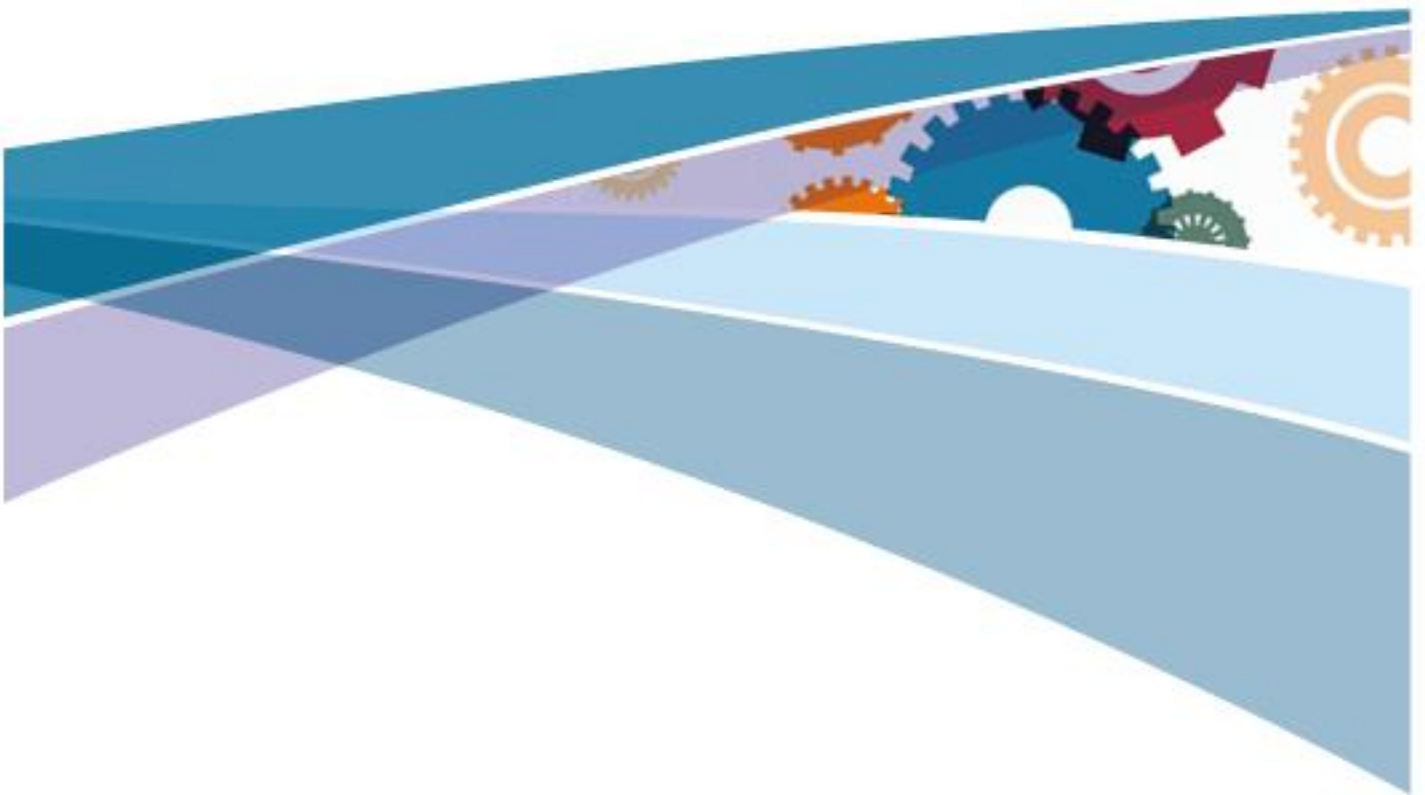




Intellectual
Property
Office

Trends at UK Intellectual Property Office 1995-2017



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July 2018

ISBN: 978-1-910790-58-8

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First published by The Intellectual Property Office
July 2018

Revised version March 2019

2 3 4 5 6 7 8 9 10

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Trends at UK Intellectual Property Office 1995-2017

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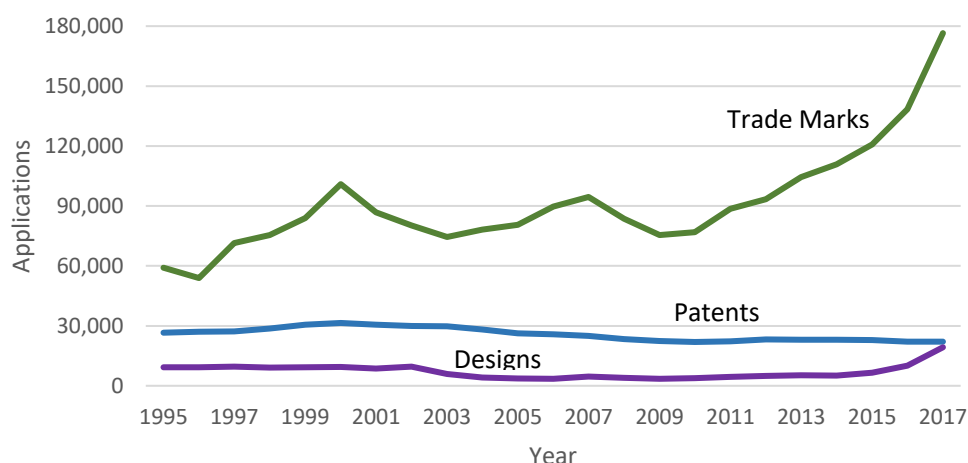
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i. Executive Summary

This document is an overview of the filing activity of the UK Intellectual Property Office (IPO) with regards to patent, trade mark and design applications, publications and grants from 1995-2017. Care should be taken when using the data provided in this document as there are a number of caveats and limitations to the data. The following section explains these in further detail.

Figure 1 shows the total number of applications received at the UK IPO between 1995 and 2017. These figures show applications filed through both the national and international route. The activity of each IP right – patents, trade marks and designs, are explored in detail throughout this document.

Figure 1 Total IPR Applications to UK IPO



Patents

While patent applications made directly to the UK IPO have seen a gentle decline in recent years, applications filed at the European Patent Office (EPO) are continuing to rise, particularly those that are filed at the EPO designating the UK. This may suggest that applicants are choosing to seek protection through alternate routes. This is also reflected in the increase of international applications filed using the Patent Co-operation Treaty (PCT) which allows patent rights across many countries from a single filing. Included throughout this report are charts which show the comparative levels of applications to the EPO and the European Union Intellectual Property Office (EUIPO).

Applicants of UK residency continue to make up the greatest share of applications made at the UK IPO, although the share of applications from non-residents is increasing and made up the greatest share yet in 2017 (40%).

Granted patents under the technology field “civil engineering” made up the greatest share of grants in 2017 (11.5%) while “micro-structure and nano-technology” had the greatest average compound annual growth (17.1%).

Trade Marks

Trade mark applications are on the rise, with total application numbers in 2017 more than double what they were in 1995. This is also seen in applications filed at the EUIPO; applications numbers have more than doubled across this time period. This may explain why applications filed to the UK IPO through the international Madrid Protocol¹ have declined in recent years as applicants seek to file through a route more convenient for gaining protection across the whole of Europe. Trade mark registrations filed through the Madrid protocol peaked in 2001, making up 29% of all registrations that year.

The rise in applications has been driven by applications from UK residents. Registered trade marks from non UK residents have remained relatively stable over recent years.

“Advertising; business management; business administration” made up the largest share of registrations in 2017 (just over 9%) while “Tobacco, raw or manufactured; smokers’ articles, matches” had the largest average yearly growth over 2007-2017 (just over 14%).

The average annual compound growth in trade mark applications between 2010 and 2017 was almost 13%, with a growth of almost 30% between 2016 and 2017. Anecdotal comments from stakeholders suggest the additional increase in both trade marks and designs seen since the referendum is a result of uncertainty around European trade marks and designs post EU exit. Deeper research would be needed to definitively answer why this is the case.

Designs

Design applications at the UK IPO have increased greatly since 2014, and in 2016 reached the greatest amount since 1995. Applications from non UK residents have dramatically declined since 1995, but this is most likely due to the option to file a Registered Community Design (RCD) at the EUIPO becoming available in 2003 which gave applicants the option to seek protection EU wide. Applications from non-residents have been increasing since 2015.

Designs classified as “tobacco, raw or manufactured; smokers’ articles, matches” have seen the greatest growth rate of application since 2007, with “Graphic symbols and logos” making up the greatest share of applications in 2017.

¹ For more information on the Madrid Protocol: <https://www.gov.uk/government/publications/protecting-your-uk-intellectual-property-abroad/protecting-your-trade-mark-abroad>

ii. Data Sources and Caveats

1. National patent data is sourced from IPO data systems. This was taken as a snapshot from our register at the end of April 2018.
2. Trade mark and design data has been sourced from IPO annual statistics publications². This data is compiled from snapshots taken at the end of each year with no retrospective updates.
3. Data covering regional offices (EUIPO, EPO) is sourced from the World Intellectual Property Organization (WIPO) statistics data centre³.
4. All data and statements in this document refer only to the time period 1995-2017.
5. First named applicant is used for all applicant statistics in line with international statistics.
6. Inventor country and technology statistics use fractional counts. Patent applications can list multiple inventors and be classified in multiple International Patent Classification (IPC)⁴ technology fields. Fractional counting divides a patent equally between each listed inventor country / technology field.
7. Patent technology statistics use the WIPO IPC concordance table⁵ to assign patent IPC classifications to 35 broad technology areas.
8. All trade mark figures refer to trade mark class counts. Trade mark applications to the IPO can specify one or more of the 45 goods and services classes in the NICE classification system⁶. Class counts allows for international comparison to IP offices with multiclass and single class filing systems.
9. All design figures refer to registered designs applied for / registered. Each design application at the IPO can contain multiple designs. To allow for international comparison to offices with single design filing systems it is the number of designs contained within applications which are counted.
10. Designs are classified according to the Locarno classification system⁷.

² IPO administrative data has historically been published in annual reviews and dedicated 'facts and figures'. Recent years can be found on our website

(<https://www.gov.uk/government/statistics?departments%5B%5D=intellectual-property-office>) and some older versions at the national archive

(<http://webarchive.nationalarchives.gov.uk/tna/20140603095050/http://www.ipso.gov.uk/about/whatwedo/ourpublications/ourpublications-review.htm>).

³ <http://www.wipo.int/ipstats/en/>

⁴ International Patent Classification <http://www.wipo.int/classifications/ipc/en/>

⁵ <http://www.wipo.int/ipstats/en/index.html#resources>

⁶ <http://www.wipo.int/classifications/nice/en/>

⁷ <http://www.wipo.int/classifications/locarno/en/>

Comparison to Other Releases

The statistics in this publication have been compiled and presented according to recognised standards⁸ to allow for international comparison. The level of detail needed to produce these statistics required data from numerous internal IPO sources, full details can be found in section ii. The consolidated data presented here provides detailed IPO administrative data over a long time series which until now has not been available in a single publication.

The IPO also publishes annual administrative data⁹, patent¹⁰ and trade mark¹¹ open datasets and has online registers and search tools based on our registers. IP registers are dynamic and alter as application status and details change so may not be directly comparable to this publication.

⁸ OECD Patent statistics manual https://www.oecd-ilibrary.org/science-and-technology/oecd-patent-statistics-manual_9789264056442-en

WIPO IP Indicators <http://www.wipo.int/publications/en/details.jsp?id=4234>

⁹ <https://www.gov.uk/government/statistics/facts-and-figures-patent-trade-mark-design-and-hearing-data-2017>

¹⁰ <https://www.gov.uk/government/publications/ipo-patent-data>

¹¹ <https://www.gov.uk/government/publications/ipo-trade-mark-data-release>

1 Patents

Patents can be used to protect inventions¹². To be granted a patent, the invention must be all of the following:

- Something that can be made or used
- New
- Inventive – not just a simple modification to something that already exists.

There is typically a lag of around five years for a patent to be granted from the filing date.

After applications are made a search takes place to find similar technologies. Once searched, an application is published 18 months from the earlier of the filing and priority date.

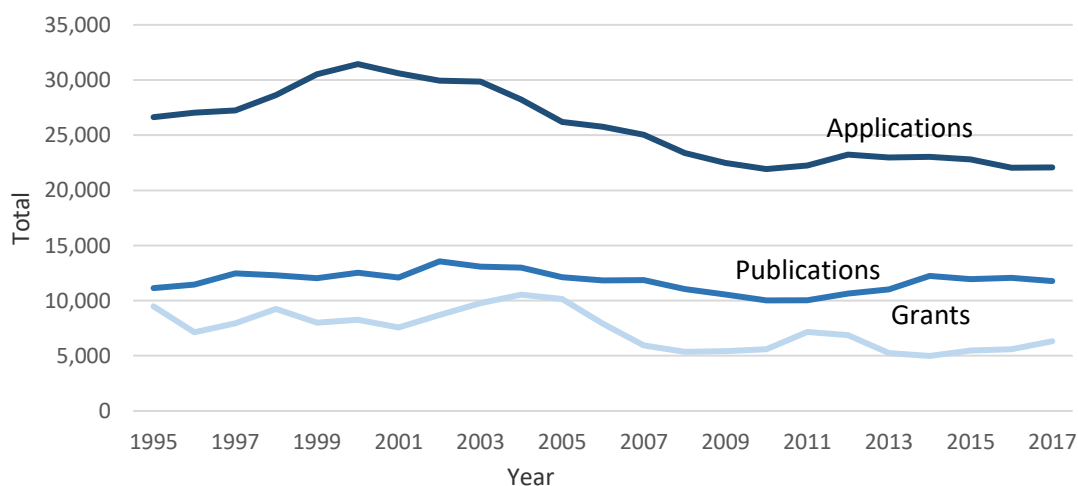
Once published, a patent will be examined to determine whether an invention is new and inventive enough to be granted. This can take several years from the filing date of the application.

Once granted a patent must be renewed to remain in force. The first fee is due 4 years after the filing date, and every year following for up to 20 years¹³.

The grant date (or B Publication) is the date on which patent rights are conferred to the applicant. There is typically a lag of around five years for a patent to be granted from the filing date. Grants are indicative of both the input of patents and the capacity of the IPO in each technology area.

Figure 2 shows the number of patent applications, publications and grants at the UK Intellectual Property Office (IPO) for 1995 – 2017. The rest of this section goes into further detail of these stages.

Figure 2 UK Patenting Activity 1995 – 2017



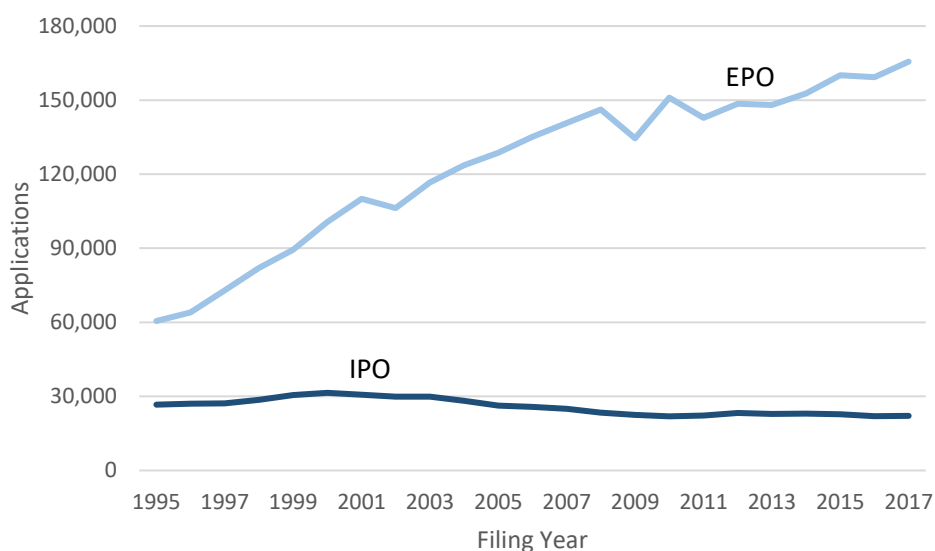
¹² For more information on patents: <https://www.gov.uk/topic/intellectual-property/patents>

¹³ For a breakdown of the patent application, see:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/656507/Facts_and_Figures_2016.pdf

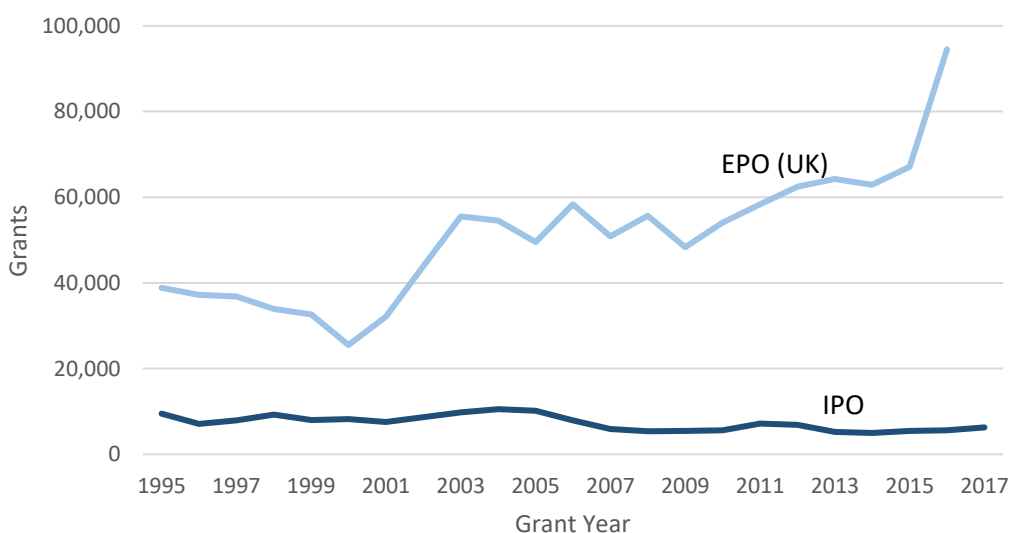
This document considers applications filed at the UK IPO. For comparison, figure 3 shows the total number of applications at the UK IPO and the European Patent Office (EPO). EPO patents are regional and therefore may provide protection in the UK. On average, 94% of patents granted at the EPO between 1995 and 2016 designated protection in the UK¹⁴.

Figure 3 IPO and EPO Total Patent Applications



The below graph shows the total number of granted patents at the IPO, alongside patents granted at the EPO designating the UK.

Figure 4 Total Granted Patents from IPO and EPO (UK)



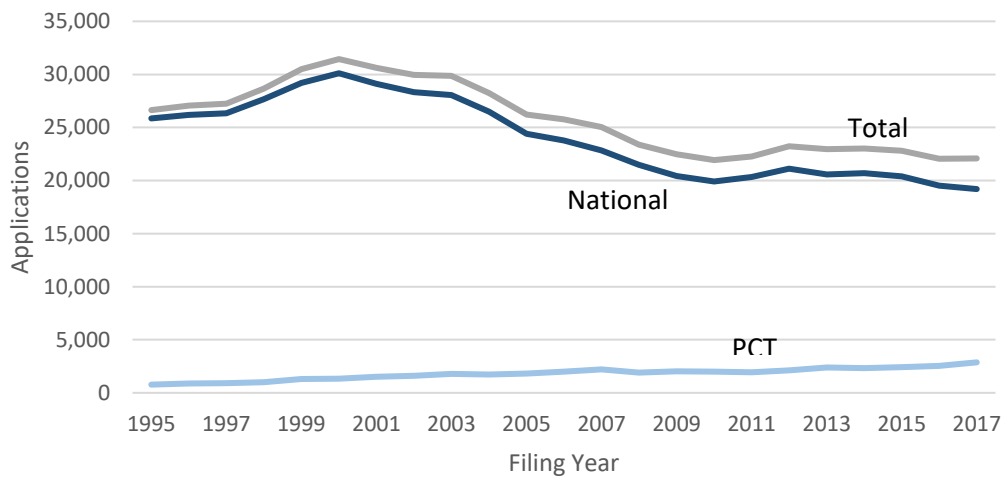
¹⁴ Source: WIPO statistics data centre: <http://www.wipo.int/ipstats/en/>. Direct and PCT national phase applications. 2017 data is from EPO statistics: <https://www.epo.org/about-us/annual-reports-statistics/statistics.html>

1.1 Patents by Route

1.1.1 Applications by Filing Route

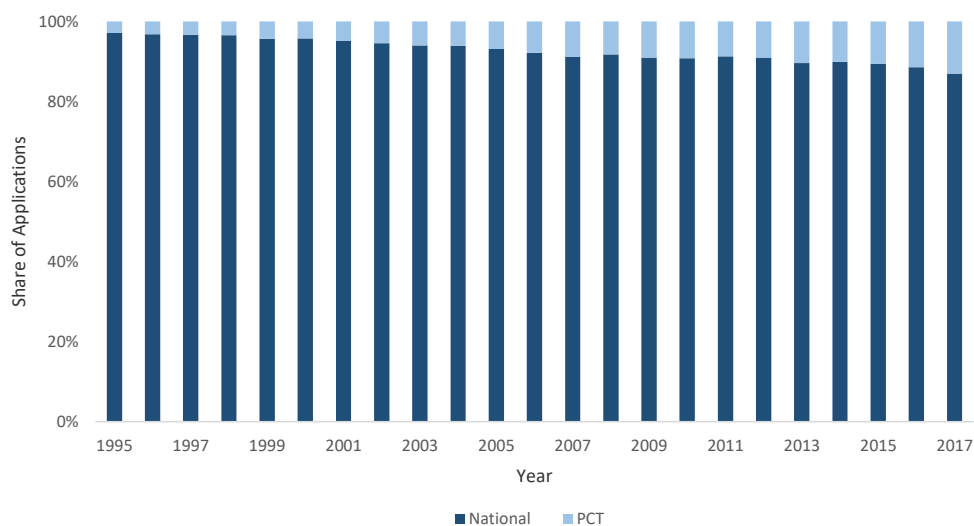
UK Patent Applications can be filed at either the National office (IPO) or through the international route. International applications use the Patent Co-operation Treaty (PCT) to pursue patent rights across many countries from a single filing.

Figure 5 Total Patent Applications by Filing Route



There was a small rise in overall applications in 2017 for the first time since 2014. However, looking at the last two decades, there has been an overall drop in applications filed at the IPO. Patents filed through the international route, however, have steadily increased and made up the largest share yet of total applications in 2017 (13%).

Figure 6 Share of Patent Applications by Filing Route



The overall drop in applications may reflect a choice to use other forms of protection (e.g. trade secrets) or alternate routes, such as European Patents issued by the European Patent Office (EPO) which was ranked 5th in the world for the number of Patent Applications in 2016¹⁵.

1.1.2 Publications by Filing Route

Not every patent application leads to a published patent. Publication (or A Publication) usually occurs 18 months after the application was filed. The date of publication reflects the time when the invention is disclosed to the general public.

Publication counts can be considered a better indication of committed patenting of innovation as these applications have been made public and are still being pursued after the initial search. However, there is a lag from the point of innovation to the date the information becomes available at publication.

Figure 7 Total Published UK Patents by Filing Route

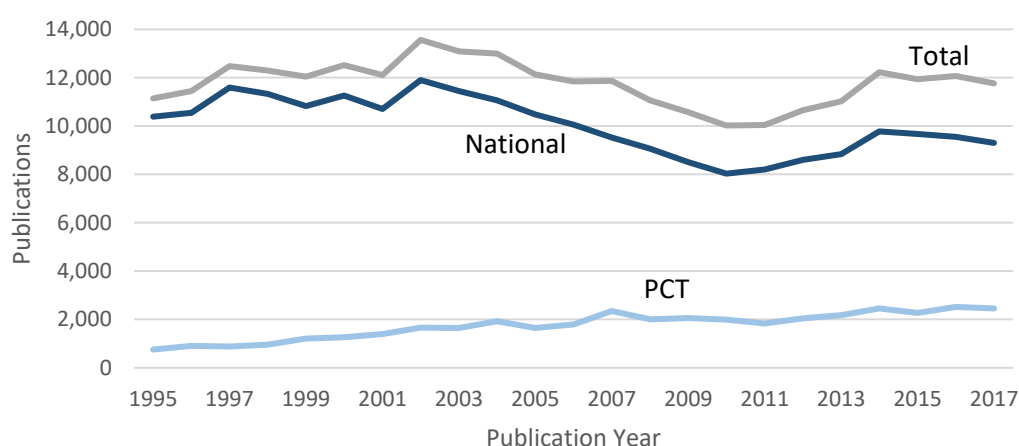
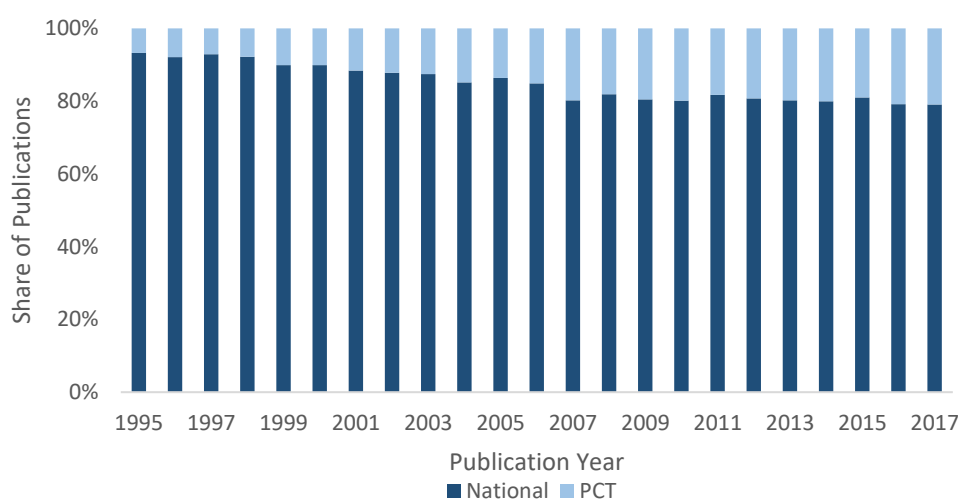


Figure 8 Share of Published UK Patents by Filing Route



¹⁵ World Intellectual Property Indicators: http://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2017.pdf

Figure 7 generally shows the same trend as in figure 5 – peaking in the early 2000s and as of 2017 not reaching similar levels. Not all applicants decide to continue their application to the publication stage. This accounts for the lower volumes seen in figure 7 compared with figure 5.

Similarly as seen before, publications of applications that have been filed through the PCT route are increasing their share of the total number of publications, reaching over 20% in 2017.

1.1.3 Granted Applications by Filing Route

The grant date (or B Publication) is the date on which patent rights are conferred to the applicant. There is typically a lag of around five years for a patent to be granted from the filing date. Grants are indicative of both the input of patents and the capacity of the IPO in each technology area.

Granted patent counts are a high quality indicator for patents as these are applications which have obtained protection. However, as previously explained, there is a lag from the point of innovation to the date the information becomes available at the grant date.

Figure 9 Total Granted UK Patents by Filing Route

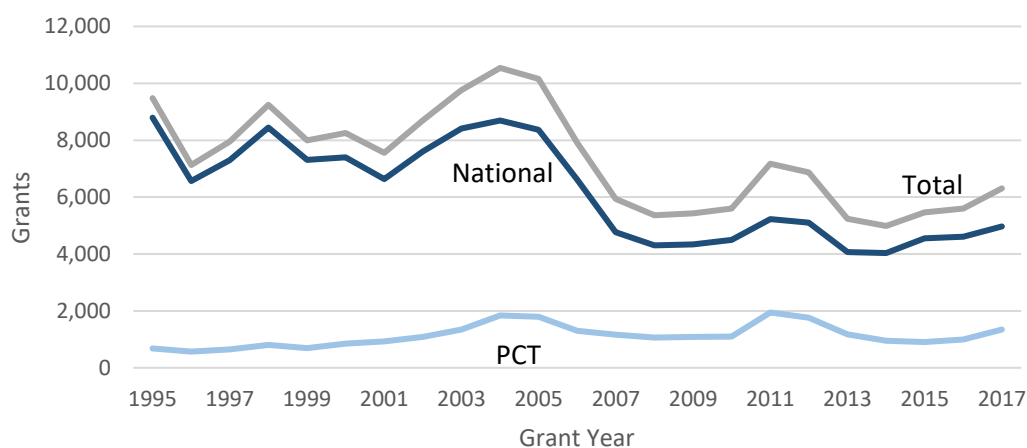
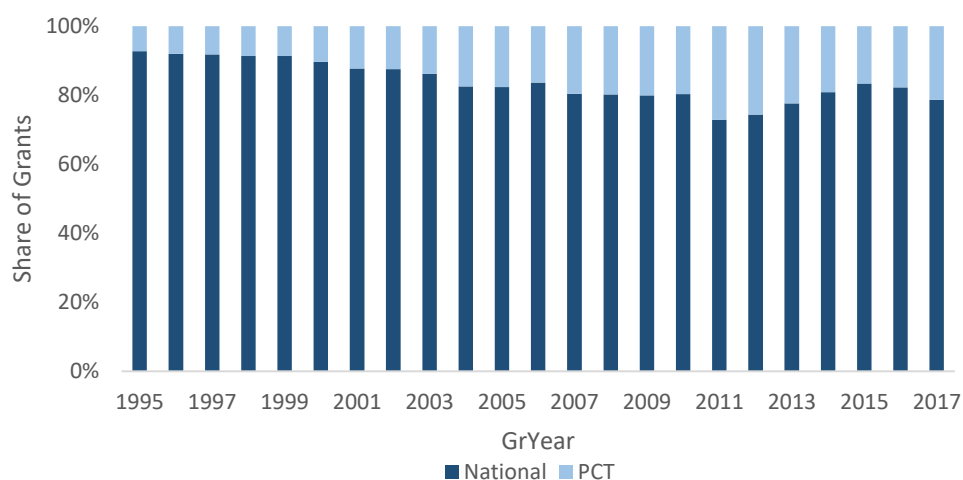


Figure 10 Share of Granted UK Patents by Filing Route

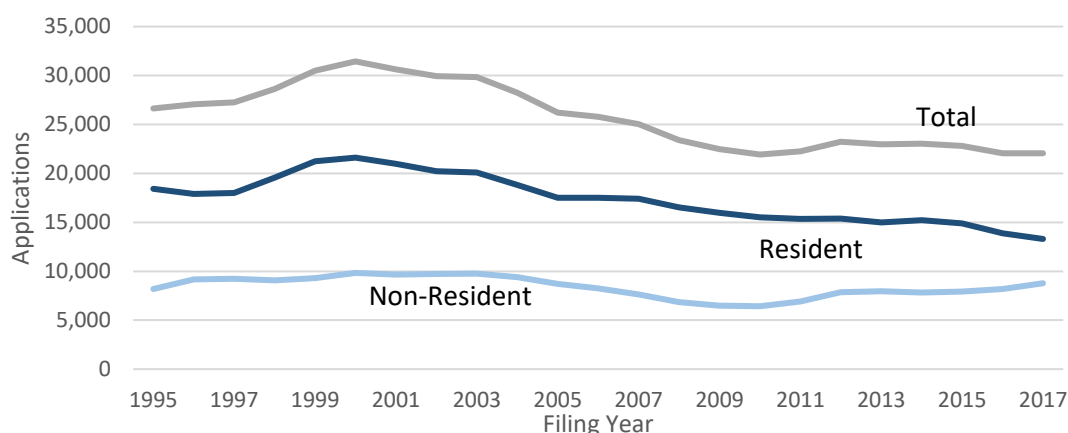


In 2016, the share of granted PCT patents increased for the first time since 2011 where it reached a peak of 27%.

1.2 Patents by Applicant Residency

1.2.1 Patent Applications by Applicant Residency

Figure 11 Total Patent Applications by Applicant Residency

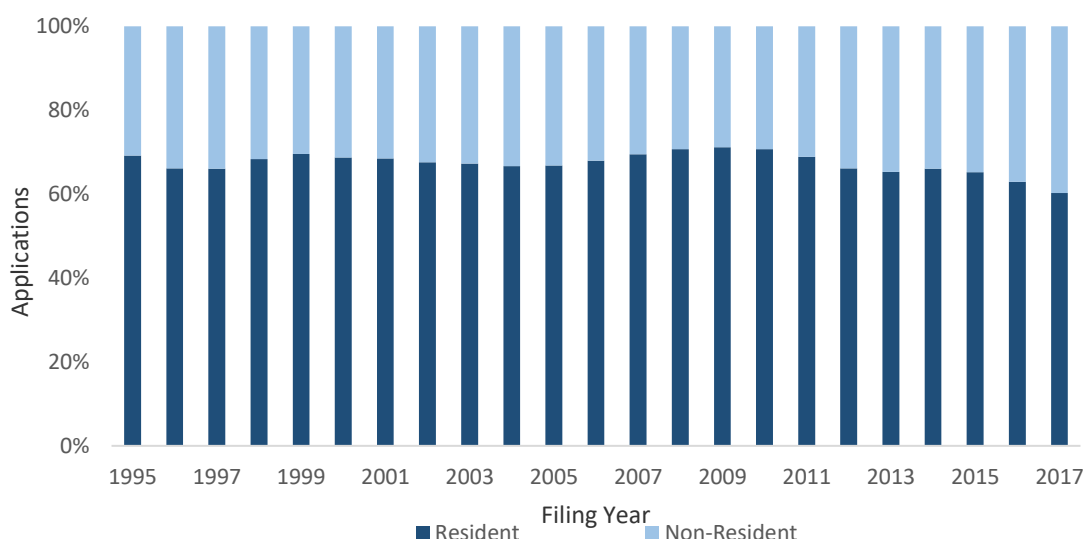


The applicant’s country of residence¹⁶ indicates where ownership or control of the invention lies.

Throughout 1995-2017, the proportion of applications coming from UK residents reached a high of 71.2% in 2009 due to a faster rate of decline in non-resident applications compared to resident applications in the years leading up to it. However, since then, resident applications have fallen while non-resident applications have risen.

The decline in total applications has been driven by a decline in applications from residents. Further analysis is needed to understand why this is the case.

Figure 12 Share of Applications by Applicant Residency



¹⁶ Applicant residency counts are based on address details provided for the first named applicant in an application. This is in line with international statistics to allow for comparison.

1.2.2 Granted Applications by Applicant Residency

Granted applications is the only stage of the patent process where the number of non-resident applicants has historically been higher than residents – although this did change in 2015 and resident applicants made up 52% of all grants in 2017.

There are typically more granted patents from non-residents whereas at the application stage resident applications are the larger group. A reason behind this difference may be that resident applicants are using the local IP system to obtain search results and make use of the priority system, only pursuing some applications to grant. It may also signal that non-residents undertaking patent applications in the UK are only doing so once they are committed receiving protection and therefore more likely to pursue an application to grant.

Figure 13 Total Granted UK Patents by Applicant Residency

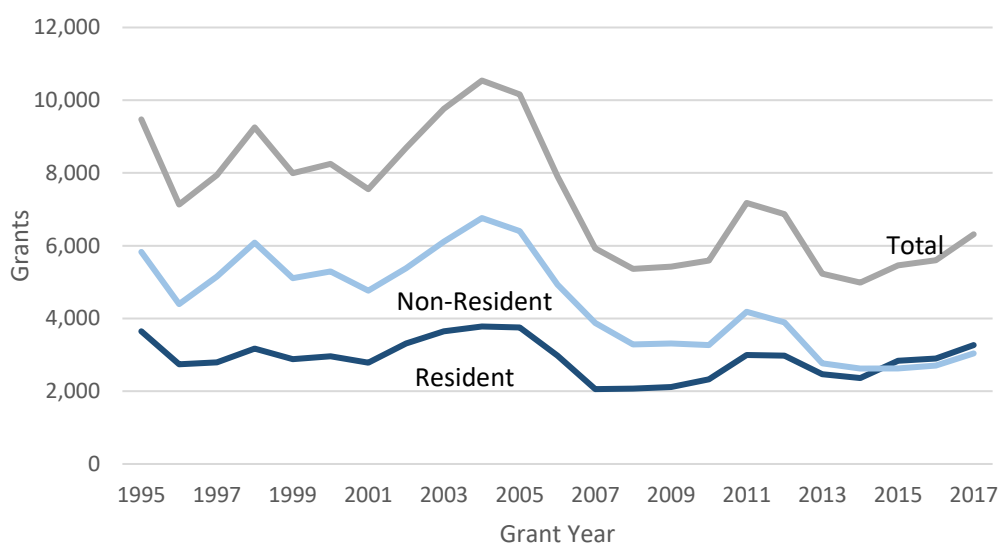
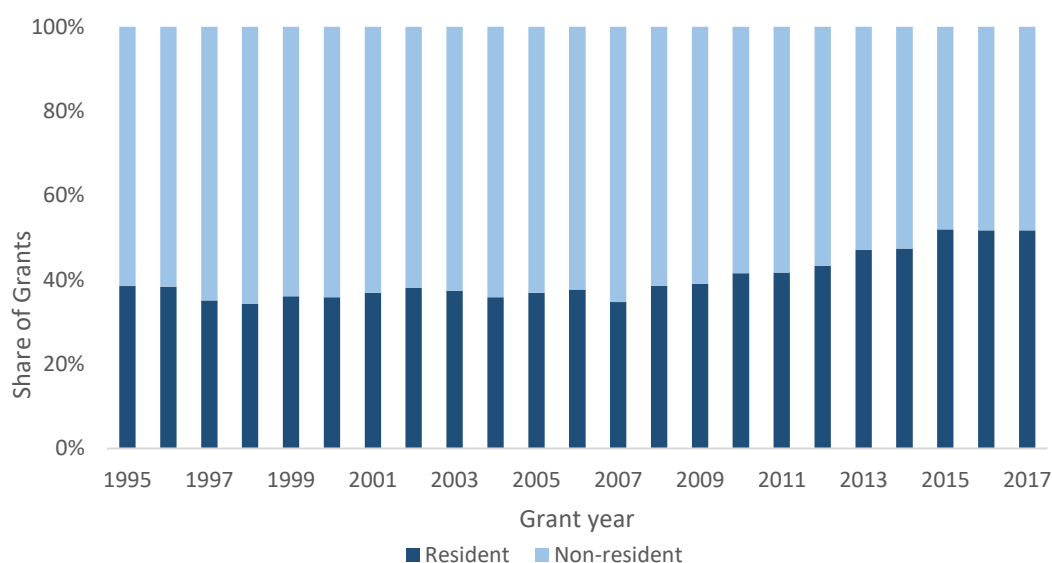


Figure 14 Share of Granted UK Patents by Applicant Residency



1.3 Patents by Applicant Country or Region

1.3.1 Applications by Applicant Country or Region

The majority of applications for UK patents come from UK applicants¹⁷ with US applicants accounting for the second greatest share. The large gap between UK and other applicants is likely due to WIPO and EPO offering more convenient routes, PCT and European Patents respectively, for foreign applicants seeking protection across multiple jurisdictions.

Figure 15 UK Patent Applications by Applicant Country/Region

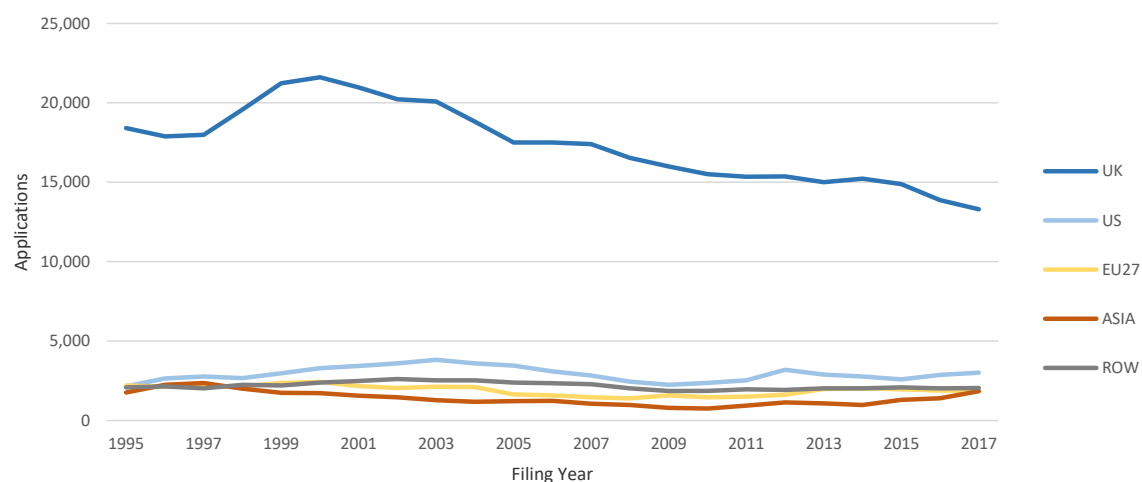
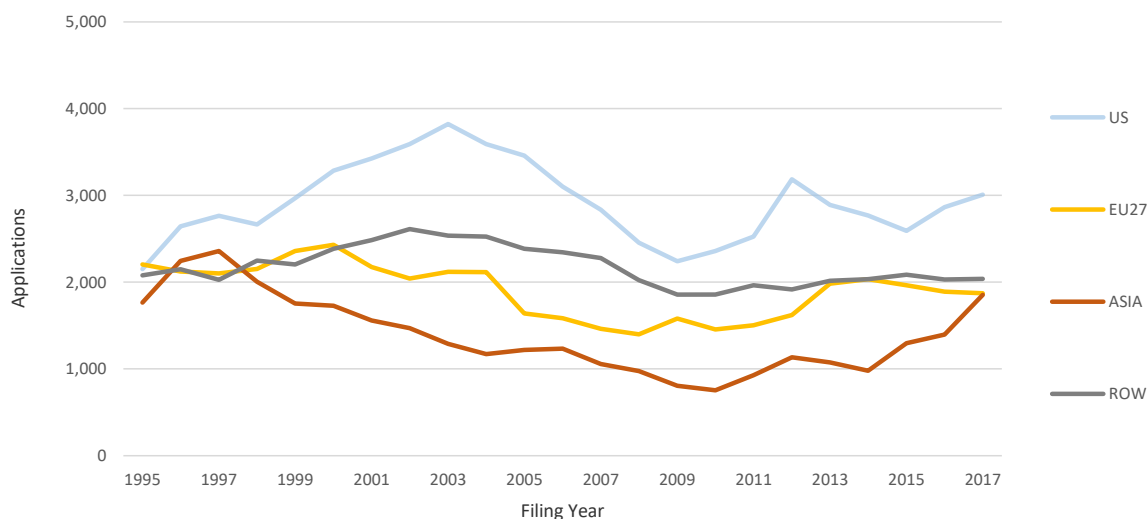


Figure 16 UK Patent Applications by Applicant Country/Region (excl. UK)

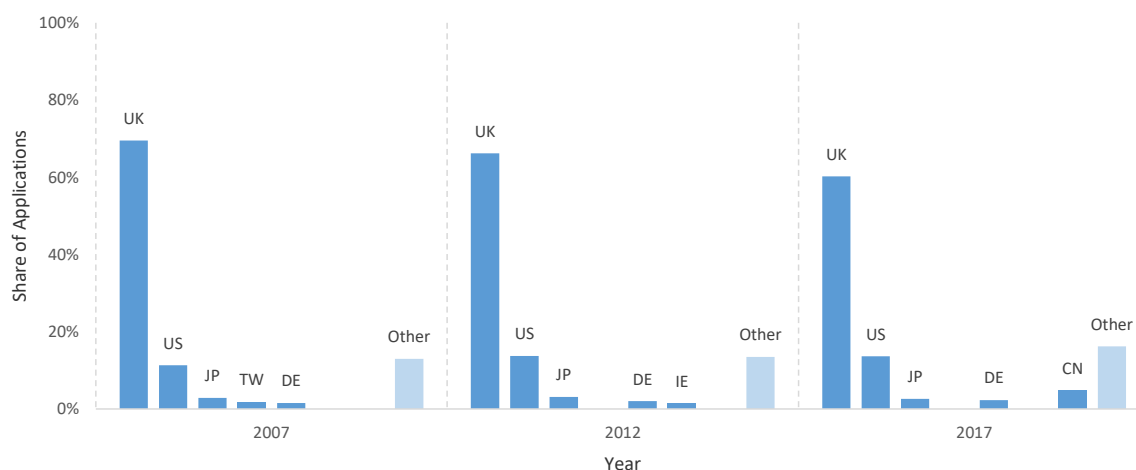


¹⁷ Applicant residency counts are based on address details provided for the first named applicant in an application. EU27 consists of the EU countries excluding UK. The Asia group is formed of China, Japan, Singapore and South Korea. All other applicant countries are grouped under ROW (rest of world).

1.3.2 Top Applicant Countries by Applications

UK applicants remain the top applicant country, with US, Japan and Germany consistently appearing in the top 5 as shown in figure 17. The appearance of China in the top 5 reflects its substantial increase in worldwide patenting activity in recent years.¹⁸

Figure 17 Top 5 Applicant Countries of UK Patent Applications



1.3.3 Top 10 Publications Countries

UK applicants own the majority of published UK patent applications.

Figure 18 Share of Published UK Patents, 2012-2017

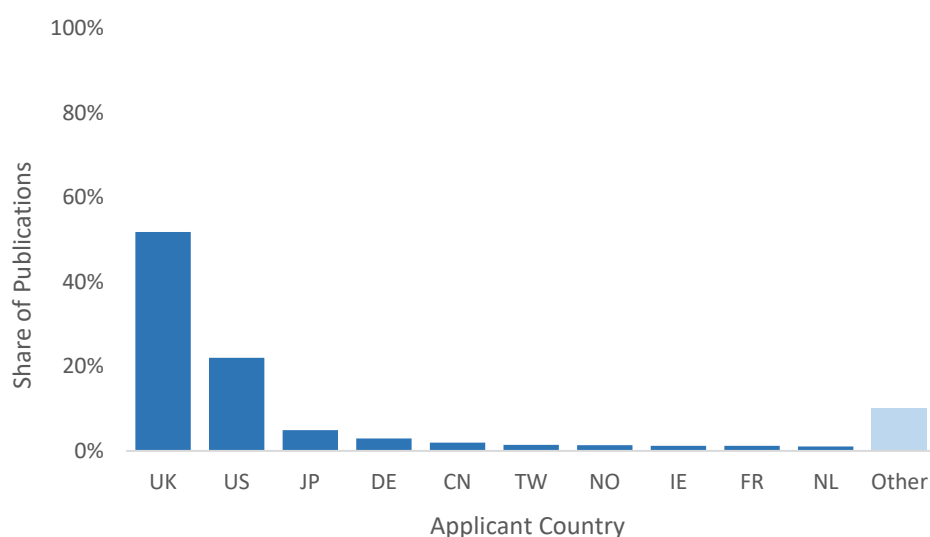


Figure 18¹⁹ shows that UK applicants made up just over half of all publications between 2012 and 2017, with US applicants second with just over 20%.

¹⁸ UK: United Kingdom, US: United States, JP: Japan, TW: Taiwan, DE: Germany, IE: Republic of Ireland, CN: China

1.3.4 Top Applicant Countries of Granted Applications

Figure 19 Share of Granted UK Patents by Top 5 Applicant Countries

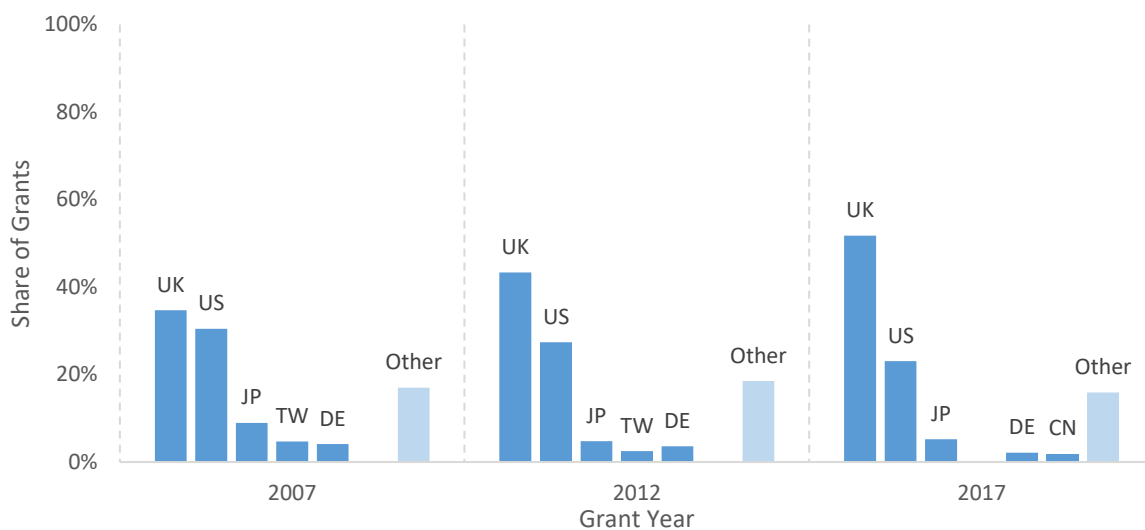


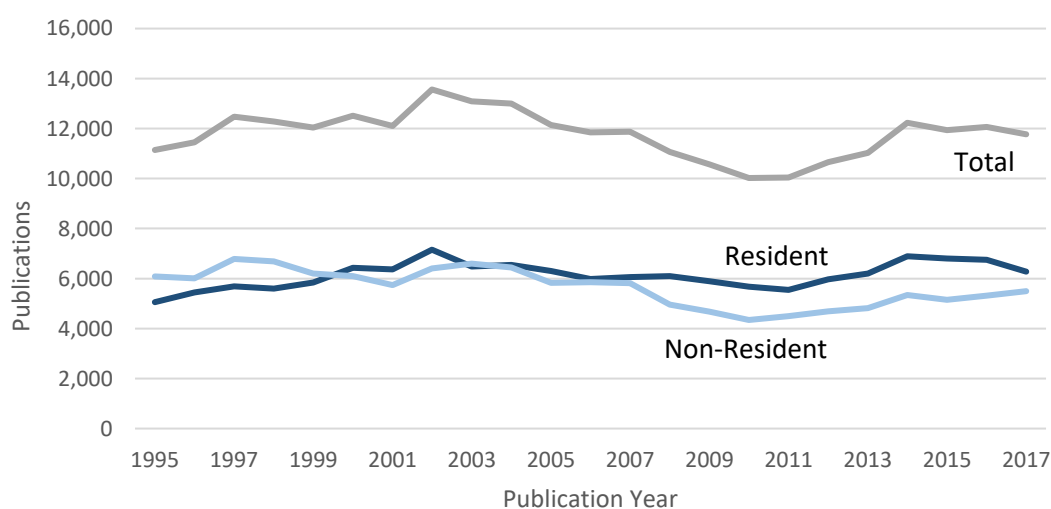
Figure 19¹⁸ shows UK applicants remain the top applicant country, with US, Japan and Germany consistently appearing in the top 5 as seen previously.

1.4 Patents by Inventor Residency

1.4.1 Publications by Inventor Residency²⁰

There have been more UK resident inventors than non-resident inventors since 2004, although the gap between the two was closer in 2017 than in recent years as non-resident publications have gradually increased since a trough in 2010.

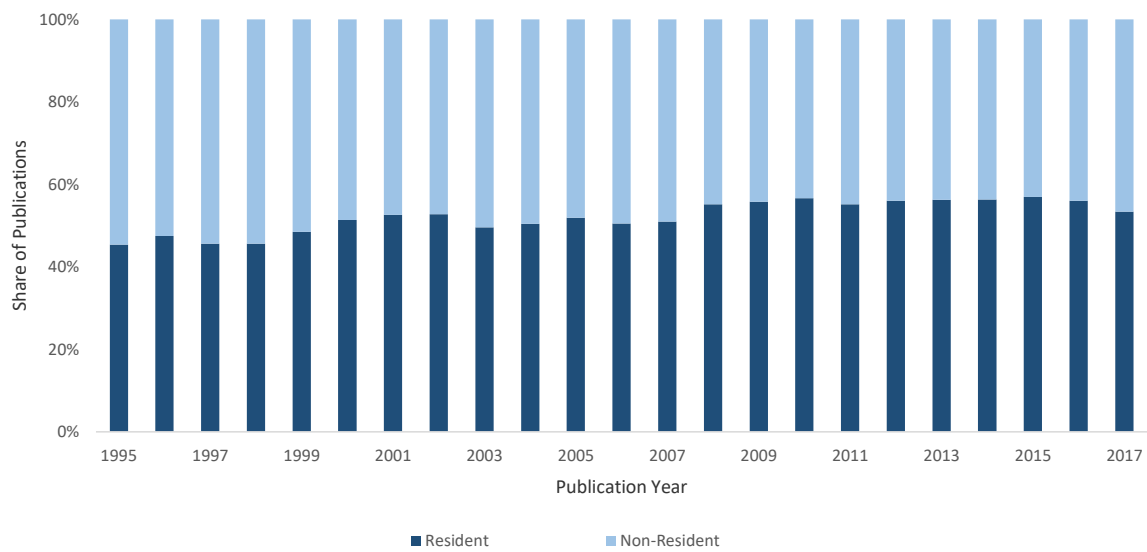
Figure 20 Total Published UK Patents by Inventor Residency



¹⁹ UK: United Kingdom, US: United States, JP: Japan, DE: Germany, CN: China, TW: Taiwan, NO: Norway, IE: Republic of Ireland, FR: France, NL: Netherlands

²⁰ Fractional counting of technologies. Each patent may be classified in multiple technology areas.

Figure 21 Share of Published UK Patents by Inventor Residency



1.4.2 Granted Applications by Inventor Residency

The inventor residency of granted applications shows a similar story to that of the applicant residency. Section 1.2.2 explains why non-residents are typically higher at the granting stage. Non-residents made up the largest share until 2013 where resident inventors took over and have remained with the largest share of the two since.

Figure 22 Total Granted UK Patents by Inventor Residency

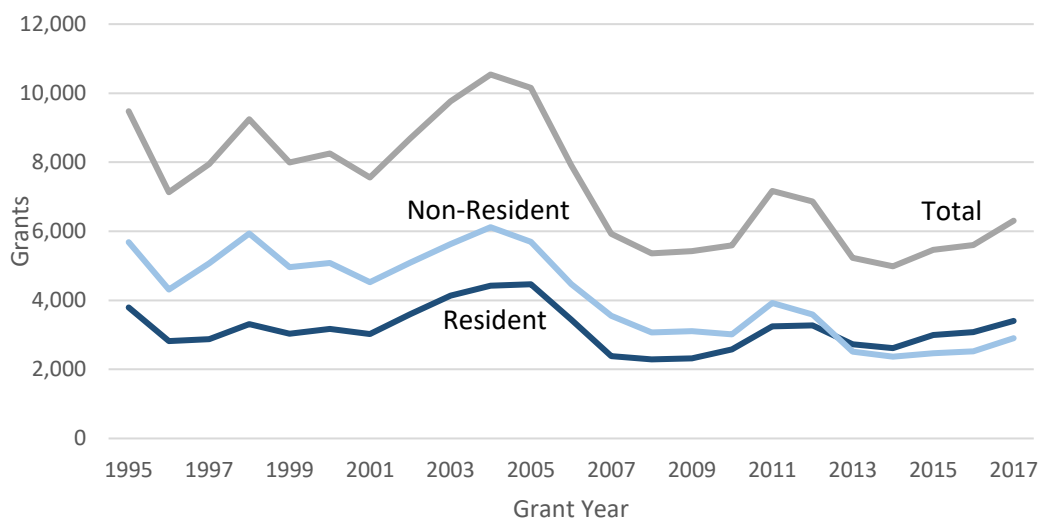
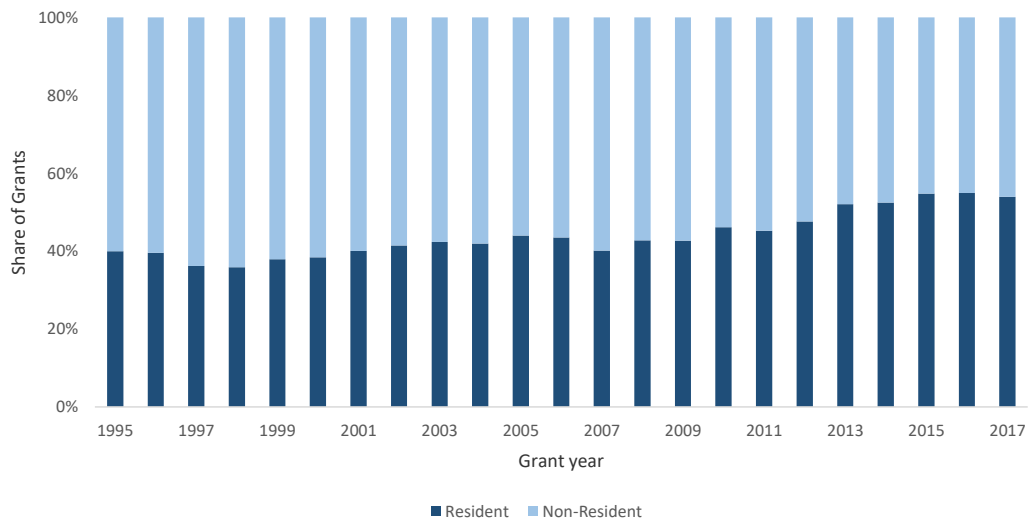


Figure 23 Share of Granted UK Patents by Inventor Residency

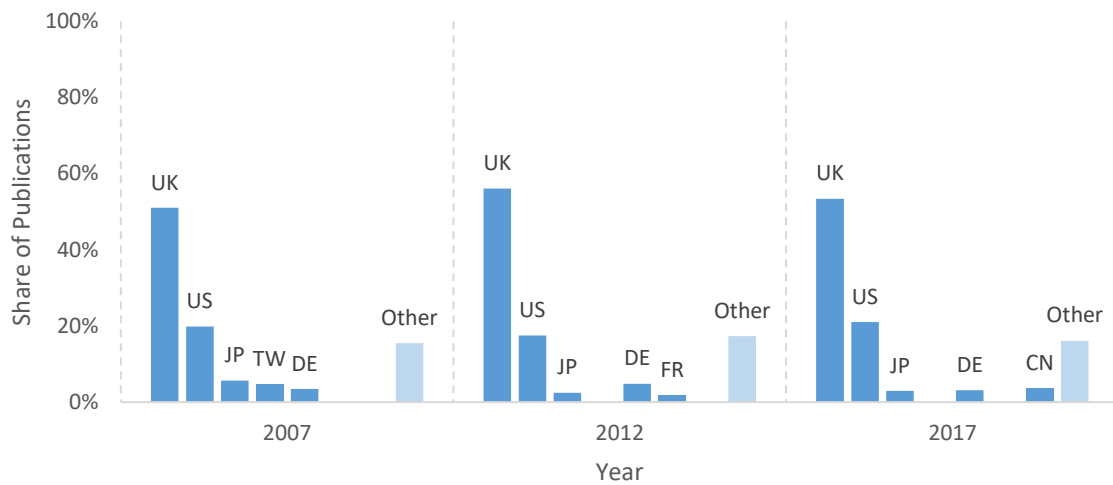


1.5 Patents by Inventor Country

1.5.1 Top Inventor Countries of Publications

Figure 24 shows a similar pattern to figure 25.²¹

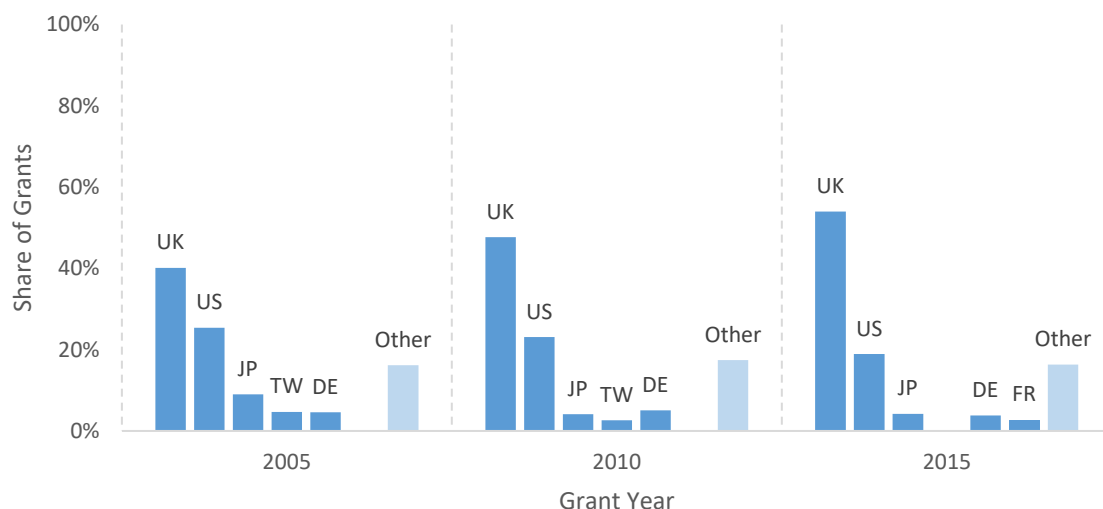
Figure 24 Share of Published Patent Applications by Top 5 Inventor Countries



²¹ UK: United Kingdom, US: United States, JP: Japan, TW: Taiwan, DE: Germany, FR: France, CN: China

1.5.2 Top Inventor Countries of Grants

Figure 25 Share of Granted Patent Applications by Inventor Residency



1.6 Patent Technologies

1.6.1 Publications by Technology²²

Table 1 shows the number of published patent applications per each of the 35 technology fields in 2007, 2012 and 2017.

Table 1 Total IPO Patent Publications by Technology

Field of Technology	2007	2012	2017	Share of publications (2017)	Average annual growth rate (2007-2017)
Electrical Engineering					
Electrical machinery, apparatus, energy	664	673	670	5.7%	0.1%
Audio-visual technology	481	338	364	3.1%	-2.7%
Telecommunications	534	266	257	2.2%	-7.1%
Digital communication	397	515	514	4.4%	2.6%
Basic communication processes	177	86	96	0.8%	-5.9%
Computer technology	815	809	1,058	9.0%	2.6%
IT methods for management	137	145	224	1.9%	5.1%
Semiconductors	208	215	151	1.3%	-3.2%
Instruments					
Optics	287	197	216	1.8%	-2.8%
Measurement	744	676	763	6.5%	0.3%
Analysis of biological materials	45	23	38	0.3%	-1.7%
Control	321	222	301	2.6%	-0.6%
Medical technology	469	510	569	4.8%	2.0%

²² Fractional counting of technologies. Each patent may be classified in multiple technology areas. Totals may not add up due to new IPC codes not been concorded to WIPO technologies.

Field of Technology	2007	2012	2017	Share of publications (2017)	Average annual growth rate (2007-2017)
Chemistry					
Organic fine chemistry	105	55	146	1.2%	3.4%
Biotechnology	111	59	79	0.7%	-3.2%
Pharmaceuticals	133	104	115	1.0%	-1.5%
Macromolecular chemistry, polymers	61	40	41	0.4%	-4.0%
Food chemistry	62	57	44	0.4%	-3.5%
Basic materials chemistry	193	141	196	1.7%	0.2%
Materials, metallurgy	99	98	125	1.1%	2.4%
Surface technology, coating	105	95	123	1.0%	1.5%
Micro-structural and nano-technology	5	10	17	0.1%	12.2%
Chemical engineering	216	233	276	2.3%	2.5%
Environmental technology	104	148	184	1.6%	5.8%
Mechanical Engineering					
Handling	417	313	356	3.0%	-1.6%
Machine tools	338	220	217	1.8%	-4.4%
Engines, pumps, turbines	348	489	514	4.4%	4.0%
Textile and paper machines	137	95	96	0.8%	-3.4%
Other special machines	367	366	309	2.6%	-1.7%
Thermal processes and apparatus	156	218	204	1.7%	2.8%
Mechanical elements	472	384	395	3.4%	-1.8%
Transport	710	717	985	8.4%	3.3%
Other Fields					
Furniture, games	726	610	464	3.9%	-4.4%
Other consumer goods	436	382	417	3.5%	-0.5%
Civil engineering	1,292	1,146	1,241	10.5%	-0.4%
Key					
<div style="display: flex; align-items: center;"> <div style="background-color: #4f81bd; color: white; padding: 2px 5px; margin-right: 5px;">Highest</div> <div style="border-left: 1px solid #ccc; border-right: 1px solid #ccc; padding: 2px 5px; margin-right: 5px;">Lowest</div> </div>					

The table shows that civil engineering had the highest share of all publications in 2017 (10.5%) but has declined since 2007. It is important to bear in mind that the total number of publications has declined since 2007 so it is unsurprising that 19 of the 35 technology fields have had a negative average growth between 2007 and 2017.

Micro-structural and nano-technology had the smallest share of 2017 publications yet the largest growth between 2007 and 2017 (13.7%).

1.6.2 Publications by Technologies²³ from Top Applicant Countries

Table 2²⁴ shows the make-up of published patents for the top 10 Applicant Countries by technology. This table should be used in tandem with figure 20 which will provide context to the total number of UK publications.

²³ Fractional counting of technologies. Each patent may be classified in multiple technology areas.

Table 2 Share of Publications from Top Publications Countries by Technologies 2012-2017

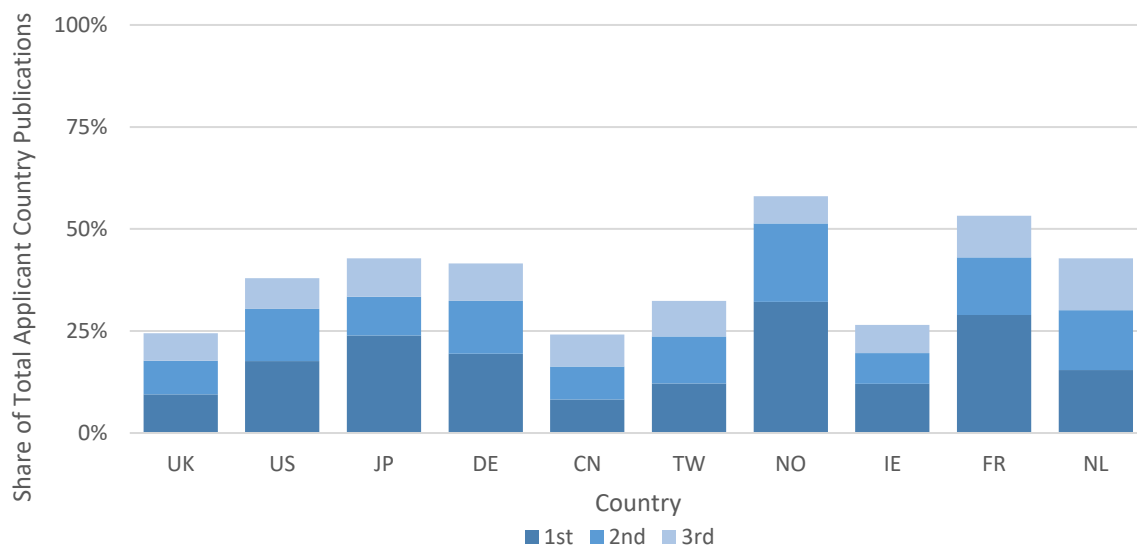
Technology	UK	US	JP	DE	CN	TW	NO	IE	FR	NL
Electrical machinery, apparatus, energy	7%	4%	6%	13%	8%	11%	2%	5%	4%	5%
Audio-visual technology	2%	2%	9%	1%	8%	3%	0%	3%	1%	13%
Telecommunications	2%	2%	9%	1%	1%	1%	1%	4%	0%	1%
Digital communication	3%	6%	24%	1%	4%	1%	3%	4%	1%	2%
Basic communication processes	1%	1%	2%	0%	0%	0%	2%	1%	0%	1%
Computer technology	7%	18%	9%	2%	4%	7%	7%	4%	5%	12%
IT methods for management	1%	4%	1%	1%	1%	0%	1%	2%	0%	1%
Semiconductors	1%	3%	1%	1%	5%	1%	1%	1%	0%	1%
Optics	2%	1%	4%	2%	8%	2%	1%	1%	0%	2%
Measurement	5%	8%	4%	9%	6%	2%	19%	4%	14%	15%
Analysis of biological materials	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Control	2%	3%	1%	2%	1%	1%	1%	2%	1%	1%
Medical technology	5%	4%	2%	4%	3%	6%	3%	6%	1%	3%
Organic fine chemistry	1%	0%	0%	3%	1%	0%	0%	0%	1%	0%
Biotechnology	1%	1%	0%	1%	1%	0%	0%	1%	0%	1%
Pharmaceuticals	1%	1%	0%	1%	2%	1%	1%	1%	0%	0%
Macromolecular chemistry, polymers	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%
Food chemistry	1%	1%	0%	0%	1%	0%	0%	1%	0%	1%
Basic materials chemistry	1%	2%	1%	2%	1%	0%	2%	2%	1%	5%
Materials, metallurgy	1%	1%	2%	1%	2%	0%	0%	2%	1%	0%
Surface technology, coating	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%
Micro-structural and nano-technology	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Chemical engineering	3%	2%	1%	4%	2%	2%	4%	2%	1%	1%
Environmental technology	2%	1%	1%	1%	1%	0%	1%	2%	1%	0%
Handling	4%	2%	1%	1%	2%	3%	2%	4%	2%	3%
Machine tools	2%	1%	1%	4%	2%	9%	0%	2%	3%	1%
Engines, pumps, turbines	4%	5%	2%	5%	6%	2%	4%	3%	29%	1%
Textile and paper machines	1%	1%	2%	1%	1%	1%	0%	1%	0%	0%
Other special machines	4%	1%	1%	2%	1%	4%	2%	8%	3%	2%
Thermal processes and apparatus	2%	1%	3%	2%	1%	1%	1%	4%	1%	1%
Mechanical elements	4%	3%	3%	7%	2%	4%	5%	2%	9%	2%
Transport	8%	7%	5%	19%	6%	7%	4%	4%	10%	3%
Furniture, games	6%	2%	1%	1%	6%	12%	0%	7%	1%	2%
Other consumer goods	5%	1%	1%	2%	4%	7%	0%	4%	1%	4%
Civil engineering	9%	13%	1%	3%	5%	7%	32%	12%	4%	15%

Key: Highest % per country Lowest % per country

²⁴ UK: United Kingdom, US: United States, JP: Japan, DE: Germany, CN: China, TW: Taiwan, NO: Norway, IE: Republic of Ireland, FR: France, NL: Netherlands

Figure 26²⁵ shows the distribution of the top three technology fields for each of the top 10 countries. The emphasis of this graph is on the spread as opposed to which technology is used. For example – well over 50% of all publications from Norway based applicants are only in three technology fields. In comparison, the top three technology fields for UK publications make up just under 25%.

Figure 26 Share of top 3 technology fields for top 10 Applicant Countries, 2012-2017



Refer to Table 2 for technologies by country

²⁵ UK: United Kingdom, US: United States, JP: Japan, DE: Germany, CN: China, TW: Taiwan, NO: Norway, IE: Republic of Ireland, FR: France, NL: Netherlands

1.6.3 Granted Applications by Technology

Table 3 shows the share of grants in 2017 by technology. This is indicative of both the input of patents and the capacity of the IPO in each technology area.

Table 3 Total Grants by Technology

Field of Technology	2007	2012	2017	Share of Grants (2017)	Average annual growth rate (2007-2017)
Electrical Engineering					
Electrical machinery, apparatus, energy	344	424	387	6.1%	1.2%
Audio-visual technology	269	192	153	2.4%	-5.5%
Telecommunications	343	196	163	2.6%	-7.1%
Digital communication	221	391	238	3.8%	0.8%
Basic communication processes	96	59	45	0.7%	-7.4%
Computer technology	374	437	501	7.9%	3.0%
IT methods for management	19	25	15	0.2%	-2.5%
Semiconductors	98	86	68	1.1%	-3.6%
Instruments					
Optics	172	86	107	1.7%	-4.6%
Measurement	413	483	546	8.7%	2.8%
Analysis of biological materials	13	15	14	0.2%	1.0%
Control	171	151	124	2.0%	-3.1%
Medical technology	194	311	299	4.7%	4.4%
Chemistry					
Organic fine chemistry	45	37	29	0.5%	-4.2%
Biotechnology	33	39	35	0.6%	0.5%
Pharmaceuticals	52	69	52	0.8%	-0.1%
Macromolecular chemistry, polymers	24	22	24	0.4%	0.1%
Food chemistry	32	25	32	0.5%	-0.1%
Basic materials chemistry	91	107	74	1.2%	-2.1%
Materials, metallurgy	44	67	59	0.9%	2.9%
Surface technology, coating	52	62	76	1.2%	4.0%
Micro-structural and nano-technology	2	8	9	0.1%	15.3%
Chemical engineering	122	168	151	2.4%	2.2%
Environmental technology	48	78	118	1.9%	9.4%
Mechanical Engineering					
Handling	215	250	193	3.1%	-1.1%
Machine tools	162	214	117	1.8%	-3.2%
Engines, pumps, turbines	143	248	294	4.7%	7.4%
Textile and paper machines	87	88	85	1.3%	-0.2%
Other special machines	183	219	165	2.6%	-1.0%
Thermal processes and apparatus	62	141	117	1.9%	6.6%
Mechanical elements	251	282	260	4.1%	0.4%
Transport	391	424	509	8.1%	2.7%
Other Fields					
Furniture, games	347	379	264	4.2%	-2.7%
Other consumer goods	157	210	263	4.2%	5.3%
Civil engineering	661	871	726	11.5%	0.9%

Key

Highest Lowest

The figures in table 3²⁶ broadly reflect those in table 1. Micro-structural and nano-technology has seen the larger annual growth rate and Civil Engineering makes up the largest share of grants.

²⁶ Fractional counting of technologies. Each patent may be classified in multiple technology areas. Totals may not add up due to new IPC codes not been concorded to WIPO technologies.

2 Trade Marks

A trade mark is a sign used to identify goods and services from others in the market place. A trade mark sign may include, for example, words, logos, colours or a combination of these.²⁷

The IPO receives trade marks through two routes – National UK applications filed at the IPO and International Registrations designating the UK (IRs) received from the World Intellectual Property Office (WIPO). International Registrations are filed under the Madrid Protocol to WIPO which allows applicants to file in several countries at once. Trade mark applications can cover multiple classes. All figures in this section refer to trade mark class counts. The UK joined the Madrid Protocol on 1st April 1996.

After an application is made it is examined by the IPO. Applicants receive an examination report and have 2 months to resolve any problems. Once the examiner has no objections applications are published in the trade marks journal for 2 months, during which time anyone can oppose it. If an application is opposed an applicant can either:

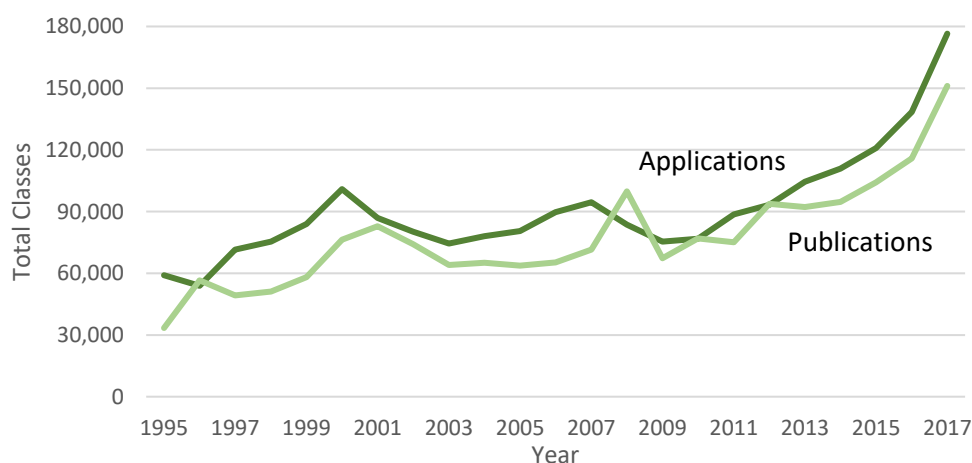
- Withdraw the application
- Talk to the person making the opposition
- Defend the application

Trade marks cannot be registered until any oppositions and objections have been resolved.

Once registered a trade mark lasts for 10 years. After this time, it must be renewed every 10 years for it to remain in force. Trade marks have no final time limit and can be renewed indefinitely.

Figure 27 shows the total amount of applications and publications, both National and International. In October 2007 the IPO no longer examined trade marks on relative grounds and as a result a large volume of cases were released. This explains why in 2008 the number of publications is greater than the number of applications.

Figure 27 UK Trade Mark Activity 1995-2017

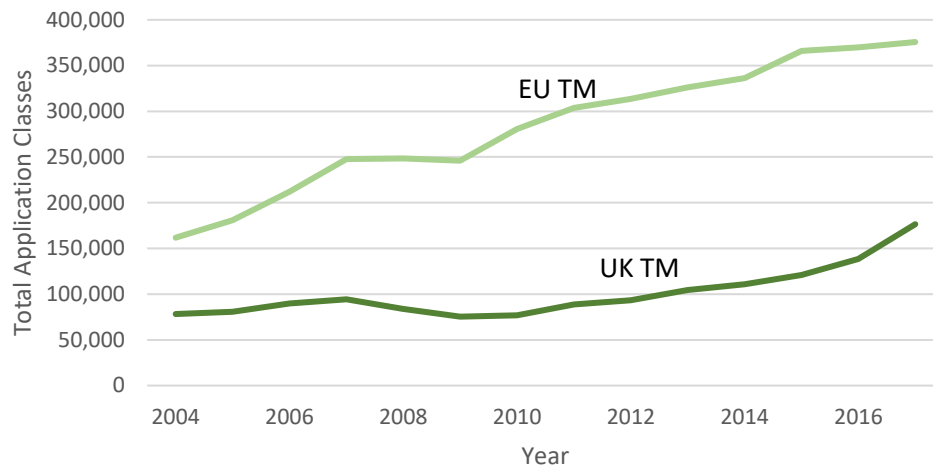


²⁷ For more information on trade marks: <https://www.gov.uk/topic/intellectual-property/trade-marks>

EU trade marks filed at the EUIPO also have affect here. EU trade marks also came into force on 1st April 1996. Figure 28 shows the total number of trade mark class applications to the UK IPO and the EUIPO for context.

The total number of applications to the EUIPO has more than doubled since 2004. Up until last year, each application at the EUIPO came with three trade mark classes. Now, which is the same at the IPO, applicants only get one and any additional classes must be paid for.

Figure 28 Total UK and EU Trade Mark Class Applications



2.1 Trade Marks by Route

2.1.1 Trade Mark Applications by Filing Route

Figure 29 Total UK Trade Mark Class Applications by Route

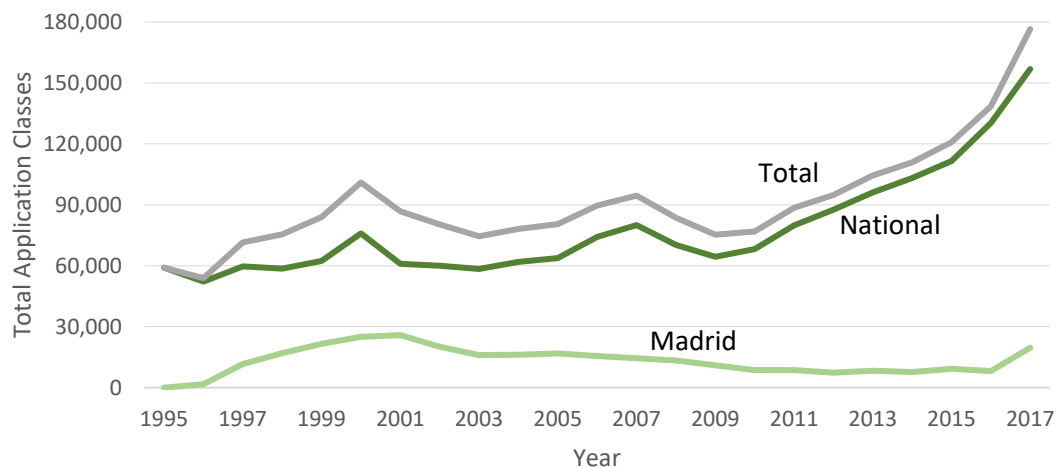
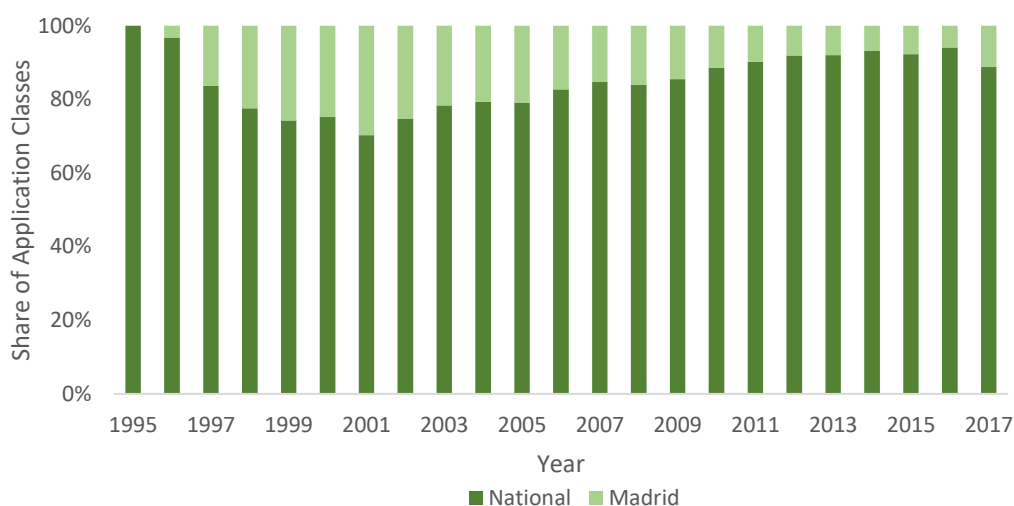


Figure 29 shows that the number of trade marks filed nationally has increased year on year since 2009. The dip between 2007 and 2009 is likely due to macroeconomic conditions.

While national applications have been rising since 2009, applications filed through the Madrid protocol consistently fell between 2001 and 2016 and made up their smallest share of total applications in 2016 since the UK joined at just 6%. 2017 saw the first increase in Madrid applications since 2001.

The number of applications filed through the Madrid Protocol peaked in 2001, making up 30% of the total applications. The decrease in Madrid applications may be due to international applicants choosing pursue UK protection via the EUIPO.

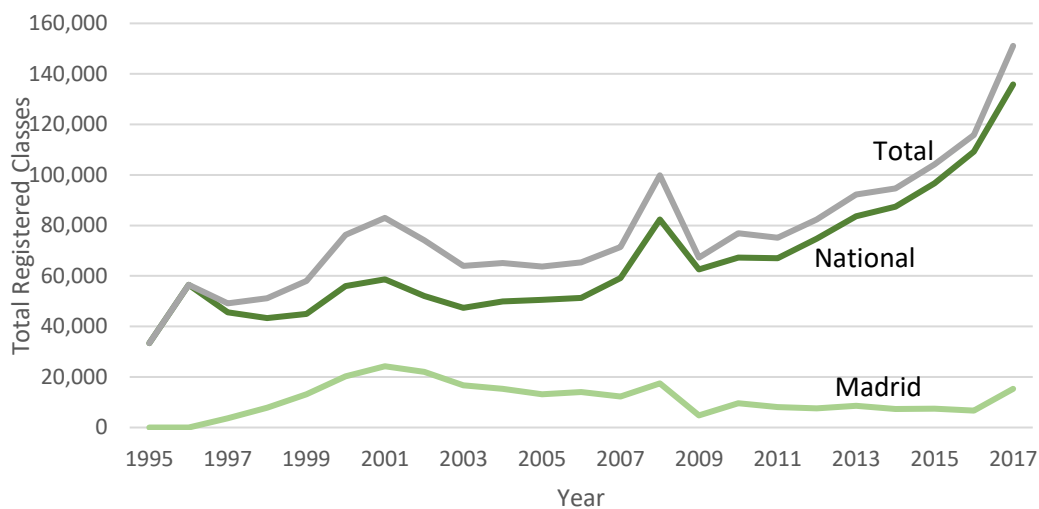
Figure 30 Share of UK Trade Mark Class Applications by Route



2.1.2 Trade Mark Registrations by Application Route²⁸

After filing and found acceptable after examination, the trade mark is published in the trade marks journal for 2-3 months so third parties may oppose the registration. Provided there are no objections, the trade mark becomes registered two weeks after the opposition period ends.

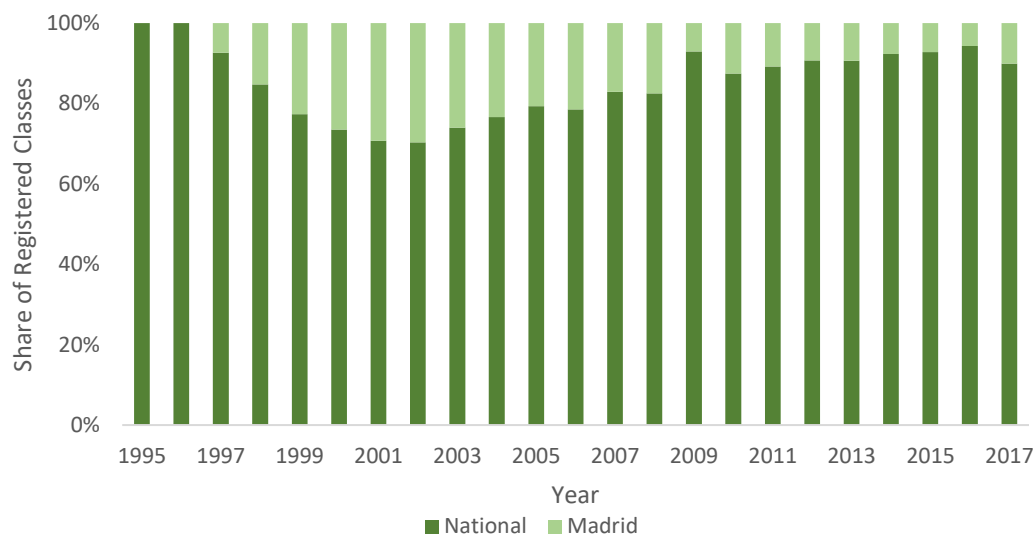
Figure 31 Total Registered Trade Mark Classes by Application Route



²⁸ Figures 31 and 32 show figures for the Madrid Protocol which was not introduced until 1996.

The increase in registrations in recent years reflects the increase in applications. The number of trade marks registrations filed through the Madrid protocol peaked in 2001, making up 29% of all registrations that year.

Figure 32 Share of Registered Trade Mark Classes by Application Route



2.2 Trade Marks by Residency

2.2.1 Trade Mark Applications by Applicant Residency

The increase in applications in recent years is predominately driven by the increase in applications from residents.

The number of applications from non-residents fell quite considerably in the early 2000s which is likely linked to the increase of applications to the EUIPO, and has remained relatively stable since although 2016 saw a significant increase in applications from non-residents, pushing their share of applications up to 12%.

Figure 33 Total National Trade Mark Class Applications by Applicant Residency

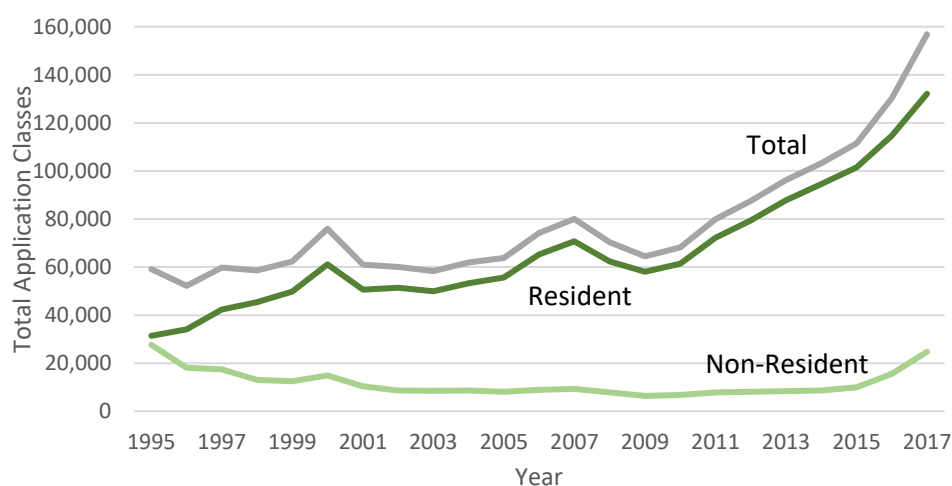
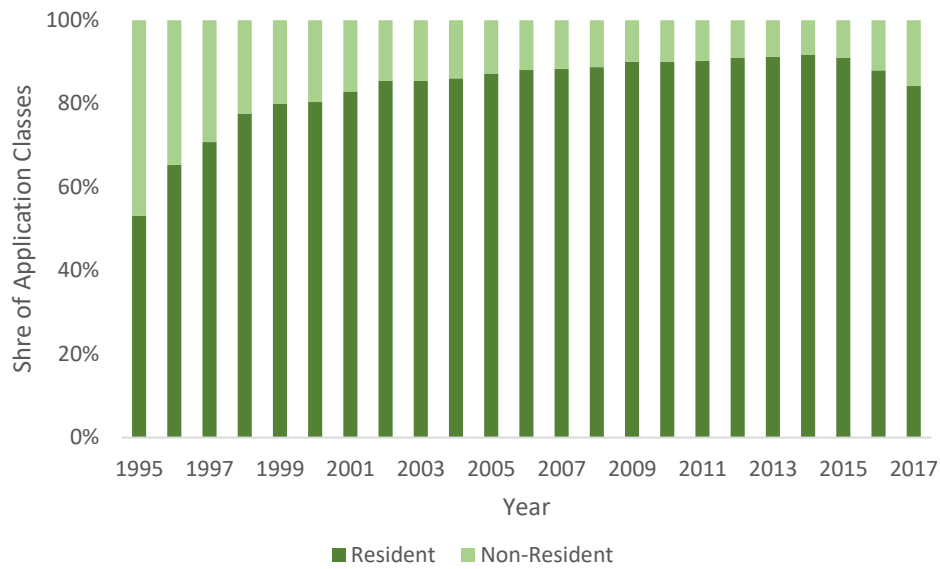


Figure 34 Share of National Trade Mark Class Applications by Applicant Residency



2.2.2 Registrations by Applicant Residency

Figure 35 broadly reflects figure 33 – applications from residents have been increasing while applications from non-residents have been relatively stable in recent years.

Figure 35 Total National Registered Trade Mark Classes by Residency

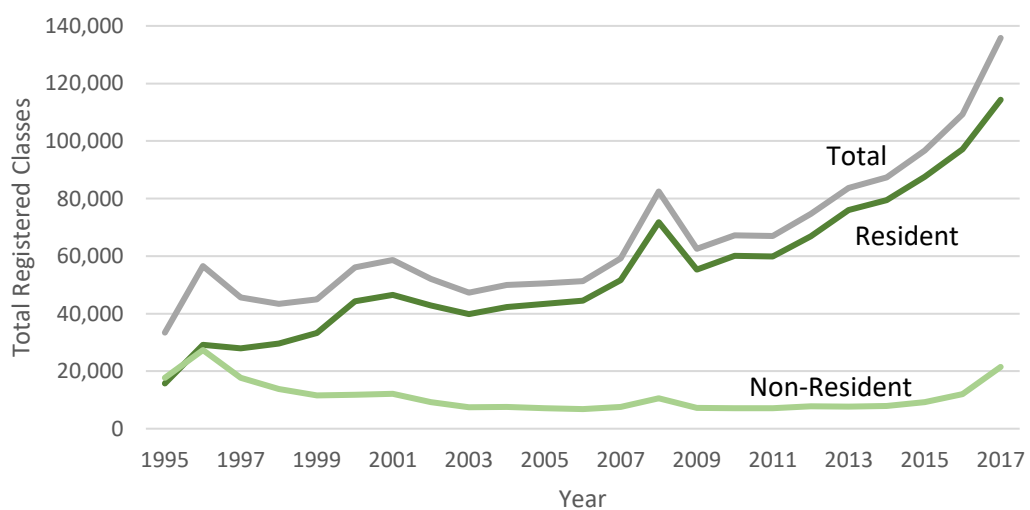
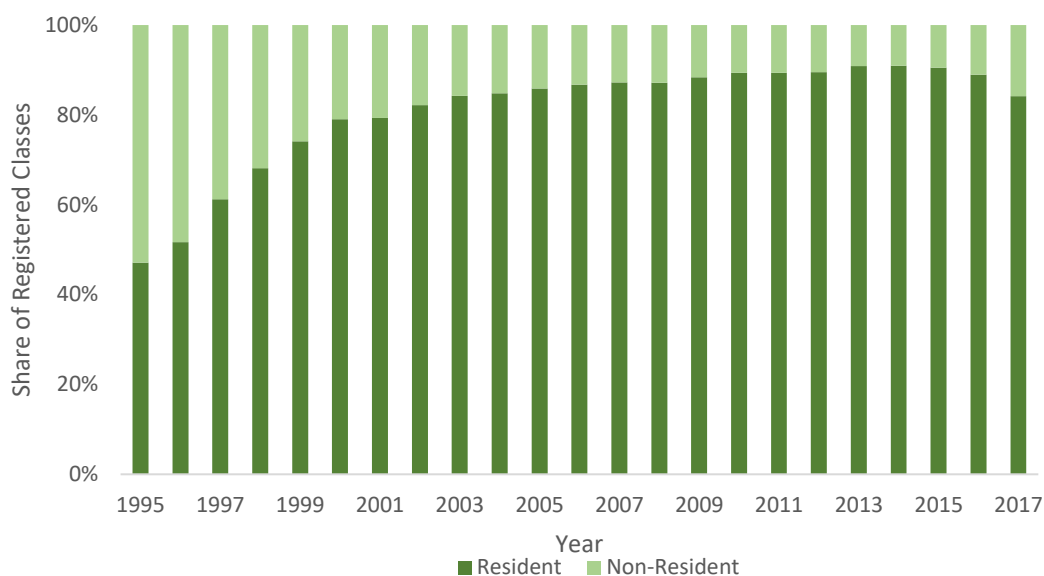


Figure 36 Share of National Registered Trade Mark Classes by Residency



2.3 Trade Marks by Class

2.3.1 Trade mark registrations by class – NICE Classification

A trade mark can include between 1 and 45 classes of goods or services as defined by the NICE international classification system²⁹. Each class represents a different goods or services area. An applicant will apply for the classes relevant for their intended use of the trade mark.

Classification	2007	2012	2017	Share of registered classes (2017)	Average annual growth rate (2007-2017)
Class 1 - Chemical products used in industry, science etc	785	692	1,241	0.82%	4.7%
Class 2 - Paints, varnishes, lacquers etc	718	465	517	0.34%	-3.2%
Class 3 - Cleaning preparations, soaps, perfumes etc	2,003	1,987	4,277	2.83%	7.9%
Class 4 - Industrial oils and greases, candles, tapers, etc	389	447	760	0.50%	6.9%
Class 5 - Pharmaceutical, veterinary and sanitary substances, infants' and invalids' foods etc	2,061	2,208	3,578	2.37%	5.7%
Class 6 - Unwrought and partly wrought common metals etc	1,073	921	1,503	0.99%	3.4%
Class 7 - Machines and machine tools, motors (except for vehicles) etc	975	1,034	1,728	1.14%	5.9%
Class 8 - Hand tools and instruments; cutlery, forks and spoons; side arms	516	491	969	0.64%	6.5%
Class 9 - Scientific, nautical and surveying and electrical apparatus and instruments (including wireless etc)	6,468	7,293	13,760	9.11%	7.8%
Class 10 - Surgical, medical, dental and veterinary instruments and apparatus	849	839	1,716	1.14%	7.3%
Class 11 - Installations for lighting, cooking, etc	1,341	1,440	2,610	1.73%	6.9%
Class 12 - Vehicles: apparatus for locomotion by land air or water	923	809	1,661	1.10%	6.1%

²⁹ <http://www.wipo.int/classifications/nice/en/>

Classification	2007	2012	2017	Share of registered classes (2017)	Average annual growth rate (2007-2017)
Class 13 - Firearms, ammunition etc	48	65	86	0.06%	6.0%
Class 14 - Precious metals and their alloys etc	1,034	1,172	2,371	1.57%	8.7%
Class 15 - Musical instruments (other than talking machines and wireless apparatus	118	124	213	0.14%	6.1%
Class 16 -Paper and paper articles, stationery, office requisites etc	4,626	4,594	6,356	4.21%	3.2%
Class 17 - Rubber, gutta-percha, gum etc	462	472	704	0.47%	4.3%
Class 18 - Leather, skins, umbrellas, harness etc	1,448	1,698	3,140	2.08%	8.0%
Class 19 - Building materials, road making materials, etc	941	906	1,494	0.99%	4.7%
Class 20 - Furniture, articles of wood, cork etc	1,283	1,314	2,635	1.74%	7.5%
Class 21 - Small domestic utensils and containers (not precious metal) glassware, etc	1,197	1,288	2,961	1.96%	9.5%
Class 22 - Rope, string, nets, tents, raw fibrous textile materials, etc	217	171	364	0.24%	5.3%
Class 23 - Yarns; threads	97	56	161	0.11%	5.2%
Class 24 - Tissues (piece goods) bed and table covers etc	871	927	1,745	1.15%	7.2%
Class 25 - Clothing including boots, shoes and slippers	3,689	4,775	9,335	6.18%	9.7%
Class 26 - Lace and embroidery; ribbons and braids; artificial flowers etc	390	421	998	0.66%	9.9%
Class 27 - Carpets, rugs etc	355	293	607	0.40%	5.5%
Class 28 - Games etc	1,879	1,939	3,777	2.50%	7.2%
Class 29 - Meat, fish, poultry and game; meat extracts, etc	1,539	1,716	2,661	1.76%	5.6%
Class 30 - Coffee tea, cocoa, sugar, rice etc	1,926	2,366	4,095	2.71%	7.8%
Class 31 - Agricultural, horticultural and forestry products, fresh fruits etc	742	707	1,319	0.87%	5.9%
Class 32 - Beer, ale, porter, mineral and aerated waters etc	1,170	1,368	2,625	1.74%	8.4%
Class 33 - Wines, spirits and liqueurs	1,025	1,266	2,535	1.68%	9.5%
Class 34 - Tobacco, raw or manufactured; smokers' articles, matches	256	290	954	0.63%	14.1%
Class 35 - Advertising; business management; business administration etc	5,885	8,178	14,624	9.68%	9.5%
Class 36 - Insurance; financial affairs; monetary affairs; etc	3,008	3,342	5,561	3.68%	6.3%
Class 37 - Building; construction, repair; installation services	1,919	1,998	3,519	2.33%	6.3%
Class 38 - Telecommunications	1,970	2,521	3,777	2.50%	6.7%
Class 39 - Transportation, packaging and storage	1,446	1,525	2,707	1.79%	6.5%
Class 40 - Treatment of material	657	747	1,397	0.92%	7.8%
Class 41 - Education; entertainment; sporting and cultural applications	5,425	7,166	13,358	8.84%	9.4%
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; legal services.	3,786	4,368	8,909	5.90%	8.9%
Class 43 - Services for providing food or drink ; temporary accommodation	1,805	2,339	4,899	3.24%	10.5%

Classification	2007	2012	2017	Share of registered classes (2017)	Average annual growth rate (2007-2017)
Class 44 - Medical services; veterinary services, hygienic and beauty care for human beings or animals ; agriculture, horticulture and forestry services	1,258	1,683	3,825	2.53%	11.8%
Class 45 - Personal and social services rendered by others to meet the needs of individuals ; security services for the protection of property and individuals	881	1,901	3,060	2.03%	13.3%

Key

Highest Lowest

“Advertising; business management; business administration” made up the largest share of registrations in 2017 (just over 9%) while “Tobacco, raw or manufactured; smokers’ articles, matches” had the largest average yearly compound growth over 2007-2017 (just over 14%).

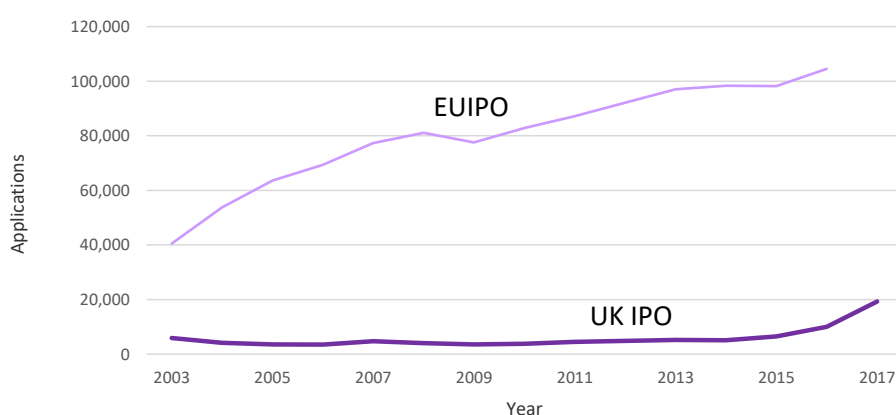
3 Designs

A registered design protects the visual appearance of a product, part of a product, or its ornamentation. This can also apply to an industrial or handcraft item. This IP right gives no protection for how a product works but merely for its appearance.

Design applications at the IPO can contain more than one design. All design figures in this report are counts of the number of designs contained within applications. The protection lasts for five years and can be renewed every five years, for up to 25 years.³⁰

Registered Community Designs (RCDs) registered at the EUIPO also have effect in the UK. RCDs became available on 1st April 2003. Figure 37 shows the total number of designs applied for at the UK IPO and the EUIPO (RCDs).

Figure 37 UK IPO and EUIPO Design Applications

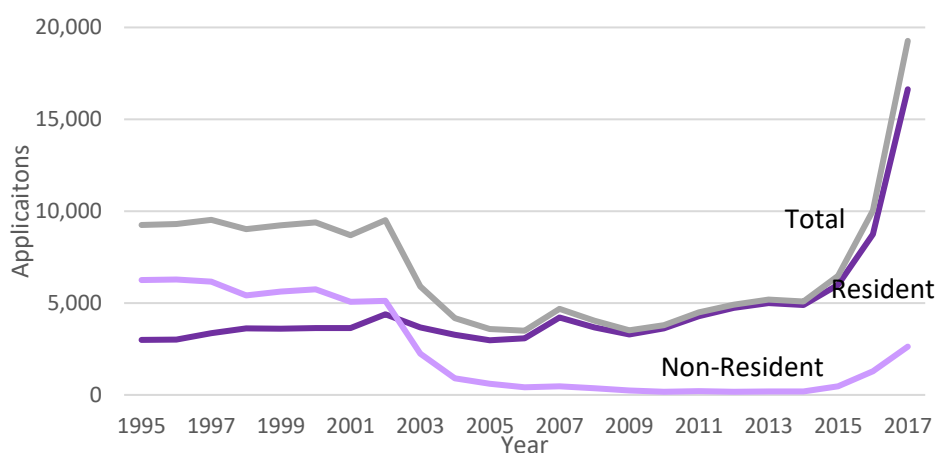


3.1 Design Applications

3.1.1 Design Applications by Applicant Residency

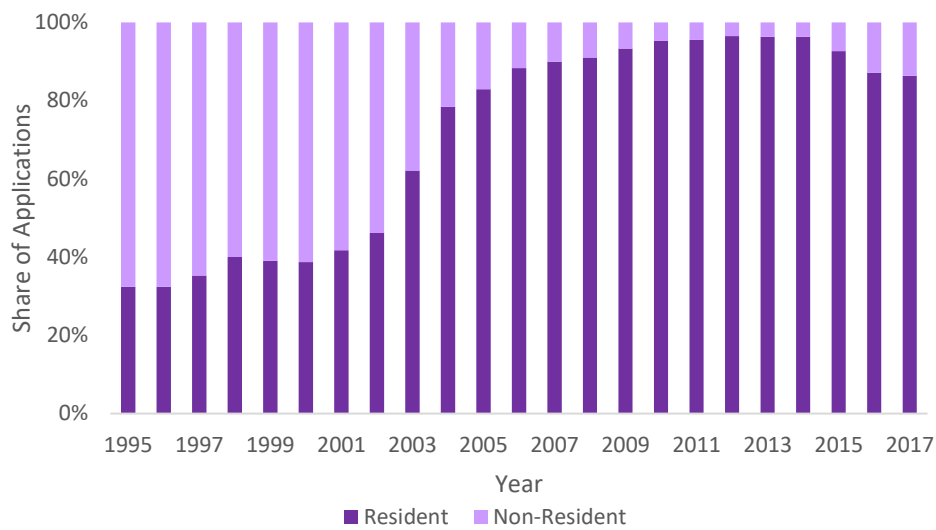
As a result of RCDs becoming available in 2003, applications from applicants who are not residents of the UK fell dramatically as shown in figure 38 but have been increasing since 2015.

Figure 38 Total Design Applications by Applicant Residency



³⁰ For more information on designs: <https://www.gov.uk/topic/intellectual-property/designs>

Figure 39 Share of UK Design Applications by Applicant Residency



The number of design applications to the UK IPO in 2017 was almost double what it was in 2016. The IPO began to accept e-filed applications in late 2015 and the fees reduced in late 2016. Anecdotal comments from stakeholders suggest the additional increase seen since the referendum is a result of uncertainty around European trade marks and designs post EU exit.

As a result of this, all classifications have seen a positive annual average growth rate as shown in Table 4.

Table 4 Design Applications by Classification

Locarno Class Number	Class	2007	2012	2017	Share of applications (2017)	Average annual growth rate (2007-2017)
1	Foodstuffs	23	35	122	0.63%	18.2%
2	Clothing haberdashery	189	364	1699	8.82%	24.6%
3	Travel goods/cases	140	181	1015	5.27%	21.9%
4	Brushware	49	43	143	0.74%	11.3%
5	Textiles	50	104	230	1.19%	16.5%
6	Furnishing	519	660	1684	8.74%	12.5%
7	Household goods	148	283	613	3.18%	15.3%
8	Tools and Hardware	165	206	727	3.77%	16.0%
9	Packages etc	377	189	667	3.46%	5.9%
10	Clocks watches etc	87	86	289	1.50%	12.8%
11	Articles of adornment	203	157	1357	7.04%	20.9%
12	Transport/hoisting	157	205	452	2.35%	11.2%
13	Electricity	75	59	210	1.09%	10.8%
14	Recording/communication	116	463	889	4.61%	22.6%
15	Machines not elsewhere specified	48	51	287	1.49%	19.6%
16	Photographic/optical	13	17	91	0.47%	21.5%
17	Musical Instruments	20	22	21	0.11%	0.5%
18	Printing and office machinery	2	0	31	0.16%	31.5%
19	Stationery/artists equipment	195	191	1003	5.21%	17.8%
20	Sales/advertising/signs	50	50	217	1.13%	15.8%
21	Games,/toys/sports goods	230	264	1225	6.36%	18.2%
22	Arms/hunting/fishing	42	32	78	0.40%	6.4%
23	Fluid dist/sanitary/air conditioning	213	146	419	2.17%	7.0%
24	Medical/laboratory equipment	238	60	424	2.20%	5.9%
25	Building/construction	232	222	604	3.13%	10.0%
26	Lighting/apparatus	55	88	392	2.03%	21.7%
27	Tobacco and smokers articles	2	6	42	0.22%	35.6%
28	Pharmaceutical/cosmetic	28	40	530	2.75%	34.2%
29	Fire/accident prevention	23	8	45	0.23%	6.9%
30	Care and handling of animals	53	107	483	2.51%	24.7%
31	Machines for food/drink preparation	11	4	18	0.09%	5.0%
32	Graphic symbols and logos, surface patterns	-	-	3251	16.87%	
99	Miscellaneous	930	562	11	0.06%	-35.8%

Key

Highest	Lowest
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Graphic symbols and logos which is a newer classification area had no applications in 2007 and 2012 made up the largest share of applications in 2017 (almost 17%) while design applications for tobacco and smoker articles has seen the greatest average annual increase from 2007 – 2017 (almost 40%).

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Published: July 2018
DPS-007586



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