Applicants from the Netherlands filed the most worldwide

Applications received by offices from resident and non-resident applicants are referred to as office data, whereas applications filed by applicants at a national/regional office (resident applications) or at a foreign office (applications abroad) are referred to as origin data. Here, plant variety statistics based on the origin of the residence of the first-named applicant are reported to complement the picture of activity worldwide. Note that for applicants domiciled in EU member states, filing at the CPVO regional office is also regarded as a resident filing.

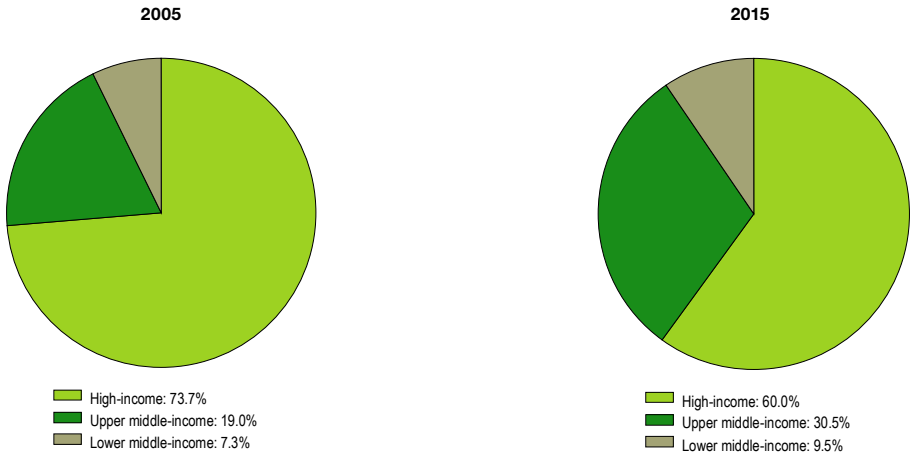
Applicants from the Netherlands remained the most active applicants in the world in 2015, filing 2,720 plant variety applications at various offices. They were followed by applicants from China, who filed 2,100 plant varieties applications, overtaking the U.S. (2,027) to

Figure 22. Plant variety applications for the top 10 offices, 2015



Source: Standard figure D5.

Figure 23. Plant variety applications by income group



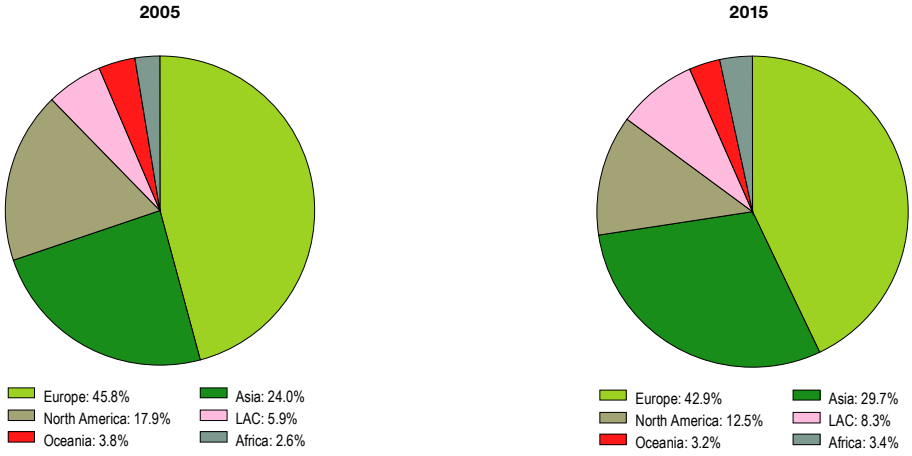
Source: Standard table D3.

become the second-largest filer. France (1,038) and Germany (942) were the fourth and fifth largest origins of applications. Among the top five, China was the only origin to experience growth (+8.4%) in filings on 2014. The other four origins saw declines, with the Netherlands recording the sharpest drop (-10.4%). While applicants from the other top five origins filed most of their applications abroad or at the regional office, those from China filed almost exclusively at their home office. Similarly, applicants from the Republic of Korea, the Russian Federation and Ukraine also filed mostly at their home offices, reflecting lower interest in seeking protection internationally.

Equivalent count

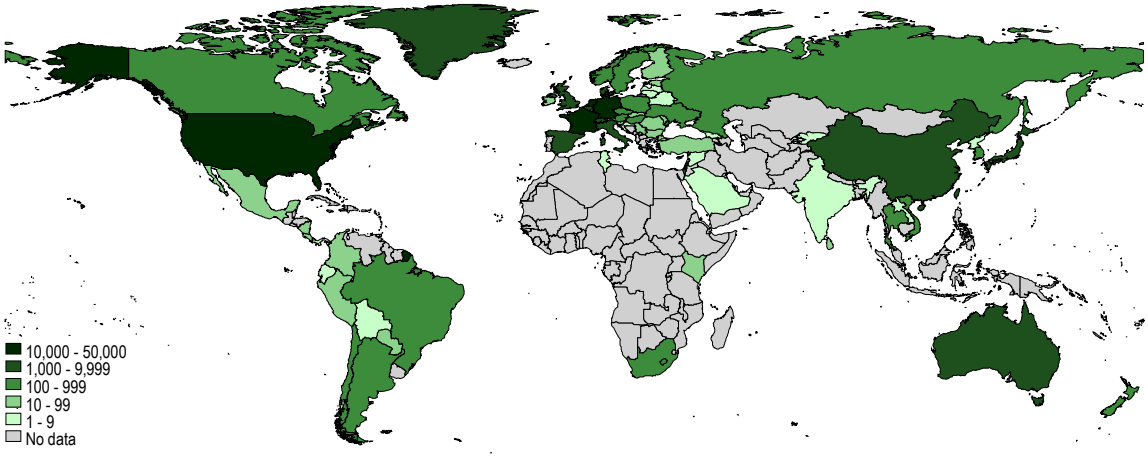
Origin data are compiled using two different counting methods – absolute counts and equivalent counts. The difference between the two lies in the treatment of regional office (CPVO) data. For absolute counts, an application received by the CPVO is counted only once. For the equivalent count, a single application filed at the CPVO is equivalent to multiple applications. To calculate the number of equivalent applications at the CPVO in 2015, each application was multiplied by the corresponding number of member states. If the applicant resided in one of the 28 EU member states in 2015, the application was counted as one resident filing and 27 filings abroad. If the applicant did not reside in an EU member state, the application was counted as 28 filings abroad.

Figure 24. Plant variety applications by region



Source: Standard table D4.

Map 4. Equivalent plant variety applications by origin, 2015



Source: Standard figure D9.

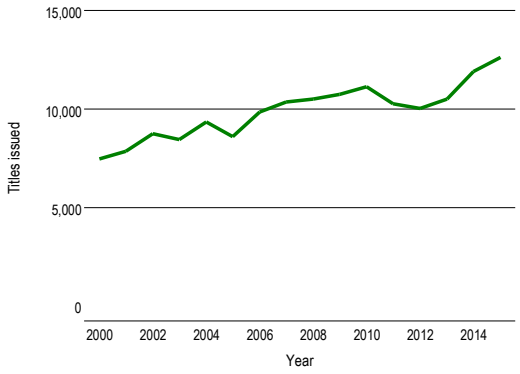
Since equivalent counts take multiple members at the regional office into account, one would expect to see those country origins whose applicants filed intensively at the CVPO to move up the ranking when applying this counting method. Not surprisingly, European countries and the U.S. topped the list of origins based on equivalent counts. Applicants from the Netherlands remained number one, with 29,315 equivalent applications filed worldwide. They were followed by applicants from France (13,674), Germany (13,497) and the U.S. (10,181). China (2,127) is the only other non-European country among the top 10 origins despite the fact that only 2% of its applicants' filings were equivalent filings abroad. This is in marked contrast to the Netherlands, for which the share was 94%.

The number of titles issued increased for the third consecutive year

The total number of plant variety titles issued rose by 6.1% in 2015 to reach 12,620. China accounted for most of this growth, with titles issued increasing by 60%. However, the CPVO issued the largest number of titles (2,844). It was followed by the offices of the U.S. (1,595), China (1,589) and Ukraine (946). Along with China, other offices that saw large increases in titles issued were Brazil (+31.7%), the Republic of Korea (+28.4%), the Russian Federation (+27.7%) and the Netherlands (+14.2%). Three of the top 10 offices issued fewer titles in 2015 than in 2014 – the U.S. (-18.2%), South Africa (-14.7%) and Japan (-1.9%).

The grant or registration process takes time, so fluctuations in volumes of granted plant variety titles may reflect changes in processing capacities or procedural delays.

Figure 25. Plant variety titles issued worldwide



Source: Standard figure D2.

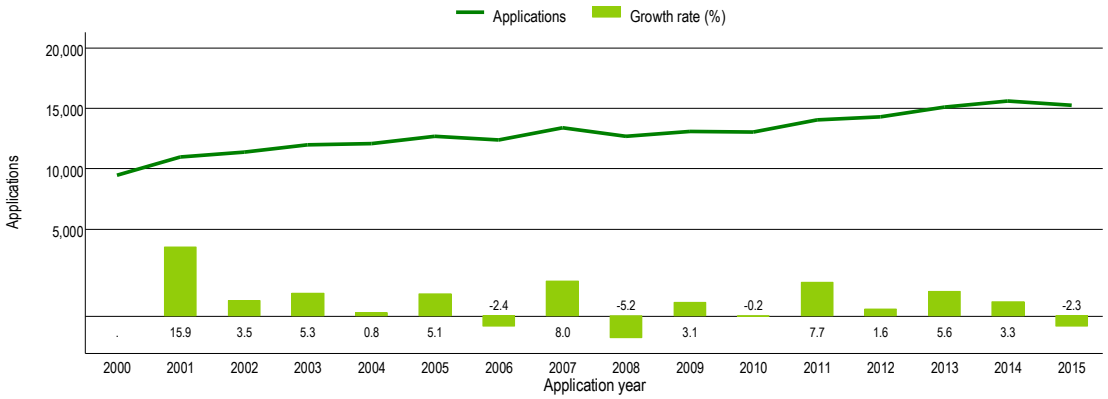
Plant varieties in force grew steadily

Around 111,180 plant variety titles were in force at the end of 2015, up 4.1% on 2014. The CPVO (23,771) and the U.S. (23,523) were the two offices with the highest numbers of plant variety titles in force. Other offices maintaining at least 4,000 active titles included Japan (8,231), the Netherlands (7,719), China (4,816), the Russian Federation (4,407) and the Republic of Korea (4,353).

Standard figures and tables

Plant variety applications and titles issued worldwide

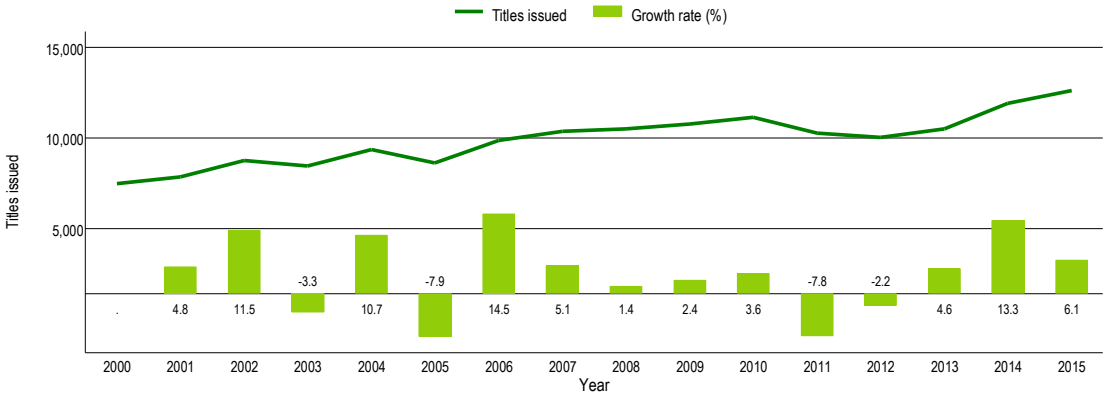
D1 Trend in plant variety applications worldwide



Note: World totals are WIPO estimates using data covering 68 offices.

Source: WIPO Statistics Database, October 2016.

D2 Trend in plant variety titles issued worldwide



Note: World totals are WIPO estimates using data covering 68 offices.

Source: WIPO Statistics Database, October 2016.

Plant variety applications and titles issued by office

D3 Plant variety applications by income group

	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
High-income	9,362	9,141	62.8	68.4	73.7	60	-0.2
Upper middle-income	2,407	4,649	72.8	70.6	19.0	30.5	6.8
Lower middle-income	921	1,450	69.4	42.9	7.3	9.5	4.6
World	**12,690**	**15,240**	**65.1**	**66.6**	**100**	**100**	**1.8**

Note: Totals by income group are WIPO estimates using data covering 68 offices. Each category includes the following number of offices: high-income countries/economies (37), upper middle-income (21) and lower middle-income (10). The EU's Community Plant Variety Office data are allocated to the high-income group because the majority of EU member states are high-income countries.

Source: WIPO Statistics Database, October 2016.

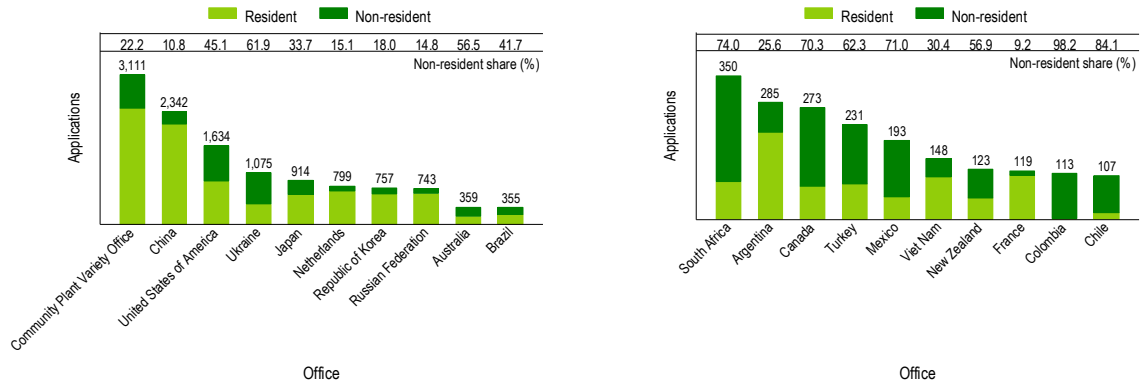
D4 Plant variety applications by region

	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-15
Africa	325	515	39.7	24.3	2.6	3.4	4.7
Asia	3,040	4,529	73	79.4	24	29.7	4.1
Europe	5,823	6,537	78.6	71.7	45.8	42.9	1.2
Latin America & the Caribbean	751	1,270	37.7	43.2	5.9	8.3	5.4
North America	2,270	1,907	37.1	51.3	17.9	12.5	-1.7
Oceania	481	482	44.7	43.4	3.8	3.2	0
World	**12,690**	**15,240**	**65.1**	**66.6**	**100**	**100**	**1.8**

Note: Totals by geographic region are WIPO estimates using data covering 68 offices. Each region includes the following number of offices: Africa (4), Asia (12), Europe (33), Latin America & the Caribbean (14), North America (3) and Oceania (2).

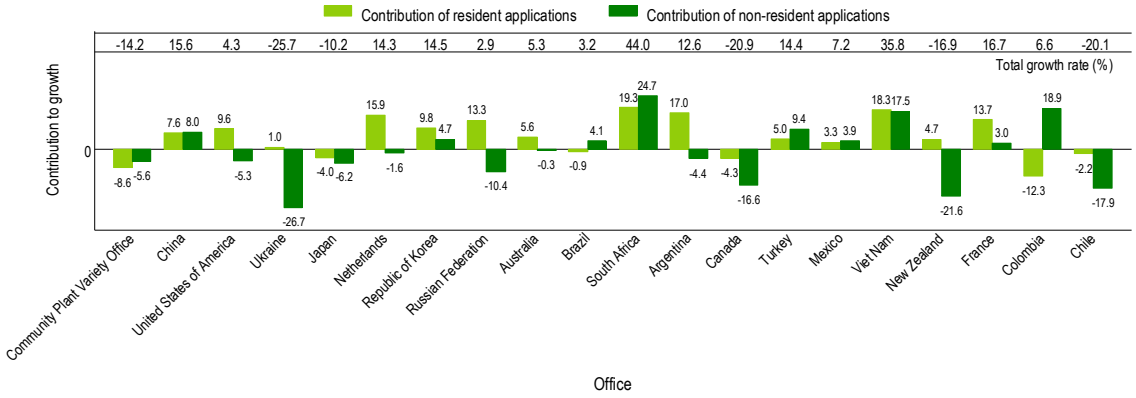
Source: WIPO Statistics Database, October 2016.

D5 Plant variety applications for the top 20 offices, 2015



Source: WIPO Statistics Database, October 2016.

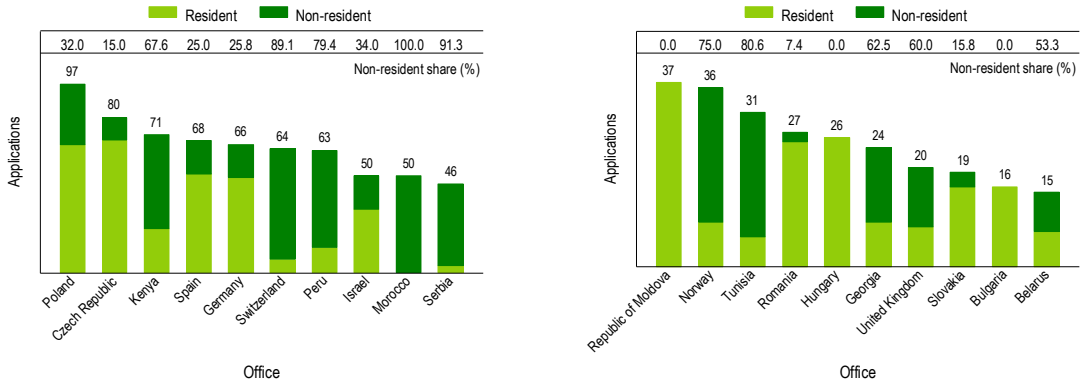
D6 Contribution of resident and non-resident applications to total growth for the top 20 offices, 2014-15



Note: This figure shows total growth in plant variety applications broken down by the respective contributions of resident and non-resident filings. For example, applications in China grew by 15.6%, and resident applicants contributed 7.6 percentage points to this total growth while non-resident applications accounted for the other 8.0 percentage points.

Source: WIPO Statistics Database, October 2016.

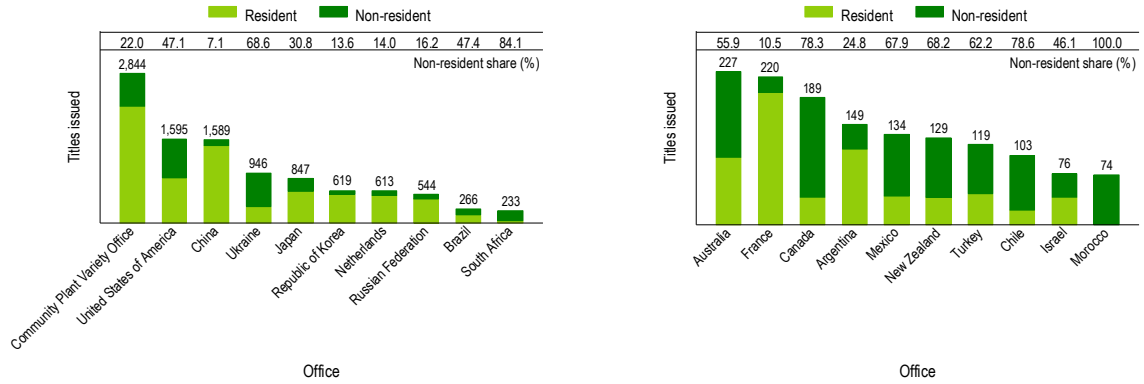
D7 Plant variety applications for offices of selected low- and middle-income countries, 2015



Note: The selected offices are from different world regions and income groups. Where available, data for all offices are in the statistical table at the end of this section.

Source: WIPO Statistics Database, October 2016.

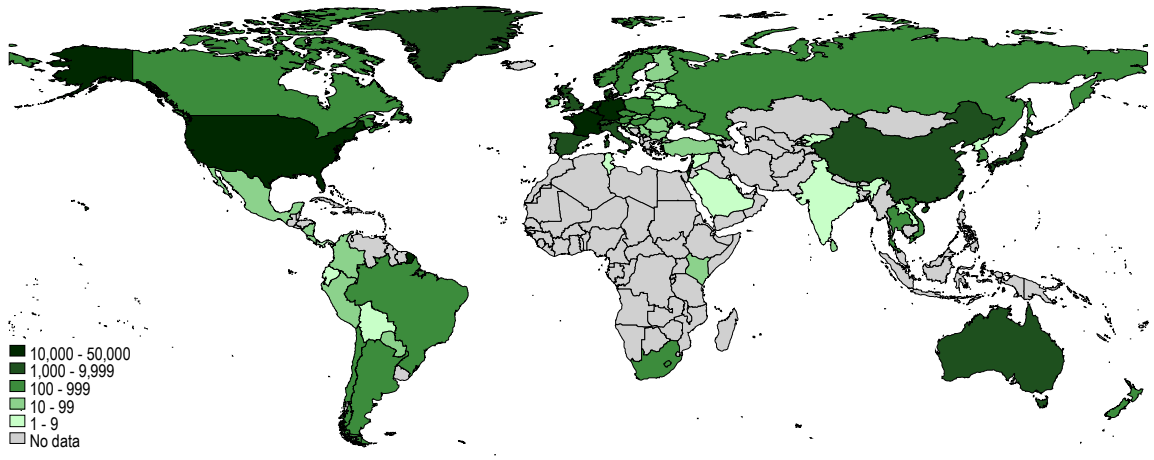
D8 Plant variety titles issued for the top 20 offices, 2015



Source: WIPO Statistics Database, October 2016.

Plant variety applications and titles issued by origin

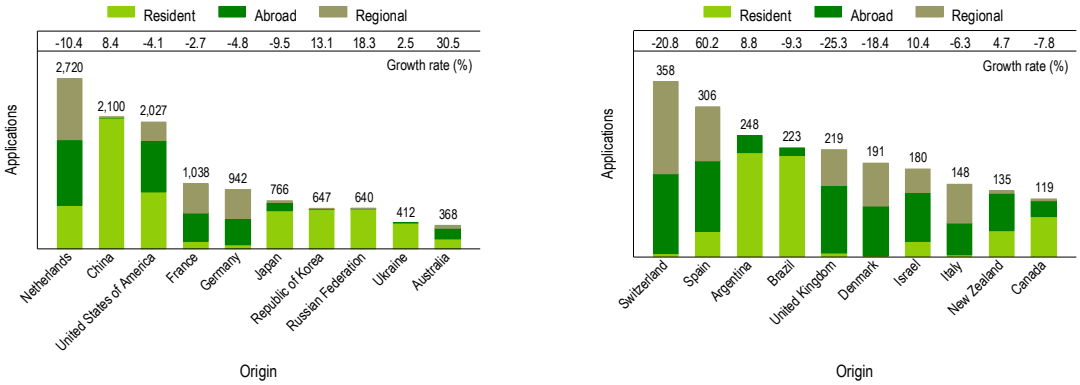
D9 Equivalent plant variety applications by origin, 2015



Note: The origin of an application is determined by the residence of the first-named applicant. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, October 2016.

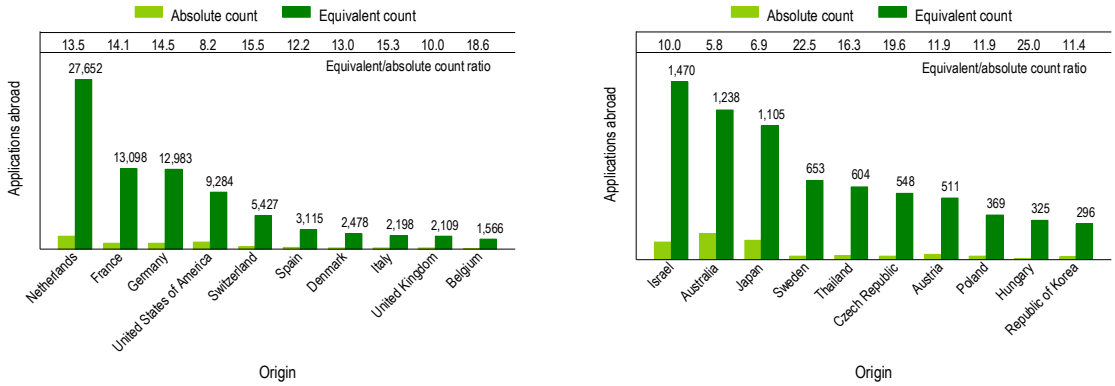
D10 Plant variety applications for the top 20 origins, 2015



Note: Data are based on absolute count, not equivalent count. The origin of an application is determined by the residence of the first-named applicant. Regional refers to applications filed at the EU's Community Plant Variety Office.

Source: WIPO Statistics Database, October 2016.

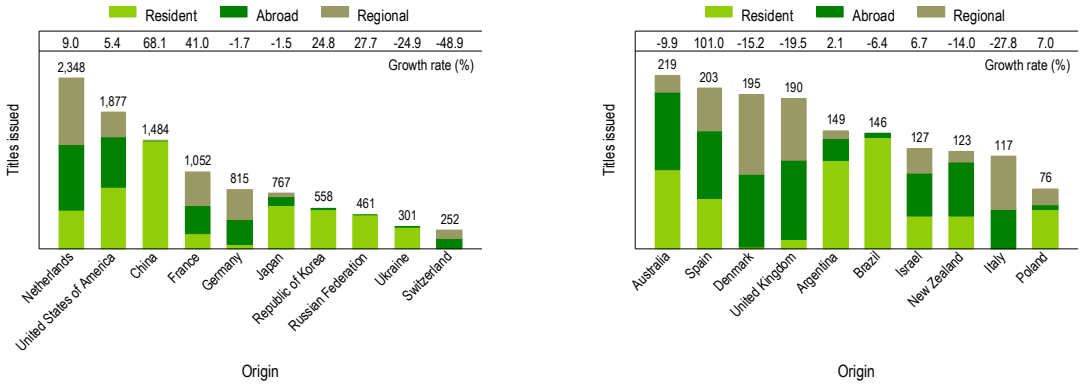
D11 Plant variety applications abroad for the top 20 origins, 2015



Note: The origin of an application is determined by the residence of the first-named applicant. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, October 2016.

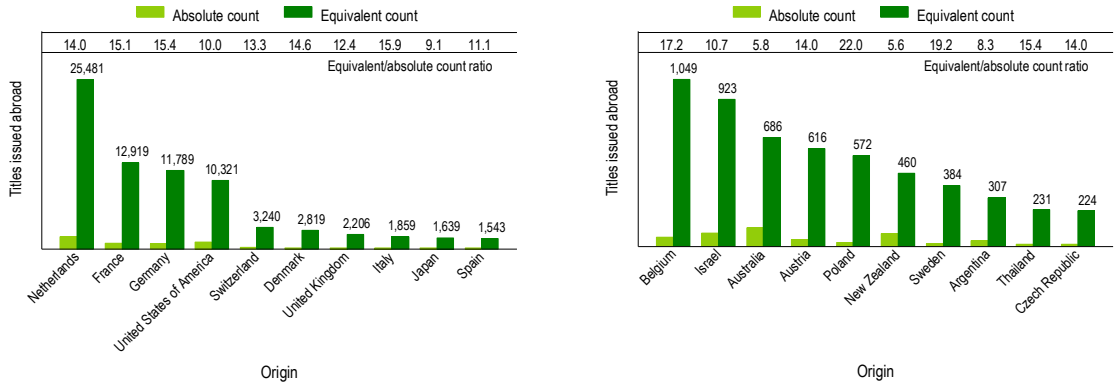
D12 Plant variety titles issued for the top 20 origins, 2015



Note: Data are based on absolute count, not equivalent count. The origin of an application is determined by the residence of the first-named applicant.

Source: WIPO Statistics Database, October 2016.

D13 Plant variety titles issued abroad for the top 20 origins, 2015

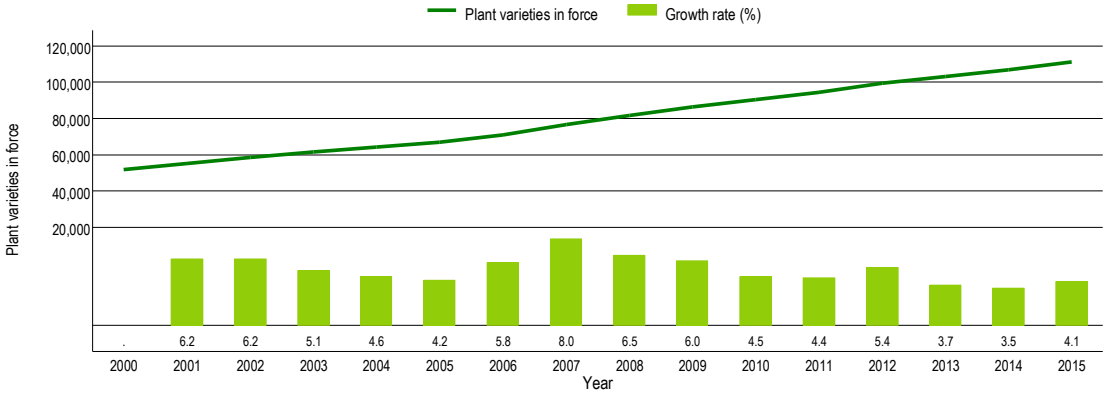


Note: See the glossary for the definition of equivalent grant (registration).

Source: WIPO Statistics Database, October 2016.

Plant varieties in force

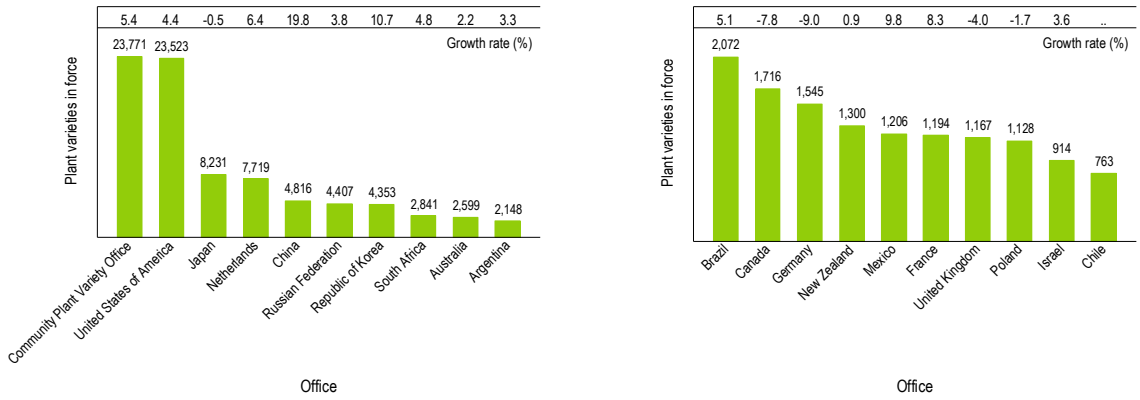
D14 Trend in plant varieties in force worldwide



Note: World totals are WIPO estimates using data covering 68 offices.

Source: WIPO Statistics Database, October 2016.

D15 Plant varieties in force at selected offices, 2015



.. indicates not available.

Source: WIPO Statistics Database, October 2016.

Statistical table

D16 Plant variety applications and titles issued by office and origin, 2015

	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
African Intellectual Property Organization (a)	..	..	..	n.a.	n.a.	9	0	9	49
Argentina	285	212	73	248	248	149	112	37	2,148
Australia	359	156	203	368	1,394	227	100	127	2,599
Austria (a)	..	..	..	43	529	1	0	1	27
Belarus	15	7	8	9	9	26	5	21	259
Belgium	1	1	0	85	1,624	..	..	..	65
Bolivia (Plurinational State of)	5	5	0	5	5	7	6	1	50
Brazil	355	207	148	223	223	266	140	126	2,072
Bulgaria	16	16	0	21	21	24	24	0	383
Canada	273	81	192	119	227	189	41	148	1,716
Chile	107	17	90	32	194	103	22	81	763
China	2,342	2,090	252	2,100	2,127	1,589	1,476	113	4,816
China, Hong Kong SAR (b)	..	..	..	2	2	..	..	..	..
Colombia	113	2	111	5	59	68	4	64	543
Community Plant Variety Office	3,111	2,420	691	n.a.	n.a.	2,844	2,218	626	23,771
Costa Rica	2	1	1	6	87	3	0	3	11
Croatia	7	7	0	9	9	8	8	0	49
Cyprus (b)	..	..	..	1	1	..	..	..	..
Czech Republic	80	68	12	96	636	64	59	5	725
Democratic People's Republic of Korea (b)	..	..	..	2	2	..	..	..	..
Denmark	1	1	0	191	2,567	5	2	3	127
Ecuador (a)	..	..	..	1	1	..	..	..	..
Estonia (a)	..	..	..	1	28	..	..	..	..
Finland	13	10	3	16	43	17	14	3	185
France	119	108	11	1,038	13,674	220	197	23	1,194
Georgia	24	9	15	9	9	48	6	42	..
Germany	66	49	17	942	13,497	57	50	7	1,545
Hungary	26	26	0	39	363	10	10	0	145
India (b)	..	..	..	1	1	..	..	..	..
Ireland (a)	..	..	..	11	65	..	..	..	..
Israel	50	33	17	180	1,503	76	41	35	914
Italy	4	4	0	148	2,281	..	..	..	..
Japan	914	606	308	766	1,711	847	586	261	8,231
Jordan	12	0	12	..	..	7	0	7	47
Kenya	71	23	48	23	23	69	1	68	383
Kyrgyzstan	3	3	0	3	3	1	1	0	5
Lao People's Democratic Republic (b)	..	..	..	2	2	..	..	..	..
Latvia	7	7	0	7	7	4	4	0	210
Lithuania	11	8	3	8	8	11	8	3	70
Luxembourg (b)	..	..	..	24	51	..	..	..	..
Mauritius (b)	..	..	..	12	12	..	..	..	..
Mexico	193	56	137	58	58	134	43	91	1,206
Morocco	50	0	50	..	..	74	0	74	301
Netherlands	799	678	121	2,720	29,315	613	527	86	7,719
New Zealand	123	53	70	135	297	129	41	88	1,300
Nicaragua	12	12	0	12	12	4	4	0	13
Norway	36	9	27	13	121	20	9	11	228
Panama (a)	..	..	..	3	3	3	3	0	19
Paraguay (a)	..	..	..	10	10	..	..	..	..
Peru	63	13	50	13	13	20	9	11	92
Poland	97	66	31	97	448	61	50	11	1,128
Portugal	1	0	1	..	..	..	..	..	11
Puerto Rico (b)	..	..	..	2	56	..	..	..	..
Republic of Korea	757	621	136	647	917	619	535	84	4,353
Republic of Moldova	37	37	0	37	37	28	20	8	157

	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
Romania	27	25	2	37	37	15	15	0	321
Russian Federation	743	633	110	640	775	544	456	88	4,407
Saudi Arabia (b)	..	..	..	1	1	..	..	..	..
Serbia	46	4	42	27	27	60	9	51	221
Singapore (a)	..	..	..	5	5	..	..	..	..
Slovakia	19	16	3	22	76	16	13	3	416
Slovenia (a)	..	..	..	1	28	3	3	0	14
South Africa	350	91	259	116	170	233	37	196	2,841
Spain	68	51	17	306	3,276	73	64	9	367
Sri Lanka (b)	..	..	..	1	28	..	..	..	..
Sweden	1	1	0	30	678	4	3	1	158
Switzerland	64	7	57	358	5,434	61	9	52	714
Syrian Arab Republic (b)	..	..	..	6	6	..	..	..	..
Thailand (b)	..	..	..	37	604	..	..	..	..
Tunisia	31	6	25	6	6	5	0	5	118
Turkey	231	87	144	95	95	119	45	74	524
Ukraine	1,075	410	665	412	412	946	297	649	..
United Kingdom	20	8	12	219	2,190	21	12	9	1,167
United States of America (PPA) (c)	1,140	466	674	n.a.	n.a.	1,074	400	674	16,336
United States of America (PVPA)	494	431	63	2,027	10,181	521	444	77	7,187
Viet Nam	148	103	45	103	103	60	35	25	191
Others/Unknown	..	..	..	25	349	..	..	..	..
Total (2015 estimates)	**15,240**	**10,200**	**5,040**	**15,240**	**n.a.**	**12,620**	**8,000**	**3,900**	**111,180**

(a) The office did not report data; therefore, applications by origin data may be incomplete.
(b) Is not a member of the International Union for the Protection of New Varieties of Plants (UPOV).
(c) Applications by origin are reported under United States of America (PVPA), because statistics by origin do not distinguish between applications under the Plant Variety Protection Act (PVPA) or the Plant Patent Act (PPA).
n.a. indicates not applicable.
.. indicates not available.

Source: WIPO Statistics Database, October 2016.

Data description

Data sources

Intellectual property (IP) data are from the WIPO Statistics Database and are based primarily on WIPO's annual IP statistics survey (see below) and on data compiled by WIPO in processing international applications/registrations through the Patent Cooperation Treaty (PCT) and the Madrid and Hague Systems. Patent Prosecution Highway (PPH) data reported in previous editions were obtained from the Japan Patent Office. However, WIPO has started to collect PPH data through its annual IP statistics survey, and PPH data reported in this edition are from WIPO's survey.

Data are available from WIPO's Statistics Data Center at *www.wipo.int/ipstats*.

Patent family and technology data are extracted from the WIPO Statistics Database and from the April 2016 edition of the European Patent Office's PATSTAT database.

Gross domestic product and population data are from the World Bank's World Development Indicators database.

This report uses the World Bank's income classifications. Economies are classified according to 2015 gross national income per capita as calculated using the World Bank Atlas method. The classifications are low-income (USD 1,025 or less), lower middle-income (USD 1,026 to USD 4,035), upper middle-income (USD 4,036 to USD 12,475) and high-income (USD 12,476 or more).[1]

This report uses United Nations (UN) definitions of regions and subregions, though the geographical terms used in the report may differ slightly from those defined by the UN.[2]

WIPO's annual IP statistics survey

WIPO collects data from national and regional IP offices around the world through an annual survey consisting of multiple questionnaires, and enters these data into the WIPO Statistics Database. When possible, data published on IP offices' websites or in annual reports are used to supplement questionnaire responses in cases where IP offices do not provide statistics. Efforts are ongoing to improve the quality and availability of IP statistics, and to gather data for as many IP offices and countries as possible. The questionnaires are available in English, French and Spanish at *www.wipo.int/ipstats/en/data_collection/questionnaire*.

Data are broken down by IP office, origin, resident and non-resident applications, applications abroad, class count, design count and other factors. See the glossary for the definitions of key concepts used in this publication.

Offices are requested to report data by the origin (country or territory) of applications, grants or registrations. However, some offices are unable to provide a detailed breakdown. Instead, these offices report either an aggregate total or a simple breakdown by total resident and total non-resident. For this reason, the totals for each origin are underreported. However, the unknown origin shares of the 2015 totals are low – only 1.5% for patent applications, 4.8% for industrial design application design counts and 2.4% for trademark application class counts.

1. For further details on World Bank income classifications, see *http://data.worldbank.org/about/country-and-lending-groups*.
2. For further details on UN regional classifications, see *http://unstats.un.org/unsd/methods/m49/m49regin.htm*.

Estimating world totals

World totals for applications for, and grants/registrations of, 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 office in question. When 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 most of the larger offices; only small shares of world totals are estimated. For example, the estimate of the total number of patent applications worldwide covers 150 offices. Data are available for 116 of them which account for 99.3% of the estimated world total. Table 1 shows the availability and coverage of data on applications for different types of IP.

Table 1: IP applications data coverage by IP type

IP type	Number of offices on which 2015 world totals are based	Number of offices for which data are available	Data coverage (%)
Patents	150	116	99.3%
Utility models	71	60	99.9%
Trademarks (a)	159	108	97.2%
Industrial designs (b)	135	130	96.3%
Plant varieties	68	56	98.6%

a. refers to the number of trademark applications based on class count (that is, the number of classes specified in applications).
b. refers to the number of industrial design applications based on design count (that is, the number of designs contained in applications).

National and international data

Application and grant/registration data include data on both direct filings and filings through international systems (where applicable). For 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 through the Madrid System. For industrial designs, data include national and regional applications combined with designations received by relevant offices through 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. Although data are collected from offices using questionnaires from WIPO's harmonized annual IP survey, national laws and regulations for filing IP applications or for issuing IP rights as well as statistical reporting practices may differ among jurisdictions. Due to continual updating of data and the revision of historical statistics, data in this report may differ from data in previous editions and from data available on WIPO's website.

IP systems at a glance

The patent system

A patent is a set of exclusive rights granted by law to applicants for an invention that meets the standards of novelty, non-obviousness and industrial applicability. It is valid for a limited period (generally 20 years), during which time the patent holder can commercially exploit the invention on an exclusive basis. 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 acquisition 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 application in each jurisdiction in which protection is sought. However, the decision whether to grant a patent remains the prerogative of national or regional patent offices, and patent rights are limited to the jurisdiction of each patent-granting authority.

The PCT application process begins with the international phase, during which an international search and optional preliminary examination and supplementary international search are performed. 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 information about the PCT System is available at *www.wipo.int/pct*.

The utility model system

Like a patent, a utility model (UM) confers a set of rights for an invention for a limited period, during which UM holders can commercially exploit their inventions on an exclusive basis. The terms and conditions for granting a UM differ from those for granting a traditional patent. For example, UMs are issued for a shorter period (7–10 years), and at most offices protection is granted without substantive examination. As with patents, 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 term "utility model" refers to UMs and other types of protection similar to UMs, such as innovation patents in Australia and short-term patents in Ireland.

Microorganisms under the Budapest Treaty

The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure plays an important role in relation to biotechnological inventions. Disclosing an invention is a generally recognized requirement for receiving a patent. When an invention involves microorganisms, national laws in most countries require that the applicant deposit a sample at a designated International Depositary Authority (IDA).

To eliminate the need to deposit a microorganism in every country in which patent protection is sought, the Budapest Treaty provides that depositing a microorganism with any IDA will suffice for the purposes of patent procedures at national patent offices of all contracting states and at regional patent offices that recognize the treaty. An IDA is a scientific institution – typically a "culture collection" – capable of storing microorganisms. Currently, there are 45 IDAs around the world. Further information about the Budapest Treaty is available at *www.wipo.int/treaties/en/registration/budapest*.

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 both goods and services. In the latter case, the term "service mark" is sometimes used. For simplicity, this report uses "trademark" regardless of whether the registration concerns goods or services. The holder of a registered trademark has the exclusive right to use the mark in relation to the goods or services for which it is registered and can block unauthorized use of the trademark, or a confusingly similar mark, to prevent consumers from being misled. Unlike patents, trademark registrations can be maintained indefinitely provided 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. Therefore, trademark rights are limited to the jurisdiction of the authority in which a trademark is registered. Trademark applicants can file an application with the relevant national or regional IP office or an international application through the Madrid System. However, when an applicant files internationally via the Madrid System, the decision to issue a trademark registration remains the prerogative of the national or regional IP office concerned, and trademark rights remain limited to the jurisdiction of the authority issuing that registration.

The Madrid System is governed legally by the Madrid Agreement (1891) and the Madrid Protocol (1989) and is administered by WIPO. It simplifies multinational trademark registration by allowing an applicant to apply for a trademark in a large number of countries by filing a single application through a national or regional IP office that is party to the System. This eliminates the requirement to file an individual application in each jurisdiction in which protection is sought. The System also simplifies subsequent management of the trademark, since it is possible to centrally request and record further changes, or to renew the registration through a single procedure. A registration recorded in the International Register yields the same effect as a registration made directly with each designated Contracting Party (Madrid member) if no refusal is made by the competent authority of that jurisdiction within a specified time limit. Further information about the Madrid System is available at *www.wipo.int/madrid*.

The industrial design system

Industrial designs are applied to a wide variety of industrial products and handicrafts.[3] 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 others.

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. 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 five years and may be renewed for additional periods of five years up to, in most cases, 15 years. In some countries, industrial designs are protected through the delivery of a design patent rather than design registration.

The Hague System comprises several international treaties – the London Act, the Hague Act and the Geneva Act.[4] 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, thus simplifying multinational registration. Moreover, by allowing the filing of up to 100 different designs per application, the System offers considerable opportunities for efficiency gains. It also streamlines subsequent management of industrial design registration, since it is possible to record changes or renew a registration through a single procedure. Further information about the Hague System is available at *www.wipo.int/hague/en*.

3. The products and handicrafts 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.
4. The London Act has been frozen since January 2010.

Glossary

Plant variety protection

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

In the United States of America (US), two legal frameworks protect new plant varieties: the Plant Patent Act (PPA) and the Plant Variety Protection Act (PVPA). Under 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 for it. Under the PVPA, the US protects all sexually reproduced plant varieties and tuber-propagated plant varieties, excluding fungi and bacteria.

This glossary provides definitions of key technical terms and concepts. Many of the terms are defined generically (for example, "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 in this publication, the name of the first-named applicant is used to determine the origin of the application.

Application
The procedure for requesting IP rights at an office which then examines the application and decides whether to grant protection. 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 or jurisdiction with an IP office of another state or 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 or jurisdiction from the perspective of the office receiving the application: the example above would be a non-resident application from the JPO's point of view.

Application date
The date on which the IP office receives an application that meets the minimum requirements. Also referred to as the filing date.

Budapest Treaty
Disclosure of an invention is a requirement for granting 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 depositing a sample of the microorganism with a specialized institution. 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 at

the national patent offices of all contracting states and at any regional patent office that recognizes the treaty.

Class
May refer to the classes defined in either the Locarno Classification or the Nice Classification. Classes indicate the categories of products and services (where applicable) for which industrial design or trademark 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 national and regional 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 a single- or multi-class filing system. For example, the offices of Japan, the Republic of Korea and the United States of America (U.S.) as well as many European IP offices have multi-class filing systems. The offices of Brazil, Mexico and South Africa follow a single-class filing system, requiring a separate application for each class in which an applicant seeks trademark protection. To capture the differences in application and registration 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 all EU member states.

Design count
The number of designs contained in an industrial design application or registration. Under the Hague System for the 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 national or regional IP offices allow applications to contain more than one design for the same product or within the same class, while others allow only one design per application. In order to capture the differences in application and registration numbers across offices, it is useful to compare their respective application and registration design counts.

Designation
Designation in an international application or registration means the request by which the applicant/international registration holder specifies the jurisdiction(s) in which they seek to protect their industrial designs (Hague System) or trademarks (Madrid System).

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 the Benelux Office for Intellectual Property (BOIP), the Eurasian Patent Organization (EAPO), the African Intellectual Property Organization (OAPI), the Patent Office of the Cooperation Council for the Arab States of the Gulf (GCC Patent Office) and the European Union Intellectual Property Office (EUIPO), 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, the EUIPO, the GCC Patent Office or OAPI, 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 Office (EPO)
The EPO is the regional patent office created under the European Patent Convention, 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. Foreign-oriented patent families are a subset of patent families. See "Patent family".

Grant
A set of exclusive rights legally accorded to the applicant when a patent or utility model is granted or issued.

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 member (Contracting Party)
A state or intergovernmental organization that is a member of the Hague System. Includes any state or intergovernmental organization party to the 1999 Act and/or the 1960 Act of the Hague Agreement. 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 being a national of one of those 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.

Hague route
An alternative to the Paris route (the direct national or regional 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 of 1934 (frozen since 2010), the Hague Act of 1960 and the Geneva Act of 1999. 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 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 renew a registration through a single procedural step.

In force
Refers to IP rights that are currently valid or, in the case of trademarks, active. To remain in force, IP protection must be maintained.

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 in most jurisdictions. However, differences in legislation exist, notably in China (which provides for a 10-year term from the application date) and the U.S. (which provides for a 14-year term from the date of registration).

Intellectual property (IP)
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, 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, those of producers of sound recordings in their recordings and those of broadcasters in their radio and television programs.

International Bureau of WIPO
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 and contracting parties. It also handles processing tasks with respect to these applications and the subsequent management of Hague and Madrid System 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 provides for the receipt, acceptance and storage of microorganisms and the furnishing of samples thereof. Currently, 45 such authorities exist around the world.

International Patent Classification (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 (the 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 qualify for patent protection, 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 plus an alphabetical list of the 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 Madrid member jurisdictions. Such international applications must be based on a trademark registration issued by the trademark holder's "home" national or regional office.

Madrid international registration
An international registration issued under the Madrid System, which facilitates the acquisition of trademark 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 member (Contracting Party)
A state or intergovernmental organization (in the case of the EU and OAPI) that is party to the Madrid Agreement and/or the Madrid Protocol.

Madrid route
An alternative to the Paris route (the direct national or regional route), the Madrid route enables an application for international registration of a trademark to be filed using the Madrid System.

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 if it 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 subsequent management of the mark, since it is possible to record changes or 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 or regional offices. Trademark rights are limited to the jurisdiction of each trademark registration office.

Maintenance
An act by the applicant to keep an IP grant/registration valid (in force), primarily by paying the required fee to the IP office of the state or jurisdiction providing protection. That 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 be maintained for only a limited number of years.

Microorganism deposit
The transmittal of a microorganism to an International Depositary Authority (IDA), which receives and accepts it, 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
The phase that follows the international phase of the PCT procedure and that 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 or jurisdiction (see also "PCT route", "Hague route" or "Madrid route"). The 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 the Registration of 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".

Non-resident
For statistical purposes, a "non-resident" application refers to an application filed with the IP office of, or acting for, a state or jurisdiction in which the first-named applicant in the application is not domiciled. For example, an application filed with the Japan Patent Office (JPO) by an applicant residing in France is considered a non-resident application from the perspective of the JPO. 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 or region)
For statistical purposes, the origin of an application means the country or territory of residence of the first-named applicant in the application. In some cases (notably in the U.S.), 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, 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" or "national 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. A patent 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 them to appropriate the returns from 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 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 or jurisdictions to protect the same invention.

PCT filing
Abbreviated form of "PCT international application".

PCT international 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 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 whether 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 a national or regional patent office decides 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 for which no patent has yet been granted or refused, and for which the application has not been withdrawn. In jurisdictions where a request for examination is required to start the examination process, a pending application may refer to an application for which a request for examination has been received or one for which no patent has been granted or refused, and for which the application has not been withdrawn.

Plant Patent Act (PPA) of the U.S.
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, plant 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 defined by the expression of the characteristics resulting from a given genotype or combination of genotypes, distinguished from any other plant grouping by the expression of at least one of the said characteristics and 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 granted (title of protection is issued) only when the variety is new, distinct, uniform, stable and has a suitable denomination.

Plant Variety Protection Act (PVPA) of the U.S.
Under the PVPA, the U.S. 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 ARIPO, the BOIP, EAPO, the EUIPO, the EPO and OAPI.

Regional route (or regional direct route)
Applications for IP protection filed or granted based on applications filed with a regional IP office.

Registered Community Design
A registration issued by the EUIPO based on a single application filed directly with the office by an applicant seeking protection within the 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 (that is, kept in force). 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 or jurisdiction in which the first-named applicant in the application has residence. For example, an application filed with the 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 sign used by the owner of certain products or provider of certain services to distinguish them from the products or services of other companies. A trademark can consist of words and combinations of words (for instance, slogans), names, logos, figures and images, letters, numbers, sounds and moving images, or a combination thereof. The procedures for registering trademarks are governed by the legislation and procedures of national and regional IP offices. Trademark rights are limited to the jurisdiction of the IP office 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 or 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 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
EUIPO	European Union Intellectual Property Office
GDP	Gross domestic product
ID	Industrial design
IDA	International Depositary Authority
IP	Intellectual Property
IPC	International Patent Classification
JPO	Japan Patent Office
KIPO	Korean Intellectual Property Office
LOC	Locarno Classification
NCL	Nice Classification
OAPI	African Intellectual Property Organization
PCT	Patent Cooperation Treaty
PPA	Plant Patent Act of the United States of America
PVPA	Plant Variety Protection Act of the United States of America
SIPO	State Intellectual Property Office of the People's Republic of China
U.K.	United Kingdom
UM	Utility model
UPOV	International Union for the Protection of New Varieties of Plants
U.S.	United States of America
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization

Annexes

Annex A
IPC-technology concordance table

FIELD OF TECHNOLOGY	IPC CODES
Electrical engineering	
Electrical machinery, apparatus, energy	F21H%, F21K%, F21L%, F21S%, F21V%, F21W%, F21Y%, H01B%, H01C%, H01F%, H01G%, H01H%, H01J%, H01K%, H01M%, H01R%, H01T%, H02B%, H02G%, H02H%, H02J%, H02K%, H02M%, H02N%, H02P%, H02S%, H05B%, H05C%, H05F%, H99Z%
Audio-visual technology	G09F%, G09G%, G11B%, H04N 3%, H04N 5%, H04N 7%, H04N 9%, H04N 11%, H04N 13%, H04N 15%, H04N 17%, H04N 19%, H04N 101%, H04R%, H04S%, H05K%
Telecommunications	G08C%, H01P%, H01Q%, H04B%, H04H%, H04J%, H04K%, H04M%, H04N 1%, H04Q%
Digital communication	H04L%, H04N 21%, H04W%
Basic communication processes	H03B%, H03C%, H03D%, H03F%, H03G%, H03H%, H03J%, H03K%, H03L%, H03M%
Computer technology	G06C%, G06D%, G06E%, G06F%, G06G%, G06J%, G06K%, G06M%, G06N%, G06T%, G10L%, G11C%
IT methods for management	G06Q%
Semiconductors	H01L%
Instruments	
Optics	G02B%, G02C%, G02F%, G03B%, G03C%, G03D%, G03F%, G03G%, G03H%, H01S%
Measurement	G01B%, G01C%, G01D%, G01F%, G01G%, G01H%, G01J%, G01K%, G01L%, G01M%, G01N 1%, G01N 3%, G01N 5%, G01N 7%, G01N 9%, G01N 11%, G01N 13%, G01N 15%, G01N 17%, G01N 19%, G01N 21%, G01N 22%, G01N 23%, G01N 24%, G01N 25%, G01N 27%, G01N 29%, G01N 30%, G01N 31%, G01N 35%, G01N 37%, G01P%, G01Q%, G01R%, G01S%, G01V%, G01W%, G04B%, G04C%, G04D%, G04F%, G04G%, G04R%, G12B%, G99Z%
Analysis of biological materials	G01N 33%
Control	G05B%, G05D%, G05F%, G07B%, G07C%, G07D%, G07F%, G07G%, G08B%, G08G%, G09B%, G09C%, G09D%
Medical technology	A61B%, A61C%, A61D%, A61F%, A61G%, A61H%, A61J%, A61L%, A61M%, A61N%, H05G%
Chemistry	
Organic fine chemistry	A61K 8%, A61Q%, C07B%, C07C%, C07D%, C07F%, C07H%, C07J%, C40B%
Biotechnology	C07G%, C07K%, C12M%, C12N%, C12P%, C12Q%, C12R%, C12S%
Pharmaceuticals	A61K 6%, A61K 9%, A61K 31%, A61K 33%, A61K 35%, A61K 36%, A61K 38%, A61K 39%, A61K 41%, A61K 45%, A61K 47%, A61K 48%, A61K 49%, A61K 50%, A61K 51%, A61K 101%, A61K 103%, A61K 125%, A61K 127%, A61K 129%, A61K 131%, A61K 133%, A61K 135%, A61P%
Macromolecular chemistry, polymers	C08B%, C08C%, C08F%, C08G%, C08H%, C08K%, C08L%
Food chemistry	A01H%, A21D%, A23B%, A23C%, A23D%, A23F%, A23G%, A23J%, A23K%, A23L%, C12C%, C12F%, C12G%, C12H%, C12J%, C13B 10%, C13B 20%, C13B 30%, C13B 35%, C13B 40%, C13B 50%, C13B 99%, C13D%, C13F%, C13J%, C13K%
Basic materials chemistry	A01N%, A01P%, C05B%, C05C%, C05D%, C05F%, C05G%, C06B%, C06C%, C06D%, C06F%, C09B%, C09C%, C09D%, C09F%, C09G%, C09H%, C09J%, C09K%, C10B%, C10C%, C10F%, C10G%, C10H%, C10J%, C10K%, C10L%, C10M%, C10N%, C11B%, C11C%, C11D%, C99Z%
Materials, metallurgy	B22C%, B22D%, B22F%, C01B%, C01C%, C01D%, C01F%, C01G%, C03C%, C04B%, C21B%, C21C%, C21D%, C22B%, C22C%, C22F%
Surface technology, coating	B05C%, B05D%, B32B%, C23C%, C23D%, C23F%, C23G%, C25B%, C25C%, C25D%, C25F%, C30B%
Micro-structural and nano-technology	B81B%, B81C%, B82B%, B82Y%
Chemical engineering	B01B%, B01D 1%, B01D 3%, B01D 5%, B01D 7%, B01D 8%, B01D 9%, B01D 11%, B01D 12%, B01D 15%, B01D 17%, B01D 19%, B01D 21%, B01D 24%, B01D 25%, B01D 27%, B01D 29%, B01D 33%, B01D 35%, B01D 36%, B01D 37%, B01D 39%, B01D 41%, B01D 43%, B01D 57%, B01D 59%, B01D 61%, B01D 63%, B01D 65%, B01D 67%, B01D 69%, B01D 71%, B01F%, B01J%, B01L%, B02C%, B03B%, B03C%, B03D%, B04B%, B04C%, B05B%, B06B%, B07B%, B07C%, B08B%, C14C%, D06B%, D06C%, D06L%, F25J%, F26B%, H05H%
Environmental technology	A62C%, B01D 45%, B01D 46%, B01D 47%, B01D 49%, B01D 50%, B01D 51%, B01D 52%, B01D 53%, B09B%, B09C%, B65F%, C02F%, E01F 8%, F01N%, F23G%, F23J%, G01T%
Mechanical engineering	
Handling	B25J%, B65B%, B65C%, B65D%, B65G%, B65H%, B66B%, B66C%, B66D%, B66F%, B67B%, B67C%, B67D%
Machine tools	A62D%, B21B%, B21C%, B21D%, B21F%, B21G%, B21H%, B21J%, B21K%, B21L%, B23B%, B23C%, B23D%, B23F%, B23G%, B23H%, B23K%, B23P%, B23Q%, B24B%, B24C%, B24D%, B25B%, B25C%, B25D%, B25F%, B25G%, B25H%, B26B%, B26D%, B26F%, B27B%, B27C%, B27D%, B27F%, B27G%, B27H%, B27J%, B27K%, B27L%, B27M%, B27N%, B30B%
Engines, pumps, turbines	F01B%, F01C%, F01D%, F01K%, F01L%, F01M%, F01P%, F02B%, F02C%, F02D%, F02F%, F02G%, F02K%, F02M%, F02N%, F02P%, F03B%, F03C%, F03D%, F03G%, F03H%, F04B%, F04C%, F04D%, F04F%, F23R%, F99Z%, G21B%, G21C%, G21D%, G21F%, G21G%, G21H%, G21J%, G21K%
Textile and paper machines	A41H%, A43D%, A46D%, B31B%, B31C%, B31D%, B31F%, B41B%, B41C%, B41D%, B41F%, B41G%, B41J%, B41K%, B41L%, B41M%, B41N%, C14B%, D01B%, D01C%, D01D%, D01F%, D01G%, D01H%, D02G%, D02H%, D02J%, D03C%, D03D%, D03J%, D04B%, D04C%, D04G%, D04H%, D05B%, D05C%, D06G%, D06H%, D06J%, D06M%, D06P%, D06Q%, D21B%, D21C%, D21D%, D21F%, D21G%, D21H%, D21J%, D99Z%
Other special machines	A01B%, A01C%, A01D%, A01F%, A01G%, A01J%, A01K%, A01L%, A01M%, A21B%, A21C%, A22B%, A22C%, A23N%, A23P%, B02B%, B28B%, B28C%, B28D%, B29B%, B29C%, B29D%, B29K%, B29L%, B33Y%, B99Z%, C03B%, C08J%, C12L%, C13B 5%, C13B 15%, C13B 25%, C13B 45%, C13C%, C13G%, C13H%, F41A%, F41B%, F41C%, F41F%, F41G%, F41H%, F41J%, F42B%, F42C%, F42D%
Thermal processes and apparatus	F22B%, F22D%, F22G%, F23B%, F23C%, F23D%, F23H%, F23K%, F23L%, F23M%, F23N%, F23Q%, F24B%, F24C%, F24D%, F24F%, F24H%, F24J%, F25B%, F25C%, F27B%, F27D%, F28B%, F28C%, F28D%, F28F%, F28G%

Mechanical elements	F15B%, F15C%, F15D%, F16B%, F16C%, F16D%, F16F%, F16G%, F16H%, F16J%, F16K%, F16L%, F16M%, F16N%, F16P%, F16S%, F16T%, F17B%, F17C%, F17D%, G05G%
Transport	B60B%, B60C%, B60D%, B60F%, B60G%, B60H%, B60J%, B60K%, B60L%, B60M%, B60N%, B60P%, B60Q%, B60R%, B60S%, B60T%, B60V%, B60W%, B61B%, B61C%, B61D%, B61F%, B61G%, B61H%, B61J%, B61K%, B61L%, B62B%, B62C%, B62D%, B62H%, B62J%, B62K%, B62L%, B62M%, B63B%, B63C%, B63G%, B63H%, B63J%, B64B%, B64C%, B64D%, B64F%, B64G%
Other fields	
Furniture, games	A47B%, A47C%, A47D%, A47F%, A47G%, A47H%, A47J%, A47K%, A47L%, A63B%, A63C%, A63D%, A63F%, A63G%, A63H%, A63J%, A63K%
Other consumer goods	A24B%, A24C%, A24D%, A24F%, A41B%, A41C%, A41D%, A41F%, A41G%, A42B%, A42C%, A43B%, A43C%, A44B%, A44C%, A45B%, A45C%, A45D%, A45F%, A46B%, A62B%, A99Z%, B42B%, B42C%, B42D%, B42F%, B43K%, B43L%, B43M%, B44B%, B44C%, B44D%, B44F%, B68B%, B68C%, B68F%, B68G%, D04D%, D06F%, D06N%, D07B%, F25D%, G10B%, G10C%, G10D%, G10F%, G10G%, G10H%, G10K%
Civil engineering	E01B%, E01C%, E01D%, E01F 1%, E01F 3%, E01F 5%, E01F 7%, E01F 9%, E01F 11%, E01F 13%, E01F 15%, E01H%, E02B%, E02C%, E02D%, E02F%, E03B%, E03C%, E03D%, E03F%, E04B%, E04C%, E04D%, E04F%, E04G%, E04H%, E05B%, E05C%, E05D%, E05F%, E05G%, E06B%, E06C%, E21B%, E21C%, E21D%, E21F%, E99Z%

Note: For definitions of IPC symbols, see *www.wipo.int/classifications/ipc*. For an electronic version of the IPC technology concordance table, visit *www.wipo.int/ipstats*.

Source: WIPO.

Annex B

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 definitions of IPC symbols, see *www.wipo.int/classifications/ipc*. 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 C

International Classification of Goods and Services under the Nice Agreement

Class heading	Goods or services
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 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 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 25	Clothing, footwear, headgear
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 35	Advertising; business management; business administration; office functions
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

Note: See *www.wipo.int/classifications/nice* for a complete list of all classes and further information on the International Classification of Goods and Services under the Nice Agreement.

Source: WIPO.

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

Source: Edital®.

Annex D

International Classification for Industrial Designs (Locarno Classification)

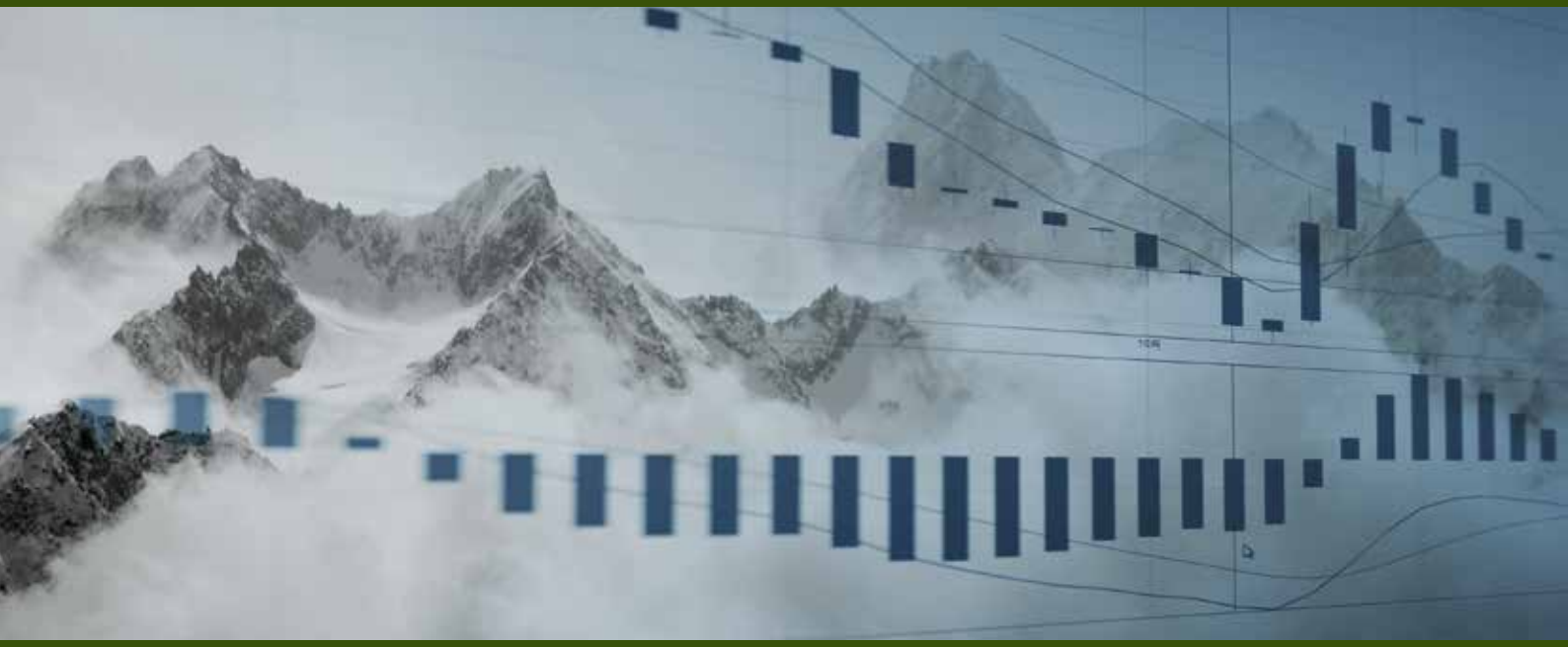
Class Heading	Goods
Class 2	Articles of clothing and haberdashery
Class 6	Furnishing
Class 7	Household goods, not elsewhere specified
Class 9	Packages and containers for the transport or handling of goods
Class 11	Articles of adornment
Class 12	Means of transport or hoisting
Class 14	Recording, communication or information retrieval equipment
Class 25	Building units and construction elements
Class 26	Lighting apparatus
Class 32	Graphic symbols and logos, surface patterns, ornamentation

Note: See *www.wipo.int/classifications/locarno* for a complete list of all classes and further information.

Source: WIPO.

Locarno classes	Sector
20, 32	Advertising
1, 27, 31	Agricultural products and food preparation
23, 25, 29	Construction
13, 26	Electricity and lighting
6, 7, 30	Furniture and household goods
24, 28	Health, pharma and cosmetics
14, 16, 18	ICT and audiovisual
17, 19, 21, 22	Leisure and education
9	Packaging
2, 3, 5, 11	Textiles and accessories
4, 8, 10, 15	Tools and machines
12	Transport

Source: Organisation for Economic Co-operation and Development (OECD).



World Intellectual Property Organization
34, chemin des Colombettes
P.O. Box 18
CH-1211 Geneva 20
Switzerland

Tel: +41 22 338 91 11
Fax: +41 22 733 54 28

For contact details of WIPO's External Offices
visit: www.wipo.int/about-wipo/en/offices/

WIPO Publication No. 941E
ISBN 978-92-805-2805-3