Why invest in universities?



The funding environment for universities

Universities are essential for the UK's modern knowledge economy. The UK has a university sector that many other countries aspire to emulate. Our academics are world leaders in research and innovation, our graduates are in demand worldwide, and our universities attract business and investment to all regions of the UK.

However, in the absence of sufficient and sustained investment, the UK's research base and university sector will fall behind key competitors. As the 2015 spending review approaches, there remain a number of major financial challenges that must be overcome.

The UK has invested significantly less in research as a proportion of GDP than many other countries. The UK's total research and development (R&D) expenditure was 1.72% of GDP in 2012 and has been around 1.8% of GDP since the early 1990s. In comparison, in 2012 the EU-28 provisional estimate was 2.06% of GDP and the OECD average was 2.4%.

Public funding for research offers high returns and has been shown to encourage greater investment in R&D from the private sector. UK research is exceptionally strong and efficient, and delivers great economic and social benefits.

But it will not be possible to sustain this positive trajectory in the long term unless investment in UK research is increased.

There remain uncertainties around funding for learning and teaching. In England, significant reforms in 2012–13 temporarily reversed a decline in resource available per student. However, with the tuition fee for undergraduate students from the UK and the EU capped at £9,000, its value is being eroded considerably by inflation. This, coupled with uncertainty in domestic and international student recruitment and research income, creates an insecure financial environment for universities. This may constrain their ability to invest in infrastructure and improvements to teaching in the long term.²

Supporting universities is supporting the future of the UK.

Invest in universities to maintain the **UK's international** competitiveness.

Universities have worked strategically to make sure they spend every pound effectively and efficiently. In England, by the government. Between 2005 and 2011 they reported £1.38 billion of efficiencies against a cumulative target of £1.23 billion.3

Universities are committed to maintaining their focus improvements can be pursued. However, efficiency gains alone cannot continue to make up for underinvestment

Universities need sufficient and sustained investment to allow them to maintain their powerful and positive contribution to society and the economy.

Why invest in universities?

The government should invest in universities because:

- Universities help students to develop the skills and knowledge employers need.
- providing the ideas and inventions on which future prosperity will be founded.
- University research benefits everyone creating stimulating culture.
- Universities help to ensure that the UK remains competitive in the global market by supporting intensive growth.
- Universities are anchor institutions in their regions they are essential for vibrant local economies and are drivers of innovation and business development.
- Universities have transformed themselves in many ways over the past decade, including becoming more efficient and cost effective.

Universities transform people's lives through education and through the wider impact of their research.

In 2014, young people from disadvantaged backgrounds in England were 60% more likely to enter higher education than they were in 2006. Over 2.3 million students are registered at UK higher education institutions. These students come from all walks of life. They will experience the social, cultural and economic benefits of higher education and, in turn, translate those into benefits for society and the economy.

created by 2020 expected to be in occupations with skills they developed at university help to increase productivity, enterprise and innovation.

In 2014, young people from disadvantaged backgrounds that universities continue to give a diverse student body the support needed to complete their degree. The UK's

provide the ideas and inventions on which future prosperity will be founded, making a difference to people's lives in the UK and globally.

- meet the grand challenges of the 21st century, such as overcoming resource scarcity, ensuring global food security and tackling global warming
- shape policies in areas like international relations, health and education
- discover and develop the technological advancements
- cure diseases and innovate models of service and care

Universities help students to develop the skills and knowledge employers need.



By 2022

2 MILLION

more jobs will require higher level skills. Employers increasingly need recruits with higher level skills. By 2022 there will be 2 million additional jobs in occupations requiring higher level skills, with the total employment share set to increase from 42% to 46% of all those in employment.6

Business surveys, student satisfaction surveys and employment data show that university courses continue to produce the best learning and labour market outcomes for employers and for graduates. 7.8 Taken together, this suggests a clear correlation between high level skills, university degrees and high-growth areas of the jobs market.

Many universities engage actively with employers to meet their needs as well as those of a diverse student body. who indicate increasingly clearly that they value help and training to increase their future employment prospects.9

Some businesses present a variety of unique skill challenges that are difficult to meet other than through employer-led, bespoke and flexible alternative learning pathways. A recent survey of 161 UK higher education institutions found that 93% offer short bespoke courses for businesses on campus or on business premises. 10

Examples of strong collaborations between universities and employers in course development or delivery include:11

- the University of Sheffield's Advanced Manufacturing Research Centre, which offers apprenticeships and opportunities for fully-funded progression to degree level education and beyond, designed to meet the practical and academic skills needs of manufacturing companies
- the University of South Wales' collaboration with British Airways, in which students graduate with both a degree in aircraft maintenance engineering and the industry-standard EASA professional license under BA's accreditation
- the University of Derby's higher apprenticeship in mineral products technology, which aims to address the skills needs of the mineral products industry; the course is designed in partnership with industry organisations and leading professional bodies, and combines the development of practical skills and the acquisition of knowledge in one higher education qualification

Universities therefore play an important part in meeting the learning needs of students and the skills needs of employers, both through their more traditional model of three-year undergraduate study and by developing a

A 1% increase in the share of the workforce with a university degree can raise the level of long-run productivity by between 0.2 and 0.5%.

broader range of pathways to higher skills, including parttime study for mature students and those already in work.

Graduates and returning workers, as well as applying and sharing the knowledge developed during their studies, will permanently raise their employers' capacity to initiate and carry out innovation activity. Research suggests that graduate skills accumulation contributed to roughly 20% of GDP growth in the UK from 1982 to 2005, and that a 1% increase in the share of the workforce with a university degree can raise the level of long-run productivity by between 0.2 and 0.5%.12

Universities also play an important part in supporting the public sector, supplying the doctors, nurses and other health professionals, teachers and social workers the country needs. Their provision in these areas is highly valued and informed by the latest research. For example, a recent comparative study concluded that increasing the number of nurses with bachelor degrees could reduce the number of preventable hospital deaths. 13

UK university research is academically world leading and more cost effective than anywhere else in the world.

46%

30%

20%

3% Recognised nationall

76%

of research submitted to REF 2014 was rated 'world-leading' or 'internationally excellent'. The UK's research base is strong and exceptionally efficient. Although the UK represents just 3.2% of global R&D expenditure, it accounts for 9.5% of downloads, 11.6% of citations and 15.9% of the world's most highly-cited articles. 14

Recently, the UK overtook the United States to become the major global research nation with the highest field-weighted citation impact in the world (1.6 times the world average). The 2014 Research Excellence Framework exercise rated 76% of the research submitted as world leading (4*) or internationally excellent (3*) – a further testimony to the well-rounded excellence of UK university research.¹⁵

The research base performs very well compared to that of other nations. However, the UK's investment in R&D as a percentage of GDP remains significantly below the OECD and EU averages. 16 It is vital that the UK narrows the gap between its investment in science and innovation and that of key competitors, to help our research base attract more talent and investment from abroad and maintain excellence in the long term.

- The UK's total R&D expenditure was 1.72% of GDP in 2012 and has been around 1.8% of GDP since the early 1990s.17
- In 2012, the EU-28 provisional estimate was 2.06% of GDP and the OECD average was 2.4%.
- The UK's public R&D expenditure was 0.44% in 2013,18 the lowest in the G8 group of countries.

In comparison:

- The United States 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.

Public funding plays a critical role in supporting the kind of long-term, speculative inquiry that leads to the significant breakthroughs fundamental to economic growth.

Discoveries such as fibre optics, stem cells and graphene. the development of technologies like computers and the internet, and medical breakthroughs such as the Hepatitis B vaccine, the portable defibrillator and modern infertility treatment were all underpinned by the work of academic researchers from UK universities. They may not have occurred were it not for publicly funded research departments.

University
research
benefits
everyone creating
businesses and
jobs, enriching
society and
stimulating
culture.





The value of university research is significant and far reaching. The 6,679 impact case studies submitted by institutions as part of the 2014 Research Excellence Framework exercise demonstrate the economic, cultural and social benefits of their research.

Universities and their graduates have the knowledge needed to drive innovation, improve products and services, and help the country become more productive.

University research makes economic sense. Analysis suggests that investment in R&D typically has a rate of return of between 20 and 50%. This means that for every £1 spent by government on R&D, private sector R&D output rises by at least 20p per year.

However, the real rate of return could be significantly higher than this. An increasing body of research finds an association between public R&D expenditure and private R&D; provided this effect is causal, this would make the rate of return of public investment in R&D even larger. For example, a report by HEFCE estimates that a 10% increase in QR (quality-related) funding could lead to a 2% increase in third stream income such as consultancy, licensing, and contract research for industry.²⁰

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. This is estimated to be worth £1.8 billion to the economy in the long run.

But the benefits of university research extend far beyond direct economic impact. University research has been shown to deliver a wide range of social and cultural benefits:

- It improves the health and wellbeing of people in the UK and around the world.
- It informs and supports policy-making in areas like education, health and the environment.
- It stimulates debate and increases public engagement on key social, cultural and political issues.
- It fosters the culture and arts that enrich our lives and make the UK and its regions appealing to visitors and investors.

Universities help to ensure that the UK remains competitive in the global market by supporting greater **business** innovation and export-led, knowledgeintensive growth.







Universities are the UK's innovation hubs. They play an important part in supporting business to drive product, process and service innovation. In turn, innovation is a key driver of economic growth and plays a critical role in increasing productivity.

that engage in partnerships with universities and public

- are more likely to invest in R&D themselves (+161%)
- perform significantly better on process and product of technical information (+57%) than similar firms

through a range of knowledge exchange activities. The UK ranks second in the world for research-based university-business collaboration, and evidence suggests exchange activities grew by over 60% between 2003–04

business can also benefit from support from universities. Universities promote entrepreneurial talent through helps graduates and local residents gain the confidence, 4,600 new graduate start-ups were set up in 2013–14. employing over 18,500 people.²⁴

Public investment in universities' innovation activities

Universities' international success helps secure the UK's share of global growth and influence.



International higher education is one of the UK's leading exports, with earnings estimated at

£10.7 BILLION

in 2011.

The excellence of the UK's university system depends on its international success.

International higher education is one of the UK's leading exports, with earnings estimated at £10.7 billion in 2011. The spending of non-EU students on fees and living costs supported 137,000 FTE jobs in 2011–12, spread across the UK. Furthermore, international higher education has significant trade and diplomatic impact; many international alumni retain professional links with the UK.²⁷

International students account for 12% of university income and sustain courses in science and technology subjects where domestic demand alone is insufficient. Employers want culturally aware and well-rounded graduates, something reflected in the fact that a lower proportion of internationally mobile graduates are unemployed. UK students recognise this – record numbers of them are gaining overseas experience – but the UK lags behind EU competitors.

International engagement and collaboration strengthens the success of UK research and is vital to address global challenges. Twenty-three per cent of UK universities' research grants and contract income is from overseas, almost half of UK academic publications are internationally co-authored, two-thirds of researchers have an international affiliation and one-quarter of academic staff are from overseas. Working internationally allows researchers to pool their expertise and resources to achieve more together - solving challenges from climate change to international development requires global teams and infrastructure that no one country can assemble alone.

The UK is world leading in a global growth market for education. It enjoys the second largest share of international students in what is predicted to be a growth market.³⁰ However, despite the UK's strong reputation and growing global demand, recruitment to the UK has stagnated in the last four years. 2012–13 saw the first decline in the number of international students on record. Recent growth of 2% lags behind key competitors such as Canada (11%), Australia and the US (8% each) who are investing heavily in promoting their higher education systems internationally and stand to gain from our relative underperformance, both in the short and longer term.

Universities are anchor institutions in their regions - they are essential for vibrant local economies and are drivers of innovation and business development.

Universities are engines of regional growth,31 supporting the rebalancing of the UK economy and helping regions to achieve their economic potential.

By creating local jobs, supporting local innovation and attracting investment and talent, they help provide the foundations for the development of regional economic powerhouses:

- Universities attract knowledge-intensive businesses, often forming a natural centre for business clusters and innovation hotspots.
- Universities play an important role in attracting foreign direct investment: they ensure that a strong talent pool is available for local companies, they are a globally recognised source of research and innovation, and their reputation allows them to act as economic ambassadors for their local areas.
- Universities provide services, expertise and infrastructure to local businesses and residents on their doorstep.
- Universities are often the largest employers in their locality and many jobs are dependent on the expenditure of universities and their students.

They are in an ideal position to take the lead on significant socio-economic issues at a local level. This is due to their knowledge and expertise, but also because they are anchored in their local area. They can help to identify economic and social opportunities in their regions and to solve the issues that affect local policymakers, businesses and residents:

- Universities help to shape local economic strategies. For example, their engagement with their Local Enterprise Partnership (LEP) is a critical aspect of local innovation and growth. Many universities supported their LEPs in the development of their European Structural Investment Fund strategies and Strategic Economic Plans.32
- Universities link research and teaching priorities to local economic and social needs.
- Universities promote public engagement, community wellbeing and active citizenship skills.

Universities are major contributors to the UK economy, generating £73 billion of output in 2011 alone.

In 2011–12, universities and their expenditure accounted for 757,268 jobs, or 2.7% of all UK employment. Universities achieve more output than advertising and market research, computer manufacturing and legal services, and generate more GDP per unit of expenditure than other sectors including health, public administration and construction.

In academic year 2011–12, the most recent for which figures are available:³³

- Universities generated over £73 billion of output.
- Universities contributed over £36.4 billion to UK GDP. Off-campus expenditure of international students and visitors contributed a further £3.5 billion. In total, this contribution came to over £39.9 billion, equivalent to 2.8% of GDP in 2011.
- For every 100 jobs at universities a further 117 were generated in other sectors of the economy.
- Universities directly employed almost 380,000 people and a further 370,000 full-time-equivalent (FTE) jobs in other sectors of the economy were dependent on the expenditure of universities. This accounted for 757,268 FTE jobs throughout the economy and was equivalent to 2.7% of all UK employment in 2011.

Evidence suggests that universities support further longterm contributions to the UK economy. For example, on average each graduate contributes an extra £80,000 in tax and social contributions compared to non-graduates.³⁴

The UK excels in higher education exports, with the second largest share of the global market, behind only the United States. The higher education sector generated an estimated £10.7 billion of export earnings for the UK in 2011–12, 35 £7.2 billion of which was from expenditure by international students on fees and living costs. The value of higher education exports grew by an estimated 25% between 2008 and 2015.

Iwenty per cent of the £73 billion output generated by the sector in 2011–12 depended on the expenditure of students from outside the EU. Because both universities and their students purchase the vast majority of their goods and services from local businesses, the benefits of their expenditure are largely retained locally.

Universities
have
transformed
themselves
over the
past decade,
becoming
more efficient
and cost
effective.

Between 2005 and 2011 English universities reported £1.38 billion of efficiencies against a cumulative government target of £1.23 billion.



Universities are committed to making every pound of public and private investment count – maximising opportunities for growth, leveraging support from other sources, and providing excellence and value for students.

International comparisons carried out by the European Commission show that the UK is a 'top performer' in using resources effectively, in both teaching and research.³⁶

Universities in England have consistently met efficiency targets set by government: between 2005 and 2011 they reported £1.38 billion of efficiencies against a cumulative target of £1.23 billion.³⁷

Universities UK's research has found that, in England

- Over the last 10 years, efficiency gains from better use of university space are estimated to total £886 million.
- In research funding, universities have so far delivered £194 million of savings on research council awards, against a cumulative target of £187 million.
- Significant investments in carbon and energy reduction have prevented 1.2 billion kg of additional carbon dioxide equivalent emissions being released.

Universities have responded strategically in the current funding environment, drawing on internal resources and borrowing to make up a shortfall in capital funding and enhance the student experience. This has enabled universities to continue to deliver world-class teaching and research, as well as maintaining the scale of their contributions to society.

A government survey of universities in England and their students' union representatives found that universities were investing significantly in enhancing the student experience, with many universities reporting increased staff support, improvements to teaching spaces, 38 smaller classes, and increased contact hours with academic staff. 39

However, universities' ability to continue to do this in the long term could be challenged. The combination of the real-terms erosion of tuition fees in England, the ongoing need to invest to maintain the university estate, and more uncertain and volatile income streams threaten to reduce the internal reserves that have been critical to universities' ability to invest in capital, staff development and the student experience. Failure to generate sufficient margins for reinvestment would be a significant threat to the long-term sustainability of universities.

Universities' priorities and how government can support them

Particularly in the current economic environment, the government will critically review public spending to ensure that every penny invested delivers the intended benefits at maximum efficiency.

Over the coming months, Universities UK will work with government, civil servants and sector stakeholders to develop detailed proposals as to how to meet the aims set out below and to examine the efficacy of current funding streams aimed at supporting university education and the UK's research and innovation base. This will require clear recognition of the devolved nature of certain funding streams and the autonomy and diversity of the higher education sector.

Universities want to continue to:

- 1. Provide high quality education that meets the UK's knowledge and skills needs
- 2. Provide opportunities for all people with the ability and motivation to study at university to be able to do so
- 3. Deliver world-class research and support innovation
- 4. Support the UK's regions and provide opportunities for businesses to enhance their innovation capacity
- 5. Attract investment and talent from abroad, and maintain the UK's international competitiveness in foreign markets

1. Provide high quality education that meets the UK's knowledge and skills needs

To help universities achieve this in England, the government should:

- ensure that universities have a sustainable income that will enable them to invest in the student experience and maintain world-class provision
- maintain sufficient support for high-cost subjects and small, specialist institutions so that universities can continue to provide high quality provision in areas crucial to society and the economy

2. Provide opportunities for all people with the ability and motivation to study at university to be able to do so

To help universities achieve this in England, the government should:

- support undergraduate students with a progressive, sustainable and affordable funding system
- develop, by 2016–17, appropriate financial support for postgraduate students, and create a one-off fund to provide financial support to students during the interim period
- continue to invest, along with universities, in funding to support social mobility; the allocation of this funding should recognise the importance of attracting students to university as well as supporting a diverse student body while they are studying

3. Deliver world-class research and support innovation

To help universities achieve this, the government should:

- enhance investment in the UK's exceptionally strong and efficient research and innovation base
- commit to a long-term strategy to increase public investment in R&D to at least the OECD average (as a proportion of GDP) over the next decade
- maintain the dual support system for research funding and the current balance of funding between its two elements
- channel research capital funding primarily through our world-class university infrastructure

4. Support the UK's regions and provide opportunities for businesses to enhance their innovation capacity

To help universities achieve this, the government should:

- place universities at the heart of innovation and growth strategies by increasing those recurrent, flexible funding streams for knowledge exchange that underpin a range of innovation activities, such as the Higher Education Innovation Fund in England.
- continue to promote and incentivise collaboration between universities and businesses, charities and other universities/across sectors and institutions, and identify and remove any funding barriers to engagement
- in England, continue to encourage all Local Enterprise Partnerships to work closely with universities in their region to support innovation and enterprise, and thereby create new skills, businesses and jobs

5. Attract investment and talent from abroad, and maintain the UK's competitiveness in foreign markets

To help universities achieve this, the government should:

- sustain 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
- launch an international student growth strategy backed by investment – to support international marketing, mobility and partnerships; this should include an ambition to increase the number of international students by at least 20% by 2020
- communicate a welcoming and consistent message to international students and staff and increase collaboration across government to promote growth and diplomacy
- enhance opportunities for qualified international graduates to stay and work in the UK for a period, to contribute to the economy
- support more UK students to study or gain work experience overseas as part of their degree

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For more detailed evidence and analysis of the role universities play in the UK economy see our recent report, The economic role of UK universities

www.universitiesuk.ac.uk/highereducation/Pages/TheEconomicRoleofUKUniversities.aspx

This publication has been produced by Universities UK, the representative organisation for the UK's universities. Founded in 1918, its mission is to be the definitive voice for all universities in the UK, providing high quality leadership and support to its members to promote a successful and diverse higher education sector. With 133 members and offices in London, Cardiff and Edinburgh, it promotes the strength and success of UK universities nationally and internationally.

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