

**UNIVERSITIES UK  
SUBMISSION TO THE  
2015 COMPREHENSIVE  
SPENDING REVIEW**



**Universities UK**

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## EXECUTIVE SUMMARY

World-leading science and higher level skills underpin a dynamic and prosperous knowledge economy. Research, innovation and human capital should be placed at the centre of the government's long-term plan for economic growth– and universities have a vital role to play in this:

- Through the teaching and training they provide, universities are essential to meeting current and future demand for higher level skills. This demand is projected to rise significantly in the next five years, with almost half of all jobs requiring some form of higher education by 2022.
- Universities are at the heart of our world-leading research base, which brings great economic and social benefits to the UK.
- Thanks to their close engagement with the private sector, universities play an important part in driving innovation and R&D. Our universities are very successful in engaging with businesses, ranking within the world's top five for collaboration.
- Universities support regional growth, encouraging local entrepreneurship and business development, attracting investment and talent, providing and creating jobs, and taking a lead on socio-economic issues at the local level.

All this is supported by strategic public investment in key areas of university activity. Universities work hard to ensure that every pound invested is spent as effectively and efficiently as possible. However, the government should be in no doubt that misplaced or mistimed cuts in public funding will put at risk the excellence and global reputation of our universities. This, in turn, will limit the vital contribution universities can make to improving productivity, boosting growth and meeting the skills needs of our economy. Therefore, as the representative organisation for university leaders, Universities UK makes the following recommendations:

### **To meet the skills needs of the UK labour market**

- Funding for high-cost subjects, on a per student basis, should not drop below current levels in real terms. The costs of delivering some courses, like medicine, physical sciences and engineering, are not always fully covered by the maximum tuition fee. Public grants are essential to ensure that the provision of high-cost subjects remains sustainable as employer and student demand increases.
- Investment in the Student Opportunity grant should be maintained to cement the progress made in recent years and to address the significant variation in higher education participation rates across geographical locations<sup>1</sup> and differences in outcomes between student groups. Widening participation in higher education and providing students from disadvantaged backgrounds with the support they need is essential to meeting the country's increasing demand for higher level skills.
- Part-time provision will play an important role in expanding participation in higher education, but numbers are declining. The government should work with stakeholders to further understand the decline in part-time student numbers and the feasibility and efficacy of the options that relate to this set out in the June 2015 independent Student Funding Panel report.

- The funding arrangements for health professional education should be aligned with other undergraduate courses to meet the skills needs of the NHS and reduce the burden on the public finances. Were this to happen, government would need to work with stakeholders to establish safeguards to ensure that students are not deterred from careers as nurses, midwives and allied health professionals.
- The government should consider ways to help attract more international students and staff to come to the UK, and support more UK students to study or gain work experience overseas as part of their degree programme.
- The government should commit to an increase in investment in teaching capital to support the expansion and competitiveness of the UK's higher education sector.

#### **To maintain the strength and reputation of the UK's research base**

- The government should set out a long-term strategy to increase national investment in R&D with the objective of bringing it closer to that of competitors. The UK invests significantly less in research and development (R&D) than its competitors: in 2012, public investment in UK science as a proportion of GDP fell to its lowest level in 20 years and remains the lowest of any G8 economy. The UK cannot continue with a significantly lower level of investment than our competitors in the long term and expect to maintain our world leading position.
- To prevent long-term damage to our research base and to ensure continuity and stability, the science ring-fence should be renewed. This is important to provide a stable platform of public funding to attract private funding in R&D.
- The dual support system underpins the excellence and efficiency of the research base. For this reason, funding through the dual support system should grow in line with any increase in publically funded R&D. The current balance of funding between its two elements should be maintained.
- Research excellence should be supported wherever it is found. To do so, the principle of independent, impartial assessment of research should be retained as the main approach for allocating research funding.
- Any new postgraduate research system of loans should complement rather than replace existing support through PhD studentships.

#### **To support the role of universities in driving innovation**

- The critical role that universities play in supporting UK innovation and regional growth must continue to be fostered. This can best be achieved by continuing to ensure that project grant funding is balanced with funding streams that underpin infrastructure (such as the Higher Education Innovation Fund (HEIF) in England), allowing universities to drive innovation, invest in new and emerging areas and respond to changing needs.
- As HEIF so successfully underpins a range of innovation and regional growth activities, and yields a high rate of return, it should be increased to £250 million in line with the recommendations of the 2013 Witty review.

## INTRODUCTION

This document represents Universities UK's submission to the 2015 Comprehensive Spending Review (CSR). It sets out how universities both underpin the strengths of the UK's economy and play a critical part in tackling its weaknesses, such as lagging productivity, low private investment in R&D and skills shortages. Our submission is in three parts. First, it sets out the role that universities play in the UK economy. Second, it describes the foundations that we believe will ensure that public funding received by universities is spent as effectively and efficiently as possible: a committed efficiency agenda, responsive and strategic financial management and an evolving regulation framework to support excellence and innovation in teaching. Finally, it makes specific proposals for the spending review around each element of public funding for university teaching, research and innovation.

The submission draws on UK-wide evidence on the role of universities in the economy and identifies a number of common issues for each of the constituent nations of the UK. Our proposals focus on the spending decisions made by the Westminster government. Although some responsibilities are devolved, decisions made affect all UK universities.

## A VIEW FOR THE FUTURE: UNIVERSITIES AT THE HEART OF ECONOMIC GROWTH

The Chancellor's summer Budget set out the government's fiscal target for the next five years. This target and the level of public spending committed assume that economic growth will remain steady. The Office for Budget Responsibility (OBR) has forecasted stable GDP growth for the next five years, averaging 2.4% per year and decelerating only slightly in 2016 when fiscal tightening will be greatest<sup>1</sup>. If economic growth is stronger than expected, this could relieve pressure on public spending. However, weaker economic growth could threaten the ability of the government to meet its fiscal targets by 2020.

It is therefore critical that any reduction in public funding does not impact on the UK's long-term growth potential. Choices made by the previous government placed research and human capital at the heart of its long-term economic plan, expanding higher education and maintaining stable investment in research. This set out a clear vision for the economy, whereby world-leading science and higher level skills underpin a dynamic and prosperous knowledge economy. We believe that a continued commitment to this vision is critical for long-term economic growth. Although the private sector has an important role to play, government investment in human capital, infrastructure and research is key to driving innovation.

### HIGHER EDUCATION AND THE UK'S SKILLS NEEDS

Universities will play a central role in meeting current and increasing demand for higher level skills. Projections suggest that the total employment share of jobs requiring higher level skills will increase from 42% to 46%.<sup>2</sup> This means that almost

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<sup>1</sup> Office for Budget Responsibility (2015) *Economic and fiscal outlook*

<sup>2</sup> UKCES (2014) *Working futures*

half of all jobs by 2022 will require their workers to have completed some form of higher education, such as a degree, higher apprenticeship or Higher National Certificate. In 2013, only 38% of working-age adults left education with a qualification above A-level standard.<sup>3</sup>

Although universities will continue to meet much of this demand through the more traditional route of three-year degrees, they also provide a broader and growing range of pathways to higher level skills<sup>4</sup>, including part-time study, higher apprenticeships, online learning, foundation degrees and other forms of employer-led bespoke training.

University education has been shown to have a significant positive impact on the UK, with a steady graduate wage premium, a strong contribution by graduates to national productivity<sup>5</sup>, and higher employer satisfaction rates for graduates than for those from any other educational background<sup>6</sup>. The recent Destinations of Leavers from Higher Education survey of 2010–11 graduates found that 94% were in work or further study three and a half years later<sup>[1]</sup>. 88.3% of 2011-12 graduates were in work, with the vast majority of those in work (80.5%) in what HESA categorises as ‘professional jobs’.

## **OUR WORLD-LEADING RESEARCH BASE**

Universities are at the centre of our world-leading research and innovation base, carrying out most of publicly funded research in the UK<sup>7</sup> and working closely with businesses and charities. Our universities are among the most productive in the world for research. In 2012, they produced 11.8 articles and 141.0 citations per unit of Higher Education Research and Development (R&D) expenditure (HERD), compared to an average of, respectively, 8.4 and 85.3 across 27 EU member states<sup>8</sup>. Thanks to its excellence the UK has a high proportion of domestic R&D funded from abroad – around 20%. This is a far greater proportion than peer countries such as the United States, Germany, Japan and China<sup>9</sup>.

Studies suggest that the UK’s strength in university research plays an important part in boosting productivity and bringing GDP growth closer to its potential. Technological change and efficiency are both key factors that generate a step change in productivity. Universities’ research and innovation activities provide effective ways

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<sup>3</sup> National Office for Statistics (2013) *Graduates in the UK labour market 2013*.

<sup>4</sup> UKCES, Universities UK (2014) *Forging futures: building higher level skills through university and employer collaborations*

<sup>5</sup> Analysis by BIS suggests that because of graduates’ ability to permanently raise their employer’s capacity to initiate and carry out innovation, a 1% increase in the share of the workforce with a university degree can permanently raise the level of long run productivity by between 0.2% and 0.5%.

<sup>6</sup> UKCES (2014) *UK Commission’s Employer Skills Survey 2013: UK results*.

<sup>[1]</sup> HESA (2015) *Destinations of leavers from higher education longitudinal survey*

<sup>7</sup> Around £3.4 billion of the £4.6 billion science budget, or 74%, is allocated to universities. Furthermore, it has been suggested that over 90% of the UK’s most highly-cited papers are produced by or in collaboration with universities. (David Sweeney, London, 20 June 2014, ‘Introductory remarks’ at *Science and Innovation Strategy 201: HEFCE consultation event*) and 70% of UK-based researchers listed in Thomson Reuters’ ‘World’s most influential minds 2014’ (listing the world’s most highly-cited researchers based on Web of Science and InCites data between 2002 and 2013) were primarily affiliated with a UK academic institution.

<sup>8</sup> Elsevier (2013). *International comparative performance of the UK research base*. A report for the Department of Business, Innovation and Skills.

<sup>9</sup> Economic Insight (2015). *What is the relationship between public and private investment in science, research and innovation?*

of achieving both<sup>10</sup>. A study by the Organisation for Economic Co-operation and Development (OECD) suggests that the effect of public research on productivity is larger in countries where universities (as opposed to government laboratories) have a higher share in public research.<sup>11</sup>

## **DRIVING INNOVATION**

The UK's universities are very successful in engaging with businesses, ranking within the world's top five for collaboration. They are also very cost-effective on research commercialisation, ranking third for patent citations and for start-ups or spin-offs per unit of R&D expenditure.<sup>12</sup> In a traditional view of the innovation process, universities' perceived role as innovators is limited to technology transfer and the direct commercialisation of research.

However, higher education institutions also strengthen the economy's innovation capabilities in other ways<sup>13</sup>. For example, they engage in a range of knowledge exchange activities with businesses, such as long-term collaborative research programmes, consultancy and bespoke training. Furthermore, they promote entrepreneurial talent through education and entrepreneurship support services, and attract investment to their local area from knowledge-intensive businesses requiring research expertise and a highly-skilled workforce. They also help to facilitate innovation indirectly by providing space (for example, the UK's 100 or more university science parks) for innovative firms to interact closely, and by assisting in the development of networks.

A healthy public funding base for research and innovation provides a stable platform from which to leverage private investment in R&D. Recent evidence suggests that a £1 increase in public funding for higher education research generates an increase in private funding of higher education research of between £0.15 and £0.45<sup>14</sup>. However, this figure only captures the effect on private funding of higher education research rather than business R&D intensity (such as internal R&D within businesses or business-funded R&D carried out elsewhere). A study estimates the impact of university research on private R&D, and suggests that a 10% increase in university research increases private R&D by 7%<sup>15</sup>. A recent study by the Department for Business, Innovation and Skills (BIS) finds that businesses that collaborate with universities or public research institutes invest more in R&D and perform significantly better on a number of indicators, including process and product innovation, than similar firms that do not, across a three year period.<sup>16</sup>

## **SUPPORTING REGIONAL GROWTH**

Many major knowledge-based economies across the developed world, including the UK, have recognised the benefits of place-based approaches to growth, such as smart

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<sup>10</sup> Universities UK (2015) *The economic role of universities*

<sup>11</sup> Dominique Guellec, Bruno van Pottelsberghe de la Potterie. (2001) *R&D and productivity growth: panel data analysis of 16 OECD countries*.

<sup>12</sup> BIS (2013) *International Comparative performance of the UK research base, 2013*

<sup>13</sup> Universities UK (2015) *The economic role of universities*

<sup>14</sup> Economic Insight (2015). *What is the relationship between public and private investment in science, research and innovation?*

<sup>15</sup> Jaffe and Trajtenberg (2002) *Patents, Citations, and Innovations: A Window on the Knowledge Economy*; and Jaffe (1989) *Universities and Regional Patterns of Commercial Innovation*

<sup>16</sup> BIS (2014) *Estimating the effect of UK direct public support for Innovation*

specialisation. The OECD defines smart specialisation as a strategic approach to economic development, in which ‘countries or regions identify and select a limited number of priority areas for knowledge-based investments’.<sup>17</sup> To be successful, such an approach needs to mobilise and coordinate the best resources and stakeholders in local areas, particularly those that are closely linked to innovation. Universities are therefore natural and vital partners in such endeavours.

Universities help regions to achieve their economic potential by supporting innovation and entrepreneurship, attracting investment and talent, and creating jobs.<sup>18</sup> They are in an ideal position to take the lead on significant socio-economic issues at the local level, for example by helping to shape local economic strategies (in England often through their close involvement in shaping their Local Enterprise Partnerships’ European Structural Investment Fund strategies<sup>19</sup>) and by linking research and teaching priorities to local economic and social needs. Universities’ close links with their regions means that they are well placed to support the government in its regional growth objectives, including the plan to establish a series of scientific and innovation audits<sup>20</sup> in areas of lower productivity and areas that see themselves as having the potential for scientific excellence.

## **AN EFFICIENT, EFFECTIVE AND DIVERSE UNIVERSITY SECTOR**

### **FINANCIAL MANAGEMENT IN THE CURRENT FUNDING ENVIRONMENT**

In order to support the economy in all these ways, some important areas of university activity are supported by strategic public investment. Public investment is essential as it supports the delivery of high-cost subjects, helps provide additional support to students from disadvantaged backgrounds and is channelled into research and innovation to tackle market failures and underpin excellence.

Universities are committed to ensuring that every pound of investment counts in order to maximise their contribution to the UK’s economy and society. To thrive in a competitive market environment, universities’ decision-making is driven by a need to be as efficient and effective as possible. Universities are managed in the same way as any other large, complex business: with a focus on achieving excellent outcomes, in line with an organisational strategy, in the most efficient and effective ways possible. For example, they ensure costs are kept down to generate sufficient margins for reinvestment; they raise funds to meet capital investment needs and leverage assets accordingly; they attract private investment to bring emerging research ideas to market; they undertake marketing activities to attract students and maintain or grow market shares (both domestically and internationally).

In England, universities have consistently met efficiency targets set by the government. Between 2005 and 2011 they reported £1.38 billion of efficiencies against a cumulative target of £1.23 billion.<sup>21</sup> They have also significantly reformed

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<sup>17</sup>OECD (2013) *Innovation-driven growth in regions: the role of smart specialisation*

<sup>18</sup> Universities UK. (2015) *The economic role of universities*.

<sup>19</sup> A recent survey of institutions in England undertaken jointly by UUK, HEFCE and DCLG suggests that the vast majority of universities have helped shape their local LEPs ESIF strategy. UUK/HEFCE/DCLG (2015) *Assessment of university involvement in ESIF 2014-2020 Programme*

<sup>20</sup> Productivity plan

<sup>21</sup> Universities UK (2015) *Efficiency, effectiveness and value for money*

the Universities Superannuation Scheme (USS), the sector's main pension scheme, to ensure its long-term sustainability through the introduction of a new benefit structure from 1 April 2016. These reforms reduce the funding deficit in USS from £12.4 billion to £5.4 billion at 31 March 2014.<sup>22</sup>

One major study from 2009 commissioned by the European Commission, which compared all 27 EU member states (plus the United States and Japan) reported that the UK system was a 'top performer' when it came to the effectiveness of public spending, in both teaching and research.<sup>23</sup> The authors of the report note that the UK's success could be attributed to the autonomy of institutions (particularly with regard to recruitment, reward and admissions) and quality- and excellence-based funding for research.<sup>24</sup>

The composition of university income has changed considerably since the 2010 CSR and the 2013 spending round. In England, the introduction of higher tuition fees has increased the private contribution that graduates make to their university education. This reform was in many ways the continuation of a longer term trend which saw a significant expansion and diversification of higher education provision. In line with the increase in tuition fees, public teaching grants for higher education were significantly reduced. Since the implementation of the new funding system, the proportion of teaching income the sector receives from grants has decreased from 66% in 2011-12 to 17% in 2015-16. In addition, public funding for capital grants decreased by 85% between 2009-10 and 2012-13<sup>25</sup>.

Despite the greater private costs of university education, a recent survey revealed that a large majority of students are satisfied overall with their course.<sup>26</sup> As part of the decision to raise the maximum tuition fee to £9,000, universities commit a significant proportion of their fee income above £6,000 towards activities to widen participation, in particular to encourage those from disadvantaged backgrounds to enter higher education. In 2014-15, this was estimated to account for around 27% of fee income above £6,000<sup>27</sup>.

The research funding landscape has also changed substantially. The cash-terms science ring-fence provided much needed stability to the research base. Nonetheless, it is estimated that public research funding to universities has experienced a real terms decline of over £400 million between 2009-10 and 2013-14. This is on course to reach £600 million by 2015-16<sup>28</sup> (excluding Research Partnership Investment Funds [RPIF] and capital grants). Total capital funding for universities has also declined significantly.

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<sup>22</sup> [USS Report and Accounts for year ending 31 March 2015](#) pages 79-81

<sup>23</sup> St. Aubyn *et al.* (2009) *Study on the efficiency and effectiveness of public spending*, especially pp. 80-84.

<sup>24</sup> For a discussion on the EU's findings, see: St. Aubyn *et al.* (2010) *Efficiency and effectiveness of public expenditure on tertiary education in the EU*. Occasional papers 70.

<sup>25</sup> Student Funding Panel (2015) *An analysis of the design, impact and options for reform of the student fees and loans system in England*

<sup>26</sup> HEPI-HEA (2015) *The HEPI-HEA 2015 student academic experience survey*. And HEFCE (2015) *National Student Survey*

<sup>27</sup> Universities UK (2015) *Efficiency, effectiveness and value for money*

<sup>28</sup> UUK analysis of research council grant income to HEIs as reported in the HESA finance record

HEFCE has estimated that the cumulative reduction in capital funding for the sector between 2009–10 and 2013–14 (including teaching and research) was around £3.5 billion<sup>29</sup>. In spite of these reductions universities have been able to sustain investment in capital through internal resources and by increasing private borrowing, but as will be discussed later in this submission, this will not be sustainable in the long term.

Universities have worked hard to diversify their income streams by collaborating more with businesses and charities as well as seeking higher private sector financial leverage<sup>30</sup>. This was partially enabled by the last government’s commitment to the science ring-fence, which provided a stable financial platform for institutions to crowd-in more private investment without compromising the long-term sustainability of research.<sup>31</sup> The flat cash settlement for the science budget over the last five years has already enabled the public science base to leverage £1.2 billion more in private investment than it would have if the budget had been cut by 19% in real terms<sup>32</sup>, the average cut planned in 2010 for other government departments except health and overseas aid.

Universities are maximising their ability to reinvest to innovate, build and maintain capital and support the student experience. However, the combination of a real terms erosion of tuition fees in England, more uncertain and volatile income streams, and risk factors that threaten to reduce the internal resources that have been crucial to universities’ investment in capital, staff development and the student experience. Risk factors such as rising costs, decreasing funding per student, and uncertainty in domestic and international student recruitment and research income, combine to create an insecure financial environment for universities. In a competitive recruitment market, failure to generate sufficient internal margins for re-investment would be a significant threat to the long-term sustainability of particular institutions.<sup>33</sup>

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<sup>29</sup>HEFCE response to BIS consultation on science and research capital

<sup>30</sup> Income from research-based interactions has risen steadily over the last decade, surpassing £2.3 billion in 2013–14. Since 2003–04, research grants from UK charities and businesses have grown, respectively, by 43% and 26%.

<sup>31</sup> Evidence for the “crowd in” effect is found in a number of studies, including Hughes and Haskel: UK-Innovation Research Centre (2014) *The Economic Significance of the UK Science Base*.

<sup>32</sup> Economic Insight (2015). *What is the relationship between public and private investment in science, research and innovation?*

<sup>33</sup> HEFCE Financial Sustainability Strategy Group (2015), *The sustainability of learning and teaching in higher education in England*

## **A REGULATORY FRAMEWORK THAT WORKS FOR THE UNIVERSITY SECTOR TODAY**

As universities operational environment has changed, reforms to the regulatory framework in England to reflect the higher education sector today are very timely. The development of a Teaching Excellence Framework (TEF) is welcome and will help further encourage a focus on the teaching and learning experience of students.

It will be important that the TEF can add value to all students, whatever their choice of subject or university, and whatever their background and aspirations. This will mean a framework that responds effectively to diversity. It should also keep the bureaucratic burden to an absolute minimum and act as a stimulus for innovation. The TEF should be integrated with a reformed quality assessment as part of a combined framework, not least in terms of keeping down the burden of external scrutiny. We would also favour a phased introduction for the TEF. Given the significant challenges of developing an effective TEF and the desire to link this to any inflationary increase in the fee cap for 17-18<sup>34</sup>, this would mean an initial exercise drawing on current information and indicators, ensuring that the requirements are proportionate to the assurances required around any fee increase. As well as being proportionate, requirements will need to be fair and transparent, and open to all providers currently eligible to charge the higher fee. Universities UK will be contributing to the consultation process in the coming months.

The supporting infrastructure for the TEF and a reformed quality assessment system should work with the principles of co-regulation and co-ownership by relevant stakeholders, including institutions, students, government, funders, employers and public. This should include a clear role for independent co-owned bodies in the administration of any assessment for teaching excellence and quality, to ensure credibility. Any system should also work with the principles of a competitive market by informing student choice and incentivising the market behaviour of institutions.

As part of our work on the future of higher education regulation Universities UK will be making proposals in the autumn for reform to sector infrastructure that can support the effective delivery of a new approach to quality assessment and the TEF. This builds on the proposals in our report on the future of regulation published in February 2015<sup>35</sup>. This report puts forward proposals for addressing deficiencies in the current regulatory regime, including the ability to control costs and derive assurances on quality and sustainability in a more diverse provider landscape. It also makes proposals for streamlining delivery of regulation in higher education to make it more effective and efficient. This would be achieved through a single regulator of providers and addressing duplication and overlap of requirements. For example, the report proposes merging the Office for Fair Access (OFFA) with HEFCE given the significant overlap in that area. It also suggests establishing HEFCE as a lead regulator that would have a more strategic role in coordinating the myriad of regulatory requirements in the sector and addressing duplication. As noted above, there are strong reasons for maintaining co-ownership of the quality assessment system through an arms-length co-owned relationship.

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<sup>34</sup> HM Treasury *Summer Budget 2015*

<sup>35</sup> Universities UK (2015) *Quality, equity, sustainability: the future of higher education regulation*.

## MEETING THE SKILLS NEEDS OF THE UK LABOUR MARKET

### Higher education policy recommendations

- Funding for high-cost subjects, on a per student basis, should not drop below current levels in real terms.
- Investment in the Student Opportunity grant should be maintained to cement the progress made in recent years and to address the significant variation in higher education participation rates across geographical locations<sup>1</sup> and differences in outcomes between student groups.
- The government should work with stakeholders to further understand the decline in part-time student numbers and the feasibility and efficacy of the options that relate to this set out in the June 2015 independent Student Funding Panel report.
- The funding arrangements for health professional education should be aligned with other undergraduate courses to meet the skills needs of the NHS and reduce the burden on the public finances.
- The government should commit to an increase in investment in teaching capital to support the expansion and competitiveness of the UK's higher education sector.

In England, while the landscape of student funding has changed significantly in recent years, there is a strong justification for continued public funding in the form of grants to support areas of strategic national importance. HEFCE provides teaching grants where fees alone do not meet the full costs of teaching. This includes funding to support the delivery of high-cost subjects and distinctive provision, and funding to provide additional support to students from disadvantaged backgrounds.

### SUPPORT FOR HIGH-COST SUBJECTS

The full annual costs of providing taught degree courses in some subject areas significantly exceed the maximum annual tuition fee (net of spending through access agreements) per student<sup>36</sup>. Providing these courses, which include medicine, science and engineering courses, is critical to meet the skills needs of both the public and private sector and to support a pipeline of talent for the research base. However, these courses are particularly vulnerable due to the lower proportion of UK students studying them, their high costs, and the increasing uncertainty around the levels of resource available for provision.

Many science, technology, engineering and mathematics (STEM) subjects fall into high-cost subject categories. There are around 90,000 STEM graduates every year, a figure which includes international students. Even if we assume that all STEM graduates go into STEM careers in the UK, this falls short of the estimated 100 000 graduates per annum for the period 2012 to 2020 that the labour market needs<sup>37</sup>. The

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<sup>36</sup> HEFCE Financial Sustainability Strategy Group (2015) *The sustainability of learning and teaching higher education in England*

<sup>37</sup> Royal Academic of Engineering (2012). *Jobs and growth*

impact of this shortfall was demonstrated in a recent CBI survey which revealed significant employer concerns regarding the availability of STEM skills<sup>38</sup>.

Public funding to support high-cost subjects is essential to ensure that universities are able to meet increased demand, both from students and from employers in areas of strong national importance. No other funding stream can ensure the provision of high-cost subjects at a scale that meets employer and student demand without undermining their sustainability. In the absence of sufficient and stable public funding, universities would be unable to sustain or expand their STEM provision to meet demand and, in some cases, may need to reduce student numbers to maintain quality or shift provision towards lower-cost subjects for which sufficient resource is ensured.

**Funding for high-cost subjects, on a per student basis, should not drop below current levels in real terms.** For student numbers in STEM subjects to expand, government support for high cost subjects would need to increase to make any expansion sustainable. Furthermore, investment is necessary to support demand in other professions too, like medicine and dentistry. HEFCE's additional funding for 'very high-cost' subjects, for which there is robust evidence that costs significantly exceed the maximum tuition fee (net of spending on access agreements) and the Band B high-cost supplement, has been very important in relieving cost pressures. We believe that government should consider moving this category of subjects into the mainstream subject banding structure.

## **ENABLING SMALL AND SPECIALIST PROVISION**

Funding for small and specialist provision is critical to sustaining world-class academic activity that is highly specialised, and to supporting diversity of provision. Many small and specialist institutions are world-leaders in their fields and therefore play an important part in maintaining the UK's competitive advantage. However, small and specialist provision is more expensive and often exceeds the annual maximum tuition fee.<sup>39</sup> In the absence of public funding to support small or specialist institutions, we would risk homogenizing the sector and damaging its overall global reputation.

A review by HEFCE is underway to reevaluate the framework used to classify institution-specific funding so that it can be targeted to where it is most needed. We believe this review is timely and broadly endorse the suggested criteria<sup>40</sup> that HEFCE has set out. However, any significant changes in allocation policy must consider the impact of such changes on other government objectives, such as the provision of strategic subjects.

## **WIDENING PARTICIPATION AND ENSURING RETENTION AND SUCCESS**

### **Student opportunity funding and access agreements**

Widening participation in higher education is critical in order to meet the government's twin aims of social mobility and economic growth. Getting people into

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<sup>38</sup> CBI/Pearson. (2015) *Inspiring growth: education and skills survey 2015*.

<sup>39</sup> HEFCE. (2012) *Student number controls and teaching funding: consultation on arrangements for 2013-14 and beyond*.

<sup>40</sup> HEFCE 2015 *review of institution-specific funding*

good jobs that match their ability and provide opportunities for progression is important in order to meet the government's ambition to move the country to a higher wage, lower welfare, and lower tax economy, and is essential in order to meet the country's skills needs. To this end, the prime minister has announced two ambitious goals: (1) to double the proportion of people from disadvantaged backgrounds entering higher education compared to 2009 and (2) to increase the number of students from Black and Minority Ethnic backgrounds progressing to higher education by 20% by the end of this parliament.

HEFCE's Student Opportunity grant has made a very important contribution to the government's strategic goals, ensuring the retention and success of disadvantaged students and supporting targeted outreach activities to widen participation<sup>41</sup>. The grant is strongly justified as it helps to make up the additional costs associated with providing disadvantaged students with the support they need. This ranges from academic support programmes to more pastoral and core disability support. HEFCE and OFFA provide oversight of progress and challenges, ensuring that evidence and best practice can be shared across the sector.

Student opportunity funding and institutional expenditure on widening participation through access agreements are distinct but complementary funding streams. Guidance for access agreement spending ring-fences investment for use on widening participation measures<sup>42</sup>. For this reason, the guidance requires a higher percentage of fee income above the basic fee to be spent by institutions that have a low proportion of students from under-represented groups and have the furthest to go to improve access. Student opportunity is primarily focused on retention and success, and is therefore targeted at those institutions with the most diverse student bodies to ensure that once students from disadvantaged backgrounds enter higher education they receive the additional support they need to fully benefit.

Recent investment and initiatives by the government, universities and others has been effective, helping to significantly increase participation levels<sup>43</sup> and to improve retention<sup>44</sup>. This has ensured that the returns on government investment earlier in life through the pupil premium, and later in the form of student loans, can be fully realised.

**Investment in the Student Opportunity grant should be maintained to cement the progress made in recent years and to address the significant**

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<sup>41</sup> For more information on the kinds of activities that student opportunity funding is used and how activities are chosen, see: HEFCE (2013) The uses and impact of HEFCE funding for widening participation

<sup>42</sup> In 2011-12, 87% of expenditure through access agreements was spent on financial support for students. In 2015-16 this will be 56%, with 20% supporting access, and a further 24% supporting student success and progression.

<sup>43</sup> In 2014, young people from the most disadvantaged neighbourhoods in England were 60% more likely to enter higher education than they were in 2006 and 40% more likely to enter higher tariff institutions than in 2009. See UCAS (2014) End of cycle report

<sup>44</sup> Non-continuation rates for full-time first-degree entrants have improved from a rate of 14% in 2002-03 to 10% in 2012-13. HEFCE

## **variation in higher education participation rates across geographical locations<sup>45</sup> and differences in outcomes between student groups<sup>46</sup>.**

A number of measures, such as the replacement of maintenance grants with loans and proposals to change the repayment threshold on student loans, could have a cumulative impact on student recruitment and retention. Maintaining flexible funding streams to provide support to students when needed may be critical in minimising this risk.

### **Part-time and mature students**

Seventy per cent of the year 2022's workforce will already have completed their compulsory education today. Declining numbers of 18-year-olds means that we can no longer rely only on young entrants to higher (and further) education to meet the needs of employers. With the population living and working longer, and a significant decline projected in blue-collar jobs, it is highly likely that people may need to make two or even three career changes during their working life. Universities therefore have an important role to play in supporting lifelong learning by providing opportunities for mature students and those already in work to reskill and upskill. Part-time degree programmes, access to postgraduate study and continuing professional development are all important ways of offering this. However, both part-time and mature student numbers have declined significantly in the last five years.<sup>47</sup>

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The independent Student Funding Panel found evidence that there are likely to be a number of factors that contributed to the decline in part-time students, including: the economic downturn and its impact on unemployment and reduced employer funding; reductions in public funding and public sector employment; and increased fees and issues related to eligibility for loans as a result of the most recent reforms to student funding<sup>50</sup>. The report concludes that the cause of the decline is likely a combination of these factors. It details a number of options to consider to improve uptake of part-time education: ensuring equity in maintenance support, extending the availability of funding support for students studying an equivalent or lower qualification, lowering the study intensity for loan eligibility, incentivising employers to fund part-time places, and the development of a more flexible system to allow credit transfer and accreditation of prior learning. **The government should work with stakeholders to further understand the decline in part-time student numbers and the feasibility and efficacy of the options set out in the June 2015 independent Student Funding Panel report.**

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<sup>45</sup> For example: in some constituencies less than 15% of 18-year-olds will enter higher education compared to 50% in others. See UCAS (2014) *End of cycle report*

<sup>46</sup> For example, analysis of the entire young A-level entrant cohort revealed that 72% of White students entering higher education after achieving a BBB at A-level achieved a first or upper second degree. This compares with 56% for Asian students and 53% for Black students who achieved the same A-level grades. HEFCE (2014) *Differences in degree outcomes: key findings*

<sup>47</sup> Universities UK. *Trends in undergraduate recruitment*.

<sup>48</sup> For further information and analysis see: Universities UK (2013) *The power of part-time*

<sup>49</sup> HEFCE (2014). *Pressure from all sides*

<sup>50</sup> Student Funding Panel (2015) *An analysis of the design, impact and options for reform of the student fees and loans system in England*

## TRAINING THE PROFESSIONALS OUR PUBLIC SERVICES NEED

Universities are central to the education and training of the public sector professional workforce: our doctors and nurses, our teachers and social workers, as well as the leaders and managers of defence and police forces, of health and social care and of central and local government. There are, however, a number of inconsistencies in how higher education is funded across these professions. In particular, in some professions central funding of fees and bursaries is constraining commissions, increasing cost pressures on universities and producing severe workforce shortages.

Initial education for nurses, midwives and most Allied Health Professionals (AHPs) is currently funded through NHS grants. **The funding arrangements for health professional education courses should be aligned with other undergraduate courses to meet the skills needs of our NHS and reduce the burden of health education on the public finances.** There are three key challenges that this would help to address. First, the NHS faces severe domestic skills shortages in a number of professions, and the existing grants based system is unable to meet the costs of increasing student numbers to meet national need. The proposed change would allow for a sustainable increase in student numbers. Second, students in these professions receive a lower level of maintenance support than other students.<sup>51</sup> By expanding the student loan system to NHS students, those students will receive more support throughout their study. Third, there is an increasing funding gap (at least 8%–12%<sup>52</sup>) which may undermine the long-term sustainability of high-quality university provision in a number of subjects.<sup>53</sup> This gap could be bridged through the introduction of a tuition fee and, in certain cases, a high-cost subject supplement from HEFCE.

Of course, we are mindful of the potential consequences of this change on recruitment, retention and success. For this reason, **should the proposed change be introduced, government must work in partnership with stakeholders to establish appropriate safeguards to ensure that students are not deterred from careers as nurses, midwives and AHPs.** In a survey of 33 English higher education providers, almost all respondents (81%) expressed confidence that they would be able to recruit good students to support an expansion in the number of AHP places offered.<sup>54</sup>

## INTERNATIONAL STUDENTS AND STAFF

Certain historic changes in immigration policy have negatively impacted on the ability of universities to recruit international students and staff, and recently announced changes and proposals could have a further substantial impact. These changes, and uncertainty around future policy, are of great concern to universities.

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<sup>51</sup> Although NHS students receive more maintenance support in the form of grants, the total maintenance package (grants and loans) currently available to them is smaller than for other students.

<sup>52</sup> CoDH and Universities UK. (2014) *Nursing, midwifery and AHP pre-registration education: the funding gap*

<sup>53</sup> University funding for nursing and physiotherapy degrees is now lower than any other subject in higher education, even though these courses put much higher demands on universities in areas such as compliance costs, laboratory space and simulation kit. University funding per student, per year outside of London is £8315 for nursing and £8778 for physiotherapy.

<sup>54</sup> Unpublished UUK survey.

International students and staff are vitally important to universities – and to the wider economy:

- Demand from international students can support the provision of certain strategically-important subjects, for example in engineering, technology and computer science. This is particularly the case at postgraduate level, where around half of all students are from outside the European Union<sup>55</sup>.
- In 2013–14, International students accounted for 13% of university income.
- Non-EU students contributed an estimated £7.2 billion to UK exports in 2011–12<sup>56</sup>, and as graduates and in future years they play an important part in boosting our trade and diplomatic impact<sup>57</sup>.

Recent recruitment patterns do not do justice either to the outstanding quality of our universities or to the sector’s potential to expand. In fact, 2012–13 saw the first decline in the number of international students on record, while competitor countries such as the United States, Australia and Canada are achieving growth rates of at least 8%. Given the valuable contribution that international students make to our higher education sector and economy more widely, the government should consider ways to increase opportunities for mobility, by helping to attract more international students and staff, and by supporting more UK students to study or gain experience overseas as part of their degree programme. To achieve this, the government must communicate a welcoming and consistent message to international students and staff, as well as enhance opportunities for talented students to work in the UK for a period after their degree and contribute to the economy. Furthermore, to support international recruitment and the mobility of research staff, programmes valued by both UK and overseas stakeholders that support mobility and collaboration – such as the Chevening Scholarships, the Newton Fund, GREAT, Education UK, UKIERI, and UK China Partners in Education – should be maintained.

## **SUPPORT FOR TEACHING CAPITAL**

Capital funding for teaching through HEFCE has declined significantly since 2010 (Figure 1), despite rising student numbers. Evidence suggests that some institutions are unable to make up the loss of public capital investment, with capital expenditure falling for around 50% of institutions<sup>58</sup>. Many institutions have used commercial borrowing, bonds and internal cash reserves to finance capital projects and make up for a decline in public funding<sup>59</sup>. Their ability to do so hinges on their ability to generate a surplus, both for direct financing and to support borrowing. However, the level of surplus achieved varies significantly between institutions, and the average

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<sup>55</sup> Universities UK (2014) *International students in higher education: the UK and its competition*

<sup>56</sup> Universities UK (2014) *The impact of universities on the UK economy*

<sup>57</sup> BIS research on soft power suggests that international students who come to the UK develop an ‘allegiance’ to British brands, promote tourism to the UK, and become UK ambassadors resulting from their positive understanding of British culture and values: BIS (2013) *The wider benefits of international higher education in the UK*

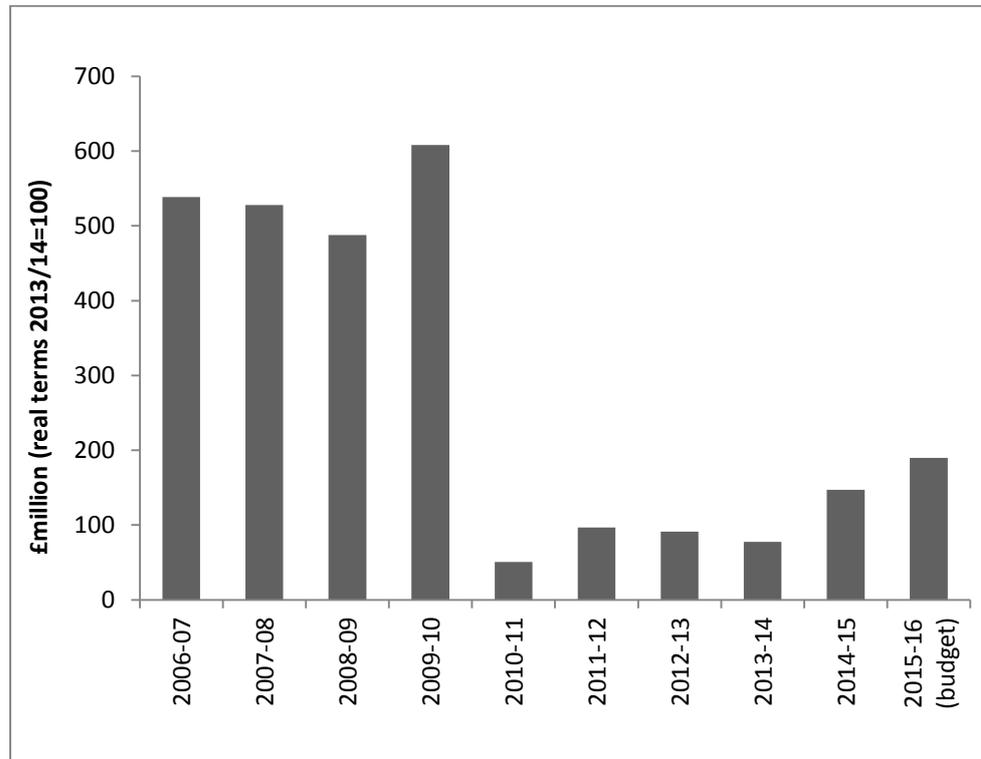
Another BIS study shows that 78% of surveyed international graduates plan to develop professional links with organisations in the UK. BIS (2011) *Tracking international graduate outcomes 2011*

<sup>58</sup> Frontier Economics (2015) *A review of HEFCE capital expenditure*

<sup>59</sup> HESA data shows that internal funding as a source of capital expenditure in the sector as a whole grew by 170.5% between 2004-5 and 2013-14. Loans grew by 10.9%, other external funds grew by 41.3%, funding body grants fell by 41.9% and retained proceeds of sales fell by 43.9%.

level of surplus across the sector is falling, from a peak of 4.8% of total income in 2010–11, to 4.3% in 2013–14<sup>60</sup>. This indicates that an even greater proportion of institutions may have to reduce capital expenditure in the future.

**Figure 1: Real terms trend in HEFCE teaching capital grant**



Source: HEFCE, UUK analysis

A fall in capital expenditure would hamper universities' ability to achieve a number of the government's strategic objectives. Capital investment is important to enable the sustainable expansion and diversification of higher education, including in high-cost subjects; it underpins a competitive higher education sector by helping to attract talented staff and students; and helps to maintain the strong global reputation of UK universities.

There are some specific areas where government investment is extremely important to universities. Universities find it more difficult to leverage loans or bid successfully for competitive capital funding to support the maintenance of existing infrastructure than for the development of new builds. Over 10% of non-residential building stock in the higher education sector is of fair or poor quality and improvements have slowed in recent years.<sup>61</sup> Furthermore, small institutions can find it particularly difficult to leverage capital to support their activities.<sup>62</sup> This is due to the threshold levels for accessing funding such as RPIF and the Higher Education Innovation Fund (HEIF), as well as difficulties in accessing bank loans and the bond market.

**The government should commit to an increase in investment in teaching capital to support the expansion, competitiveness and quality of the UK's**

<sup>60</sup> HEFCE (October 2014) 'Financial health of the higher education sector 2013-14 to 2016-17

<sup>61</sup> Frontier Economics (2015) *A review of HEFCE capital expenditure*

<sup>62</sup> GuildHE and Universities UK (2014) *Capital funding in small specialist institutions: a paper to shape policy thinking*. Unpublished.

**higher education sector.** Between 2005–06 and 2013–14, the majority of capital funds were allocated formulaically, but the proportion allocated through competitive mechanisms has increased in recent years. There are some specific benefits associated with formulaic allocation mechanisms when compared with competitive mechanisms<sup>63</sup>. Considering the current needs of UK higher education, particularly around building maintenance, we believe that the majority of teaching capital investment should continue to be allocated formulaically.

## MAINTAINING THE STRENGTH AND REPUTATION OF THE UK'S RESEARCH BASE

### Research policy recommendations

- The government should set out a long-term strategy to increase national investment in R&D with the objective of bringing it closer to that of competitors.
- To prevent long-term damage to our research base and to ensure continuity and stability, the science ring-fence should be renewed.
- Funding through the dual support system should grow in line with any increase in publically funded R&D. The current balance of funding between its two elements should be maintained.
- Research excellence should be supported wherever it is found. To do so, the principle of independent, impartial assessment of research (as in the Research Excellence Framework or the research councils' peer-review mechanisms) should be retained as the main approach for allocating research funding.
- Any new postgraduate loan system should complement rather than replace existing support through PhD studentships.

An increasing body of literature shows that public investment in research is an essential component of our innovative economy, underpinning the kind of long-term speculative inquiry that can lead to major breakthroughs and a step change in productivity and economic growth<sup>64</sup>. Public and private funders of R&D do not have the same incentives. Market failures and difficulties in predicting the benefits of research results can deter private investment, even when this could lead to a competitive advantage for a firm or industry in the long-term.<sup>65</sup>

The national return for research activities is two to three times greater than the private returns to individual businesses<sup>66</sup> because it enhances the innovative capacity of the whole business sector. Public funding for science is therefore a critical part of our nation's research and innovation base that cannot be replaced. Public funding for

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<sup>63</sup> These benefits are outlined in Frontier Economics (2015) *A review of HEFCE capital expenditure*

<sup>64</sup> See, for example, William Janeway (2012) *Doing Capitalism in the Innovation Economy*

<sup>65</sup> Tera Allas (2014) *Insights from international benchmarking of the UK science and innovation system*; Jones, Richard. (2013) *The UK's innovation deficit and how to repair it*. Sheffield Political Economy Research Institute. Paper No. 6.

<sup>66</sup> Frontier economics (2014) *Rates of return to investment in science and innovation*

research is thought to achieve a return of between 20% and 50%, but could be significantly higher<sup>67</sup>. Even taking the lower estimate of a 20% return on public R&D expenditure, a 5% (or £450 million) increase in the science and research budget could permanently raise private sector output by at least £90 million every year.<sup>68</sup> This is estimated to be worth £1.8 billion to the economy in the long run.

The UK science, research and innovation ecosystem has in the past proven to be extremely effective, with well-established institutional structures and complementary funding streams creating a balanced system that delivers consistently excellent outputs. In accordance with the Haldane principle, government sets an overarching strategic framework for science and research, but the autonomy of research funders (and researchers themselves) is respected.

However, this is not to say that the sector stands still. Shifts in research council funding<sup>69</sup> demonstrate how the research community can evolve to embrace new priorities. The ongoing review of the research councils<sup>70</sup> led by Sir Paul Nurse, the findings of the Dowling review of university-business collaboration<sup>71</sup> and the Taylor review of innovation and health research<sup>72</sup> have made (or will make) considered, evidence-informed recommendations for the future evolution of the system.

**We urge that the government makes full and proper use of the findings of these complementary reviews (and the expertise on which they have been based) in sketching a course for the future development of science, research and innovation in the UK. This, we believe, provides a sounder basis for effective development and reform (where it may be needed) than short-term exigencies.**

## **SETTING OUT A LONG-TERM VISION FOR RESEARCH FUNDING**

Research is a long-term investment in the UK economy, and has been recognised as such in recent changes to national accounts at the EU level<sup>73</sup>. Because research is a cumulative process, it needs long-term, patient investment to deliver maximum benefit to society<sup>74</sup>. It often takes time for research to come to fruition and for its benefits to be accrued<sup>75</sup>. Failure to invest adequate public funding in research in the short term, or policies that could reduce its excellence and efficiency, will cause long-term damage to the research base that will be impossible or at least extremely costly for future generations to reverse<sup>76</sup>. The research base has maintained its excellence

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<sup>67</sup> Universities UK (2015) *The economic role of universities* p39

<sup>68</sup> J. Haskel *et al* (2014) *The economic significance of the UK science base*

<sup>69</sup> Office for National Statistics (2015) *Science, Engineering and Technology Statistics 2013* Tables 10-11

<sup>70</sup> Nurse review of Research Councils: *call for evidence* (2015)

<sup>71</sup> *The Dowling review of business-university collaborations* (2015)

<sup>72</sup> *Innovative medicines and medtech review: terms of reference* (2015)

<sup>73</sup> ESA10

<sup>74</sup> Mariana Mazzucato (2013) *The Entrepreneurial State*. Anthem Press

<sup>75</sup> One study found that it takes six years for public investment in science to have a full impact on the number of papers and seven years for an impact on citations: Gustavo Crespi and Aldo Geuna (2005) *Modelling and measuring scientific production: results for a panel of OECD countries*. SPRU. Haskel and Hughes (2014) suggest that 'for radical breakthroughs and for certain technologies, it seems clear that the time period through commercialisation may indeed span one or two decades.' (p14)

<sup>76</sup> For example, research by Adams (1990) finds a 20-30 year lag between scientific publication and its effect on productivity in the form of knowledge absorbed by an industry. He suggests that a decline in the productivity of scientists and a fall in the stock of knowledge (measured by total papers) explained 15% of the economic slowdown in the 1970s.

and competed successfully for research talent, investment and leadership in recent years – but global competition is increasing.

In 2012, public investment in UK science as a proportion of GDP fell to its lowest level in 20 years and it remains the lowest of any G8 economy<sup>77</sup>. Universities UK estimates suggest that, on average, the UK would need to stimulate £600 million extra R&D investment every year just to maintain current levels of expenditure in R&D relative to GDP (1.63% of GDP in 2013). In comparison:

- The USA spends around £250 billion (2.8% of GDP) on R&D per year.
- South Korea doubled its expenditure on R&D between 2003 and 2011 to around £35 billion (4.0% of GDP).
- Countries such as Germany and France have consistently invested more than 2% of their GDP in R&D and aim to increase this to 3% or more in the future.

Following the 2010 CSR, universities helped to drive significant savings from the science and research budget, and moved towards greater asset and equipment sharing.<sup>78</sup> There is an ongoing commitment to drive efficiencies, however further real-term reductions to the science budget cannot be fully compensated through efficiency savings and would instead impact on the excellence and sustainability of UK research.

A BIS review of UK research and innovation notes three reasons why, despite the research base's productivity and efficiency, we cannot continue with a lower level of investment than our competitors and expect to maintain global leadership<sup>79</sup>. First, R&D investment plays a critical part in building absorptive capacity and therefore the ability of businesses and organisations to apply external and internal research to generate economic and social benefits. Second, public investment supports highly valuable international collaborations which may not come about without sufficient funding. Third, private sector R&D expenditure is comparatively low, suggesting that public investment in R&D at its current level is failing to encourage sufficient private sector investment.

We recognise that in the current fiscal environment there are limits to what the government can afford to fund. And that even if the productivity and high returns of the research and innovation base is understood, funding must continue to be targeted as effectively as possible. However, if funding for research faces further real-terms decline, the UK will gradually fall behind as a global research and innovation hub, at great cost to our economic growth potential. Our current success and the level of global investment that it attracts rests on historic investment. We need to sustain the investment pipeline for this to be maintained.

A real-terms increase in investment in the science budget is necessary to counter the gradual erosion of funding for research and maintain our global leadership. By strengthening our public and private domestic research base, we enhance our capacity to drive discovery and to capitalise on basic and applied research carried out

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<sup>77</sup> Scienceogram (2013) UK science funding drops below 0.5% of GDP

<sup>78</sup> Universities UK (2015). Efficiency, effectiveness and value for money.

<sup>79</sup> Tera Allas (2014) Insights from international benchmarking of the UK science and innovation system.

in this country and overseas. It is clear that UK investment in GDP lags behind that of our competitors and, despite the reputation and efficiency of our research base, this will in time undermine our global position. This risks choking innovation and suppressing economic growth. Increased investment would signal a long-term commitment to our research base to global investors, researchers and the business community.

**The government should set out a long-term strategy to increase national investment in R&D with the objective of bringing it closer to that of competitors.** A recent analysis by BIS suggested that the UK should invest 2.9% of GDP in R&D, the average of our competitors, with around one third comprising public investment.<sup>80</sup> If the government was to spend 1% of GDP on publicly-funded R&D, this is estimated to require around £8.8 billion more investment<sup>81</sup>. The government, in recognition of the vital contribution of research to productivity, efficiency and economic growth, should set out a long-term plan to sustainably enhance R&D investment above inflation over the next decade to get closer to this target.

The importance of sustainable investment and management of research was recognised through the introduction of full economic costing in the early 2000s. This continues to be embedded in institutional and funders' approaches and has ensured a greater focus on reinvestment in infrastructure, including buildings, facilities and staff. This sustainable approach underpins our current success and provides an attractive investment base.<sup>82</sup> Many competitors have increased investment in research without due regard for longer term sustainability, however, there is an increasing recognition that sustainable investment in research is now necessary to maintain a competitive advantage in the medium to longer term.

**To prevent long-term damage to our research base and to ensure continuity and stability, the science ring-fence should be renewed.** The research base is particularly vulnerable to short term changes in its funding, as funding plans are often established to support multiple long-running research projects, studentships and facilities. The renewal of the ring-fence should be seen as an important part of a long-term strategy to enhance investment in research.

The excellence of the UK research base has been underpinned by the dual support funding system: the mix of block-grant and project-based funding that operates both in capital infrastructure and the wider funding model. The dual support structure for research funding, with its distinct but complementary funding streams, has proven very effective<sup>83</sup>. It supports the institutional autonomy which allows for effective, long-term decision making and efficient use of resources<sup>84 85</sup>, while ensuring selectivity and accountability at a relatively low cost to government. The system supports quality by driving continuous improvement across all institutions,

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<sup>80</sup> Tera Allas. (2014) *Insights from international benchmarking of the UK science and innovation system*. This level of total investment would also be broadly consistent with the commitment made in the Lisbon Treaty for investment across the European Union of 3%, with one third coming from public sources.

<sup>81</sup> CaSE briefing (2015) *What proportion of GDP should the UK invest in R&D?*

<sup>82</sup> EUA *Full Costing Progress and Practice*

<sup>83</sup> Pacc (2014) *A review of QR funding in English HEIs*. A report for HEFCE and Universities UK

<sup>84</sup> St. Aubyn *et al.* (2009) *Study on the efficiency and effectiveness of public spending*, pp. 80-84.

<sup>85</sup> Aghion, P. *et al.*, (2007), *Why Reform Europe's Universities?*

promoting research specialisation to achieve a competitive advantage, and enabling investment in excellent researchers, proposal development and infrastructure rather than new facilities or one-off research projects<sup>86</sup>.

For these reasons, **funding through the dual support system should grow in line with any increase in publically funded R&D. The current balance of funding between its two elements (which is approximately 3:2, with a greater proportion of funding directed through the research councils) should be maintained.**

### **SUPPORTING EXCELLENCE WHEREVER IT IS FOUND**

Funding for research should target excellence wherever it is found, either via the competitive processes of the research councils or through a rigorous assessment of research outputs as evaluated through the Research Excellence Framework (REF). **The principle of independent, impartial assessment of research (as in the REF or the research councils' peer-review mechanisms) should be retained as the main approach for allocating research funding.**

### **INVESTMENT IN RESEARCH CAPITAL**

Because it was not protected by the ring-fence, public investment in capital for research (as well as higher education) has not remained stable over the course of the 2010 CSR period. HEFCE has estimated that the cumulative reduction in capital funding for the sector between 2009–10 and 2013–14 (including teaching and research) was around £3.5 billion<sup>87</sup>. To ensure that capital funding is spent as strategically as possible, we strongly recommend that, like resource spending on research, public spending on research infrastructure should be supported by a stable, protected, long-term capital allocation.

The summer Budget set out plans to invest £6.9 billion up to 2021 in research capital, which we welcome. However, in order to fully benefit from this capital investment, matching investment in maintenance, expertise and staff must be ensured. This requires a strong commitment to long-term revenue funding and a commitment to prioritise the maintenance of existing infrastructure to avoid its deterioration.

### **ENSURING A PIPELINE OF TALENT**

The ability of our research base to thrive in the future depends crucially on our ability to train and attract talented researchers. This requires opportunities for successful students to enter postgraduate education and doctoral programmes. The introduction of postgraduate taught Masters loans will form an important part of this, creating opportunities for thousands of students to access the financial support they need.

Postgraduate and early career researchers also need such support. A new postgraduate research (PGR) loan scheme has been proposed, which could help more students with the ability and motivation to undertake doctoral programmes to be able to do so. However, **any new PGR loans system should complement rather than replace existing support through PhD studentships**, which provide

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<sup>86</sup> Pacc (2014) *A review of QR funding in English HEIs*. A report for HEFCE and Universities UK

<sup>87</sup> [HEFCE response to BIS consultation on science and research capital](#)

critical support for pursuing strategic, national priorities and rewarding excellence and contributions made to the research base. Support should continue to be offered via the funding councils and competitive research council funding opportunities beyond Centres of Doctoral Training/ Doctoral Training Partnership competitions. Funding through HEFCE's Research Degree Programme supervision fund is critical in ensuring diversity in the system, ensuring support is available in research areas and regions not covered by those schemes.

## SUPPORTING THE ROLE OF UNIVERSITIES IN DRIVING INNOVATION

### Innovation policy recommendations

- The critical role that universities play in supporting UK innovation and regional growth must continue to be fostered. This can best be achieved by continuing to ensure that project grant funding is balanced with funding streams that underpin infrastructure (such as the Higher Education Innovation Fund (HEIF) in England), allowing universities to drive innovation, invest in new and emerging areas and respond to changing needs.
- As HEIF so successfully underpins a range of innovation and regional growth activities, and yields a high rate of return, it should be increased to £250 million in line with the recommendations detailed in the 2013 Witty review.

The impact of public research is found to be greatest in countries with a high intensity of business R&D<sup>88</sup>. In order to benefit from public research, businesses and organisations must have the capacity to access, understand and apply the results of basic and applied research conducted externally (termed absorptive capacity). The role for public funding to support research and innovation is therefore not only to help develop innovative ideas and bring them closer to market, but also to foster a dynamic relationship between basic and applied research, and the public and private sectors.

**The critical role that universities play in supporting UK innovation and regional growth must continue to be fostered. This can best be achieved by continuing to ensure that project grant funding is balanced with funding streams that underpin infrastructure (such as the HEIF in England), allowing universities to drive innovation, invest in new and emerging areas and respond to changing needs.**

HEIF enables universities to fund innovative, high-value-added initiatives, to build on other funding sources to maximise the economic and social impact of teaching and research, and to undertake high-risk, high-return investments that could not be supported through short-term project funding<sup>89</sup>. It also delivers excellent value for money to the taxpayer, producing a return of £6.30 per £1 spent. On top of this,

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<sup>88</sup> Frontier economics (2014) *Rates of return to investment in science and innovation*, figure 28; Tera Allas. (2014) *Insights from international benchmarking of the UK science and innovation system*, figure 3; Dominique Guellec, Bruno van Pottelsberghe de la Potterie. (2001) *R&D and productivity growth: panel data analysis of 16 OECD countries*

<sup>89</sup> PACEC (2014) Knowledge exchange performance and the impact of HEIF in the English higher education sector

HEIF-funded activity also produces a significant impact on the economy through the wealth and jobs created by student start-ups and spin-offs. Recent research suggests that £1 spent on HEIF helps these businesses generate £3.36 in additional turnover (when the total impact of university activity is considered). HEIF created 48,300 jobs across all student start-ups and spin-offs in 2013.

**As HEIF so successfully underpins a range of innovation and regional growth activities, and yields a high rate of return, it should be increased to £250 million in line with the recommendations detailed in the 2013 Witty review.** Some of this increase should be used to extend HEIF to smaller institutions so that more institutions can effectively support regional growth across the UK and that innovation can be led by a greater range of institutions.

As well as increasing funding streams that support infrastructure, the government should consider ways to enhance universities' involvement in innovation and regional growth projects. More should be done to support university engagement with Innovate UK projects and programmes, including Catapult centres. This could include relaxing criteria for Innovate UK funding so that universities are eligible for a wider range of financial instruments, or ensuring that decisions concerning the expansion of the Catapult network are based on clear criteria that consider where developed capabilities may already be found. For example, this has already been done in the High Value Manufacturing and Satellite Catapults.

Similarly, the government should explore options to more strongly incentivise engagement and higher investment in knowledge exchange from businesses of all sizes. For instance, it might want to consider ways to ensure a more streamlined application procedure for SMEs and new or more generous tax breaks. This could be achieved, for example, by creating an 'open innovation' tax credit rewarding collaborative innovation activities or redesigning the Patent Box so that collaborative innovation activities performed in the UK entitles businesses to the highest rate of relief.

## CONCLUSION

Public funding supports the essential role that universities play in the UK's economy in a highly strategic way. It provides support for higher education, research and innovation in areas where there is no other sustainable source of investment and where there are clear national benefits in doing so. Universities will ensure that every pound invested is spent as effectively and efficiently as possible. However, the government should be in no doubt that misplaced or mistimed cuts in public funding will put at risk the excellence and global reputation of our universities. This, in turn, will limit the vital contribution universities can make to improving productivity, boosting economic growth and meeting the skills needs of our economy.

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