



Pointmaker

ABOLISHING THE INNOVATION POLL TAX

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SUMMARY

- The UK economy is underperforming in two critical areas: productivity and innovation.
- Labour productivity is still 4.3% below the pre-crisis peak; the UK is performing significantly worse than the other G7 countries.
- This paper proposes that the weak performance of UK innovation over the last two decades has contributed to the prevailing low level of productivity.
- The Government could reduce the UK innovation deficit by:
 - abolishing patent renewal fees,
 - simplifying the patent application process,
 - establishing new accelerated patents for small businesses,
 - pushing for improvements to EU policies.

THE STATE OF INNOVATION IN THE UK:

- Research and Development spending in the UK is falling behind the EU average.
- UK patent applications by residents have fallen the most among the G7 since 1992 – even when adjusting for GDP.
- Adjusting for R&D spending, only Japan has seen a worse fall in applications in the G7 since 1992.
- Whereas patent applications by non-residents have stabilised in the UK since 1992, in the rest of the G7 they grew 152%.
- Patent grants have fallen 27% in the UK compared to an increase of 141% across the rest of the G7.
- High-tech exports are growing much faster in France and Germany than in the UK.



1 INTRODUCTION

1.1 What has happened to UK productivity?

The UK's economic recovery will not be secure without sustained long-term productivity growth. Productivity growth is the key to higher living standards because real wages will not rise in the long term unless there are underlying improvements in output per hour.

Strong GDP and employment growth throughout 2013 has highlighted the continued weakness of productivity, which remains 4.3% below the pre-crisis peak on an output per hour basis (Chart 1). Productivity is now back to where it was in Q1 2006.¹ On an output per worker basis, it is still 3.6% below the pre-crisis peak. If this does not improve, the UK will soon be approaching a decade of stagnant productivity.

¹ Office of National Statistics, Labour Productivity Key Measures 2014

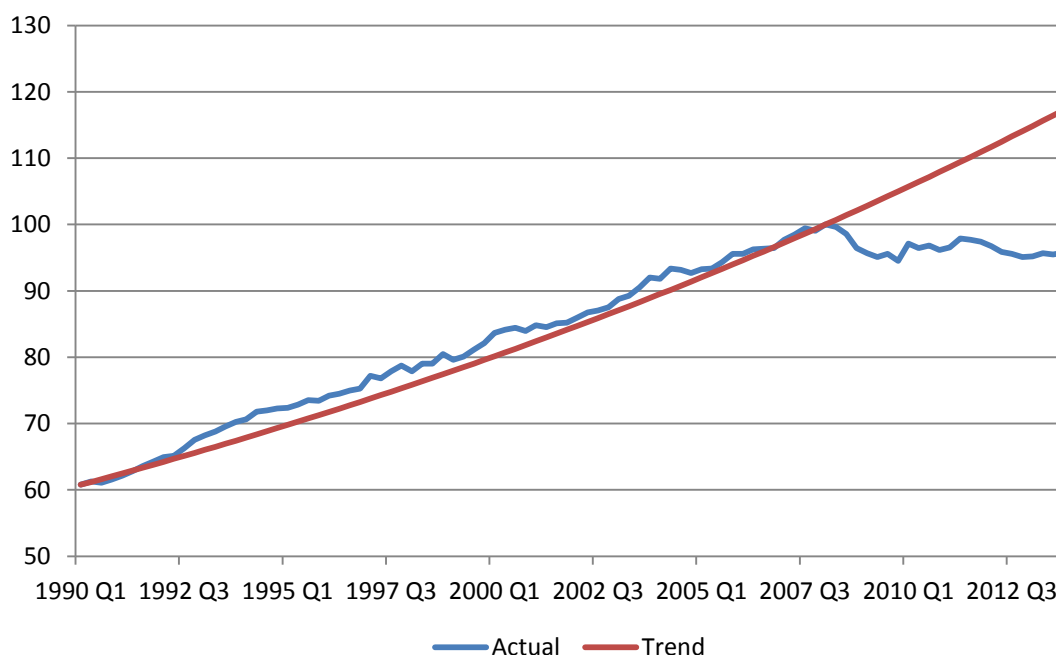
The average annual growth in productivity between 1971 and 2007 was 2.6%. However, this period can be divided into two distinct sub-periods. Between 1971 and 1989, output per hour grew at an average annual rate of 2.35% but between 1990 and 2007, it grew at an average annual rate of 2.84%. This acceleration in the annual growth rate of half a percentage point is likely to be the result of the supply-side reforms of the Thatcher Government, as well as increasing technological progress and global competition. Improving underlying productivity growth is therefore not only desirable but possible.

If labour productivity had grown between 2008 and 2013 at the pre-crisis average of 2.84%, then it would be 22% higher than it is now.

1.2 How does UK productivity compare internationally?

Between 1997 and 2007, overall labour productivity grew by an average annual rate of

Chart 1: Output per Hour (2008 = 100)



Source: Office of National Statistics, CPS Analysis



2.5% in the UK compared to 1.9% in the rest of the G7.² However, since 2007 UK labour productivity has underperformed relative to the other G7 countries (Chart 2). By the end of 2012, productivity in the other G7 countries was 4% higher than its level in 2007, whereas in the UK it remained 3% lower than 2007 levels.

Data from the Office of National Statistics shows that output per hour in the UK is 21 percentage points lower than the G7 average – the biggest gap since 1992. British productivity is more than 30 percentage points lower than in the US, Germany and France. Even in Italy, productivity in 2012 was 11 percentage points higher than in the UK.

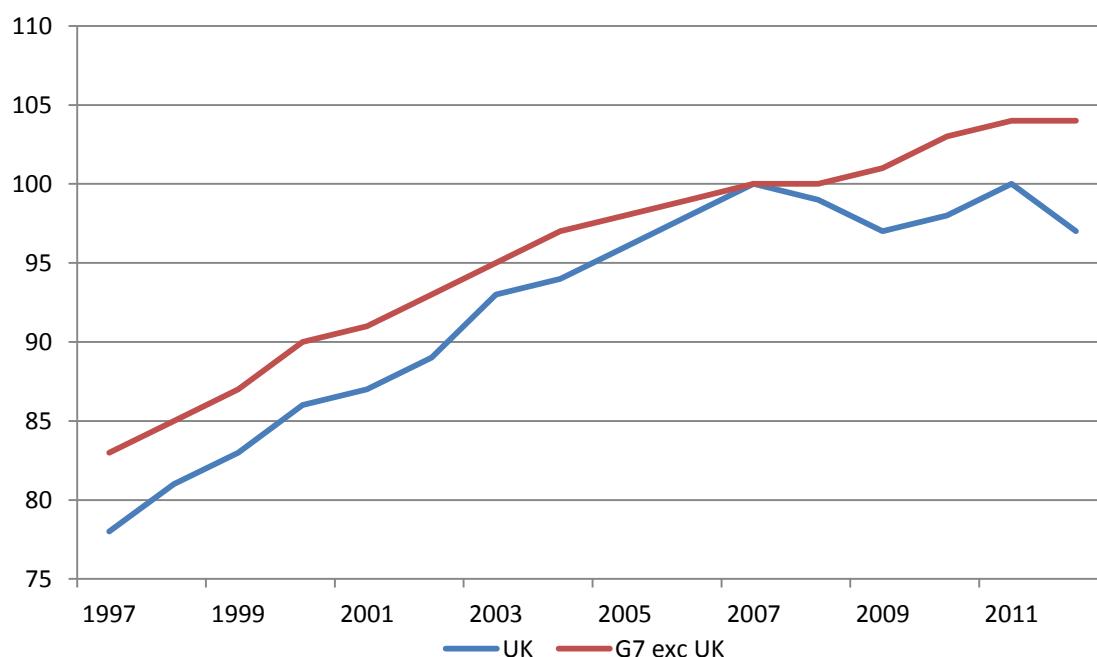
² Office of National Statistics, International Comparisons of Productivity – Final Estimates, 2012

1.3 What is causing the weakness in productivity?

There are numerous reasons for this unprecedented stagnation in productivity. One possible explanation is 'labour hoarding' as firms held on to their workers in the expectation of a swift economic recovery. The idea that the weakness in productivity is a temporary cyclical phenomenon is however unconvincing. Some demand led improvements are inevitable but given that productivity has failed to recover in 2013 despite 1.7% output growth, it seems likely that supply-side constraints are the dominant cause of the UK's ongoing shortfall in this regard.

Loan forbearance, whereby banks do not liquidate non-performing loans, may mean that unproductive companies have not exited the market to be replaced by productive new

Chart 2: Output per Hour (2007 = 100)



Source: Office of National Statistics, CPS Analysis



start-ups.³ This impaired allocation of capital is likely to have been exacerbated by ultra-loose monetary policy which has slowed deleveraging in less productive sectors and allowed the proliferation of “zombie companies”. The severe contraction of specific sectors such as finance and mining also appears to have contributed to lower labour productivity generally.⁴

The fall in business investment is also likely to have led to a reduction in the quantity and quality of available capital and thereby diminished labour productivity. Gross fixed capital formation has seen an encouraging rise in the second half of 2013 but on a real terms quarterly basis it is at the same pre-crisis level

³ Ota, 'Forbearance and Broken Credit Cycles', 2013

⁴ Office for National Statistics, Economic Review, April 2014

of Q3 2003.⁵ Excluding dwellings, i.e. residential property, investment has been stagnant since Q4 2008.

However, it is innovation which is the most important driver of productivity growth and more highly skilled, highly paid jobs.

Unfortunately, innovation remains a structural weakness of the UK economy.

2 THE INNOVATION DEFICIT

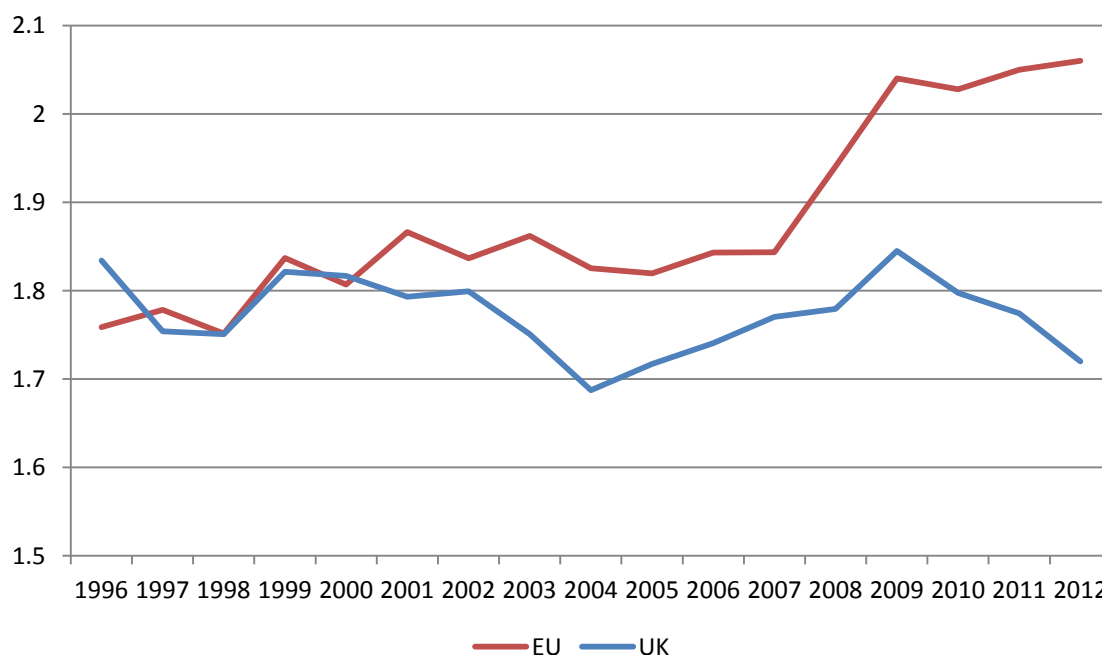
2.1 What has happened to UK innovation?

It should be of concern that in the last few years there has been a divergence between the UK and the EU on expenditure on Research and Development (Chart 3).

Total expenditure on Research and Development comes from four sectors:

⁵ Office for National Statistics, Business Investment, Q4 2013 revised results

Chart 3: Research and Development Spending (% of GDP)



Source: Office of National Statistics, CPS Analysis



Business, Higher Education, Government and Private Non-Profit. Across the EU, average R&D spending as a percentage of GDP rose from 1.76% in 1996 to 2.06% in 2012.⁶ However, in the UK it has fallen from 1.83% to 1.72% over the same period. Of particular concern is the increasing divergence that has been apparent since 2007. In 2007, R&D spending across the EU was 1.84% and this rose to 2.06% in 2012. In the UK it fell from 1.77% in 2007 to 1.72% in 2012.

Spending on Research and Development is structurally higher in France and Germany than in the UK. In 2012 R&D spending in France was 2.26% of GDP, and in Germany it was 2.92% of GDP. This may to some extent explain the significantly higher levels of productivity in those two countries.

Data from the UK Innovation Survey⁷ shows falling levels of private sector innovation with the percentage of firms classed as product innovators declining from 24% in 2008 to 18% in 2012. Analysis from the Bank of England⁸ suggests that product innovators have productivity levels around 20% higher than firms which are not product innovators.

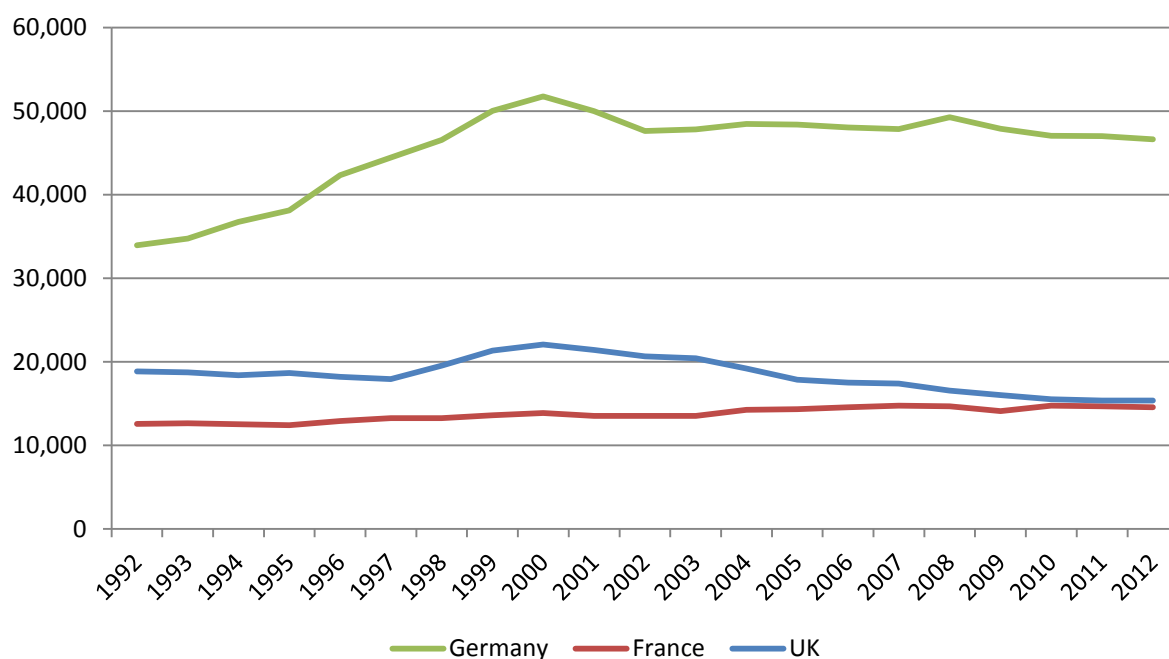
Industries which rely on an intensive use of intellectual property are important drivers of the UK economy. A study carried out by the European Patent Office and the Office for Harmonization in the Internal Market found that 39% of GDP across EU economies is generated by IP intensive industries, which

6 Office for National Statistics, UK Gross Domestic Expenditure on Research and Development, 2012

7 Department for Business Innovation and Skills, UK innovation Survey 2013 (April 2014)

8 Bank of England Quarterly Bulletin 2014 Q2

Chart 4a: Patent applications by Residents



Source: World Intellectual Property Organisation, CPS Analysis



directly and indirectly generate 35% of all employment.⁹

In the UK, patent-intensive industries create 13.6% of GDP and 10.1% of employment. Furthermore, the average weekly wage in patent-intensive industries is 64% higher than in non-IP intensive industries. Effective patent reform could boost innovation, productivity and wages.

2.2 Patent applications

Innovation in technology and in the development of goods and services is one of the key drivers of productivity growth. Patents are a good measure of the level of innovation in an economy because as companies research and develop new technologies and production processes, they seek to gain the protection that patents can provide.

⁹ European Patent Office & Office for Harmonization in the Internal Market IP Study, 2013

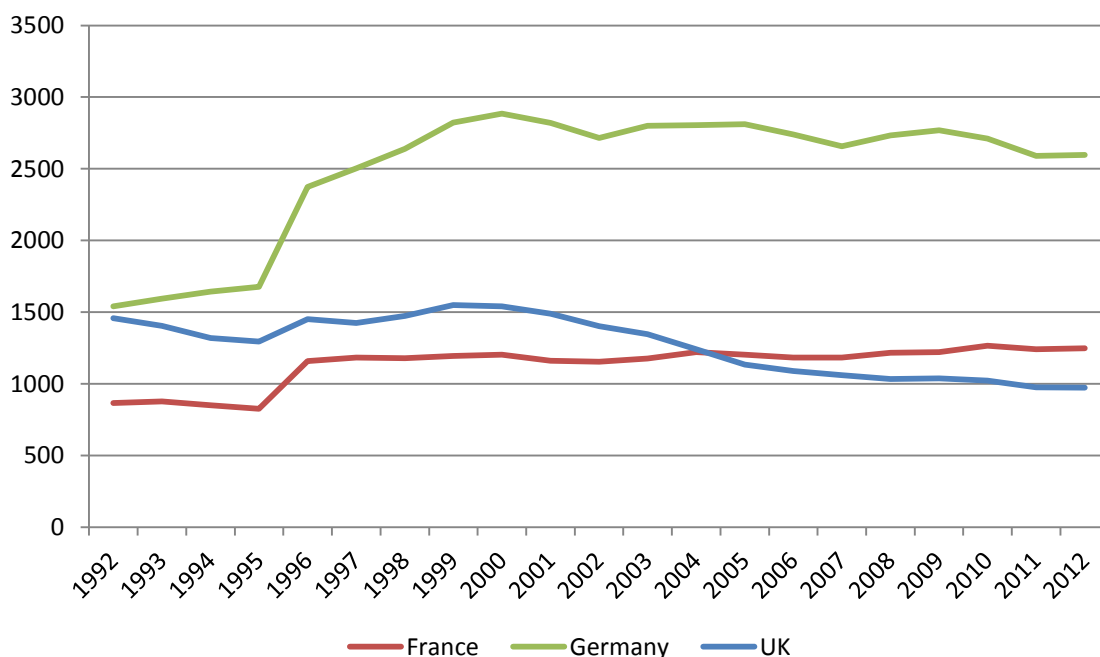
It is therefore not unreasonable to suggest that the higher the number of patent applications, the greater the level of innovation in an economy.

Data from the World Bank¹⁰ shows that the number of patent applications in the UK has been falling. Furthermore, compared to the other G7 countries as well as China, the UK has seen the greatest percentage fall in patent applications. In 1992, there were 18,848 patent applications by UK residents and this fell by 18.5% to 15,370 in 2012. Across the other G7 countries, the number of patent applications increased by 29.4% since 1992

In China, there has been a spectacular increase of 5241% from 10,022 applications to 535,513 in 2012 (Chart 4b). Such an increase is to be expected given the expansion of China's economy from a relatively low level over the

¹⁰ World Bank, patent application by residents data

Chart 5a: Patent applications per \$100bn GDP



Source: World Intellectual Property Organisation, CPS Analysis



same period. However, it would be wrong to assume that significant growth in patent applications is possible only in a less economically developed country. Canada has seen a 67.8% increase over the same period and the US has enjoyed a remarkable 191% rise in patent applications. The stagnation and contraction of patent applications in the UK compares poorly with strong and steady growth of patent applications in the US.

Of particular concern is the UK's underperformance in patent applications relative to France and Germany – which are the two economies closest to the UK in size and structure (Chart 4a). Apart from in 2012, the number of applications in the UK has fallen every year since 2000. Reforms carried out by the current Government appear to have contributed to a slowing of the fall in patent applications and even a marginal increase of 27 applications in 2012.

Nevertheless, in 1992 there were 6,309 more

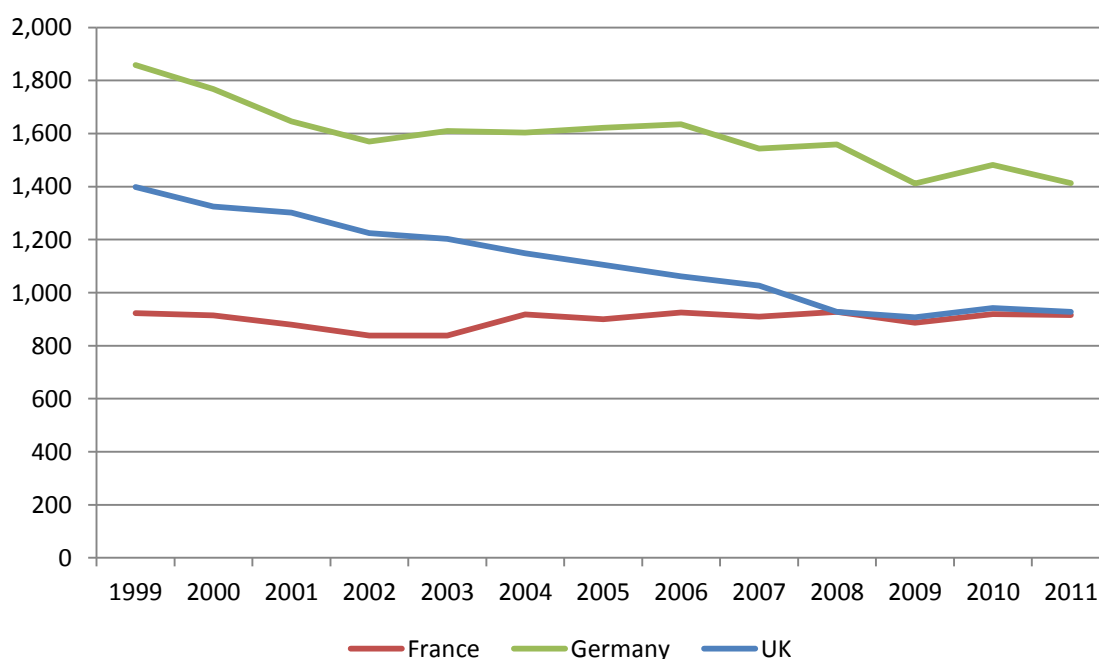
patent applications by residents in the UK than in France. This increased to 8,180 more in 2000 but has since fallen to 830. The French now have 16% more patent applications by residents than they did in 1992. This compares favourably to the 18.5% fall in the UK. In 1992, Germany had 15,071 more patent applications by residents than the UK but by 2012, this had increased sharply to 31,250 more applications.

2.3 Patent applications adjusting for GDP

Data from the World Intellectual Property Organisation (WIPO)¹¹ gives more detail about patent applications. It is to be expected that wealthier and more populous countries generate more applications. However even when adjusting for the size of its economy, the UK's performance from 1992 to 2012 has been the worst out of the G7 + China (Chart 5b). In 2012 the UK had 972 patent applications by

¹¹ [World Intellectual Property Organisation, Statistical Country Profile](#)

Chart 6a: Patent applications per \$1bn R&D spending



Source: World Intellectual Property Organisation, CPS Analysis



residents per \$100 billion of GDP in 2005 prices, compared with 1,457 applications in 1992.

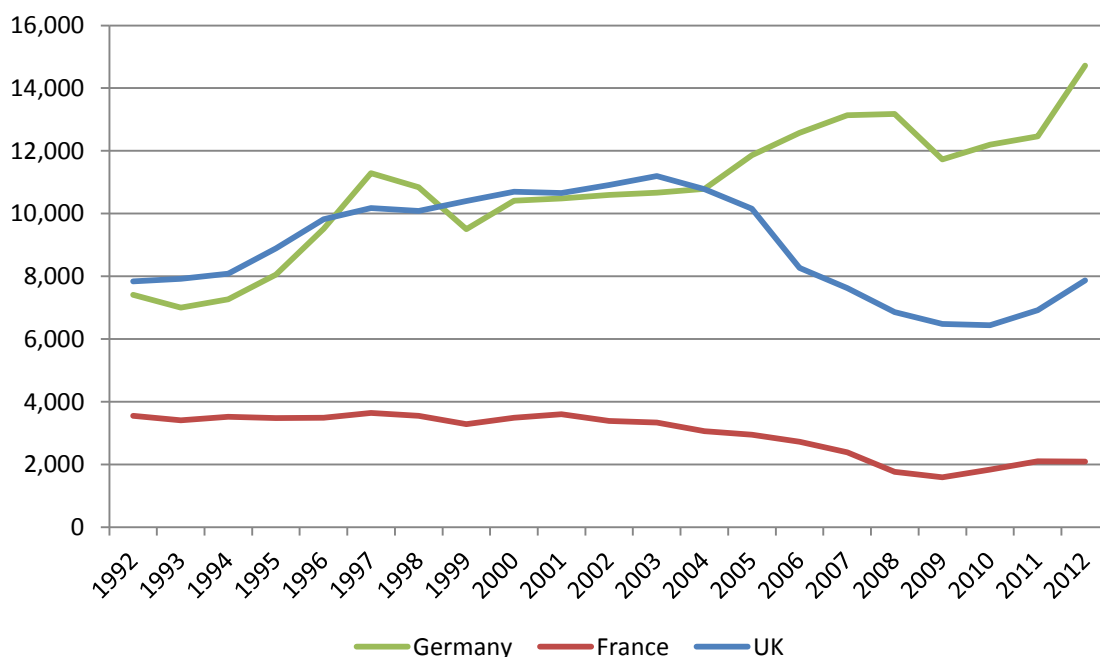
Whilst China now has by far the most patent applications, Japan remains the leader with 7,160 patent applications by residents in 2012 per \$100 billion of GDP in 2005 prices. Nevertheless, by this measure patent applications have increased 674% in China but fallen 28% in Japan. The UK also compares poorly with France and Germany when adjusting patent applications for GDP (Chart 6a). Between 1992 and 2012 there was a 33% fall in the UK, but increases of 44.3% in France and 68.6% in Germany. By this measure the Germans had only 83 more applications than in the UK in 1992, but this had increased to 1,624 by 2012. Over the same period the UK went from 592 more applications than the French, to 276 applications fewer. Across the G7 countries excluding the UK, there was a small fall of 1.53%; still far better than the UK.

2.4 Patent applications adjusting for R&D spending

Countries with higher R&D spending could be expected to have a greater number of patent applications and higher levels of innovation. Even when taking into account the different levels of R&D spending across countries, the UK still performs poorly. When looking at the number of patent applications by residents for every \$1 billion of R&D spending (2005 prices), Japan has historically dominated but has recently been overtaken by China (Chart 6b).

With the exception of China, there is clearly a country-wide trend of a falling number of patent applications for a given level of R&D. Across the G7 excluding the UK, applications fell 19.6% from 9,929 applications per \$1 billion of R&D in 1999 to 7,980 in 2010. However, in the UK applications fell by 32.6% over the same period which is a greater fall than every other G7 country apart from Japan.

Chart 7a: Patent applications by Non-Residents



Source: World Intellectual Property Organisation, CPS Analysis



In 1999, there were 475 more patent applications from residents in the UK for every \$1 billion of R&D spending than in France (Chart 6a). By 2011, this difference had fallen to just 12. Although the number of patent applications adjusted for R&D spending in France was relatively low in 1999, the figure has remained stable over the following years – in contrast to the UK and the G7.

2.5 Patent applications by non-residents

The UK has also underperformed relative to the rest of the G7 + China with respect to patent applications by non-residents (Chart 7b). The key factors which attract patent applicants from overseas residents to seek patent protection in a foreign country are “the size of the market and the country’s inventive capacity.”¹² Patent applications by non-

residents are therefore an indication of the innovation potential of a country.

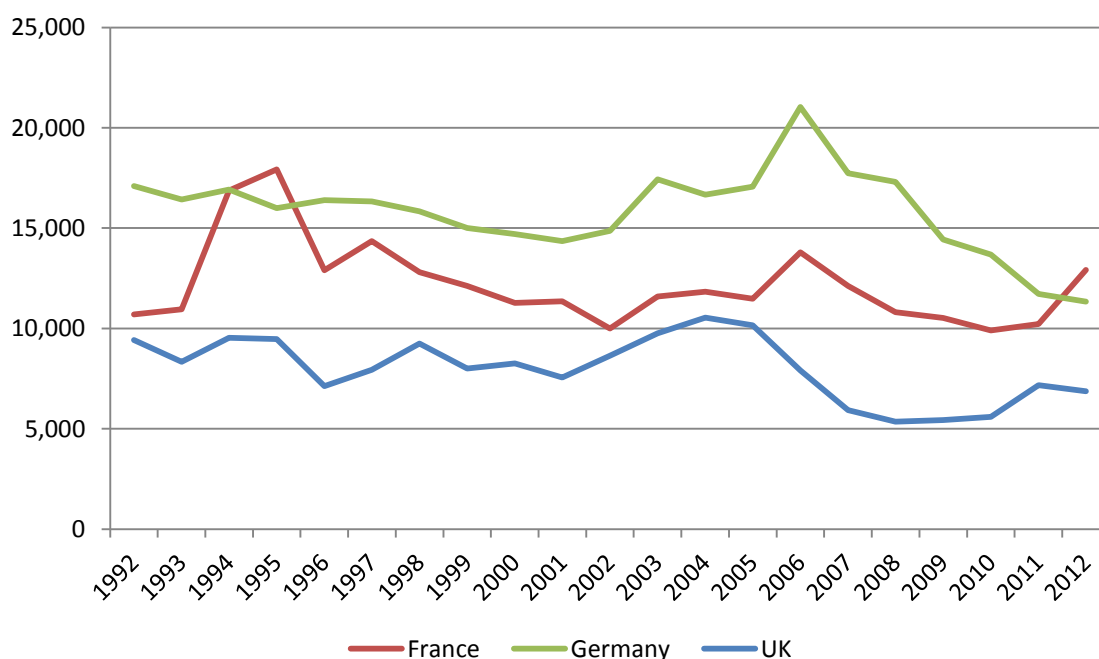
Patent applications by non-residents rose between 1992 and 2003, but were in gradual decline thereafter until 2010. In 2011 and 2012 there has been a rebound with 7,865 applications in 2012. This means that overall the number of applications by non-residents has remained stable and grown by 0.33% since 1992. However, this compares poorly to the other G7 economies, where the number of applications has increased by 152% over the same period.

Whilst applications in China have grown by 2,578% since 1992 – which is the fastest out of the G7 + China – the US remains the World leader with 274,033 applications which is an increase of 201% since 1992.

The only country to have performed worse than the UK on this measure in the G7 + China is France, where applications fell by 41%

¹² [Nepelski & Giuditta de Prato, ‘Does the Patent Cooperation Treaty work?’, 2013](#)

Chart 8a: Total Patents Granted



Source: World Intellectual Property Organisation, CPS Analysis



(Chart 7a). The WIPO data also shows that between 1990 and 2004, the UK and Germany had very similar numbers of patent applications by non-residents. However, after 2004 there was a substantial divergence between the two countries. In 1992 the UK had 435 more patent applications by non-residents than Germany, but in 2012 Germany had 6,855 more applications than the UK. Since 1992 applications in Germany grew by 98.8%, compared to the stagnation in the UK.

2.6 Patents granted

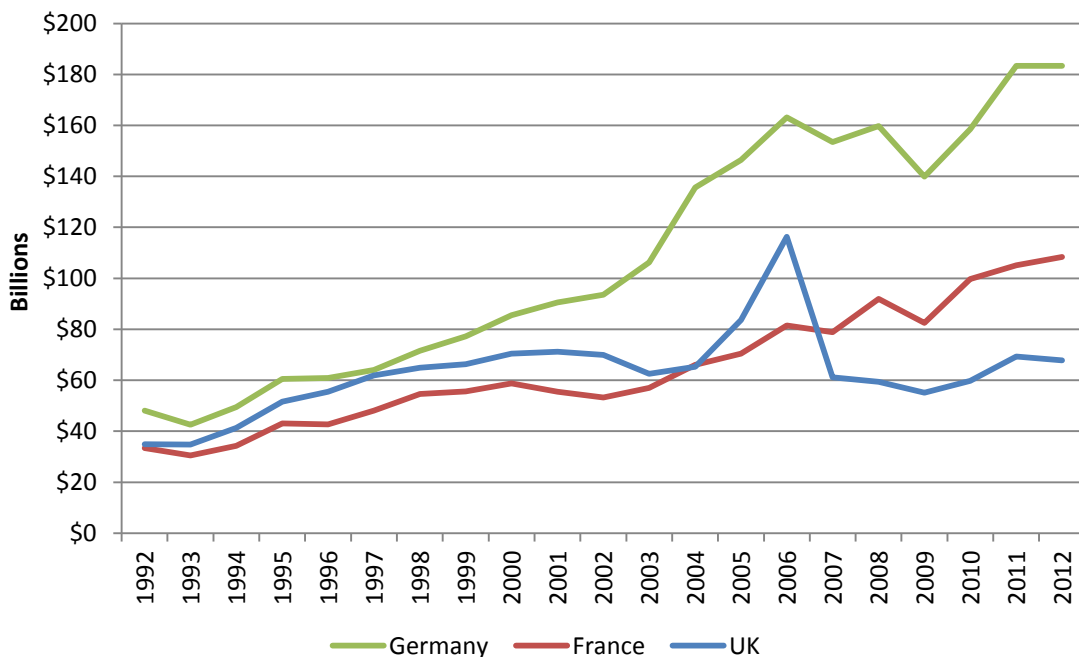
In terms of the total number of patents granted, the UK has also performed disappointingly. WIPO data shows that Japan, China and the US. lead the World with the other G7 economies far behind (Chart 8b). The quality of patents is of course crucial but it remains a longer-term problem for the level of innovation in the UK that fewer patents are being filed as well as granted compared to similar economies.

The total number of patents granted by residents and non-residents in the UK fell by 27.1% from 9,420 in 1992 to 6,864 in 2012. However, across the rest of the G7, the number of patent grants increased by 141.5% from 1992 to 2012.

Germany is the only economy in the G7 + China which has seen a larger percentage fall in patent grants than the UK since 1992 (Chart 8a). However, in France patent grants increased by 20.6% over the same period. In terms of the absolute number of patent grants, only Italy had fewer patent grants in 2012 than the UK.

Nevertheless, there is some positive news for the UK as far as patent grants are concerned. In 2011, the number of patent grants increased sharply by 28.2% to 7,173 from 5,594 in 2010. This coincided with significant reforms enacted by the current Government – such as the patent box. The fact that there were 6,864

Chart 9a: High-Tech Exports



Source: World Intellectual Property Organisation, CPS Analysis



patent grants in the UK in 2012 – which is still 22.7% higher than in 2010 – shows that these reforms didn't just lead to a one-off increase. Moreover, these improving figures show that effective patent reform is possible.

2.7 High-technology Exports

This picture of a weak long-term trend with a marginal rebound in the last few years is also apparent in the UK's high-technology exports. High-tech exports are products which have a high Research and Development intensity; these include exports from industries such as aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery.

In current US dollars, the UK's high-tech exports were \$34.9 billion in 1992 and grew by 94.4% to \$67.8 billion in 2013. However, across the other G7 countries, high-tech exports grew by 112.4%. Since 1992, only the US and Japan have seen slower growth in high-tech exports than the UK out of the G7 + China (Chart 9a); although both countries were starting at a much higher level than the UK which means their capacity for growth would have been lower.

The last few years have seen an improvement in the UK's relative performance in high-tech exports. From 2010 to 2012, the dollar volume of high-tech exports increased by 13.4% compared to 6.8% across the other G7 economies. In fact, only Germany and China have seen faster growth since 2012. This shows that whilst the UK has suffered from a weak and damaging long-term performance, it is possible to see big improvements in the country's global standing.

The extent of this relatively weak performance is revealed by a comparison with Germany and France. In 1992, the UK, France and Germany all had similar volumes of high-tech exports.

However by 2012 the value of French and German exports was approaching twice and three times the value of those from Britain respectively. Given the UK's excellent universities and open economy, export growth in high-tech industries should be a key strength. Such divergence with the French and Germans since 1992 is therefore of great concern.

Only Italy and Canada remain below the UK in terms of the absolute level of high tech exports out of the G7 + China. The UK's share of total high-tech exports by G7 countries has fallen from 13.5% in 2002 to 9.9% in 2012.

3 WHAT NEEDS TO HAPPEN TO INCREASE INNOVATION?

In order to increase productivity and the underlying growth capacity of the economy, the UK needs an ambitious set of patent reforms which remove barriers to innovation. Effective reform which simplifies and accelerates the patent application process, cuts the cost of ownership and empowers small businesses could be a powerful boost to innovation in the UK.

These reforms must also be achieved without compromising on patent quality, which remains crucial for business confidence in the patent system.

The current Government has introduced a number of positive reforms including the patent box and the establishment of a small claims track in the Intellectual Property Enterprise Court (IPEC). The Intellectual Property Act 2014,¹³ also contains useful measures such as implementing the Unified

13 [UK Parliament Website](#)



Patent Court which will help to bring into force the single patent system across EU countries.¹⁴

The reforms undertaken so far are welcome and appear to have contributed to a slowing in the deterioration of Britain's innovation deficit. However, the Government needs to go further to promote innovation with more ambitious patent reform.

Reform must also encourage innovation amongst smaller businesses given that patent grants are still dominated by a small number of large businesses. The top ten companies with the most patents granted by the IPO in 2012 (excluding European patents) accounted for 14% of all the patents granted in the UK, and the top 50 companies accounted for 29%.¹⁵

Uppenberg and Strauss from the European Investment Bank show that productivity in the services sector can be increased through higher fixed capital, new technology and innovation through interaction with customers, suppliers and competitors.¹⁶ Patent reform which boosts investment and the development of new technology can therefore be effective in increasing productivity in both manufacturing and services.

3.1 Patent reform to boost innovation:

1 Abolish Patent Renewal Fees.

Patent renewal fees are a poll tax on innovation. Owners of patents, whether large or small companies and irrespective of profitability, pay the same fees to the Intellectual Property Office (IPO). Under the current system, annual renewal fees are paid

from the fifth year of a patent at a cost of £70 and this fee increases every year until it reaches £600 in the 20th year of a patent (Chart 10). Over the first 10 years of a patent, renewal fees are £720 and over the full 20 years they add up to £4,550. Patent renewal fees serve two key purposes; the first is to encourage patent-holders who are not commercially exploiting their patents to let them expire before the 20 year duration is finished, and the second is to provide a source of revenue for the IPO. However, these fees are unnecessary and ineffective in achieving these aims.

The problem with holding a patent to expiry without commercially exploiting it comes not from innovators without the infrastructure to take advantage of it, but from trolls who collect patents to prevent their rivals from using it. This is because licencing rights permit patent-holders to allow other entities to use the patents. This means that if a small innovative company has a patented product but not the ability to make use of it, it can then licence it out and thereby the public benefits from the innovation. If no other entity wants to make use of the licencing rights, then the patent-holder is not preventing any social benefit if it holds the patent to its expiration anyway. Furthermore, it is unlikely that large, profitable businesses which might consider patent trolling will be significantly deterred from doing so by having to pay renewal fees.

The more profound impact of patent renewal fees is on small and medium enterprises and start-ups with smaller balance sheets as well as fast-growing innovators which are not yet profitable. The fees place yet another unnecessary burden on those who have spent the time, money and energy in developing new

14 [Intellectual Property Office Website](#)

15 [Intellectual Property Office Annual Reports](#)

16 [Uppenberg & Strauss, 'Innovation and Productivity Growth in the EU Services Sector'](#)



goods, services and technologies. At best, they add to the cost base of these innovators, making it more difficult to turn a profit. At worst, they can act at the margin to deter future innovation which would make everyone worse off. There is also an inherent injustice when innovators lose the rights to their own creations if they do not pay the fees.

Abolishing patent renewal fees would send a powerful signal globally to entrepreneurs and investors that Britain is the place to do business and be innovative. Furthermore, it could provide a material boost to innovation amongst growing start-ups and SMEs which are currently trying to make the most of their patents, and which might consider getting patents. Whilst it is true that patent renewal fees are only a part of the overall cost of innovation, such a clear step may go some way in reversing the declines that we have seen in

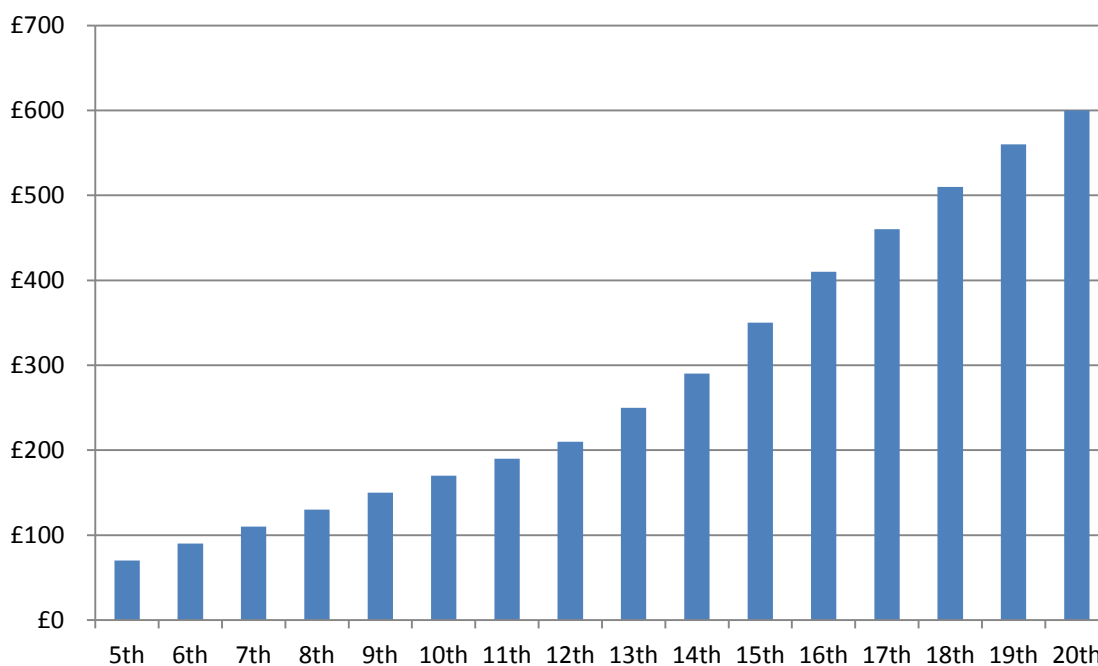
recent years. The form¹⁷ which patent holders must complete each year to renew their patents can therefore be abolished.

Under Section 46 Patents Act 1977, patent holders who licence the rights to their patents are entitled to pay just half of the patent renewal fees. This is supposed to act as incentive to those who are not commercially exploiting their patents to licence them. However, given that licencing works to the mutual benefit of both parties and will be almost always preferable to a non-commercially exploited patent, it is unclear to what extent the halving of renewal fees actually helps.

Even so, the IPO can abolish the £50 fee which is charged along with Form 21 which is used for the registration or cancellation of a licence. The IPO granted only 2,097 licences in 2012 so the cost of abolishing the £50 fee should

¹⁷ [Intellectual Property Office Patents Form 12](#)

Chart 10: Patent Renewal Fees



Source: Intellectual Property Office



easily be covered by its retained surplus. In addition, there may be a question as to what extent patent holders who are not commercially exploiting their patents may be aware of licence rights. The IPO should therefore consider sending a notice to patent holders, for example every four years of the duration of a patent, reminding them of the opportunity of licencing rights.

As far as the IPO is concerned, it must of course have sufficient funds in order to carry out its important work but the burden should not be upon innovators. Instead, the burden of these costs should be placed upon criminals and those who infringe the intellectual property rights of others. Infringers, not innovators, should pay.

The IPO's annual reports¹⁸ show that over the year 2012/13, its total turnover was approximately £73.9 million (Table 1). In the same year, the IPO raised £12.8 million from the renewal fees for UK patents. Looking at the IPO's accounts over the last five years

suggests that abolishing renewal fees for UK patents would lead to an average 17% fall in the IPO's revenue. Data from the IP Crime Annual Report for 2012/13¹⁹ shows that the number of people found guilty of IP infringement in 2012 was 598, which was a slight increase on the year before but lower than the peak in 2008 (Table 2). This number includes people who have violated IP legislation such as the Trade Marks Act 1994 and the Copyrights, Designs and Patents Act 1988.

If patent renewal fees had been abolished in 2009 and replaced with additional fines for IP infringement, then each individual who had been found guilty of IP infringement over the period 2009 to 2012 would have to pay an average fine of £12,200. As a further point of reference, the value of assets seized under the Proceeds of Crime Act (PoCA) in 2011/12 was approximately £120.7 million.²⁰ The amount that the IPO raised from UK patent renewal fees in

18 [Intellectual Property Office Annual Reports](#)

19 [IP Crime Annual Report 2012-2013](#)

20 [HM Courts & Tribunals Service Fol Request](#)

Table 1: Total UK Patent Renewal Fees and IPO Turnover

	Year	2008/09	2009/10	2010/11	2011/12	2012/13
Renewals for UK Patents (000s)		£9,577	£10,188	£11,256	£12,531	£12,777
Total Turnover (000s)		£61,139	£61,202	£66,641	£71,880	£73,855
Patent Renewals as % of Turnover		16%	17%	17%	17%	17%

Table 2: Total Number of People Found Guilty Under The Criminal Provisions of the Copyright, Designs and Patents Act 1988 and the Trade Marks Act 1994.

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
No. found guilty	400	483	603	909	1169	1249	1391	1364	1028	584	598



the same year was £12.5 million i.e. 10% of the value of assets seized under PoCA.

A study by Helmers and McDonagh²¹ of the patent cases filed at courts in England and Wales between 2000 and 2008 found that most cases incurred total costs of between £1 million and £6 million for both claimants and defendants. 43% of the cases alleged the infringement of a patent and 31% of cases sought the revocation of a patent. It is clear that there is scope for the IPO to replace the revenue from UK patent renewal fees with fines on those who have been found guilty of IP infringement.

The Government should therefore look to amend Section 61 of the Patents Act of 1977 to allow the IPO to levy fees on entities which have been found guilty of IP infringement. The courts could treat the IPO as a third party and inform it if an entity or individual is found guilty of IP infringement. The IPO should be given the flexibility to levy fines at a level which is dependent on the severity of the infringement which has been committed. There is currently a £500,000 cap on damages in the IPEC (although not the High Court) so a high cap of, for example, £250,000 on these new fines could be set with the option to raise the cap in the future if necessary. A high cap would also

give greater certainty to the IPO that it will be able to raise the revenue that it will lose from abolishing UK patent renewal fees. Although, it should be expected that the great majority of fines will be well below the cap.

The introduction of the £50,000 cost cap on legal fees in the IPEC has been a very useful measure in increasing the access to justice for SMEs by allowing them to litigate in the confidence that it won't bankrupt them. This new fine for IP infringement will do nothing to harm access to justice because it will only apply to those who have been found guilty of deliberately infringing IP rights.

These new fines would act as a further deterrent for infringers and allow the IPO to reduce the revenue it has to raise off the backs of innovators. Patent renewal fees are unfair, inefficient and are a barrier to innovation especially for SMEs and start-ups. They can and should be abolished.

2 Simplify the patent application process

One important way to increase the volume of patent applications is to simplify the application process – which is currently needlessly complex and burdensome. Reform of the application process could reduce costs, save time and reduce barriers to innovation.

²¹ Helmers & McDonagh. 'Patent Litigation in the UK'. 2012

Table 3: IPO Patent Application Costs

	Paper Filing	Electronic Filing
Application Fee	£30	£20
Form 9A	£150	£130
Form 10	£100	£80



The application process currently takes the following form:²²

Step 1: Prepare a patent application which includes a written description of the invention showing how it works and can be made. These should include drawings as well as 'claims' which demonstrate the unique technical features. Alongside this should be a summary of the important technical aspects of the invention.

Step 2: Complete and file Form 1 with the IPO along with the full patent application. This is the formal request for a patent to be granted.²³ If the application is being submitted by someone other than the inventor, then fill in Form 7. The application fee also needs to be paid.

Step 3: The IPO confirms receipt of the application filing and sends an application number.

Step 4: Complete and file Form 9A with the IPO and pay the search fees. This must be done usually within a year of the filing date.

Step 5: Once the application fee has been paid, the IPO then carries out the preliminary examination to make sure that the application meets its formal requirements. After a search has been requested the IPO will assess if the invention is new and inventive.

Step 6: The IPO will issue a search report to the applicant within six months of receiving Form 9A.

Step 7: The IPO will publish the patent application 18 months after the filing date.

Step 8: Complete and file Form 10, along with the fee which requests the IPO to carry out a

substantive examination. This must be done no later than six months from the publication of the application.

Step 9: The IPO then examines the application and informs the applicant of any changes which are needed. If the application meets all the requirements of the Patent Act 1977, the IPO will grant the patent.

The compulsory fees for the initial Patent Application, Form 9A and Form 10 add up to £230 if completed online and £280 if completed by paper (Table 3).

To simplify this process, a first proposal would be to make Form 10 an opt-out rather than an opt-in procedure. There should be a new presumption from the IPO that applicants will wish to have substantive examinations carried out. The IPO should automatically carry out substantive examinations no later than six months from publication. Form 10 should therefore be reformulated so that it is only used to inform the IPO that the applicant does not want to proceed automatically with the substantive examinations. Moving to an opt-out system will cut the cost in time and resources caused by the extra bureaucracy implied in the completion and filing of Form 10 but allowing substantive examinations to be delayed for those who would prefer. This change will help streamline the process and ease the burden on innovators. It will also not affect combined search and examinations, which are helpful for some applicants but not for others.

A second proposal would be the introduction of a new consolidated deposit to replace the three staggered fees. This new system would establish a flat £200 application deposit made payable on the filing of Form 9A i.e. the search request.

²² [Intellectual Property Office, Patents: Application Guide](#)

²³ [Intellectual Property Office, Patents Form 1](#)



This £200 deposit can then be paid back to all the individuals and entities whose patent applications are subsequently granted. This system would act as a further boost to innovators and prevent superfluous applications whilst being essentially revenue neutral for the IPO and saving time in the application process.

There might be concern that this would create an incentive for the IPO to grant fewer patents, given that they would be obliged to return the £200 deposit to those applicants whose applications have been granted. However, the IPO accounts reveal that the total revenue from application, search and examination fees consistently amount to less than 5% of the government body's total turnover. In 2012/13, for example, revenue from patent applications, searches and examinations constituted £3.5 million out of a total revenue of £73.9 million. This means that this change is unlikely to significantly affect the IPO's decisions on grants. Moreover, the IPO has a far greater incentive to maintain its reputation for credible patent grants, and this is to say nothing of the existing checks within the system to prevent poor decisions.

In 2012, there were 23,235 patent applications by residents and non-residents alongside 17,200 requests for searches and 6,864 patent grants. If there was a £200 deposit payable on the request for searches, it would have almost entirely covered the £3.5 million that the IPO earned from application, search and examination fees. If the IPO paid back the £200 deposit to all those who had their patents granted, then this would be an approximate transfer of £1.4 million. Since 2003, the IPO has had an average annual retained surplus of £3.8 million and in 2013 had reserves of £88.5 million. The £1.4 million transfer can therefore be paid from the IPO's retained surpluses.

3 Establish new Small Business accelerated patents.

A patent application usually takes between three and four years to complete. For some fast growing business, this period of time is simply too long and holds back their development and expansion; it is not difficult to see how such a period of time can add major rigidities to business plans. As has been mentioned previously, a large proportion of the patents granted in the UK are filed by a very small number of companies. The Government should therefore give small businesses the right to request accelerated processing of their patent applications. Small businesses, as defined by the Companies Act 2006, are those companies which satisfy at least two of the following conditions:

- An annual turnover of £6.5 million or less,
- a balance sheet size of £3.26 million or less,
- an average number of employees of 50 or fewer.²⁴

The IPO already carries out some accelerated procedures, such as the Green Channel which allows patent applicants to request accelerated processing if their inventions have an environmental benefit. The IPO has reported that the accelerated patents offered under the Green Channel have become increasingly popular.²⁵

Modelling a new accelerated patents procedure for Small Business on the Green Channel therefore seems reasonable. The applicants should request in writing to receive

²⁴ [Companies House, Companies Act 2006](#)

²⁵ [Intellectual Property Office, The Patent Office Annual Report and Accounts](#)



to receive the Small Business accelerated patent by explaining how their business satisfies the required conditions. The applicants should also make clear which procedures they wish to be accelerated i.e. search and examination and/or publication.

The Government has previously consulted on the possibility of setting up 'superfast' patents which would only take 90 days to be granted. Nonetheless there were concerns over the potential damage to the quality of the procedure if it were undertaken so quickly.²⁶ However, given that this form of accelerated tool is already in use, it is clear that there is no risk to patent quality. Furthermore, the Small Business accelerated patents could give many businesses flexibility and control over their innovation and business planning.

4 Push for improvements to EU patent policies

The UK's patent box provides businesses with a reduced corporation tax rate of 10% on profits derived from patented innovations.²⁷ To take advantage of the patent box, the business must have had some part in the innovative process. This reform is a strong incentive to innovate and has been credited with increasing investment in the UK; GlaxoSmithKline for example have stated that it encouraged them to build a new pharmaceutical plant in the UK. However, the patent box has been fiercely criticised by some in the European Union for being against the "European spirit".²⁸ Others within the European Commission have also absurdly

condemned the UK patent box as harmful to competition. The Government should provide certainty to British innovators by resisting any European led efforts to curb the patent box – perhaps by joining forces with other countries such as the Netherlands, which have similar schemes in place.

As has been mentioned, by providing a financial incentive to research and innovate, patents help to foster productivity growth. The introduction of the European Patent Convention which will establish a single harmonised patent system across the Single Market (except Italy and Spain) should be welcomed. The reforms will reduce the cost of protecting intellectual property and give much greater confidence to businesses across the European Union. However, given that the reforms are only expected to come into force in 2015, there is still time for the UK Government to push improvements to the Unified Patent Court system. For example, the renewal fees have yet to be revealed and thus the Government should lobby for lower fees before a final decision is made.

4 CONCLUSION

Labour productivity in the UK is underperforming both by historical standards and compared to the other G7 countries. Productivity is dependent on many different elements including innovation - and measures of the level of the UK's innovation also suggest the nation is lagging behind the G7. Research and Development spending in the UK is falling behind the EU average, UK patent applications by residents have fallen the most among the G7 since 1992 – even when adjusting for GDP, and whereas patent applications by non-residents have stabilised in the UK since 1992, in the rest of the G7 they grew 152%.

²⁶ [BBC News, 'Vince Cable drops 'superfast' patents plan', 2013](#)

²⁷ [HM Revenue & Customs, The Patent Box](#)

²⁸ [Reuters, 'Germany calls EU to ban "patent box" tax break s', 2013](#)



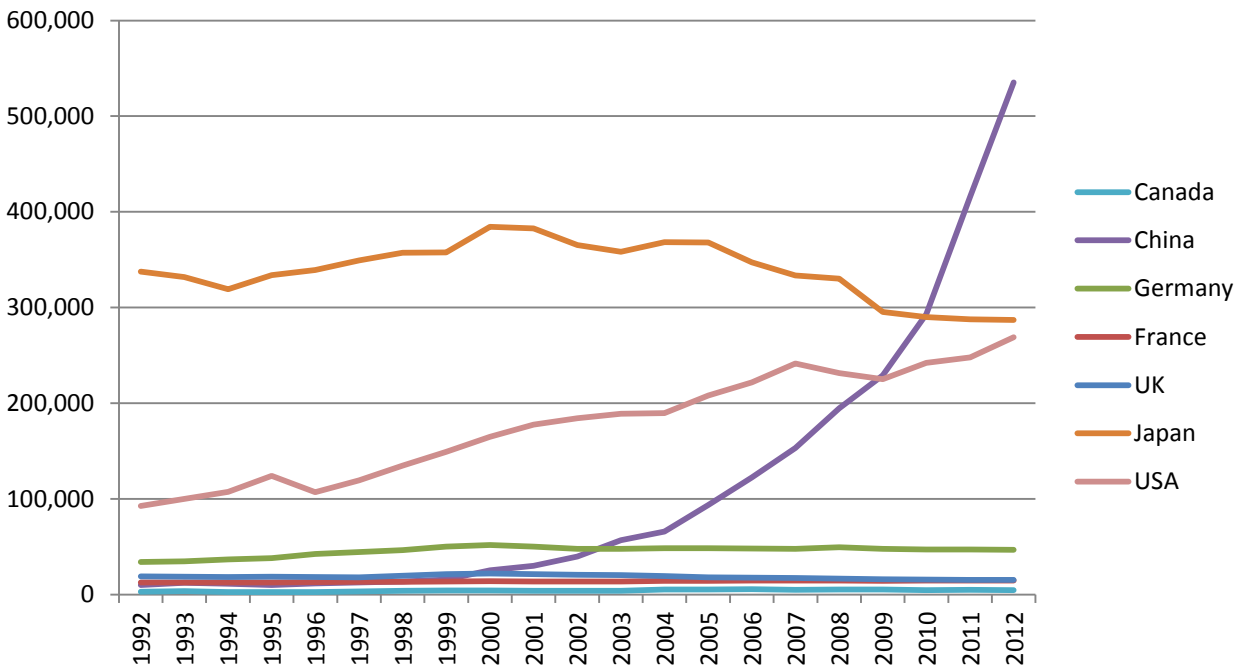
The level of innovation that a nation can achieve is dependent on many factors, and it is clear that the patent system is one of them. The Government could therefore help to reduce the UK's innovation deficit by carrying out further reforms to reduce the complexity, costs and waiting periods of the current UK patent system.

Patent renewal fees are a poll tax on innovation and should be abolished. The patent application process can be simplified, new accelerated applications can be established for small businesses and there should be a push for improvements to EU policies. Effective patent reform which supports and promotes innovators could help to reduce the UK's innovation deficit and be one step in restoring productivity growth.



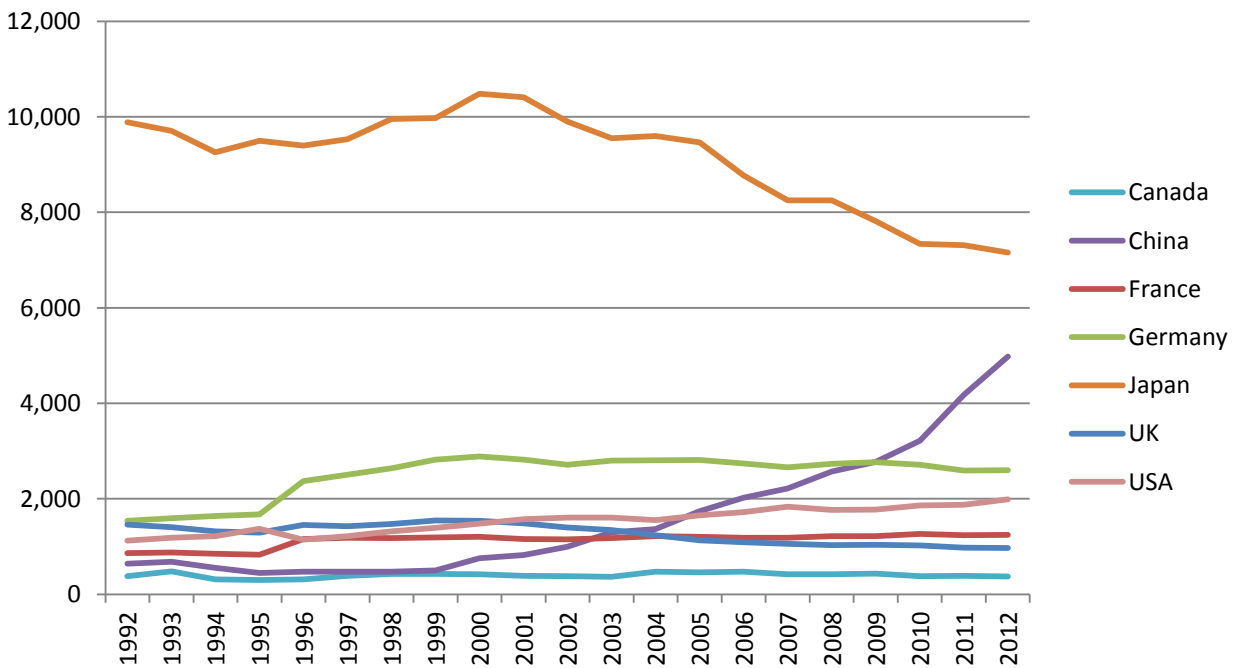
APPENDIX

Chart 4b: Patent applications by Residents



Source: World Intellectual Property Organisation, CPS Analysis

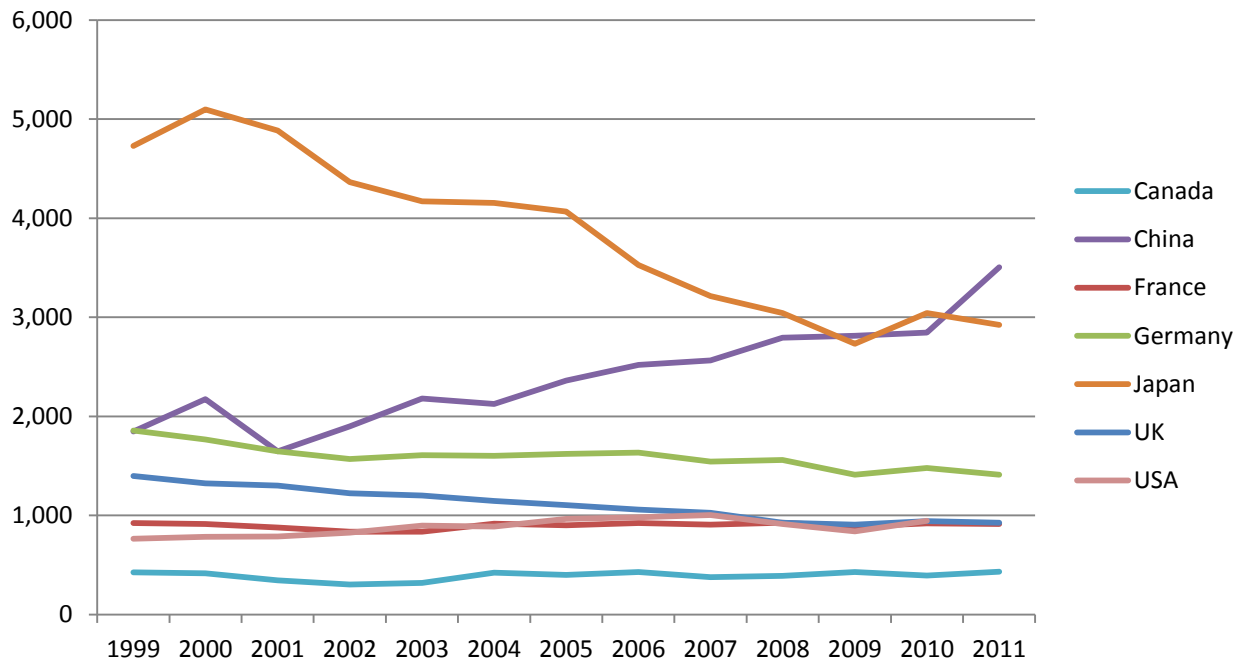
Chart 5b: Patent applications per \$100bn GDP



Source: World Intellectual Property Organisation, CPS Analysis

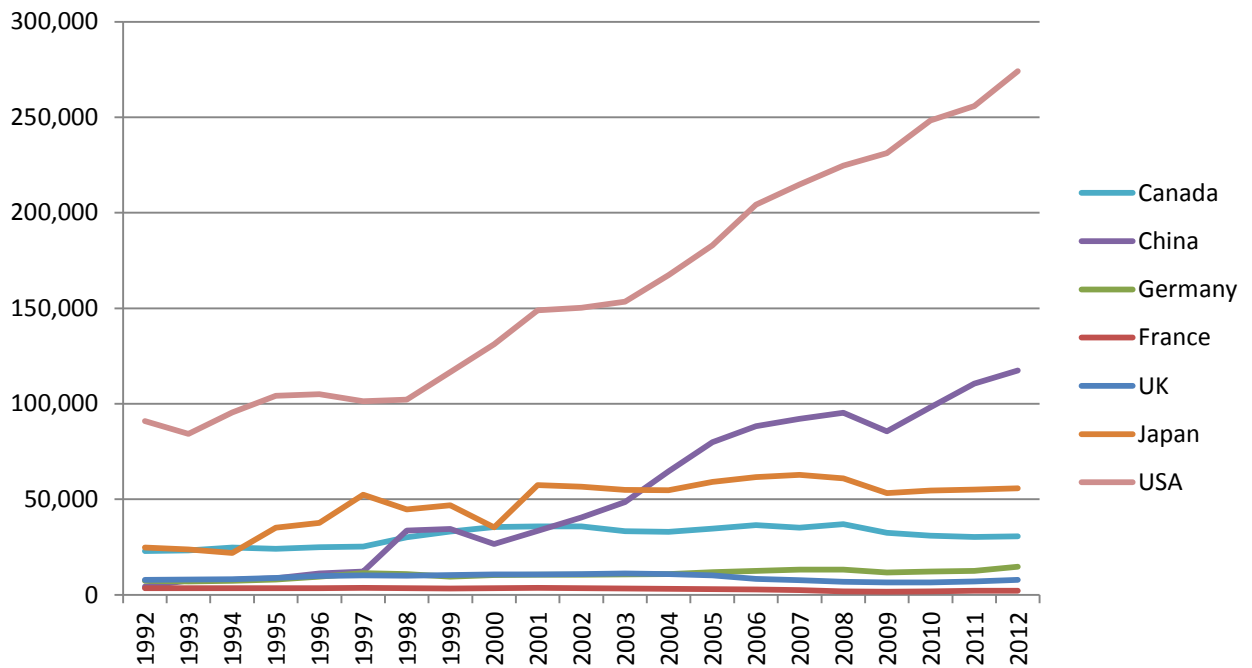


Chart 6b: Patent applications per \$1bn R&D spending



Source: World Intellectual Property Organisation, CPS Analysis

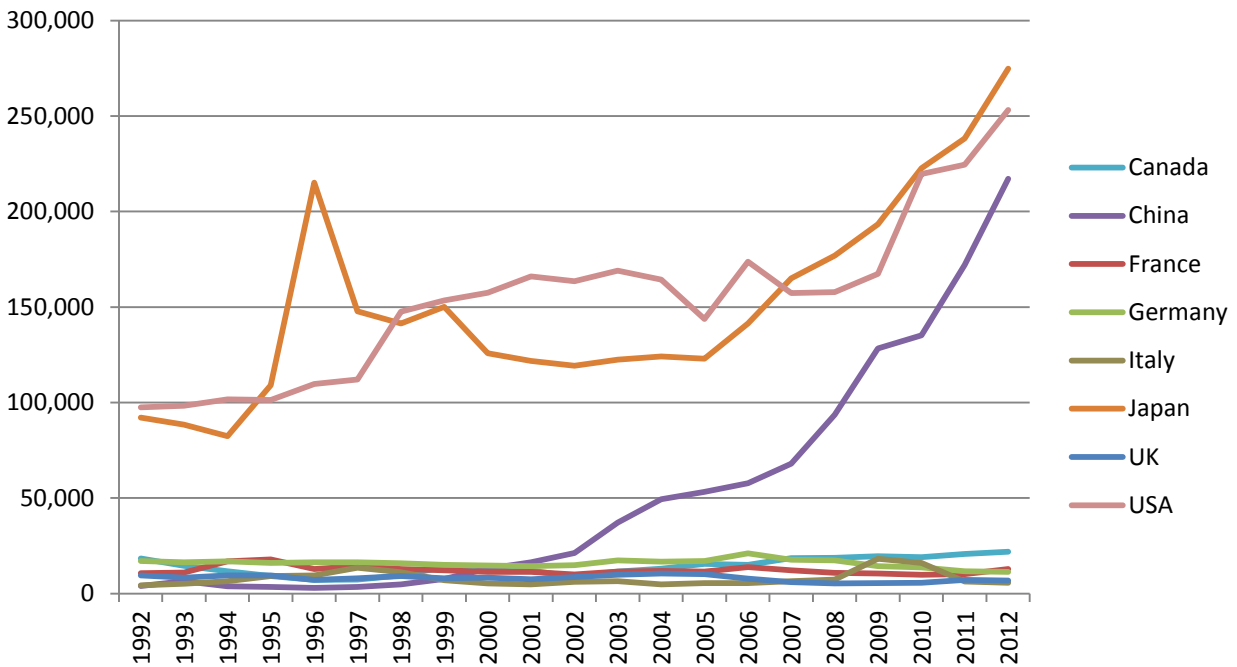
Chart 7b: Patent applications by Non-Residents



Source: World Intellectual Property Organisation, CPS Analysis

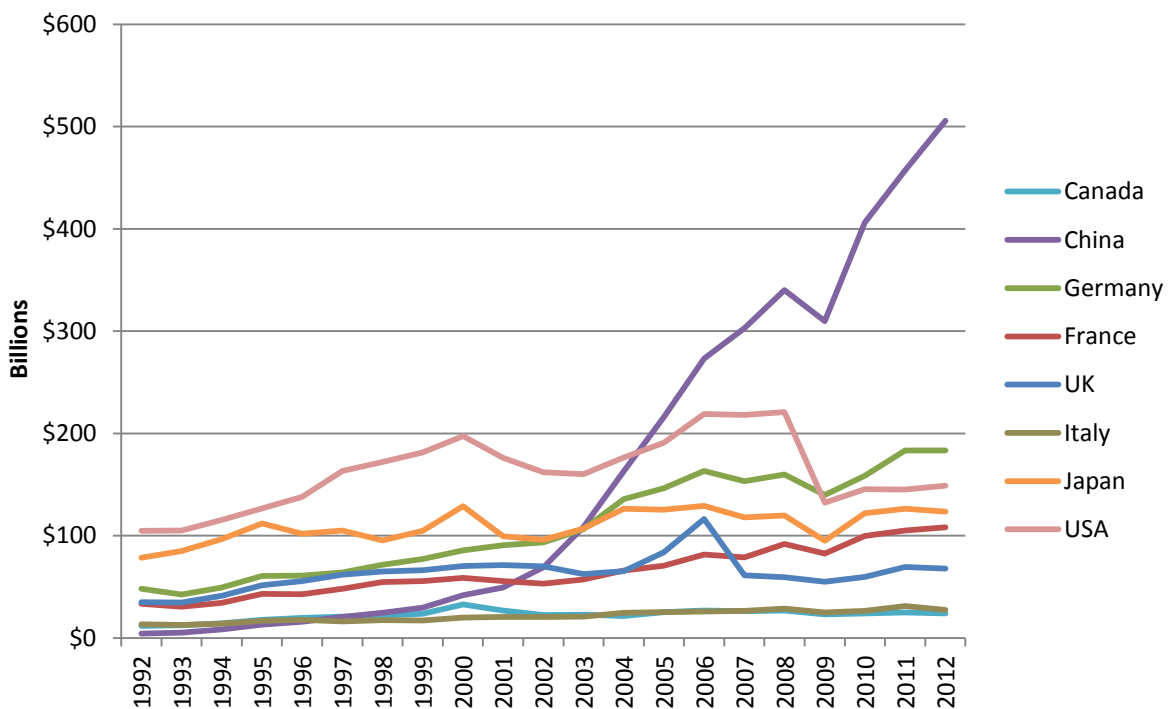


Chart 8b: Total Patents Granted



Source: World Intellectual Property Organisation, CPS Analysis

Chart 9b: High-Tech Exports



Source: World Intellectual Property Organisation, CPS Analysis



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