

PATTERNS AND TRENDS

IN UK HIGHER EDUCATION

2012

HIGHER
EDUCATION:
ANALYSING
A DECADE
OF CHANGE



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Foreword

Universities are a core strategic asset to the UK and play a critical role in driving economic growth and social mobility. World-class education, research and innovation are to be found in universities right across the sector, making them vital to the future prosperity and wellbeing of society.

This year's Patterns report, which continues the series on changing trends in higher education and brings us up to 2011, records a period of outstanding success and growth for UK universities. It tells the story of how institutions are demonstrating resilience in the face of uncertainty, and a capacity to adapt to the challenges of rapid change.


Since 2001 the number of students gaining a first degree has risen by 17%, while the number achieving a postgraduate qualification has risen by 27%. Much of this growth can be attributed to the sector's ability to attract students from around the world to study in the UK. Being entrusted with the education of students who will become professional and business leaders in their countries is both a great privilege for UK universities as well as a testament to their high standing internationally. It also brings with it many advantages and benefits for the country more widely. Students from overseas enrich the learning experience of all students, and enable British students to benefit from an education that has a strong international dimension. While they are here, overseas students also make a significant contribution to local and national economies, and when they return to their home countries they provide an invaluable network of influence and support for UK business.

If current trends continue, universities are on track to generate £17 billion of annual export earnings by 2025. Achieving this growth potential will require the university sector and the government to work together to ensure that recruitment activities and migration policies are mutually supportive.

Despite the steady rise in student numbers, the UK remains behind many competitor countries in terms of the percentage of highly skilled individuals in its workforce. Figures for 2012–13 enrolment, not included in this report, suggest that this gap may be set to widen if the number of home students applying to university declines. This year's Patterns report therefore provides a timely opportunity to reflect on developments over recent years.

In addition to this brief summary publication, detailed data on patterns of institutional diversity (published as section B of this report in previous years) are available on the Universities UK website. This data tracks the rise of student numbers and the extent to which the profile of the student population has changed, and considers the changing popularity of different subject areas over the period, as well as looking at the financial position of the sector.

Patterns provides helpful contextual data for strategic planning and for considering future policy developments. In particular, it will help to inform a forthcoming review of the impact of recent higher education reforms, to be undertaken by Universities UK in the spring of 2013.

A handwritten signature in black ink that reads "Paul O'Prey". The signature is written in a cursive style with a dot for the letter 'o' in "Prey".

Professor Paul O'Prey

Vice-Chancellor, University of Roehampton
and Chair, UUK Longer Term Strategy Network

Introduction

Over the past decade higher education in the United Kingdom has undergone significant change, from the introduction of variable tuition fees to the increasingly international outlook of the sector. These, along with a number of other changes, have affected almost every aspect of university provision and have served as a precursor to the current reforms of the higher education sector. This report uses data from the Higher Education Statistics Agency (HESA) to consider some of these developments in more detail, examining the changing size and shape of the sector over time. It will be followed in spring 2013 by a report focusing on monitoring the impact of the current reforms on various aspects of higher education provision.

In 2010–11 there were 165 higher education institutions in the UK. This report features data on all these institutions, all of which are in receipt of public funding from the funding councils, other than the University of Buckingham. This excludes data for the University of Wales (central functions), which has staff but no students. All HESA figures quoted in the report which relate to student and staff numbers have been rounded to the nearest five in accordance with HESA data protection protocols. All percentages have been calculated using the raw figures and rounded to a fixed number of decimal places. It follows that some of the data presented may not sum precisely. Raw data underpinning the charts in this report is available to download from the Universities UK website at www.universitiesuk.ac.uk/highereducationinfocus.

An overview of higher education provision

The past decade has seen rapid growth in the sector, with total student numbers rising from just under 2 million in 2000–01 to around 2.5 million by 2010–11. The majority of provision continues to be delivered in higher education institutions in receipt of public funding from the funding councils. About 93% of higher education provision has been delivered in publicly funded institutions throughout the past five years. Recent policy changes, however, may lead to a shift in the balance between higher education and further education. In addition, the government has recently signalled its intention to support the entry of new providers to the market.

The rest of this report will focus solely on the higher education provision that is delivered by higher education institutions, therefore further education and alternative provision are excluded from this point forward.

Fig 1 Distribution of student numbers by type of provider, 2009–10

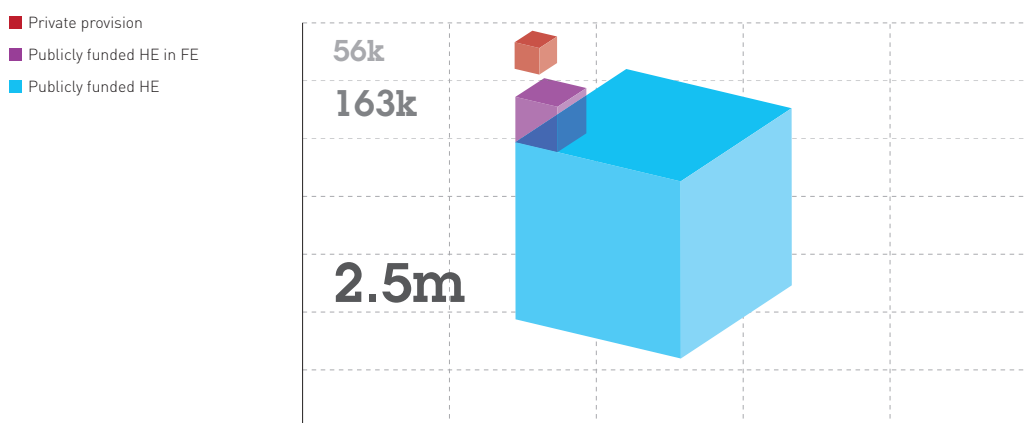
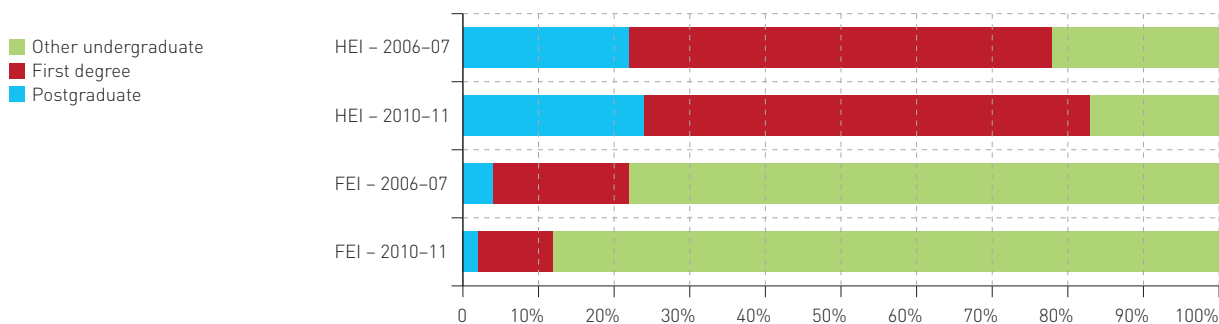


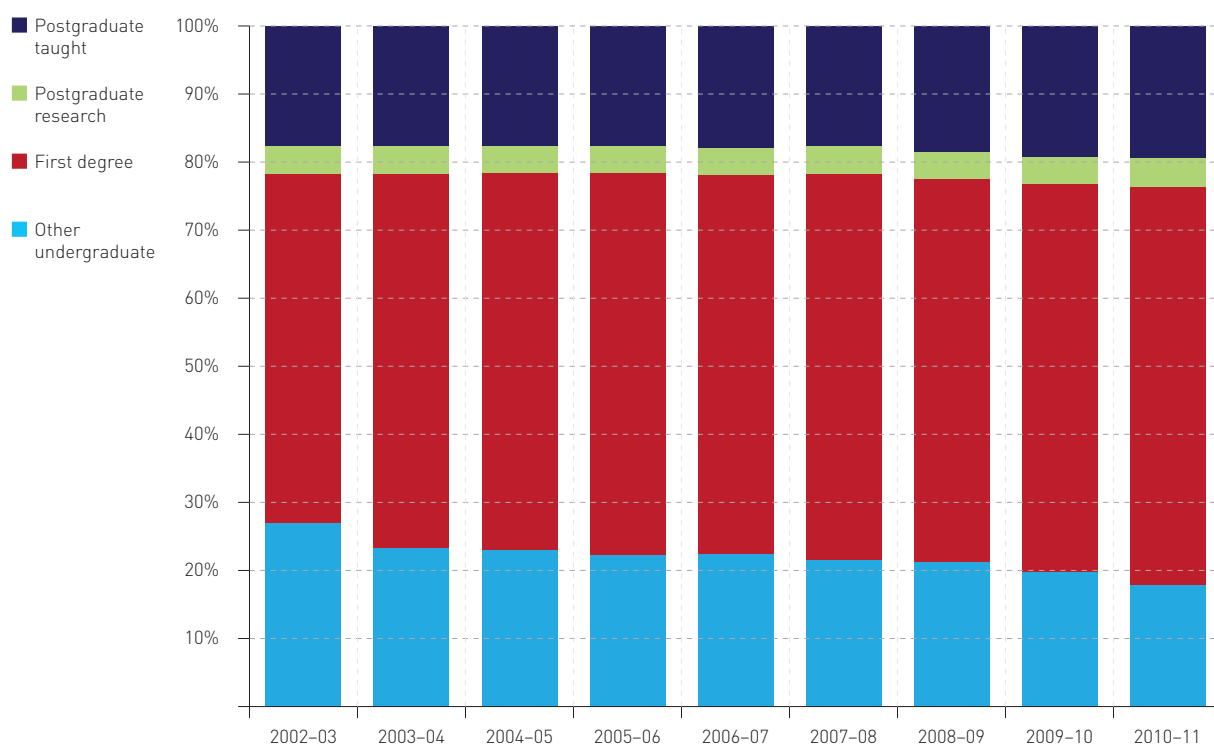
Fig 2 Higher education students by level of study and institution type, 2006–07 to 2010–11



Students

With an average annual growth rate of 2%, the number of students in higher education has increased at a reasonably steady rate over the past decade. There are now 2.5 million students in higher education, an increase of 0.5 million since 2001–2002. Only two of these years showed very little or zero growth – 2007–08, the year after the introduction of variable tuition fees, and 2010–11, the first year in which student number controls became more tightly regulated.

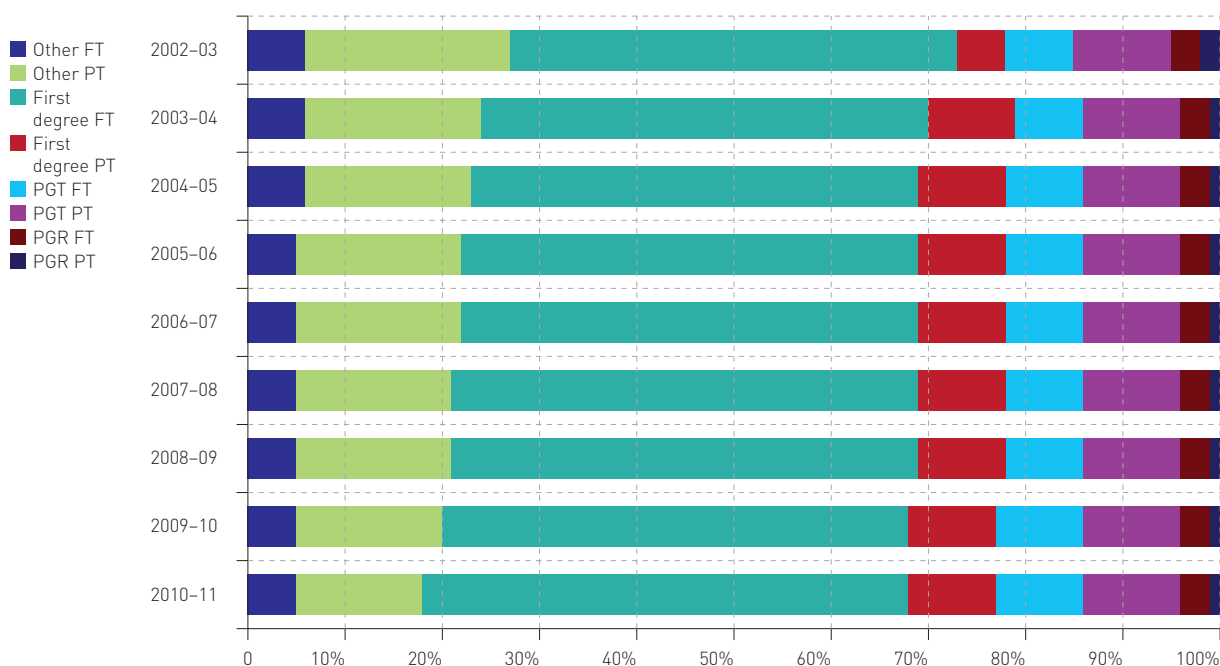
Fig 3 Trends in total student numbers by academic year and level of study



With the exception of enrolments on other undergraduate programmes, enrolments for all levels of study have increased. The largest percentage increases between 2002–03 and 2010–11 were for students studying for a first degree followed by those registering for taught postgraduate study, with increases of 34% and 32% respectively.

Part-time enrolments have remained fairly static over the past decade, albeit from a relatively low base. However, when this is examined by level of study we can see that the number of students studying part time for their first degree increased by over 90% over this period. There have recently been changes to the way in which part-time students can access financial support. This, in conjunction with increased fee levels, could compromise the sustainability of part-time provision. Universities UK will be leading a project to consider this issue in more depth.

Fig 4 Trends in total student numbers by academic year, mode and level of study



International students

Along with the expansion at undergraduate level, growth in student numbers has largely come from a significant increase in the number of international students studying at UK universities. In 2002-03 non-EU students made up just 8% of the total student population; by 2010-11 this had risen to around 12%. International students bring huge benefits to the UK economy: higher education as an export industry contributed around £7.9 billion annually to the economy in 2009 and has the potential to contribute almost £17 billion by 2025.

The most significant trend in the student population has been the growth in demand from international students looking to undertake Masters-level qualifications in the UK. The number of non-EU students coming to the UK to undertake taught postgraduate study has more than doubled since 2002-03. This growth has been across all subject areas but those with the largest percentage increase are engineering and technology, mathematical sciences and subjects allied to medicine, which have increased by 149%, 155% and 228% respectively. Along with business and administrative studies, these subject areas are also the most popular in terms of absolute numbers.

There has also been considerable change in the regions from which students come in order to study in the UK. The most noticeable increases are from Asia and the Middle East, which together have experienced more than an 80% rise in the number of students that they send to the UK. In 2010-11 the top five countries of origin for international students were China (including special administrative regions), India, Nigeria, USA and Pakistan.

Fig 5 Trends in international market shares, 2000 and 2010

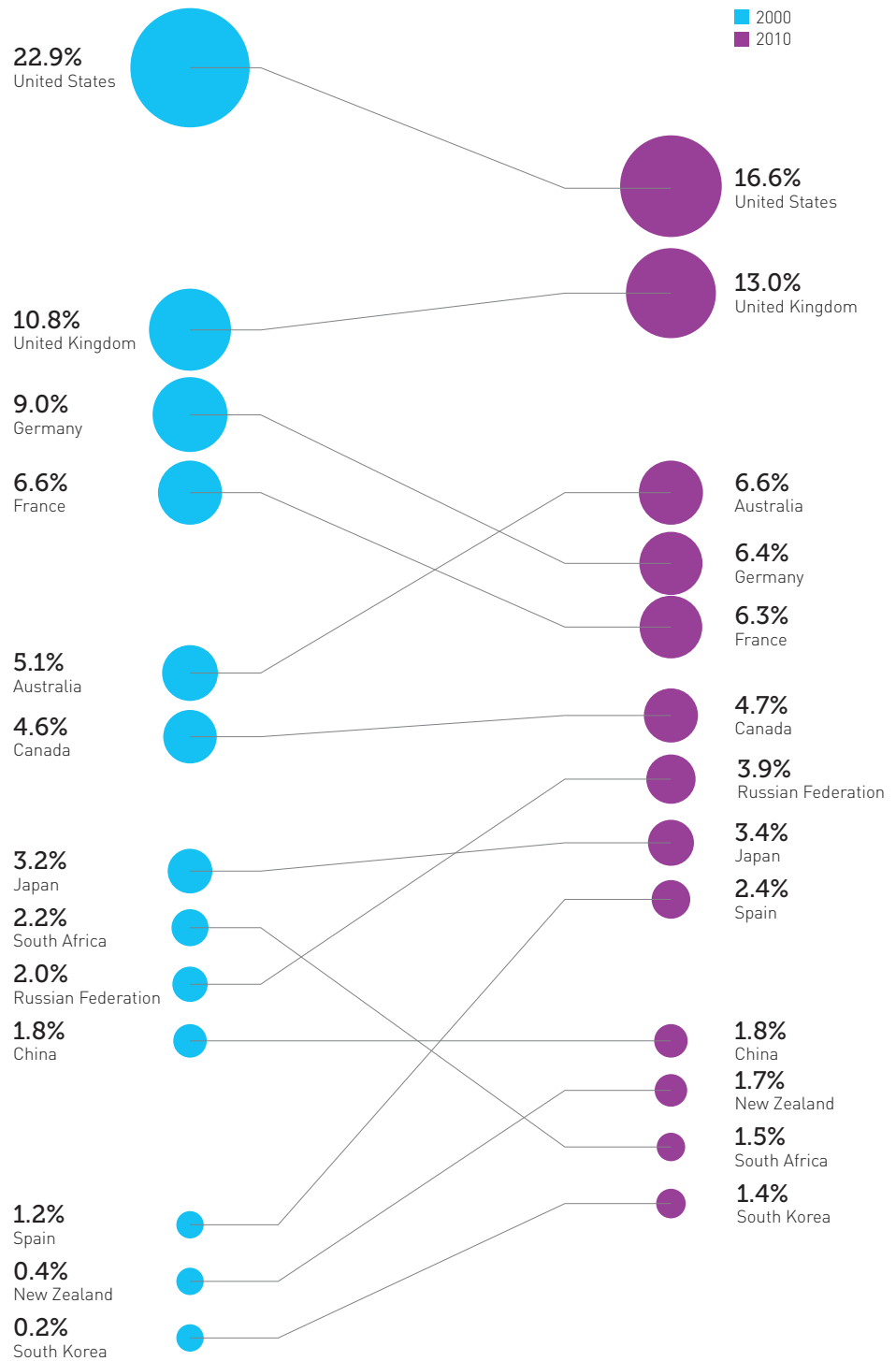


Fig 6 Percentage change in total student numbers by domicile and level of study between 2022-03 and 2010-11

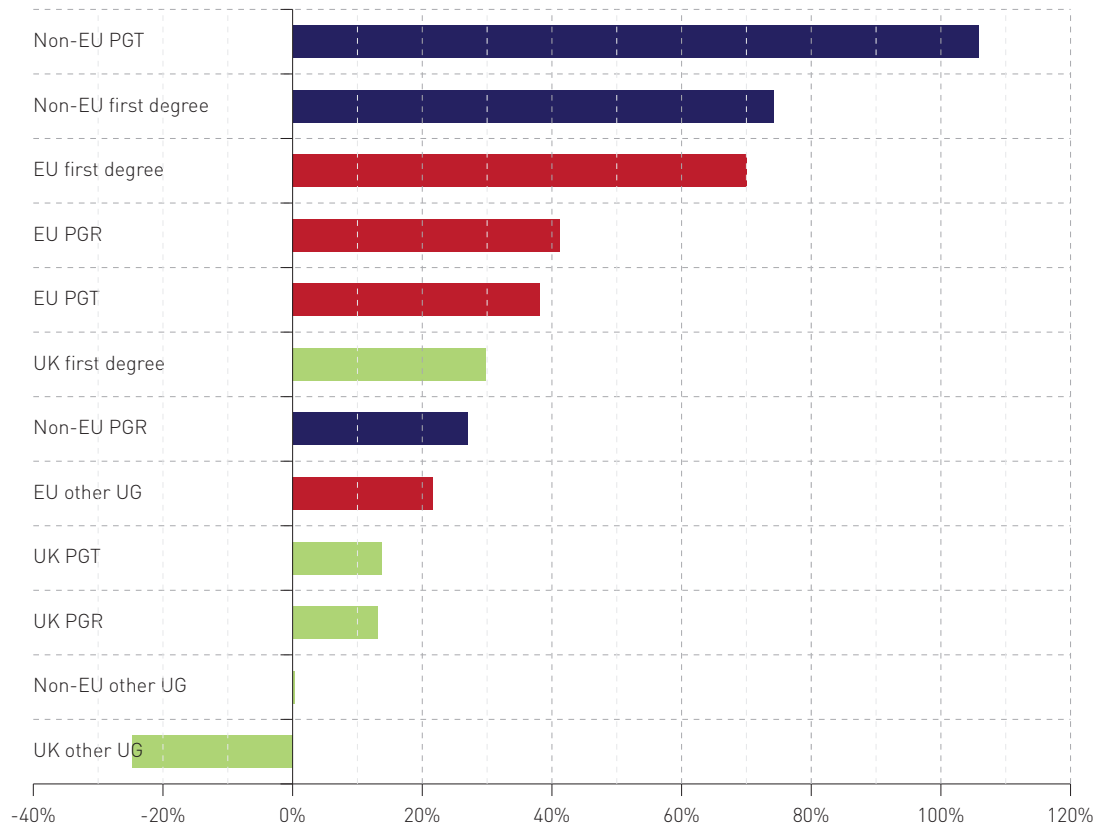
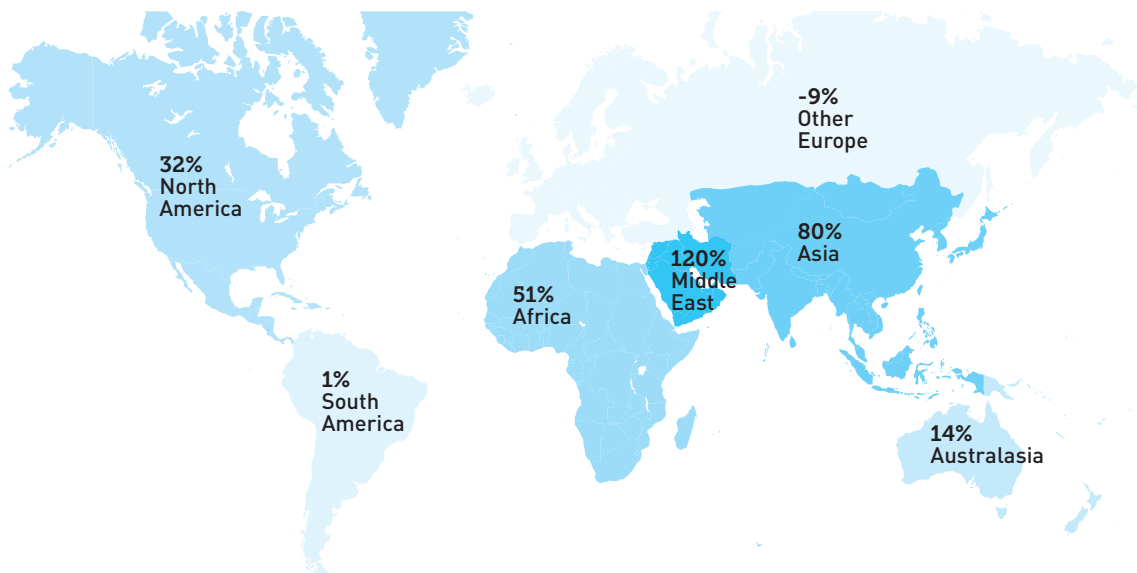


Fig 7 Change in total non-EU student numbers studying at UK HEIs by region of origin between 2002-03 and 2010-11



A UK-wide picture

The devolution of responsibility for higher education policy to each of the UK nations has brought more prominence to the cross-border flows of students in the UK. The proportions of students by country are broadly in line with the distribution of the UK population, with a slight overrepresentation in Scotland and underrepresentation in Wales. Over the period 2002–03 to 2010–11, whilst the overall rate of growth in student numbers has been comparable in each of the countries of the UK, a closer look shows that this has varied significantly by country year on year.

As higher education policy has become more divergent across the UK, the cross-border flow of students has become increasingly important when considering the impact of policy changes. Students domiciled in England are the most likely to remain within their home country to study – only around 3.5% attended an institution located outside of England in 2010–11. Around 17% of Scottish students studied outside of Scotland and 33% of Welsh- and Northern Irish-domiciled students studied outside of their home country.

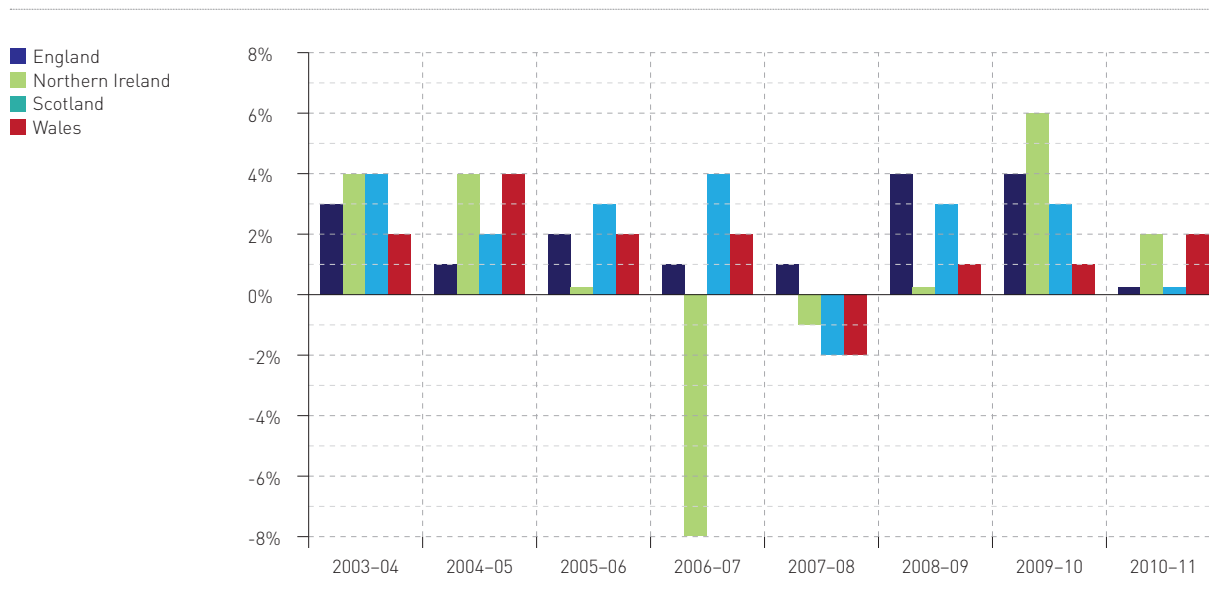
There is also some variation by country in the mode of study that students choose. In England almost 35% of the student population is studying part time compared with just 25% in Scotland and 30% in Northern Ireland and Wales. However, there would seem to be more uniformity when the same analysis is carried out by level of study. England, Scotland and Wales all have broadly similar proportions of students studying at each level, while Northern Ireland has a higher proportion of students studying at first degree level than the other three countries.

As part of the aforementioned work that Universities UK will publish in spring 2013, we will also be undertaking a more detailed analysis of the impact of changes to higher education policy in each of the four UK nations on the cross-border flow of students.

Fig 8 Students per thousand population, 2011



Fig 9 Year-on-year growth in total student numbers by academic year and country of institution, 2002-03 to 2010-11

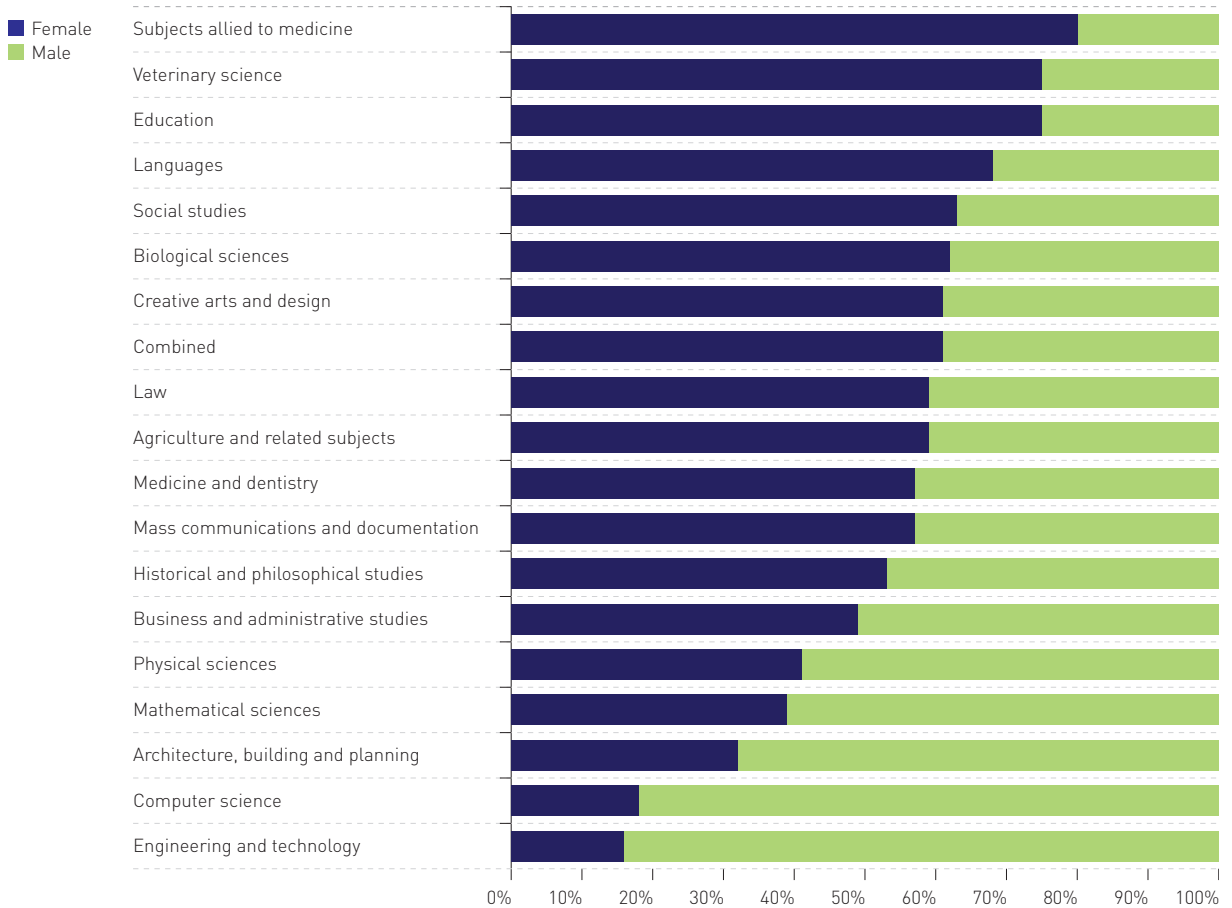


Age and gender profiles

Although at first sight the gender profile of the student population appears to be balanced, a more detailed look by both level of study and subject suggests that there continues to be some variation. At first degree level around 55% of students are female. At postgraduate research level, however, the proportion of women is around 47%. That said, this has increased from 45% in 2002-03.

There also continues to be a significant gender bias in certain subjects. Students in veterinary science, education and subjects allied to medicine are predominantly women whilst engineering and computer science students are predominantly men. The latter may partly be due to the high proportion of overseas students taking those subjects, as there tends to be a higher proportion of male overseas students than female – 54% compared with 47% of EU students and 42% of UK students.

Fig 10 Subject of study by proportion of male and female students, 2010–11



There has been a clear change in the age profile of the population between 2002-03 and 2010-11. There has been an increase in the numbers of younger students studying at UK institutions alongside a decline in those aged over 30. Projections suggest a decline in the overall 18-year-old population over the next decade which may result in a further change to the age profile of the student population. So too might the trend towards the offer of more flexible provision, thus enabling students to combine study with employment.

Fig 11 Trends in total student numbers by age group, 2002-03 to 2010-11

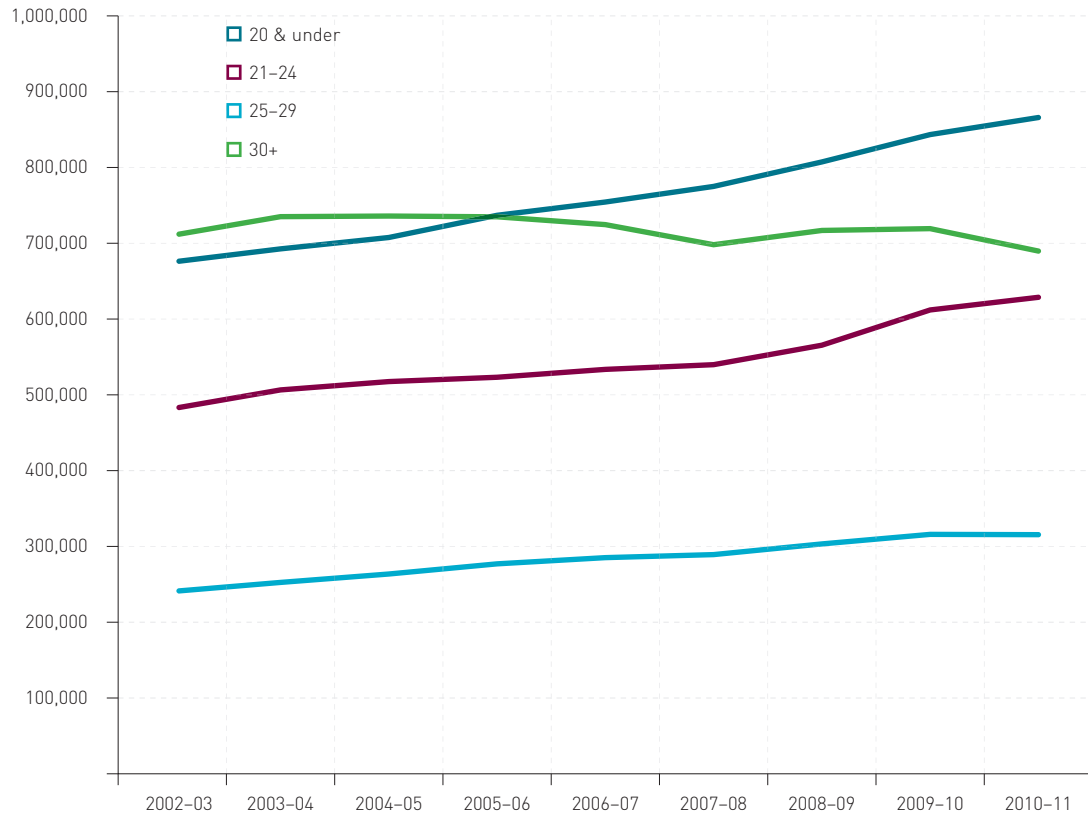
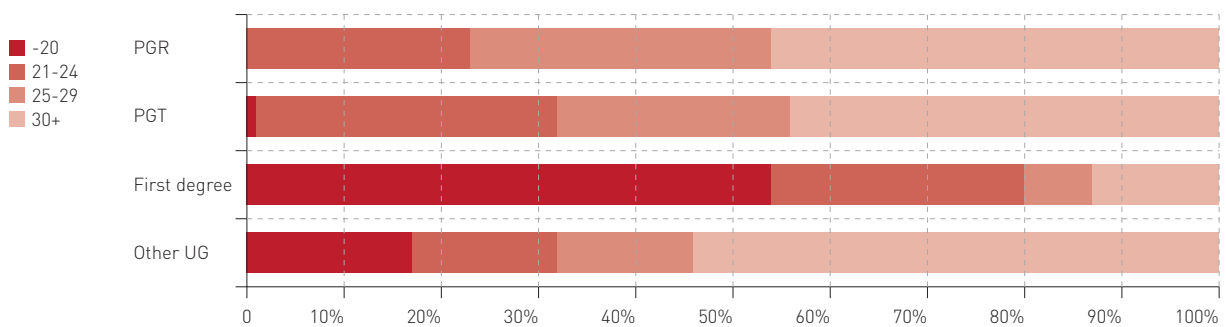


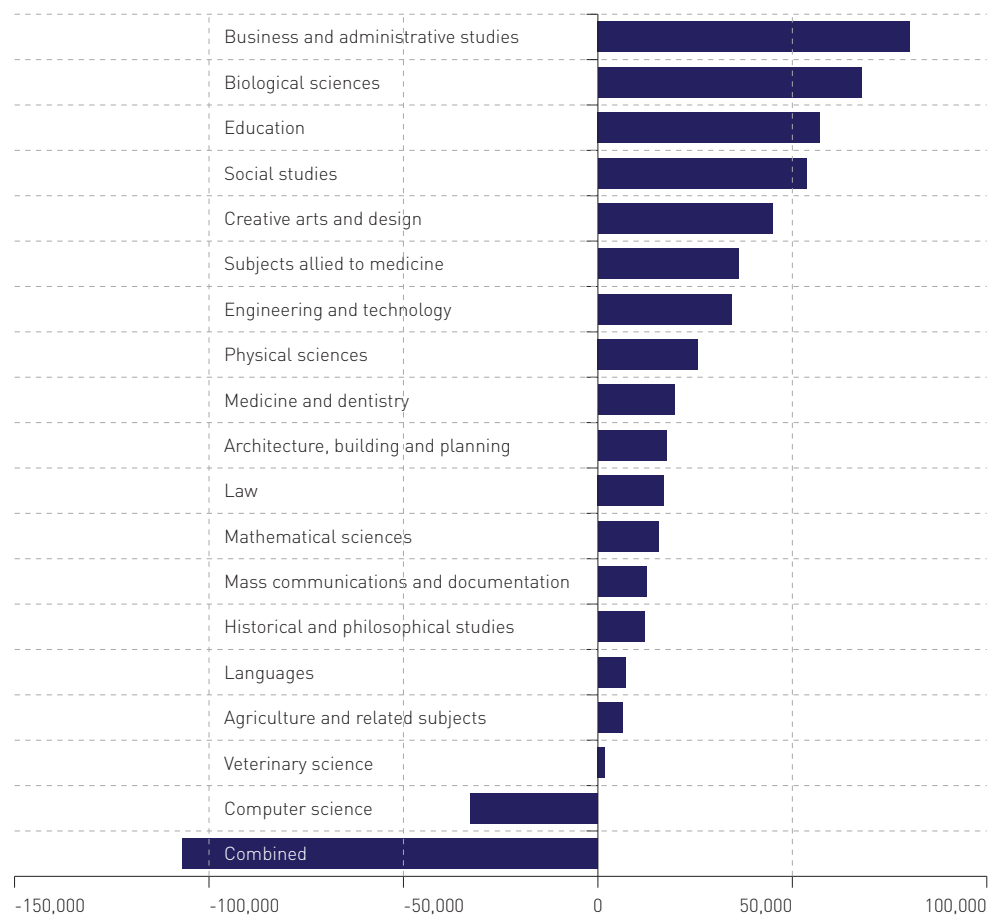
Fig 12 Total student numbers by age group and level of study, 2010-11



Subject choice

Changes to the numbers of students studying particular subjects suggest that there are some areas of vulnerability in terms of sustainability of provision. The steady decline in the number of students taking computer science courses has long been a concern, and not just in the UK – for example, between 2003 and 2009 the number of students graduating with computer science degrees in the USA fell by 35%. There are, however, other subject areas which after a period of decline seem to have begun to recover. Enrolments on engineering courses at the beginning of the 2000s were relatively static but by 2006–07 an upturn was evident and there has been a subsequent increase of around 23%. Mathematical sciences and biological sciences have seen the largest percentage increases since 2002–03.

Fig 13 Change in number of students enrolled by subject between 2002–03 and 2010–11

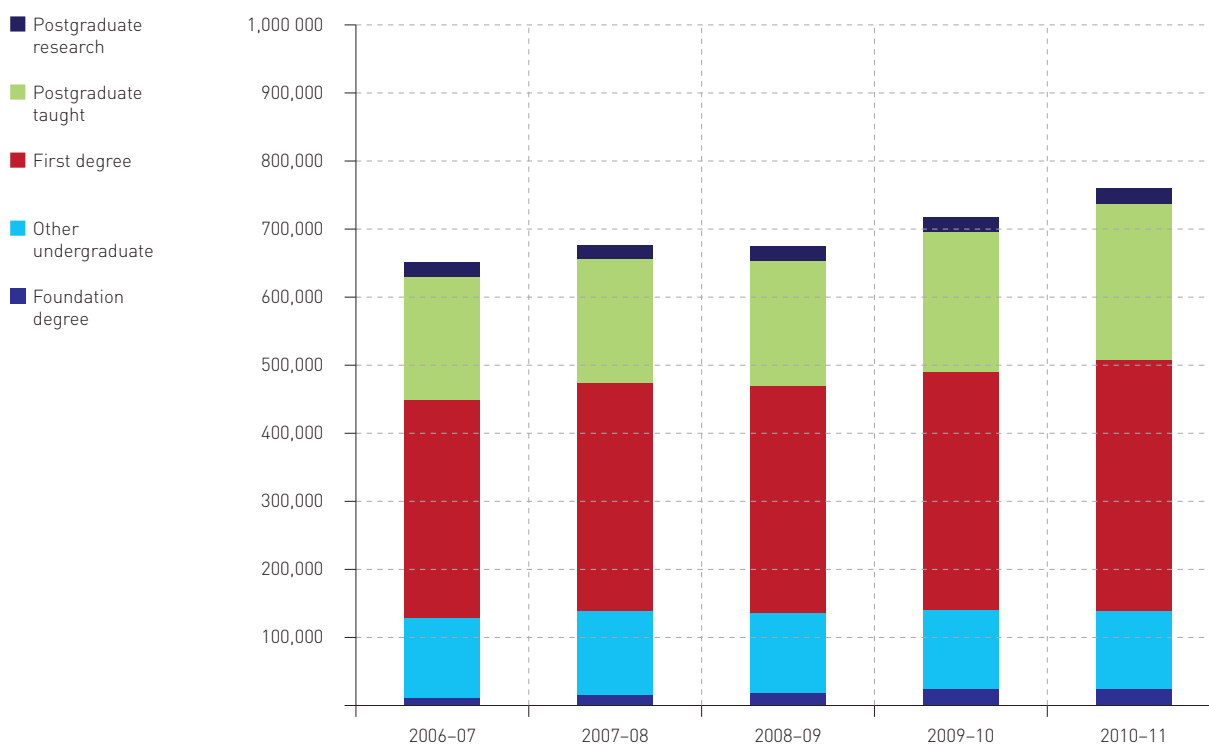


Outcomes and achievement

Between 2006–07 and 2010–11 there has been a 17% increase in the number of students receiving higher education qualifications. The largest percentage increase has been the 27% rise in the number of students leaving with taught postgraduate qualifications. There have been more modest increases in the numbers leaving with first degrees and research degrees, 16% and 9% respectively.

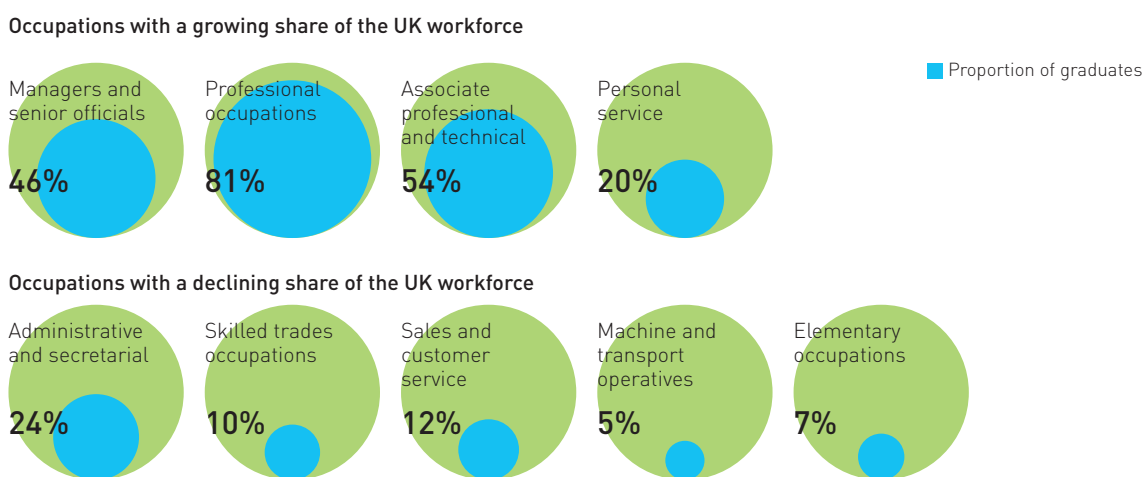
This reflects the increasing proportion of the UK population that hold a higher education qualification. The percentage of the UK labour force aged 30 to 34 with a higher education qualification has increased from 30% to 50% between 2001 and 2011. This growth reflects the changing profile of the UK workforce and the increasing need for higher level skills. Those occupations with a growing share of the workforce have predominantly been in areas which require higher level skills.

Fig 14 Number of students obtaining higher education qualifications by year and level of qualification obtained, 2006–07 to 2010–11



A recent report from the Higher Education Careers Services Unit (HECSU) on what graduates do suggests that the climate for graduate employment is much better than anticipated. Despite continued economic difficulties, public sector job losses and relatively high levels of unemployment, graduate unemployment rose only marginally in 2010–11 compared with the previous year.

Fig 15 Percentage of graduates within occupations, 2010



There are also signs that the graduate employment market is starting to recover. In its summer 2012 review, the Association of Graduate Recruiters (AGR) revised its growth prediction for the average graduate starting salary from 4% to 6%, taking the average starting salary to £26,500. After three years of no increase to starting salaries this is good news both for graduates and for the UK economy. The AGR also expects that the number of graduate vacancies offered by the top 100 graduate recruiters will rise by 4.6% in 2012.

Staff

In 2010–11 there were 381,790 staff employed by UK higher education institutions, an increase of around 13% since 2003–04. The majority of the increase has been as a result of the growth in the number of academic staff working in the sector, albeit with a small decrease in 2010–11. This increase has resulted in a more even balance between academic and non-academic staff.

Growth in academic staff numbers has been concentrated in specific disciplines and there are a handful of disciplines which have seen a contraction in the number of staff employed. Both engineering and agriculture have seen a moderate reduction in the number of academic staff, 2% and 5% respectively. In terms of subject areas seeing growth, the biggest percentage increase since 2004–05 has been in architecture and planning (23%).

Fig 16 Trends in number staff employed in higher education institutions by function, 2003-04 to 2010-11

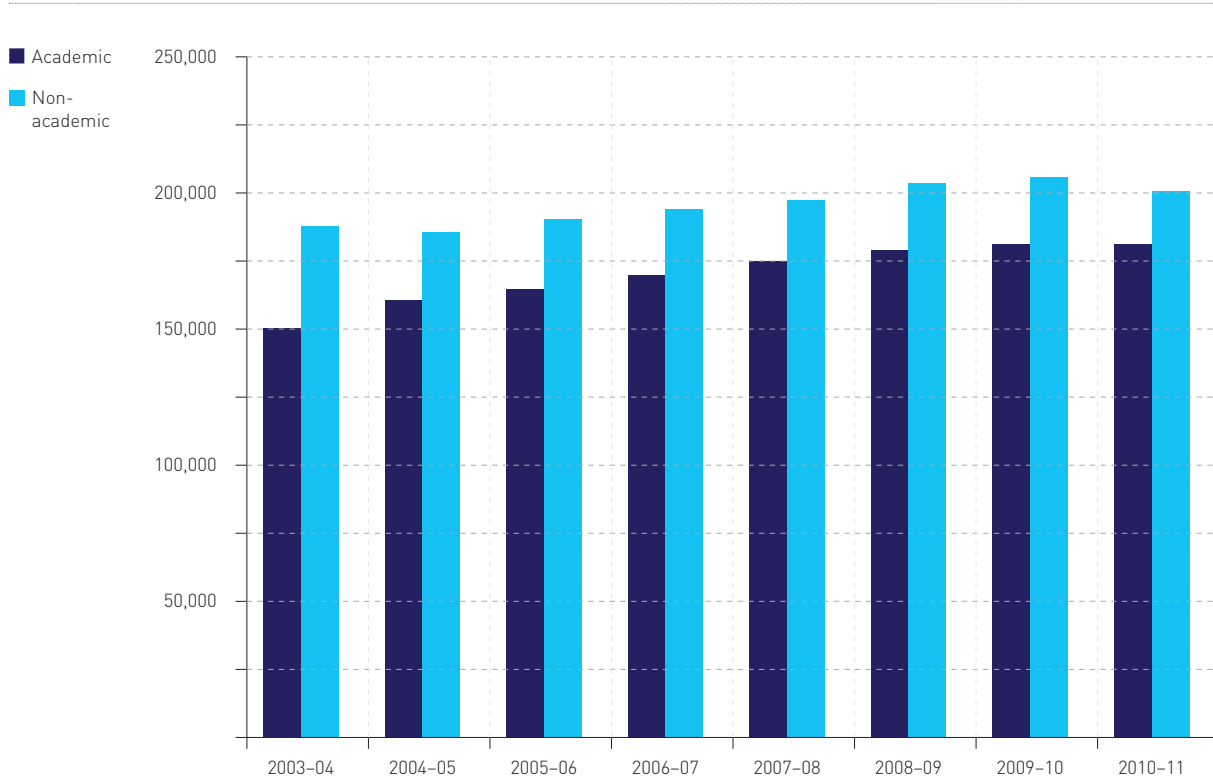
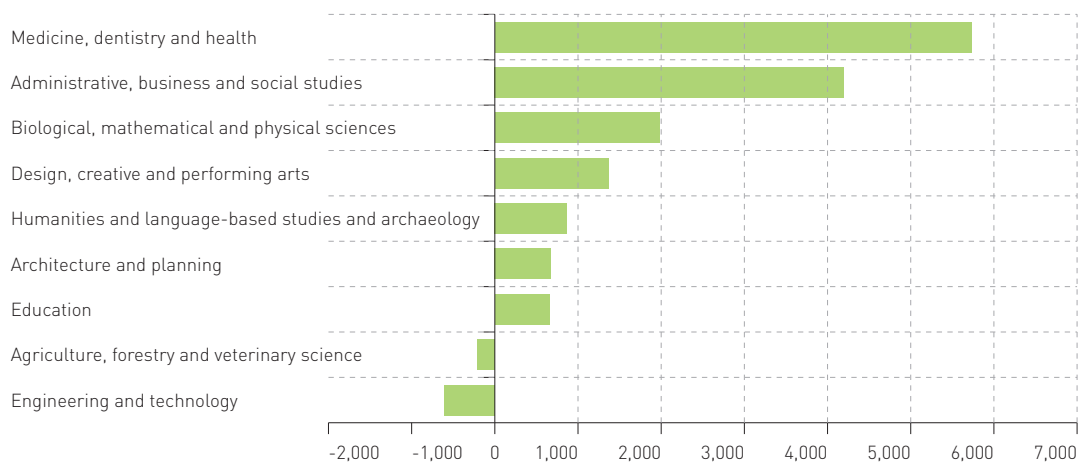


Fig 17 Change in number of academic staff by subject area between 2004-05 and 2010-11



There has also been a change in the profile of non-academic staff members. An increasing number of said staff are now employed in professional occupations and fewer in clerical and manual roles, possibly reflecting the increasing professionalisation of higher education.

As the sector moves into a new funding environment, institutions are committing more time and resources to student support. The number of staff employed in dedicated student support roles has increased by more than 50% since 2003–04.

The age profile of the academic workforce has become more skewed towards higher age categories. The number of staff aged between 61 and 65 has more than doubled between 2003–04 and 2010–11, as has the number of academic staff over the age of 66. This changing age profile is particularly noticeable in some disciplines. Almost 60% of staff in education are over the age 45 and 8% over the age of 60. These changes may reflect the changing demographics in the UK population and the phasing out of the default retirement age. They may also represent more fundamental shifts within the sector which may warrant further investigation.

Fig 18 Trends in number of non-academic staff by employment function, 2003–04 to 2010–11

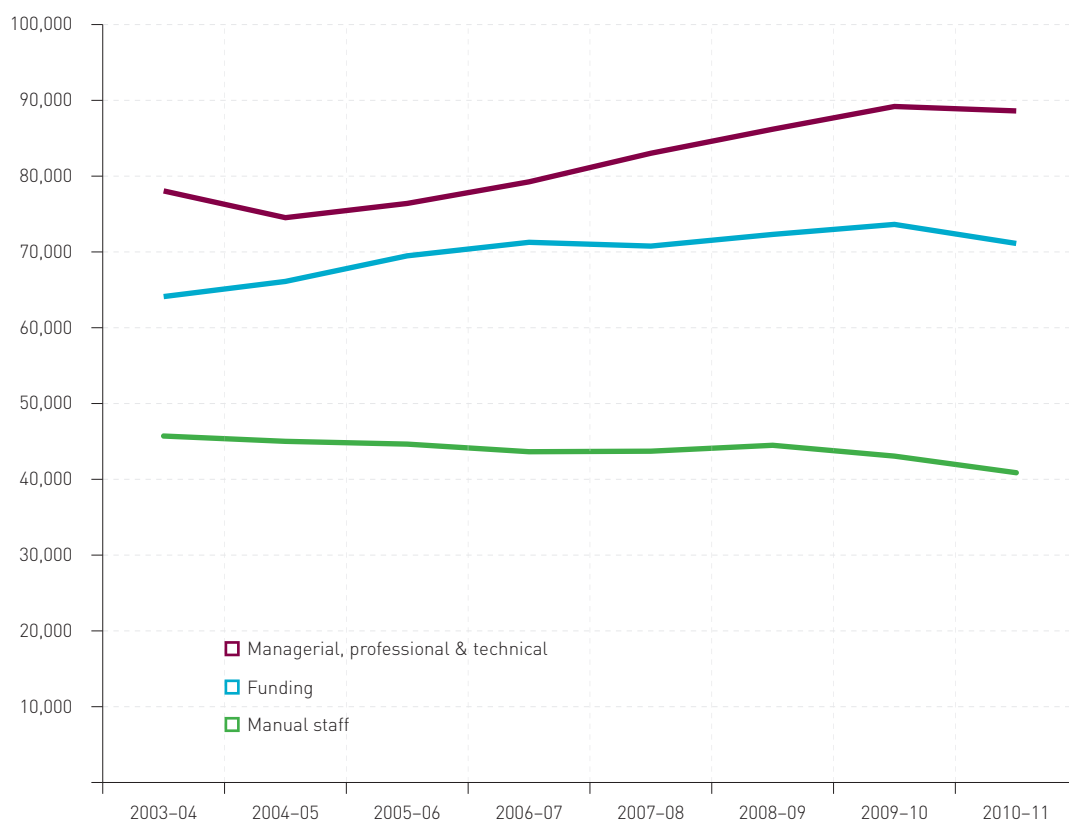


Fig 19 Proportion of academic staff by age group and subject area, 2010–11

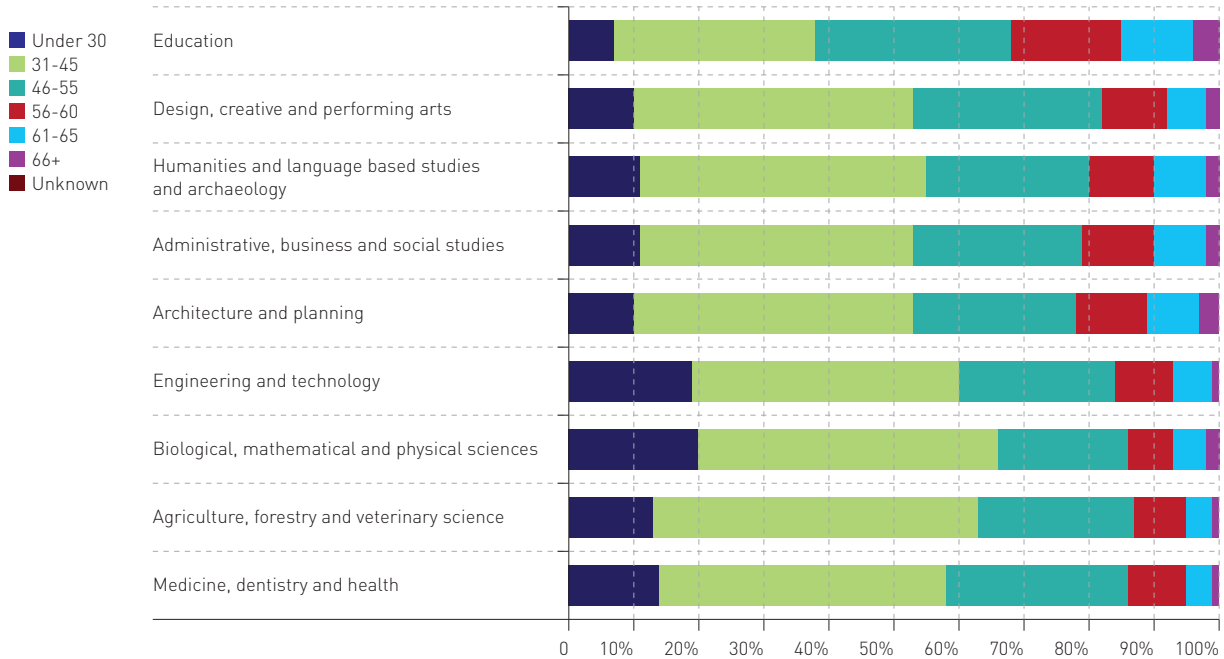
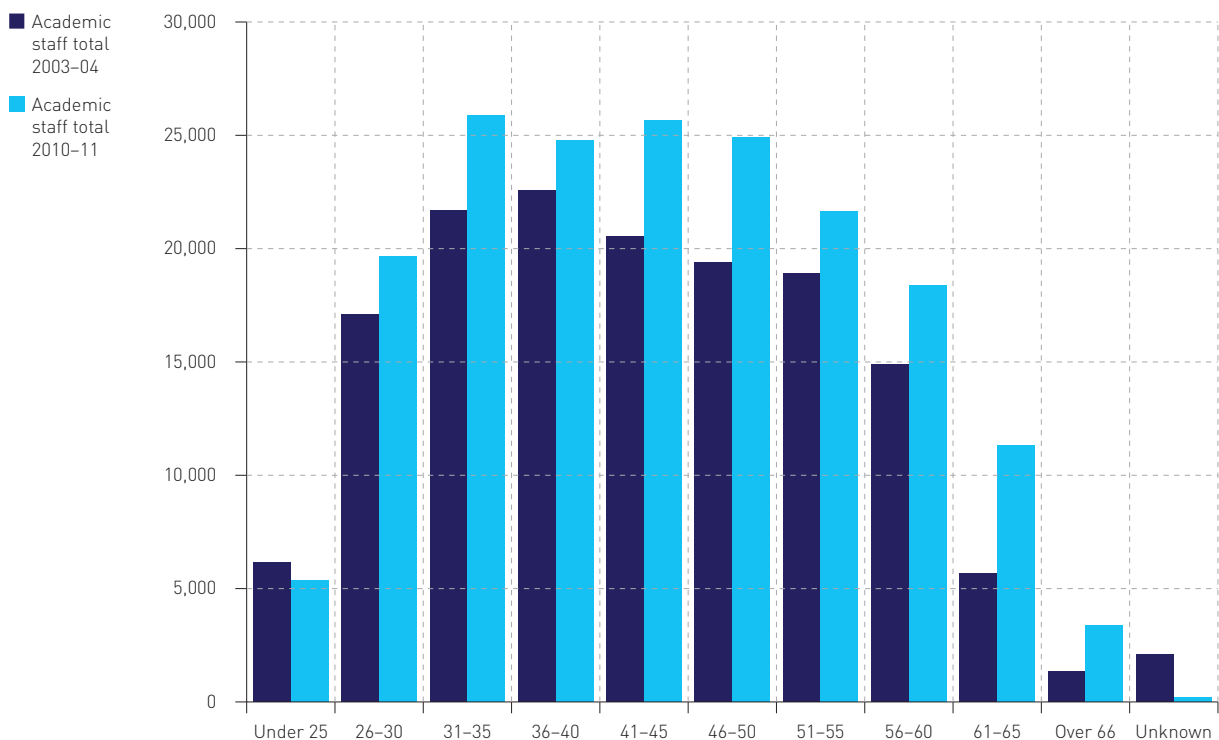
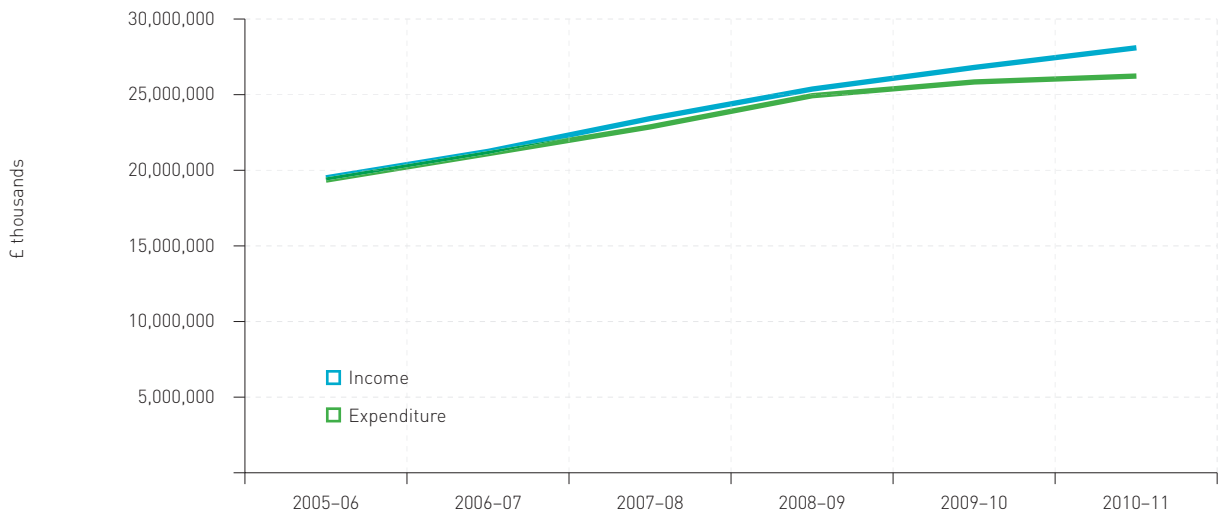


Fig 20 Change in age profile of academic staff between 2003–04 and 2010–11



Income

Fig 21 Trends in total income and total expenditure, 2005-06 to 2010-11



Over the past decade there has been a relatively steady rise in the level of income to the higher education sector, an increase of 41% since 2005-06. Over the same period the level of expenditure has also risen but at a slower rate than income, just 35% over the past six years. This undoubtedly reflects efforts within the sector both to diversify income streams and to control costs more carefully. Recent improvements to the surplus position of the sector as a whole suggest that institutions are preparing themselves financially for a period of increased uncertainty.

Tuition fee income has more than doubled over the past decade, from around £3 billion in 2000–01 to just over £8 billion in 2010–11. This is likely due to a combination of the introduction of variable tuition fees in 2006–07 and the rapid expansion of overseas student numbers. As a proportion of the total, the biggest shift has been in the balance of funding from block grant funding to tuition fees. Tuition fees made up around 22% of all income in 2000–01; by 2010–11 this had risen by around 10 percentage points. As we move further towards replacing the HEFCE teaching grant with loans for the graduate contribution, the balance between direct government funding and funding via tuition fees will continue on this trajectory.

Fig 22 Trends in total teaching income by source, 2000–01 to 2010–11

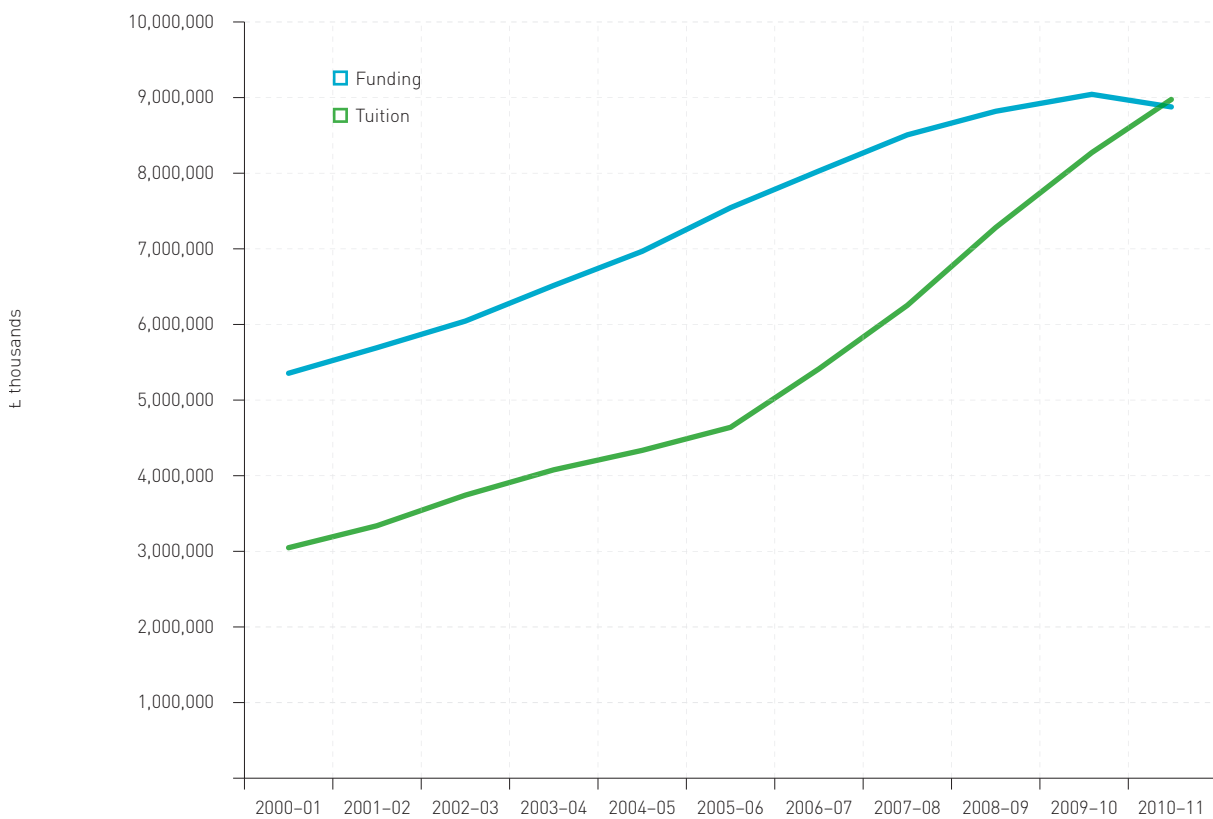
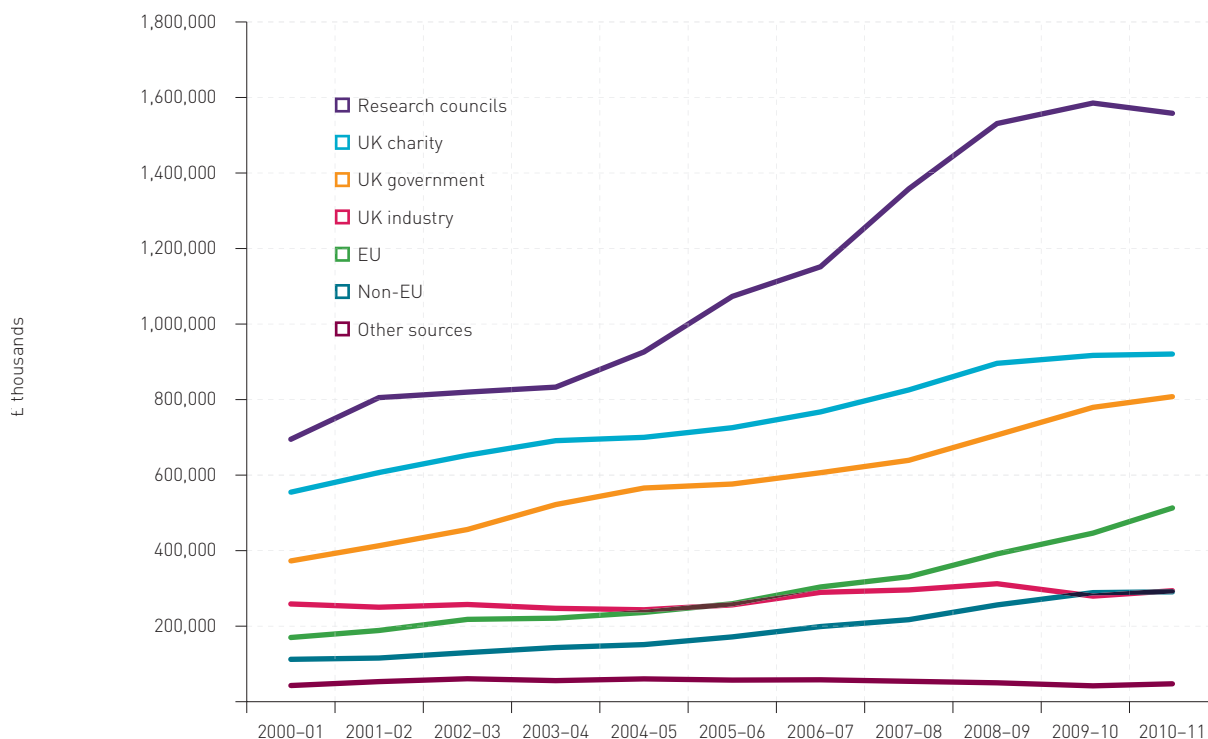


Fig 23 Trends in research income by source, 2000-01 to 2010-11



After a period of fairly steady growth in the value of research funding distributed by the research councils, the past three years have seen relative stability in terms of the total amount of funding flowing to institutions. There has been very little change in the amount coming from UK industry relative to other income streams, an increase of just 13% between 2000-01 and 2009-10 compared to a 105% increase in total income. However, there has been considerable variability during this period. Between 2000-01 and 2005-06 there was very little change in the level of industrial income that institutions were able to attract. However, between 2005-06 and 2008-09 industrial income rose by around 22%. There was a moderate reduction in 2009-10, likely due to the global recession, but 2010-11 saw a return to growth.

The Higher Education Innovation Fund was set up by the government in 2001 to encourage knowledge transfer activity in higher education institutions. However, it is likely that the effects of this only started to be seen by the mid 2000s, the first round of funding having been intended to support institutions in establishing the infrastructure to support business engagement more consistently. HEFCE's Higher Education – Business and Community Interaction Survey provides an in-depth analysis of knowledge exchange between universities and other organisations, including industry and charities. The 2010-11 survey found that the number of research contracts had almost tripled since 2001-02 and had increased by more than 20% since 2007-08, demonstrating the fundamental role that universities play in driving business improvement and innovation.

Conclusion

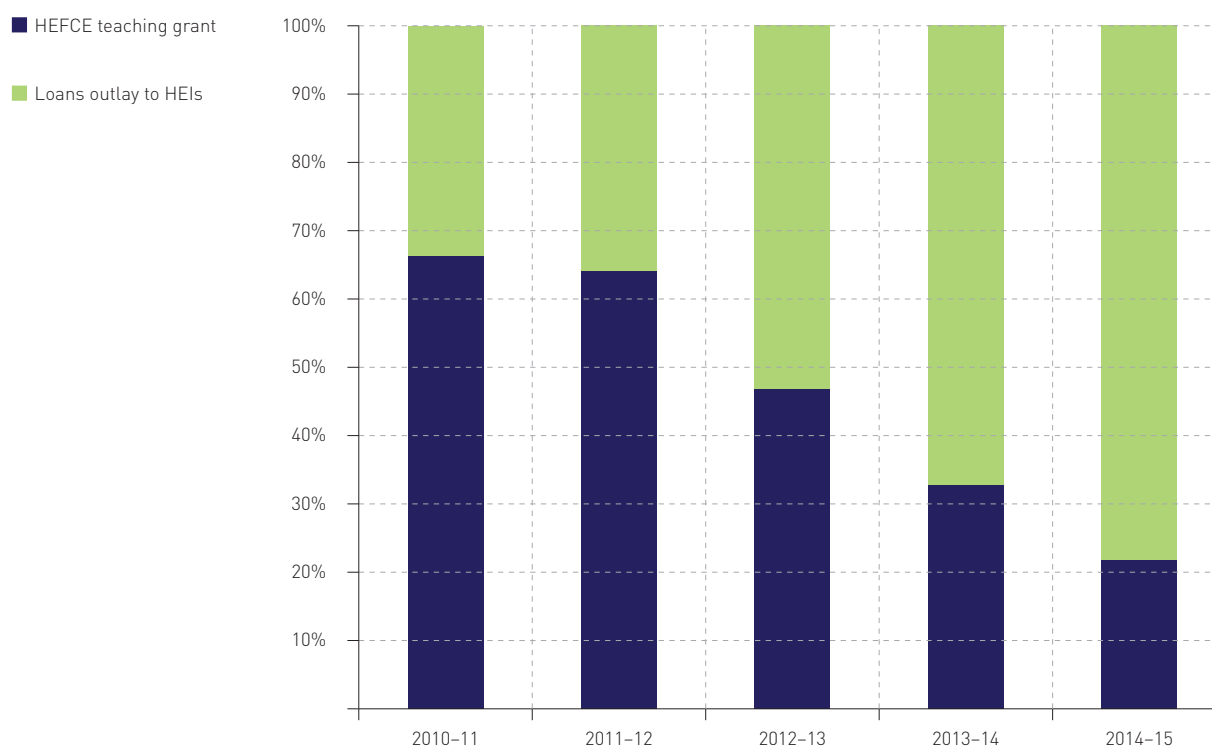
The beginning of the 21st century has seen a period of expansion in higher education. It has not been without its challenges, but, as the analysis presented in this report demonstrates, the higher education sector has already risen to meet many of them. The student population has grown by around half a million in 10 years and this growth has not just been in young students on first degree programmes. The increased demand for part-time provision and flexible learning, along with the increasing numbers of mature students, is evidence of the growing demand for lifelong learning. The growth in the number of international students choosing to study in the UK is evidence of the high esteem in which UK higher education is held throughout the world. Higher education as an export industry already contributes around £8.3 billion to the UK economy, and this is expected to rise to around £17 billion by 2025.

The UK research base holds a leading position in the global research landscape. Recent research from the Department for Business, Innovation and Skills found that UK research is high quality and efficient, suggesting that while the level of investment in research and development in the UK might be lower than its main comparator countries, output per unit of resource is much higher. Public investment in science and research has grown considerably over recent years – research council funding to universities alone has more than doubled over the past decade. It is this commitment to research funding that has enabled the UK to maintain its position as a world leader in the global research landscape.

But there is little room for complacency; the sector must continue to rise to the challenges that it faces. The next decade will be a challenging one and the sector must be prepared for it. The greatest challenges will be those presented by the changes to the funding environment in which universities will find themselves operating, and the divergence of funding policy across the four UK nations.

The shift from block grant funding in England and Wales to a graduate contribution system has implications for financial stability and planning. In England, the financial forecasts suggest that total teaching income to the sector will rise over the period up to 2014–15, although the composition of this funding will change significantly. HEFCE funding will reduce from around £4 billion in 2011–12 to around £1 billion by 2014–15. This will be replaced by increased tuition fee income from Home and EU undergraduate students. This is forecast to increase by around £1.5 billion per annum between 2012–13 and 2014–15.

Fig 24 Indicative breakdown of funding between loans for the graduate contribution and HEFCE teaching grant, 2010–11 to 2014–15



Although the fee and funding arrangements for Scottish students studying in Scotland remain unchanged, there have been changes to policies relating to students from the rest of the UK. There is considerable uncertainty about the effect of changes to fee and funding policies across the UK on the cross-border flows of students, and concern that the divergence of policy will have an impact on student choice and decisions about where to study.

The research funding landscape also presents its own challenges. While the UK produces around 10.9% of world citations and 6.4% of all articles, its level of investment in research and development as a percentage of GDP is lower than many of its comparator countries. A flat cash settlement in the 2010 spending review has provided stability for research funding in the UK but this comes at a time when other countries are investing more heavily in their research base. Institutions have already demonstrated their ability to work more effectively with business and this will become increasingly important as institutions seek to grow and diversify their income streams.

Changes to the higher education workforce are illustrative of the way in which universities have adapted to the expansion of all areas of activity across the sector. The increasing number of academic staff reflects both the growing number of students studying at institutions and the increasing volume of research activity. Institutions are looking to ensure that this is properly supported by a growth in numbers of staff employed in dedicated student support functions.

A historic look at the higher education sector, such as that undertaken in this report, provides an insight into the ways in which universities have evolved and how they have risen to new challenges. In the next decade, as universities respond to policy changes and other developments, it is certain that the size and shape of the sector will continue to change.

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Detailed data on patterns of institutional diversity, together with the detailed data and a full list of sources used in this publication, can be found at www.universitiesuk.ac.uk/highereducationinfocus

Higher education in focus

Outputs in Universities UK's Higher education in focus series provide an overview of the shape and impact of the UK's higher education sector, using simple and innovative visualisations of data.

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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