Autumn Statement Briefing 2016

Campaign for Science and Engineering | 16th November 2016

The Chancellor, Philip Hammond, is due to deliver his first autumn statement on November 23rd. Here we take a look at the state of R&D funding, where we expect changes to be made, and questions that need to be answered; particularly with the expected loss or reduction of EU funding.

Summary

State of the funding from the 2016 budget and 2015 spending review:

- The total science and research budget was fixed in real terms at £5.9 billion in 2016/2017, increasing to £6.3 billion by 2019/2020.
- This increase from flat cash was made up by the £1.5bn Global Challenges Research Fund (started in 2015/16) funding allocated to BEIS from DfID aid spending.
- The Innovate UK budget will be maintained in cash terms for the rest of the Parliament at £561m 2016/17, therefore falling in real terms.

UK and EU Research and Development (R&D) expenditure:

- Government financed gross expenditure on R&D is among the lowest in the EU at 0.48% of GDP compared to the EU15 average of 0.68%
- Across all sectors the UK spends 1.7% of GDP on R&D, equating to £30.6bn, well below the OECD average of 2.38%[1].
- The UK received €8.8bn in EU funding for R&D between 2007 and 2013, and currently receives an estimated £1.55bn a year in structural and Horizon 2020 funds.

CaSE Autumn Statement priorities

- Commit publicly to ensuring that the total level of investment in UK science from EU and UK public sources combined will not decrease from the current level following Brexit.
- Act to mitigate against any reductions in the purchasing power of research budgets due to reductions in the value of the Pound
- Commit to a long-term target for public and private R&D spending to reach 3% of GDP by 2025.

[1] https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm

UK Research and Development Investment

The Science Budget

In the 2016 budget not much had changed from the 2015 spending review in which it was announced that the science budget will be protected in real terms up to the end of the Parliament. This fixed the total science and research budget (research base budget) at £5.9 billion in 2016/2017 increasing to £6.3 billion by 2019/2020 (Table 1)

	2016/17	2019/20	16-20 Total
Resource Budget	£4.8 bn	£5.1 bn	£19.8 bn
Capital Budget	£1.1 bn	£1.2 bn	£4.6 bn
Total (Resource Base Budget	£5.9 bn	£6.3 bn	£24.4 bn

Table 1: Breakdown of the current and future public science spend from the spending review and budget[2]

The shortfall between cash and real terms seen from 2010 to 2015 is now being bridged with the £1.5 bn Global Challenges Research Fund which is a reallocation of money from the Department for International Development and will constitute 10% of the total science budget by 2020[3]. The GCRF is committed to "research that addresses the challenges faced by developing countries"[4]. This means the science budget is protected against the effects of inflation but will have additional priorities attached to an increasing portion of its funding.

While the research base budget has been maintained, the Innovate UK budget was only protected in cash terms – a total of £561m in 2016/17[5]. This is equivalent to a real terms cut over the next 4 years.

Total R&D investment

As the government has recently highlighted one of the UK's greatest strengths is its science and innovation base; this was a focus of Philip Hammond's speech at Conservative Party Conference, and has been reiterated by both BEIS Secretary Greg Clark and the Prime Minister.

This strength is despite persistently low public spending on R&D – among the lowest in the Europe – and well below the EU average (Figure 1).

[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/505308/bis-16-160-allocation-science-research-funding-2016-17-2019-20.pdf
[3] CASE EPC EU report http://www.sciencecampaign.org.uk/resource/CaSEEPCEUReport2015.html
[4] http://www.rcuk.ac.uk/funding/gcrf/
[5]https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/514838/CO300_Innovate_UK_Delivery_Plan_2016_2017_WEB.pdf

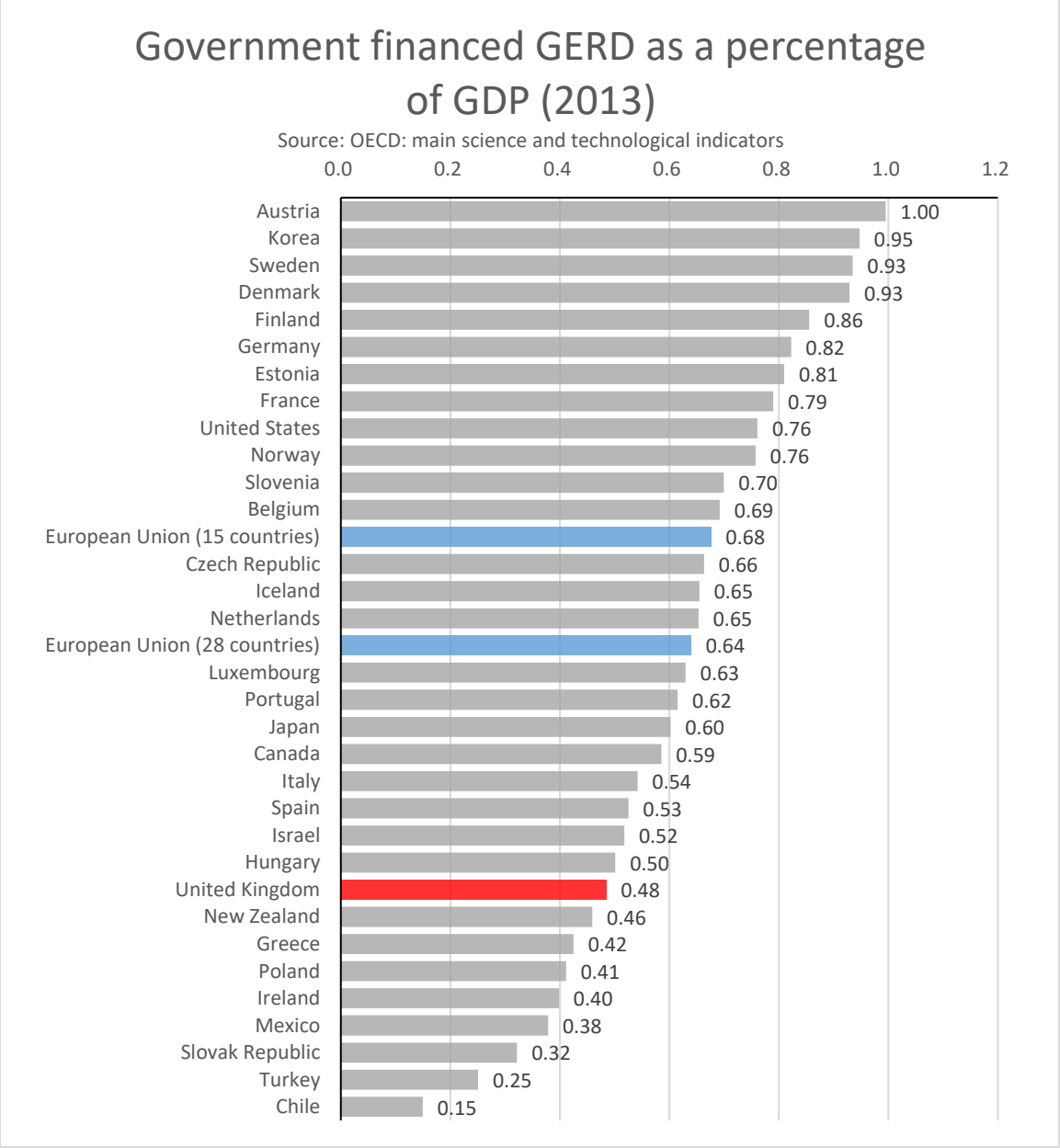

Figure 1

Additionally, the UK spends well below the average on R&D when all sectors are combined, including business investment. This decreased throughout the 90s but has since stabilised at around 1.7% of GDP, equating to £30.6bn[6]. This is less than both the EU15 target of 3% and the UK's European, American and Chinese competitors (Figure 2). Indeed, ahead of the 2015 Spending Review, the Science & Technology and BIS Select Committees in the House of Commons both called on the Government to "produce a long term 'roadmap' for increasing public and private sector science R&D investment in the UK to 3% of GDP — the EU 15 Target"[7] [8].

[6] GERD 2014, ONS

[7] https://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/news-parliament-2015/the-science-budget-report-published-15-16/

[8] http://www.publications.parliament.uk/pa/cm201516/cmselect/cmbis/466/466.pdf

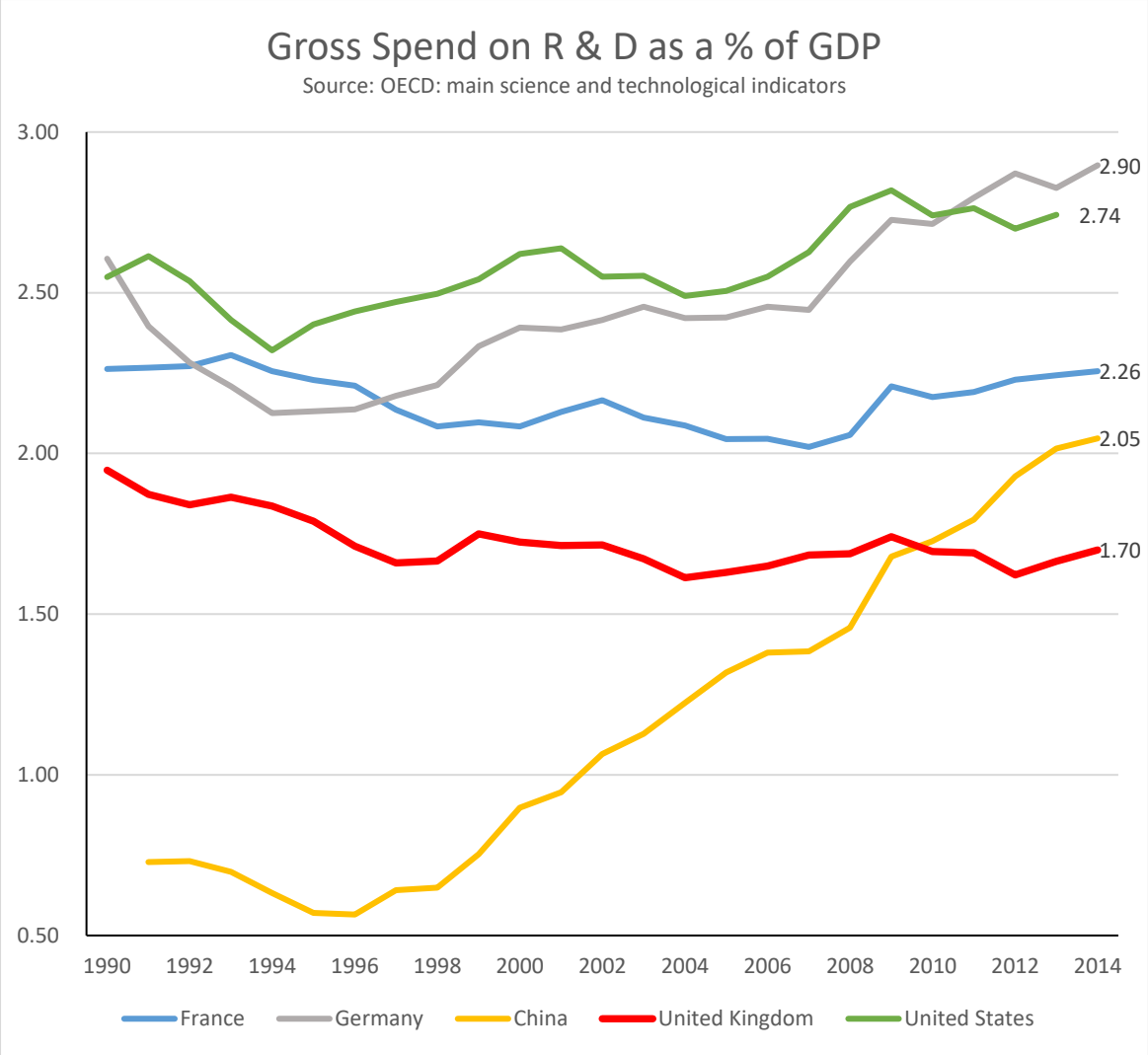

Figure 2

Though UK research and innovation is world class, this is constrained and at risk if low levels of investment persist. Our international peers recognise the value of nurturing their research and innovation capabilities and strength, and with good reason. There is a well evidenced link between the strength of our research and future innovation, growth and productivity. Government can take the lead as public investment 'crowds in' private investment and every £1 of public investment in R&D raises private sector output by 20p each year in perpetuity[9]. And firms that consistently invest in R&D are 13% more productive than firms that don't invest in R&D[10].

As the UK shapes its new place in the world outside the EU, the Autumn Statement provides an opportunity for the Chancellor to **renew confidence and send a signal of intent to the watching world by committing to a long-term target for public and private R&D spending to reach 3% of GDP by 2025.**

[9] http://www.sciencecampaign.org.uk/resource/UKScienceBase.html
[10] Cable, V (2014) Innovation and the UK knowledge economy

EU contribution to UK R&D funding

We have clearly heard from the sector that the collaboration and cross border working built into EU research programmes is of vital importance. There is agreement that we would want to see continued access to EU programmes for research feature in the negotiations. However, while it is possible to participate in EU programmes as a non-member state, the current amount of funding received by all non-member states combined does not equal the current level of funding received by the UK. Only £3.5bn[11] has been allocated to non-member states in the last decade. On the other hand, the UK is currently a net receiver of EU funding for research; receiving €8.8bn between 2007 and 2013 compared to an indicative contribution of €5.4bn. The level of R&D funding the UK receives from the EU is very likely to decrease even if we negotiate continued access.

EU R&D funding has increased while UK public funding has stagnated meaning that most of the increase in UK research funding over the 6 years between 2008-2014 came from EU sources (Figure 3). Some areas or the UK are more dependent than others on EU funding i.e. the South West, North West, Scotland and Wales[12]. Losing this funding would therefore disproportionately affect certain parts of the UK.

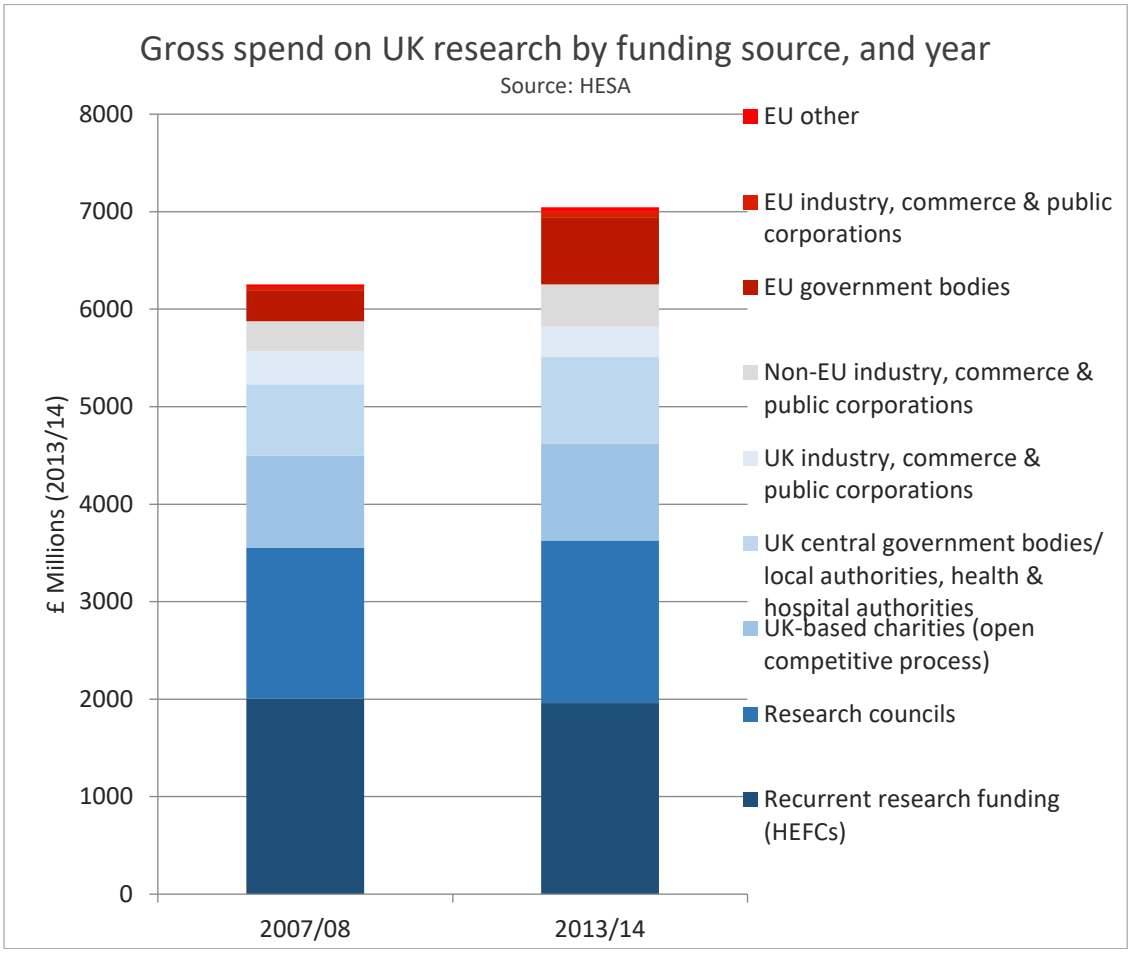

Figure 3

[11] Digital Science, Examining the implications of Brexit for the UK research base, 2015

[12] CASE EPC EU report http://www.sciencecampaign.org.uk/resource/CaSEEPCEUReport2015.html

The current framework programme, Horizon 2020, is larger than FP7 with €80 funding over 7 years (2014-2020). Based on the same proportions (and equivalent structural funds), the UK could be expected to win €12.1bn over the 7 year period[13]. This equates to €1.72 bn euros or to £1.55bn[14] a year. In relative terms, it is the same equivalent of 25% of the UK government science budget (Figure 4).

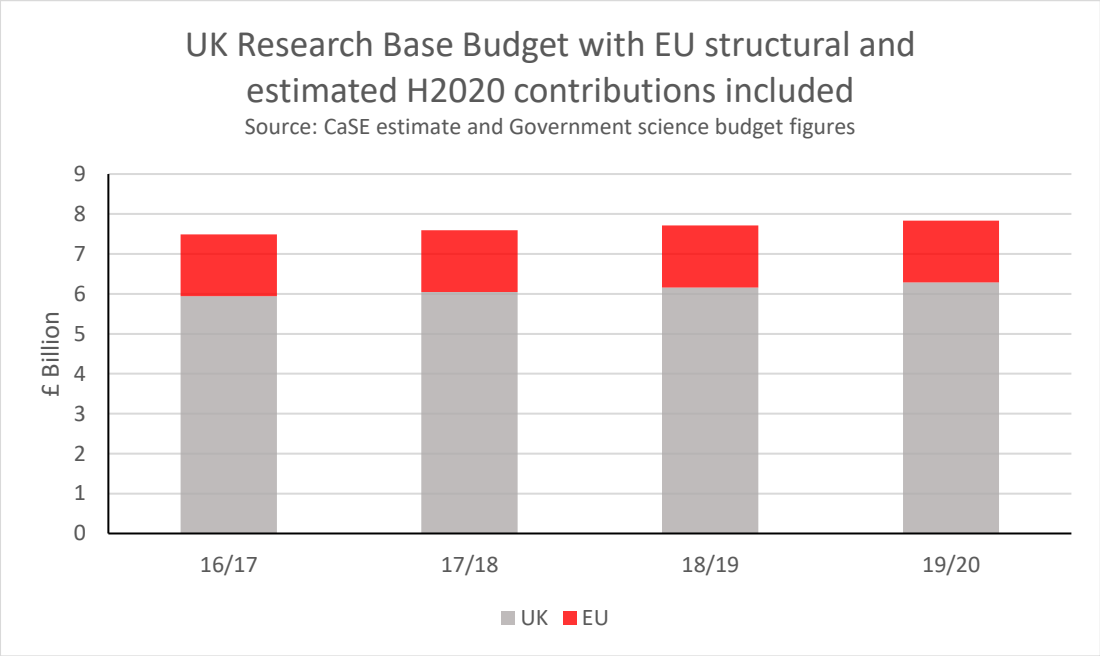

Figure 4

The Government should use this Autumn Statement to provide reassurance that Brexit will not result in damaging cuts to the UK science base. This could be achieved by **a commitment from the Chancellor that the total level of investment in UK science from EU and UK public sources combined will not decrease from the current level following Brexit.** There are many details underpinning that commitment which rightly would need to be worked out as part of the EU negotiations, such as precisely what involvement the UK will have with EU structures and programmes for research. This commitment would instead be much needed assurance that the total level of public investment in UK science will not suffer as a result of Brexit. Without this commitment it is difficult to see how the Prime Minister's commitment to ensuring a good outcome for science following Brexit could be achieved.

Research, research materials and some international subscriptions will be affected by changes to the exchange rate resulting in budget shortfalls. This commitment should include **a commitment to mitigate against reductions in the purchasing power of research budgets due to reductions in the value of the Pound.**

[13] In the last completed funding allocation (framework programme 7) the UK received €8.8bn (€6.9bn only from FP7 and €1.9bn from structural funds – which is 22% of this 6.9 – 8.8 total). €6.9 billion was approximately 12.3% of a €55.9bn pot. The current EU allocation (Horizon 2020) amounts to a much larger pot of €80bn, so presuming the UK was at least as successful as last time, then 12.3% of €80bn is 9.9 bn + structural funds at 22% (€2.18bn) = €12.1 bn or €1.72 bn euros a year (£1.55bn).

[14] Conversion rate 0.9 Euros to a pound. Correct at time of writing but recognising the pound is at a historic low.

Indications from Government

There have been some indications of government priorities for the autumn statement. The government has talked favourably about R&D and the UK's science and engineering base in previous months, most notably at Conservative party conference.

Though Hammond has ruled out a spending "splurge" he has indicated that he will not be keeping to the schedule of deficit reduction outlined by the previous Chancellor. Although this means more flexibility, he has ruled out any major increases in infrastructure and capital investment.

More specifically to science there has been a focus on innovation and new business: Hammond has stated the importance of "nurture[ing] the tech transfer offices … to get the science from the lab into the factory". This policy direction has been supported with the announcement of £220 million for commercialising life sciences companies, and for aiding technology breakthroughs into commercial success.

The Chancellor has also guaranteed multi-year funding for projects which gain EU funding before leaving the EU. The Government has also confirmed that this commitment is new money, additional to the science funding announced in the Spending Review. At the time of this announcement Dr Sarah Main, director of CaSE responded favourably to the protection of existing funding and added "What we need now is to secure the longer term conditions that will enable science to thrive - a suite of policies that sustain flow of global talent, an 'in house' regulatory framework for the UK that enables us to work with the whole world, and an investment programme that sees the UK step up to the ambition for research and innovation set by Europe and the United States."

This may be forthcoming as Hammond has noted in front of the Lords Economic Affairs Committee, that "in designing any fiscal stimulus, any sensible Chancellor would seek to do as much as possible through investment that will not only deliver short-term demand stimulus but address longer-term structural problems in the economy."

The Autumn Statement will be delivered on the 23rd of November, CaSE will be issuing a response shortly afterwards.