Transition to higher degrees across the UK: an analysis of national, institutional and individual differences

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HEA research series

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Foreword

The future of postgraduate education is a topic that should concern us all. The number of postgraduate students in the UK quadrupled between 1990/91 and 2000/01 and has doubled since. Currently, there are about half a million students studying at postgraduate level at UK institutions. There is plenty of evidence to show how postgraduates benefit employers and the economy, yet little is known about who enters postgraduate study and whether all students are given equal opportunities to access higher degrees.

This report, funded by the Higher Education Academy (HEA), investigates patterns of transition to postgraduate degrees in the UK and looks at differences in relation to three areas: the individual characteristics of graduates, such as gender and ethnic group; the type of higher education institution, and the four UK home nations. Its findings help us to understand where further work is needed to ensure that the postgraduate cohort is more representative of our society as a whole.

Indeed, the report shows that postgraduate study may be the new focus for widening participation in UK higher education. As a sector we are gradually addressing concerns over inclusion, access, success and retention at undergraduate level, though there is still some way to go, as recent research from Durham University has shown.[1]

This new research from the HEA has found that men are more likely than women to enter both kinds of higher degree – research and taught – with differences particularly marked for research degrees. This is contrary to recent trends at earlier levels of the education system, according to recent studies, including at undergraduate level, where women have higher attainment and higher rates of transition than men. Gender differences remain marked for almost all disciplines: women had lower rates of progression to higher degrees in arts, humanities, social sciences and STEM disciplines.

The research also shows that Black Caribbean and Bangladeshi groups show lower than average rates of progression to taught postgraduate degrees. These same two groups also had 'exceptionally low' rates of progression to research degrees, with less than ten graduates from each group making this transition per academic year.

Plainly, this isn't good enough. The postgraduate population should reflect the full range of talent and diversity in the population as a whole. The report includes recommendations to help understand the picture more fully, so that appropriate action can be taken. This includes conducting a more complex statistical analysis of rates of progression by gender, ethnicity and social class, which should consider the continued association of these background characteristics with progression to higher degrees once other factors such as degree-level attainment, subject discipline and institution have been factored in.

A range of research about postgraduate education is currently being undertaken or has been commissioned by organisations and agencies in the UK, who clearly see it as a priority. For example, the Department for Business, Innovation and Skills (BIS) has commissioned research on the level of demand for postgraduate study, which will investigate aggregate demand for postgraduate programmes based on evidence from institutional application records, and the Higher Education Funding Council for England (HEFCE) is investigating widening participation and access indicators at postgraduate level.

This report is the first part of a three year study from the HEA that will examine the repercussions of recent reforms for learning and teaching in higher education. We have a strategic priority to work with the HE community to influence policy, future thinking and change to improve the student learning experience, and transition to postgraduate level study is clearly an important area of focus for us all. We look forward to addressing the concerns that this report highlights and taking this work forward with the higher education community.

Professor Craig Mahoney
Chief Executive, Higher Education Academy

April 2013

[1] V.Boliver, (2013) *How fair is access to more prestigious UK universities? (British Journal of Sociology)*

Foreword

Postgraduate education matters. As the UK economy becomes increasingly knowledge-intensive, a growing range and number of businesses need people with highly-developed and specific expertise. They join the considerable range of essential professions and public services which depend on postgraduate entrants, including higher education itself.

The average earnings of postgraduates points to the premium employers are willing to pay for their skills. The personal benefits of postgraduate study can be measured in terms of career opportunities and job satisfaction as well as earnings. Postgraduates also make higher than average returns to the Treasury through income tax and other contributions. Additionally, postgraduate students make an important contribution to society and the wider economy. Postgraduate education is, in short, a good investment for the individual and for the UK.

So it is, perhaps, surprising how little we know about postgraduate study. Which students go on to study at postgraduate level? What are their characteristics and backgrounds? Where do they go, and what influences their decisions?

The information gap creates an increasingly pressing problem.

Over the last decade, the average proportion of the UK's working population holding a postgraduate qualification has almost doubled, increasing from 4.4% in 2001 to 7.9% in 2011. During this period, the number of postgraduate students has increased by about 25%. This has been largely due to a rapid increase in the number of international postgraduate students. However, the growth in international numbers has masked a recent decline in the number of UK-domiciled new entrants to postgraduate taught programmes. And the most recent data points to a small decrease in international new entrants at postgraduate taught level too.

We need to understand whether this is likely to be a blip or a trend. If it is a trend we need to understand the underlying reasons if we are going to design appropriate responses.

The context has been a period of profound change in higher education, and the wider economy, which make it difficult to pinpoint cause and effect. The recent recession and slow return to growth, combined with changes to undergraduate fee levels in 2006 are part of this, but postgraduate fee and funding arrangements have also changed considerably. At the same time, part-time participation has decreased at both undergraduate and postgraduate level. Further changes to undergraduate fee and funding arrangements, introduced last year, will start to influence decisions about postgraduate study from 2015.

These new influences could alter or exacerbate existing patterns of participation. As this study shows, participation rates among women, some ethnic minority groups and lower socio-economic groups are already relatively low – factors which led Sir Alan Milburn to describe postgraduate access as a 'social mobility time bomb.'

Establishing how various factors which influence demand interrelate in a diverse cohort of students studying at varying levels of intensity and for a variety of reasons is not easy.

This study makes a valuable contribution filling some of the evidence gaps. By exploring the background characteristics and rates of progression of postgraduate students across the UK, it helps to establish a baseline from which we can evaluate the effect the most recent reforms.

Alongside a range of other recent studies, these new insights will help us as we consider how to adapt to changing demand. A better understanding is also important in helping universities develop more innovative and flexible ways of offering postgraduate education, and target their efforts to widen participation at postgraduate level.

But it will also help inform the debate with government about what can be done at national level to ensure we have an appropriate, and sustainable, level of postgraduate education which serves the national interest as well as the interests of individual students. In the current climate, the available options may be limited. This is all the more reason to ensure we have a sound evidence base for any intervention.

Professor Eric Thomas
President, Universities UK

April 2013

Executive summary

This report investigates patterns of transition to postgraduate degrees in the UK. It focuses on full-time UK- and EU-domiciled first degree graduates who successfully completed their studies in the 2009-10 and 2010-11 academic years, using data about their studies, their background characteristics and their activity after graduation provided by the Higher Education Statistics Agency. With these data it is possible to identify which kinds of graduates entered higher degrees, in which institutions, how they funded their studies and how they differ from their peers who did not begin a higher degree.

The report is organised around three overarching themes, looking at differences in transition to higher degrees across:

- institutions;
- the four UK home nations;
- graduates' individual characteristics, including their academic and demographic background.

Progression to higher degrees (section 5)

We established some basic patterns of progression to higher degrees as a first destination for the graduates in our dataset:

- About one in eight of the graduates in our dataset entered a higher degree, representing about half of all those progressing to further study as their 'first destination'. About 10% of graduates entered a taught higher degree and 2% a research degree.
- Rates of progression to higher degrees varied considerably across subject discipline for both taught and research higher degrees, but in different ways. 'Pure' disciplines tended to have higher rates than 'applied' subjects.
- There was a clear association between degree-level attainment and progression to a higher degree.

UK home nations (section 6)

We looked at movements within and across the four home nations for those first-degree graduates progressing to higher degrees. We compared graduates' country of origin, the country where they studied their first degree and the country where they entered a higher degree. By doing so, we provided new evidence on a topic that has not previously been researched. We found that:

- EU-domiciled graduates from UK universities progressed to higher degrees at considerably higher rates than UK-domiciled graduates. Differences in progression to higher degrees across graduates based in the four UK home nations were considerably less marked. Graduates originally from London were more likely to enter taught higher degrees and less likely to enter research degrees than those from Wales, Northern Ireland or the other English regions. Scottish graduates were more likely to enter research degrees, but less likely to enter taught higher degrees.

- On the basis of an analysis at the aggregate level, we did not find evidence to suggest that differences in undergraduate funding arrangements across the four home nations are associated with differences in rates of progression to postgraduate study. However, this is a complex issue that bears more detailed investigation in the light of the most recent reforms.
- There was little sign of a 'brain drain' of UK graduates to higher degrees abroad. Some British graduates left to study in other countries, but this amounted to about one in 20 of those entering higher degrees.

We concluded that, on the whole, there is a broad similarity in patterns of progression to postgraduate study across the four UK nations.

Institutional patterns (section 7)

We looked carefully at transitions to higher degrees across UK higher education institutions. We were able to analyse both the institutions students graduated from and those that they progressed to for a higher degree. Our findings included the following:

- There was a considerable range in the rate of progression to taught and research higher degrees across institutions. However, there were also differences in the patterns between taught and research higher degrees. Those progressing to research degrees were concentrated in particular institutions: one in five of those progressing to a research degree graduated from one of the 'big five' research universities.
- Graduates from more selective institutions generally had greater rates of progression to higher degrees than those from less selective institutions. However, the picture was not uniform: some less selective institutions sent more graduates to taught higher degrees than some selective institutions.
- Institutions varied considerably in the extent to which they 'retained' their graduates entering a higher degree – on average two out of five graduates stayed with their first-degree institution for their higher degree. Institutions also differed in whether they were net losers or gainers of graduates entering higher degrees from the cohorts analysed. There was a clear draw to London-based institutions.

On the basis of these findings, we suggest there is scope for detailed case studies to investigate the institutional practices that may influence these different rates of progression to higher degrees.

Background characteristics (section 8)

Amid concerns about potential inequalities in access to postgraduate study, we examined rates of progression to higher degrees by socio-economic background, gender and ethnicity:

- Women had lower rates of progression to higher degrees than men, especially for research degrees. This apparent female disadvantage remains when controlling for subject discipline and attainment. It is an issue across all subjects, not just in STEM disciplines.
- There are clear differences in progression to postgraduate study by ethnic group. For some groups, the number of graduates entering research degrees is very small, raising concerns about the diversity of the research workforce.
- Graduates from lower socio-economic backgrounds are underrepresented among those progressing to higher degrees. This remains the case whether using occupational measures, parental education or type of secondary school attended as the indicator. However, we did not find evidence to suggest that finance was the overriding factor here, as the proportion of graduates progressing to higher degrees who funded themselves varied little across socio-economic background.

These apparent inequalities are a cause for concern. Further research is required to investigate these factors in more detail.

Recommendations

Drawing on these findings, we believe there is a strong case for further research as follows:

- Case studies of policies and practices at institutions with higher and lower rates of progression and retention in higher degree transitions to identify best practice that can be shared across the sector. This could incorporate differences across disciplines (e.g. in specific departments) and consider whether measures of the student experience are influential (e.g. NSS results).
- There is a need for a more complex statistical investigation of the association between background characteristics, academic and financial factors with transition to higher degrees.
- The transition from taught higher degrees to research degrees should be further investigated, particularly for those subjects where the postgraduate Masters is a 'stepping stone' to a doctorate, such as in the humanities and social sciences.
- Patterns should continue to be monitored as the first students from the new funding regimes of 2012 complete their courses.

1 Introduction

Postgraduate study is an important and growing part of the UK's higher education system. The number of postgraduate students in the UK quadrupled between 1990-91 and 2000-01 (Wakeling, 2009a) and has doubled since (HEC, 2012). In 2010-11, almost one-quarter of students in UK higher education were postgraduates. Despite this rapid growth and the increasing importance of postgraduates to institutions and employers, comparatively little is known about who enters postgraduate study, what factors are associated with entry and how successful institutions are at recruiting and retaining postgraduates. A number of recent publications about postgraduates have drawn attention to the absence of research around these issues.

The need for research to identify the factors associated with transition to postgraduate study has become particularly pressing following recent changes to higher education funding in the UK. The changes introduced in the 2011 White Paper *Students at the Heart of the System* (Department for Business, Innovation and Skills, 2011) have led to the replacement, in England, of most of the direct teaching grants to institutions by tuition fee loans to students and an increase in the maximum annual tuition fee charged to UK students in English universities for undergraduate study up to £9,000. Similar arrangements have been adopted in the other UK nations for students not ordinarily living in that country (e.g. English students going to Scotland, Welsh students going to Northern Ireland, etc.). These changes have prompted concerns that, in future, students will be discouraged from postgraduate study on grounds of cost and accumulated student debt. Uncertainty over future funding arrangements and fee levels for taught postgraduate programmes such as Masters degrees may compound any financial deterrent. A number of organisations have produced reports expressing concerns about postgraduate education and calling for more research to be undertaken:

- the Higher Education Commission's Postgraduate Inquiry (2012);
- the British Academy's position statement Postgraduate Funding: the Neglected Dimension (2012);
- the 1994 Group's report The Postgraduate Crisis (2012);
- National Union of Students' proposals Steps Towards a Fairer System of Postgraduate Funding in England (2012);
- the Sutton Trust's report The Postgraduate Premium (Lindley and Machin, 2013);
- Alan Milburn's report University Challenge: How Higher Education Can Advance Social Mobility (2012).

The Higher Education Academy has prioritised, in its research strategy, developing an understanding of the impact of changes in UK higher education policy on teaching and learning and the student experience. This report addresses those concerns.
The first graduates who have paid annual tuition fees of up to £9,000 will not graduate until Summer 2015. In the meantime, it is important to establish a 'baseline' understanding of factors affecting transition to postgraduate study under previous student funding regimes across the UK. To do so, this report focuses on three inter-related areas:

1. The **factors** associated with transition from undergraduate to postgraduate study, specifically taught and research higher degrees. A range of academic (subject discipline, attainment, institution), geographical, financial and demographic (age, gender, ethnicity, socio-economic background, etc.) factors are considered.

2. The success of particular **subject disciplines** and **institutions** in progressing undergraduates to postgraduate study, given their circumstances and the kinds of undergraduate students they recruit. This will help to identify, for instance, whether some institutions are more successful than their comparators in relation to the proportion of their graduates entering higher degrees. The practices in apparently successful institutions can then be investigated further by subsequent research to highlight policies and practices that encourage transition to postgraduate study.

3. The extent to which transition to higher degrees varies across the four **UK home nations**. The variation in undergraduate funding arrangements across the UK presents the opportunity for a 'natural experiment' regarding the effect of tuition fees and debt on transition to postgraduate study.

The research reported here covers **UK- and other EU-domiciled graduates only**. This is principally because the survey we analyse does not cover non-EU international graduates. However, our main concern is with UK and EU graduates because recent changes in higher education policy do not affect the funding arrangements for non-EU international students. Indeed the numbers of such students on postgraduate qualifications have grown rapidly in recent years, while numbers of UK and other EU students have remained static. This has been highlighted as a success story for British higher education, but has also prompted concerns that British students, in particular, are being forgotten in postgraduate education (HEC, 2012).

2 Previous research

The literature on transition and access to postgraduate study highlights the shortage of data and the scope of potential problems, but offers few substantive empirical findings. While there exist some useful summaries of the UK postgraduate 'landscape' (e.g. Artess *et al.,* 2008; House, 2010), there is little in the way of research investigating transition to and take up of postgraduate education. This gap in the literature has been identified in the UK, but it is also an international problem, with few international studies available to draw on (Wakeling, 2010).

In their synthesis of extant studies on widening participation to postgraduate research degrees, Wakeling and Kyriacou (2010, p. 5) note: "in contrast to initial access to higher education, there is little research on entry to postgraduate study, including postgraduate research degrees". This position is supported by McCulloch and Thomas (2012, p. 11-12) who call for "the concerted attention of a body of scholars and practitioners within a number of educational systems supported by relevant research funding and other official bodies" to be directed at the issue. This has been further echoed by prominent public bodies and policy commentators, with the HEC (2012, p.12) report referring to postgraduate education as "the new frontier of widening participation" and Alan Milburn, the government's adviser on social mobility, warning that "lack of access postgraduate study is in danger of becoming a social mobility time bomb" (2012, p.6).

A few recent studies have begun to provide evidence on questions of access to postgraduate education. Lindley and Machin (2013) used birth cohort studies for 1958 and 1970, combined with the Labour Force Survey to examine the proportion of the UK population holding postgraduate qualifications (Masters degrees and doctorates). They showed that those born in the top earnings quintile were more likely to acquire such qualifications and that holders of postgraduate qualifications have continued to enjoy an earnings premium. They suggest that this connection between origin, credentials and earnings has deleterious consequences for social mobility in Britain.

Using more recent data about graduate destinations, Wakeling (2009a) showed social class inequalities in progression to higher degrees. These were partly accounted for by other factors, including subject discipline and undergraduate attainment. Inequalities appeared to be structured by type of institution attended. However, these findings relate to graduates from 2001-02 to 2004-05, before the changes to tuition fees arising from the 2004 Higher Education Act in England were introduced. Wales (2013) conducted a similar analysis looking at progression to further study in general for 2004-05 to 2008-09 graduates, but without foregrounding institutional factors. Instead he constructed a unique database of postgraduate tuition fees, showing that increases in fees were associated with a reduction in enrolment rates. Wales also found that just over half of those entering further study remained in their first-degree institution. Furthermore, in about 90% of cases the first-degree institution was the single most common destination institution for further study.

Futuretrack, a study of the cohort of students entering higher education in 2006 found about one-fifth have now entered postgraduate study (six years on), although only about 5% of its original group of 500,000 students remain in the most recent sample. This is an increase on the 15% progressing in an earlier study of the 1999 cohort. Those most likely to enter postgraduate study were graduates with three-year degrees, with first class honours degrees, men, with graduate parents, from an Asian background, and attending a 'prestigious' institution. Almost half of the group reported being dissuaded from postgraduate study by debt, with those from lower socio-economic backgrounds slightly more likely to be dissuaded than others (Purcell *et al.,* 2012).

While these studies point to some effects of socio-economic background, it is important to remember that there are a range of other factors to take into account in considering entry to postgraduate study. Much of the debate around postgraduate access has focused on changes to higher education policy in England. Very little is known about whether students subject to different funding regimes or studying in different systems are more or less likely to enter postgraduate study. The institutional dimension of progression to postgraduate study has also been neglected. In this report we investigate those areas, while also examining individual background characteristics that may be associated with staying on for a higher degree.

3 Considerations in analysing data about postgraduate students

There are two important considerations that give context to the research reported here. Firstly, postgraduate education is a complex enterprise that differs in key respects from undergraduate education. Secondly, the quality and availability of data about postgraduate students in UK higher education institutions has certain limitations that hinder investigations of students' background characteristics and the process of entering postgraduate education. To some extent these two issues overlap.

A basic distinction is recognised in postgraduate education between programmes that are taught and those that are mainly or wholly based on a student's own original research. Overlaying this distinction is a hierarchy of different awards, ranging from certificates, through diplomas and Masters degree's to doctorates. Students taking different types of qualification can be assumed to have quite different intentions: some will be intending to qualify for a profession; some will be involved in continued professional development while employed; some will be studying a qualification to improve their general level of education without a specific career in mind; some will be training to become researchers; and some may be doing it for fun!

Around 45% of postgraduate students are part-time and their distribution across disciplines and institutions differs from the distribution at undergraduate level. Furthermore, the funding arrangements for postgraduate study are substantially more diverse than at undergraduate level. Students entering an approved course of undergraduate study for the first time have access to loans and, in some circumstances and jurisdictions, grants and waivers to cover tuition fees and living costs; these entitlements are, however, missing at postgraduate level. Some funding is available via the research councils, charities, industrial sponsors and charitable bodies, particularly for postgraduate research, although by no means all students are funded (House, 2010, p. 9, reports that three-fifths of research students have their tuition fees paid by a sponsor). With a few exceptions, such as for postgraduate initial teacher training, students on taught postgraduate programmes are typically self-funded. Both the Higher Education Commission (2012) and NUS (2012) have recently called for the extension of the student loan system to taught postgraduate study. Tuition fee rates vary substantially across institutions and types of postgraduate programme (Wales, 2013), and the very large number of postgraduate students from outside the EU (not included in this report) often pay higher fees. At the time of writing, postgraduate tuition fee levels appear to be in a state of flux as institutions adjust to the new undergraduate funding regimes that have emerged across the UK following the Browne Review (2010) in England.

These differences mean that it is difficult to make general conclusions that apply to all the various types of postgraduate study. Within the scope of this report there is the facility to distinguish between taught higher degrees (i.e. principally postgraduate Masters) and research degrees (mainly the degree of PhD). Further research could usefully distinguish between different kinds of Masters degree and even research degrees.

Issues of data quality and coverage also affect the postgraduate student record. Entrants to full-time undergraduate study via the Universities and Colleges Admissions Service (UCAS) provide a range of data items about their background (such as ethnicity, disability, parental occupation and level of education). These data items are

added to the academic record institutions create for each student, detailing subjects taken, attainment and so on. Records are submitted to the Higher Education Statistics Agency (HESA), who make them available for analysis by researchers. Although HESA collects data about postgraduates, there is no equivalent national clearing house for postgraduate applications, and so it is down to individual institutions to collect data items about postgraduates' backgrounds. Collection of these items is optional and hence the coverage of the record for variables such as parental occupation, parental education, previous higher education institution and so on is very patchy (House, 2010). It is certainly not robust enough for an investigation of the demographics of the postgraduate student body.

The approach taken here is to exploit HESA's Destinations of Leavers from Higher Education (DLHE) survey to investigate immediate transition to postgraduate study. Approximately six months after successful completion of a qualification, UK- and EU-domiciled students are surveyed by their institution to determine what activity they are involved in – for instance, whether they are working, undertaking further study, unemployed or undertaking other activities. Using these data it is possible to capture students' background characteristics, their academic record, whether or not they have entered further study and, if they have, what kind of further study that is, where, and how it is funded. The advantage of this approach is that it enables a comparison on a cohort basis: we can directly compare the characteristics of students who do and do not progress. This is much more difficult to achieve if using only the records of those currently pursuing a postgraduate programme, because the equivalent details are not available for non-participants. However, it does mean that we are not able to say anything about those graduates who defer their entry to a postgraduate programme until later in the academic year. The set of non-participants therefore includes some graduates who will, in future, enter postgraduate study[2]. As Figure 3.1 shows for academic year 2010-11, this comprises a substantial proportion of new postgraduate entrants (essentially the students in the set represented by the red rectangle who are not also in the set represented by the blue rectangle). Some 60,000+ new UK-domiciled postgraduate entrants did not complete their first degree in the previous academic year. A small number of graduates (565) progressed to postgraduate study outside of the UK (those in the blue rectangle but not in the red rectangle).

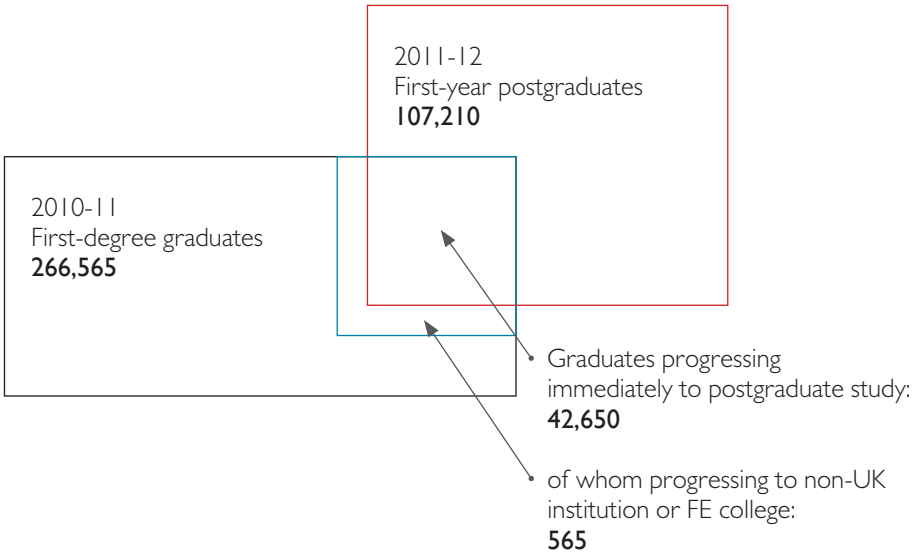


Figure 3.1: Venn diagram showing relationship between set of first-degree graduates 2010-11 and first-year postgraduates 2011-12 (UK-domiciled only)

The results set out in this report need to be understood with these complexities in mind.

[2] In technical terms, the data are 'right censored'.

4 Description of datasets

The population on which the data in this report is based (henceforth 'the qualifiers dataset') comprises UK- and EU-domiciled first-degree and taught postgraduate qualifiers from full-time programmes in 2009-10 and 2010-11 who were part of the DLHE target population (see Table 4.1). It should be noted that institutions that did not have any full-time students completing their qualifications at these levels in these years are excluded from the analysis; this includes The Open University and Birkbeck, University of London. It should be further noted that those in the dataset completing first degrees entered higher education under different student funding regimes now in place. Graduates from outside the EU are not covered by this report. The DLHE survey is limited to UK- and other EU-domiciled graduates. While non-EU graduates are an important group, they are covered by very different funding arrangements. Moreover, one of the concerns that has prompted this research is the question of access and widening participation to postgraduate study, including the potential impact on social mobility. Here the focus must be on UK-domiciled graduates (and hence some of the analyses presented are limited to UK-domiciled graduates only).

The dataset thus comprises both population data (all UK- and EU-domiciled students completing a first-degree in 2009-10 to 2010-11) and survey data (those responding to DLHE). As can be seen from Table 4.1, response rates vary across type of qualification attained, but amount to around four out of every five graduates. This yields a total population of 556,510 for 2009-10 and 2010-11, of whom 452,765 responded to the DLHE survey. This is a very high response rate for a survey, but it does mean there is risk of non-response bias in any statistical analysis, and our results, which have not been weighted for non-response, should be read with this in mind. A brief analysis of the extent of bias in the data is given in the Appendix, where technical aspects of the dataset and a brief description of some of the main variables are provided.

Table 4.1. Number and type of qualifications obtained by academic year and DLHE response rate

	2009-10				2010-11			
Qualification obtained	**Responded**	**Did not respond**	**Rate (%)**	**Total**	**Responded**	**Did not respond**	**Rate (%)**	**Total**
Taught higher degree	29,180	12,010	70.8	41,190	35,865	13,640	72.4	49,505
PGCE or PGDE	17,145	2,525	87.2	19,665	16,560	2,505	86.9	19,065
First degree	220,825	50,705	81.3	271,530	231,940	53,035	81.4	284,980
Other qualification[1]	4,805	1,700	73.8	6,505	4,560	1,835	71.3	6,395
Total	**271,955**	**66,940**	**80.2**	**338,895**	**288,930**	**71,020**	**80.3**	**359,945**

[1] Other includes other postgraduate diplomas, postgraduate Bachelors degree at Masters level, and other Masters-level taught qualifications

Note: Details may not sum to totals due to rounding. This is a HESA reporting requirement.

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

5 Progression to postgraduate study: basic description

Key points

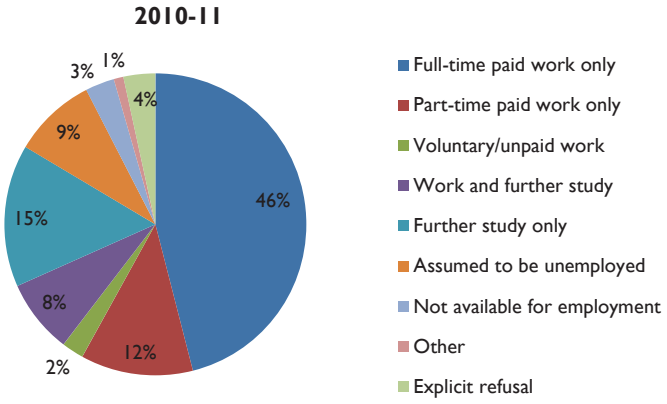
- There were few differences of note in patterns of progression to postgraduate study between the academic years 2009-10 and 2010-11.
- About one-in-four graduates for whom a first destination was known entered further study in 2009-10 to 2010-11. Of these, around half entered a higher degree. For UK-domiciled graduates in these years, there was a slight increase in progression to a higher degree from the rate observed in an earlier study looking at graduates from 2001-02 to 2004-05.
- A large majority of those progressing to a higher degree entered a taught Masters programme (9.8% of the graduates in our dataset). Far fewer progressed immediately to a research degree (2.0%).
- There is substantial variation in the rate of progression to higher degrees by subject discipline. Patterns differ for taught and research higher degrees. Generally speaking, rates are higher for 'pure' and lower for 'applied' disciplines. This variation may relate to differences in postgraduate funding opportunities and the structure of the graduate labour market for different disciplines.
- There is scope for further investigation of disciplinary differences in rates of progression, including the contribution of the culture of different subjects.
- A clear relationship is evident between degree-level attainment and the likelihood of progressing to a higher degree. The rate of progression is highest for graduates with first class Honours degrees and declines with each successive drop in degree classification.

Overall progression

Table 4.1 shows that more than a third of a million UK/EU students completed taught qualifications in UK higher education institutions in both 2009-10 and 2010-11. Of these, more than a quarter of a million students completed a first degree and 40,000+ graduated from a taught higher degree. This report concentrates on first degree graduates only. The focus is on graduates progressing to higher degrees (Masters and doctorates). There is scope for further research in the future to look at progression to other kinds of postgraduate qualifications and further study.

The results reported in this document cover the academic years 2009-10 and 2010-11. In many analyses presented in the main text, data are aggregated across the two years. As a general observation, there were few notable differences in progression to postgraduate study across the two years; where there were it is difficult to determine whether this constituted an ongoing trend or instead was part of the routine fluctuation seen in data such as these. A longer chronological run of data would be required to make any such judgements. In this report we examine the percentage of first-degree graduates who progress to postgraduate study. We refer to this measure as the 'rate of progression' throughout.

Figure 5.1. First destination of first degree graduates in 2010-11.

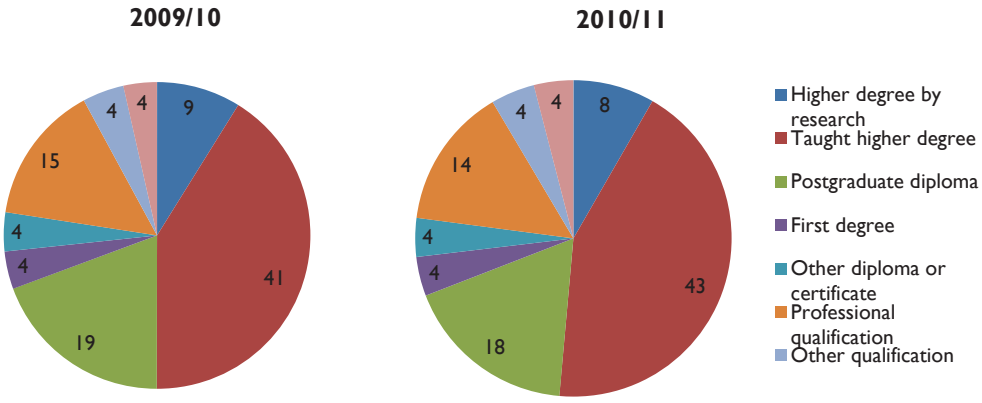


Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Figure 5.1 shows the first destination of first-degree graduates from 2010-11 (the distribution for 2009-10 is very similar). Almost one-quarter entered some form of further study, in some cases combined with work. Not all of these graduates entered a higher degree, however. Around one out of every eight (11.8%) first-degree graduates progressed directly to a higher degree programme in 2009-10 to 2010-11. Of these, a large majority entered a taught higher degree, with only about one in 50 graduates (2.0%) directly entering a research degree. This overall rate of progression has risen marginally since 2001-02 to 2004-05 where an earlier study found a rate of progression to taught higher degrees of 6.8% (UK-domiciled students only), compared to 8.6% in 2009-10 to 2010-11 (Wakeling, 2009a).

In this report we are concentrating on first-degree graduates progressing to higher degrees. It is worth noting that this group comprises roughly one-half of all those categorised by HESA as entering 'further study' as their first destination. Figure 5.2 shows the type of qualification progressed to by first-degree graduates moving on to further study as their first destination in 2009-10 and 2010-11. There are small changes across the years, but the shifts are marginal. Other kinds of further study than higher degrees are quite heterogeneous. A small proportion of graduates have commenced another undergraduate degree. The dataset does not provide any detail about these first degrees, but we can speculate that this group includes students undertaking professional training in the format of a first degree, a set of courses that probably includes Medicine, Nursing and Midwifery, Pharmacy and other allied professions. Those entering professional qualifications or diploma courses appear mainly to be training for the legal or teaching professions.

Figure 5.2. Type of qualification progressed to by first degree graduates in 2009-10 and 2010-11



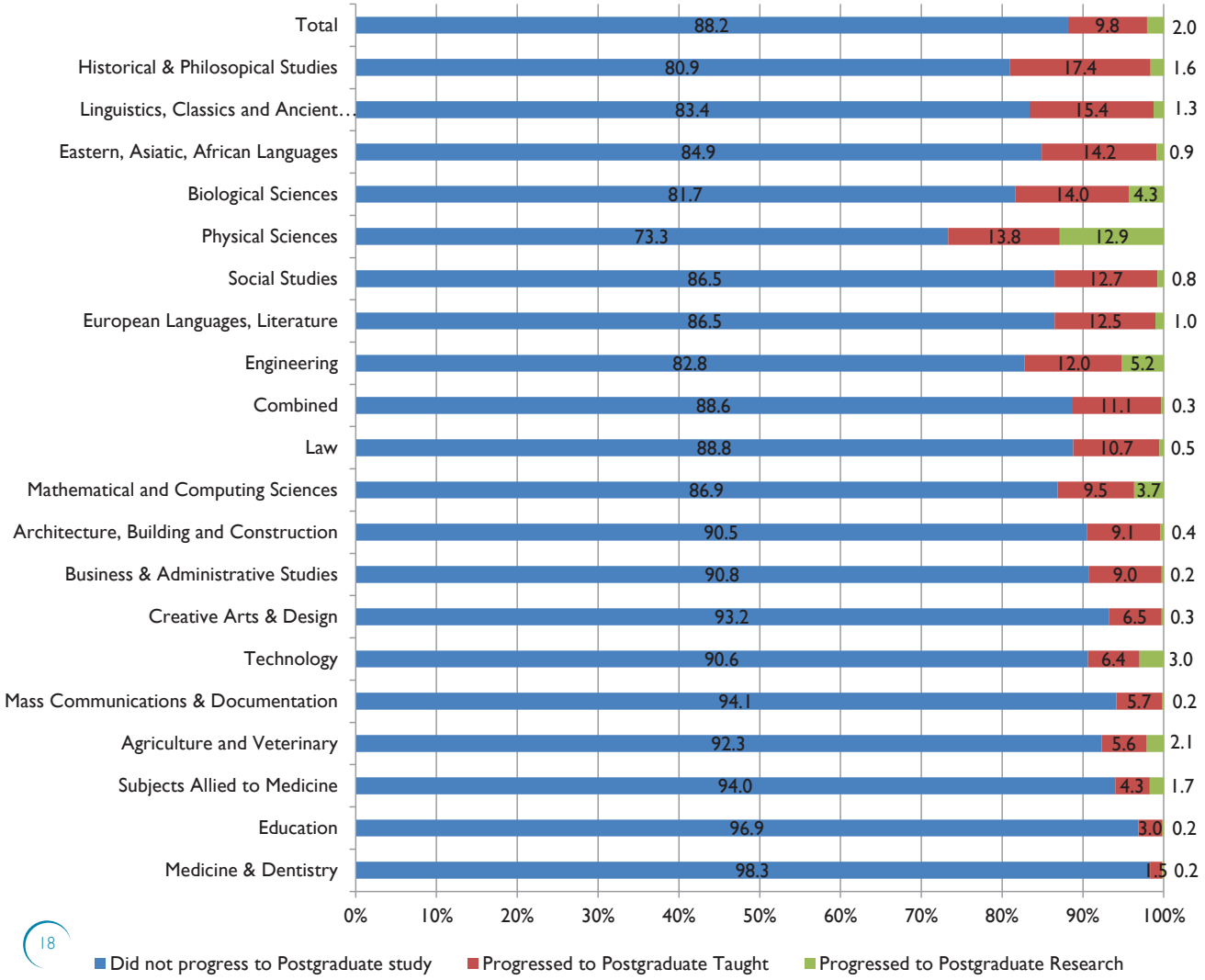
Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Table 5.1. Number of first degree qualifiers by progression status and subject group: 2009-10 & 2010-11 combined

Subject group (JACS)	Did not progress to postgraduate studies	Progressed to taught higher	Progressed to research degree
Total	**408,450**	**44,315**	**9,025**
Creative Arts & Design	50,715	3,545	150
Business & Administrative Studies	49,445	4,880	115
Biological Sciences	40,655	6,625	2,040
Social Studies	38,670	5,650	325
Subjects Allied to Medicine	36,730	1,640	675
Mathematical and Computing Sciences	23,585	2,470	875
Education	20,885	640	30
Historical & Philosopical Studies	19,445	4,110	365
Law	18,470	2,205	110
Physical Sciences	18,465	2,960	2,740
Linguistics, Classics and Ancient Languages	17,745	3,220	260
Engineering	17,345	2,375	970
Medicine & Dentistry	14,515	225	30
Mass Communications & Documentation	13,585	820	25
Architecture, Building and Construction	10,385	1,035	40
European Languages, Literature	7,025	1,000	85
Agriculture and Veterinary	4,395	260	80
Technology	3,545	240	85
Eastern, Asiatic, African Languages	1,710	285	20
Combined degree	1,125	140	115

Note: Details may not sum to totals due to rounding. This is a HESA reporting requirement.
Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Figure 5.3. The percentage of first degree qualifiers by progression status and subject group: 2009/10 & 2010/11 combined



Subject discipline

British higher education is characterised by early specialisation, with students selecting one or sometimes two subject disciplines at the beginning of their undergraduate studies and typically focusing on that subject throughout their degree programme[3]. The experience of students, the organisation of studies and higher education pedagogies vary considerably across different disciplines. The size and shape of disciplines differ considerably too. Looking at groups of subjects (Figure 5.3 and Table 5.1), it can be seen that those completing first-degree qualifications are not evenly distributed, nor is there uniform progression to postgraduate study across disciplines. Some of the largest disciplines at first-degree level have a relatively low proportion of their graduates progressing to a higher degree. Creative Arts and Design, for instance, which accounted for more than 10% of the first-degree graduates in our dataset, has fewer graduates progressing to a higher degree than Historical and Philosophical Studies, despite the latter producing fewer than half as many first-degree graduates. Biological Sciences accounted for the greatest absolute number of graduates progressing to a higher degree, but Physical Sciences saw the highest proportion of its graduates continuing.

There are differences in the proportion of graduates progressing to different types of higher degree by discipline. Historical and Philosophical Studies, Languages and the Biological and Physical Sciences all show relatively high rates of progression to a taught higher degree. For progression to a research degree, Physical Sciences has a substantially higher progression rate than other disciplines, with more than one-quarter of all the first-degree graduates in the dataset progressing to a research degree hailing from this subject grouping (which includes Physics, Chemistry and Earth Sciences). In some disciplines, many students enter a taught higher degree, but relatively few progress to a research degree: Languages, Social Studies and Historical and Philosophical Studies all follow this pattern. As the British Academy (2012) has recently pointed out, entry to doctoral study in the arts, humanities and social sciences is increasingly via a 'research training' Masters programme (especially for funded students). This model does not (yet) apply to the same extent in the STEM disciplines. It has led the British Academy to express concern about access to doctoral study for financially disadvantaged students because of the dearth of funding to support taught Masters degrees (amid publicity that the research councils are withdrawing their support of Masters provision)[4]. The datasets at our disposal do not allow us separately to identify first-degree graduates progressing to research training Masters. However, we can see that about half of those responding to the DLHE survey who completed a taught higher degree entered a research degree programme in the following academic year[5]. It is perhaps a little worrying that the progression rate for this kind of programme dropped to around one-third for those in humanities disciplines. There is scope for further investigation of patterns of access to this subset of Masters programmes, particularly as they comprise part of the supply 'pipeline' for future higher education teachers and researchers.

There does not appear to be any clear relationship between the absolute size of a discipline and the proportion of its first-degree graduates progressing to higher degrees. We can though look for explanations for the subject differences in progression rates in both 'internal' and 'external' disciplinary characteristics. 'Internal' factors relate to the nature of the discipline or subject group itself, while 'external' factors include the structure of opportunities available to graduates of a discipline, including the state of the relevant labour market, the availability of postgraduate

[3] At Scottish institutions, the first one or two years are usually broader, with specialisation coming later in the programme.

[4] See Boffey, D. (2013) University leaders protest at 'disastrous neglect' of postgraduates. The Observer, 6 January.

[5] In the survey, a taught higher degree is defined as being designed specifically as a training in research methods and intended as a preparation for advanced supervised research.

studentships in that area and so on. In Becher's (1989) terms, we can characterise disciplines as 'pure' or 'applied' and associate the two ideal-types with different rates of progression to postgraduate study. The set of disciplines with a low proportion of first-degree graduates entering any kind of higher degree are generally 'applied' subjects. Graduates from these disciplines can be expected both to have qualifications that prepare them for direct entry to the labour market and to have a disposition to enter their chosen career immediately (which would have influenced their original selection of a degree subject). As an example, we can see that almost 90% of UK-domiciled first-degree graduates in Medicine and Dentistry entered full-time employment as their first destination, with only about 2% entering a higher degree. Graduates who have trained to be doctors and dentists have well-defined opportunities to enter their chosen career. Similarly graduates in Education will tend to be focused on entering a teaching career either directly after obtaining an undergraduate degree with qualified teacher status, or perhaps via a PGCE (which around 7% of UK-domiciled first-degree graduates in Education enter as a first destination). Conversely, graduates of 'pure' disciplines are less likely to have clearly defined and structured opportunities in the graduate labour market. Graduates in Historical and Philosophical Studies, for instance, tend to lack an obvious set of careers for which they have been directly prepared. Consequently those who enter employment do so in a broad range of careers (HECSU, 2012). A large proportion of graduates in this subject grouping enter a taught higher degree, presumably for most of them as a means of acquiring more advanced, directly vocationally relevant knowledge and skills or of improving their general level of education and hence their position in the labour market. Similar observations could be made about Languages and Social Studies.

As well as being interesting in its own right, it is important to understand disciplinary variation in rates of progression to postgraduate study to give context to investigation of other factors associated with transition. It is well known that men and women, for instance, are not evenly spread across different subjects. Men are in the majority in the natural sciences; women in certain humanities and 'caring' disciplines; in other areas numbers are more even. Similar observations can be made about socio-economic background, ethnicity, prior attainment and so on. If we did not take into account the fact that there is a large male majority in Engineering, where many graduates progress to a research degree, we might overemphasise the role of gender in progression (actually women are more likely than men to progress to a research degree in Engineering in our dataset).

Furthermore, arrangements for funding postgraduate study differ considerably across subject groups, especially for research degrees. Large numbers of research council and industrially sponsored studentships are available in STEM subjects, whereas funding is scarcer in social sciences and in the arts and humanities. PGCE programmes are typically funded under the same system as first degrees, but postgraduate Masters programmes seldom attract sponsorship. Students may, however, find access to Career Development Loans easier in applied and vocational subjects and difficult to acquire for 'pure' academic Masters degrees. Thus the structure of the supply of funding will condition progression to higher degrees alongside the demand for further study from graduates.

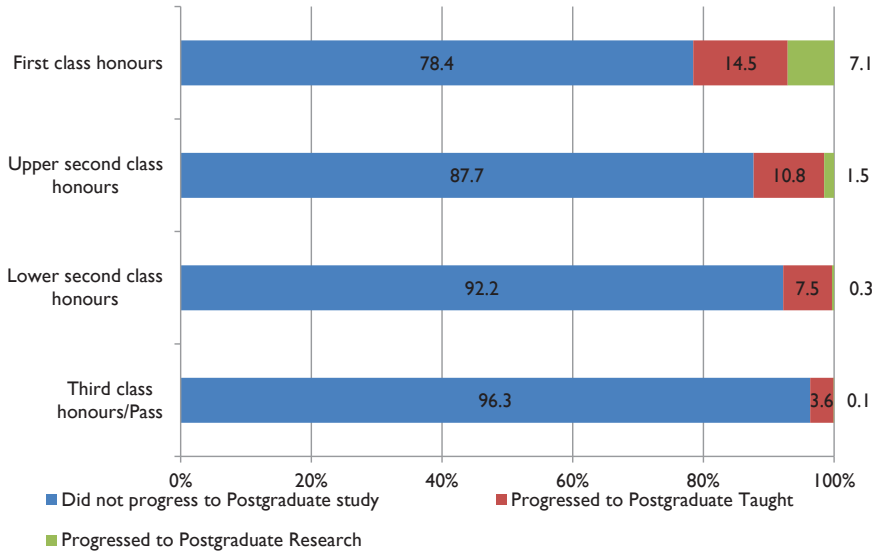
While there are some plausible reasons for disciplinary differences in progression to higher degrees, it is also noticeable that ostensibly similar disciplines can have quite different rates of progression. An intriguing question here is whether the culture of particular disciplines encourages, supports and promotes postgraduate study or not. It is difficult to make a direct determination about this using statistical data, but we can speculate that there are some softer influences at work, relating to the advice and guidance given to undergraduate finalists in different disciplines and, to some extent, the 'well-worn paths' followed by previous cohorts. Drilling into detailed subject groupings, within Social Studies about one in ten first-degree graduates in both Sociology and Social Policy progress to a taught higher degree. In Politics, a comparator discipline, the rate is twice as high: one in five make this transition. Looking at research degrees, in Physical Geography about one in 50 first-degree graduates enter a research

degree; for Geology it is almost one in ten. Of course these are relatively crude comparisons, which need to be further unpacked and qualified, but they do suggest that some disciplines may have lessons for their comparators that could be drawn out from more detailed case-study research.

Degree-level attainment

As previous research has shown (Stuart *et al.,* 2008; Wakeling, 2009a; Wales, 2013), there is a very strong association between degree-level attainment and progression to a higher degree. Our results underline this finding using the most recently available data. Graduates with a first class Honours degree have the highest rate of progression to a higher degree, with the rate declining for each successively lower grade. The relationship is particularly evident for progression to a research degree where first class Honours graduates are a numerical majority (despite comprising only about 15% of first-degree graduates)[6]. Missing out on what has become known as a 'good' degree (upper second class or higher) effectively debars a first-degree graduate from progressing immediately to a research degree. Even then, holders of upper second class Honours progress at only one-fifth of the rate of first class Honours graduates. Given the concerns raised by commentators recently about the continued need to attract the 'brightest and the best' to postgraduate study in the face of a changing student finance environment, this is potentially an encouraging finding. It also echoes the conclusions of a comprehensive analysis of initial entry to higher education using the National Pupil Database, which found that academic attainment accounted for much of the observed inequality in access to higher education by socio-economic background (Chowdry *et al.,* 2008). At the same time, it is important to recognise that degree classifications have been criticised as very blunt and crude measures of attainment (Wolff, 2012) and "no longer fit for purpose" (Burgess, 2007, p. 5). Research funded by HEA has also drawn attention to worrying inequalities in degree classifications awarded across ethnic groups that remain statistically unexplained (HEA and ECU, 2008; Stevenson, 2012). We should be wary then about naïvely assuming that ability alone facilitates entry to higher degrees.

Figure 5.4. The percentage of first degree qualifiers by progression status and degree classification: 2009/10 & 2010/11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009/10 - 2010/11

[6] Numbers progressing to a research degree by first-degree classification, 2009-10 to 2010-11 combined: I – 5,010; II(i) – 3,435; II(ii) – 360; III/Pass – 15; Unclassified – 160; not applicable – 40.

Summary

In this section, we presented a basic description of the cohort of UK- and EU-domiciled first-degree graduates in 2009-10 and 2010-11 and investigated their patterns of response to the DLHE survey and of progression to postgraduate study. We have drawn out some of the academic factors that condition progression to postgraduate study, including: the nature of different disciplines and their articulation with specific graduate labour markets; the different types of postgraduate study pursued by graduates, looking in most detail at higher degrees; and the effect of attainment at degree level on the postgraduate transition. We have seen that 'applied' disciplines tend to have lower rates of progression to higher degrees and that the highest rates of progression to research degrees can be found among first-degree graduates in STEM disciplines. Physical Sciences, which includes Physics, Chemistry and Earth Sciences, accounts for about one in every four of the first-degree graduates in our dataset progressing to a research degree. Furthermore, we noted that differences in progression rates across cognate disciplines could be based on different disciplinary cultures and practices, which might fruitfully be explored in more detail in subsequent research.

Having looked above at subject disciplines, in the following two sections of the report we turn to the two other major contextual factors that structure the opportunities for progression to postgraduate study. Students are taught in institutions of different sizes and type. These institutions have differing missions, ethos, orientation to research and employment and so on, which may condition their students' aspiration to enter higher degrees. Similarly institutions are themselves based in different countries. Within the UK, the funding regimes for first degrees have changed considerably in recent years, with divergence evident across the four 'home nations' of England, Northern Ireland, Scotland and Wales. There are good reasons to suspect that students from some systems and not others may be in a more propitious financial situation, upon their graduation from a first-degree programme, to consider further study. We turn first then to an investigation of progression to postgraduate study across the UK home nations.

6 Patterns of progression to postgraduate study by country

Key points

- EU graduates from UK institutions were much more likely to progress to a higher degree than UK-domiciled students. There were differences in progression rates between graduates from different EU countries, but there were no clear patterns according to countries' characteristics.
- National differences in rates of progression to higher degrees between UK-domiciled graduates were much smaller than those between UK and EU graduates. Scottish graduates had a lower rate of progression to taught higher degrees than graduates from the rest of UK, but higher rates of progression to research degrees. The four-year Scottish undergraduate degree might account for some of this difference. Within England, graduates domiciled in London had slightly higher rates of progression to taught higher degrees than those from the other English regions
- The variation in higher education funding systems across the UK nations did not seem directly to influence rates of progression to higher degrees. However, this is a complex issue that would bear more detailed investigation.
- Graduates of Welsh institutions have a slightly higher progression rate to higher degrees than graduates from institutions in the rest of the UK. Welsh institutions are also the most likely to 'retain' their undergraduates for higher degree study.
- There was no evidence of a 'brain drain' of graduates to higher degrees abroad. While some British graduates progressed to higher degrees outside the UK, the total numbers were fairly small.

The 'home nations' context

The varied student funding regimes that apply across the UK home nations of Wales, Scotland, Northern Ireland and England have the potential to affect progression to postgraduate study in different ways. With tuition fees for English students and students studying in England of up to a maximum of £9,000 per annum for 2012 entrants, strong concerns have been expressed that graduates will be dissuaded from further study by the large debts accumulated at undergraduate level. When the first students under the £9,000 arrangements graduate in 2015 it will be important to determine whether their rate of entry to postgraduate study is affected by the change. A useful way of undertaking such an analysis would be to compare whether graduates from the different UK systems progress at different rates depending on whether they were liable for high fees or perhaps none during their undergraduate years. To make such a comparison meaningful, it is important to understand the baseline variation in rates of progression to postgraduate study across the home nations. Such differences in rates of progression to postgraduate study in England, Northern Ireland, Scotland and Wales may already exist – and there may already be evidence that different undergraduate funding arrangements are leading to different rates of progression. On the other hand, rates may not differ markedly or might be affected by other factors not directly related to student tuition fees.

The introduction of devolved government in Scotland, Wales and Northern Ireland in the late 1990s included the devolution of many aspects of higher education policy. Divergence has been most noticeable in devolved policies on funding for

undergraduate students. After 1998 when, following the Dearing Report (NCIHE, 1997), the Westminster government introduced means-tested liability for annual tuition fees of £1,000 across the UK, the four home nations have followed somewhat separate paths. The detail is complicated and can be difficult to follow, but broadly speaking in England and Northern Ireland tuition fees rose to £3,000 following the 2004 Higher Education Act; in Wales the contribution of Welsh students was subsidised by the Welsh Assembly to retain fees at the original £1,000 + inflation rate; and in Scotland tuition fees were first replaced by a graduate contribution scheme and subsequently abolished completely. There is further complexity introduced for students from other EU states who, under EU law, must be treated as if they were a local student. For 2012 entry, English institutions charged up to £9,000 in annual tuition fees to all UK-/EU-domiciled students; in Scotland there were no fees for Scottish or other EU students, but those from elsewhere in the UK were liable for up to £9,000. In Wales and Northern Ireland, local students paid fees at a lower rate than those coming in from other parts of the UK.

The data in this report principally cover students entering higher education in 2005-2008. These are students covered by the period of £3,000+ fees (in England). Clearly as no students have yet graduated under the new regime, we can do no more than speculate about the impact of the £9,000 arrangements based on observed differences from the earlier data.

There is little previous research on student mobility between the UK home nations. Wakeling and Jefferies (2012) looked at whether changes to undergraduate tuition fees affected students' country of enrolment for a first degree in the period 2000-2010 (their article also includes a detailed explanation of the changes to student funding in the UK and Ireland in this period). They found little evidence of students acting in an economically 'rational' way to minimise their fee liability. The undergraduate participation rate in England – the system with the highest fee – rose above that of Scotland over the period, despite Scottish students not being liable for their fees. Trends in enrolment between the countries followed a longer-term trend of students studying in their 'home' country and seemed mostly unaffected by shifts in the funding system. Whether this applies in a similar manner to postgraduate transition, however, is a separate question requiring empirical investigation. Unlike at undergraduate level, where student support packages are not the same in each jurisdiction, at postgraduate level the systems are almost identical in that there is very little support available for taught higher degrees. Research degree support, which is principally through the UK-wide research councils (except in Northern Ireland) or by corporate sponsorship, is also effectively the same across the UK.

It is also illuminating to investigate in detail the patterns of movement across and within the home nations in progression to postgraduate study. Do some countries gain at postgraduate level at the expense of others? Do students who move for their undergraduate study stay put when moving to a higher degree, or do they return to their home country? If there are differences in progression to postgraduate study across the countries, does this appear to be more related to their country of origin or their country of study?

As well as possible shifts in progression rates within and across the home nations, a concern about a 'brain drain' has been raised, both by academic researchers and those involved in discussing higher education policy. With a recent proliferation in the availability of higher degrees taught through the medium of English in other European countries, and in many cases very low fees or free tuition for higher degrees, there is potential for a 'brain drain' of intellectual talent. A number of studies have investigated the motivations of British students leaving the UK for study (e.g. Brooks and Waters, 2011; Waters *et al.,* 2011; Findlay *et al.,* 2012). These studies have found that students' motivations were not necessarily financial, but they have also raised concerns that such a situation will not endure if there continues to be an absence of funding for Masters degrees for British students (Brooks, 2012). Those leaving the UK for postgraduate study are potentially a difficult-to-reach group; however, there are some limited data in

the dataset about the extent to which UK-domiciled students have moved abroad for further study. Although we cannot comment on their country of destination, the data allow us to determine whether there is already a 'flight of talent' from the UK.

Progression by country of domicile

Looking first of all at the rate of progression to a higher degree by country of domicile, the most notable difference is between graduates domiciled in the UK and those from the EU (Table 6.1). Well over one-third of all EU-domiciled graduates from UK institutions progress immediately to a higher degree. About one in three enter a Masters degree and one in 25 a research degree. For UK-domiciled students the equivalent figures are one in 11 and one in 50. This is perhaps not entirely surprising because EU students studying in the UK will differ in many respects from their compatriots who study at home. We might assume that students electing to study abroad for the whole of their first degree are from financially comfortable families, in the main. It may also be that their decision to study abroad in the first place included a longer-term plan to take further qualifications and possibly enter an academic career. Graduates may wish to extend their stay in the UK for personal reasons, with a higher degree helping to achieve that aim. Finally, despite the implementation of the Bologna Process across Europe, some graduates may feel that a UK first degree is not long enough to provide, on its own, a comparable equivalent to the main undergraduate qualification in their country of origin. We would certainly expect graduates moving abroad to study to have, on average, a wider knowledge of opportunities in higher education, both at home and abroad. We must of course also be mindful of the much lower response rate to the DLHE survey among EU-domiciled graduates (see Appendix). Those remaining in the UK for further study will be easier to contact and may be more likely to respond than EU graduates who return to their country of origin.

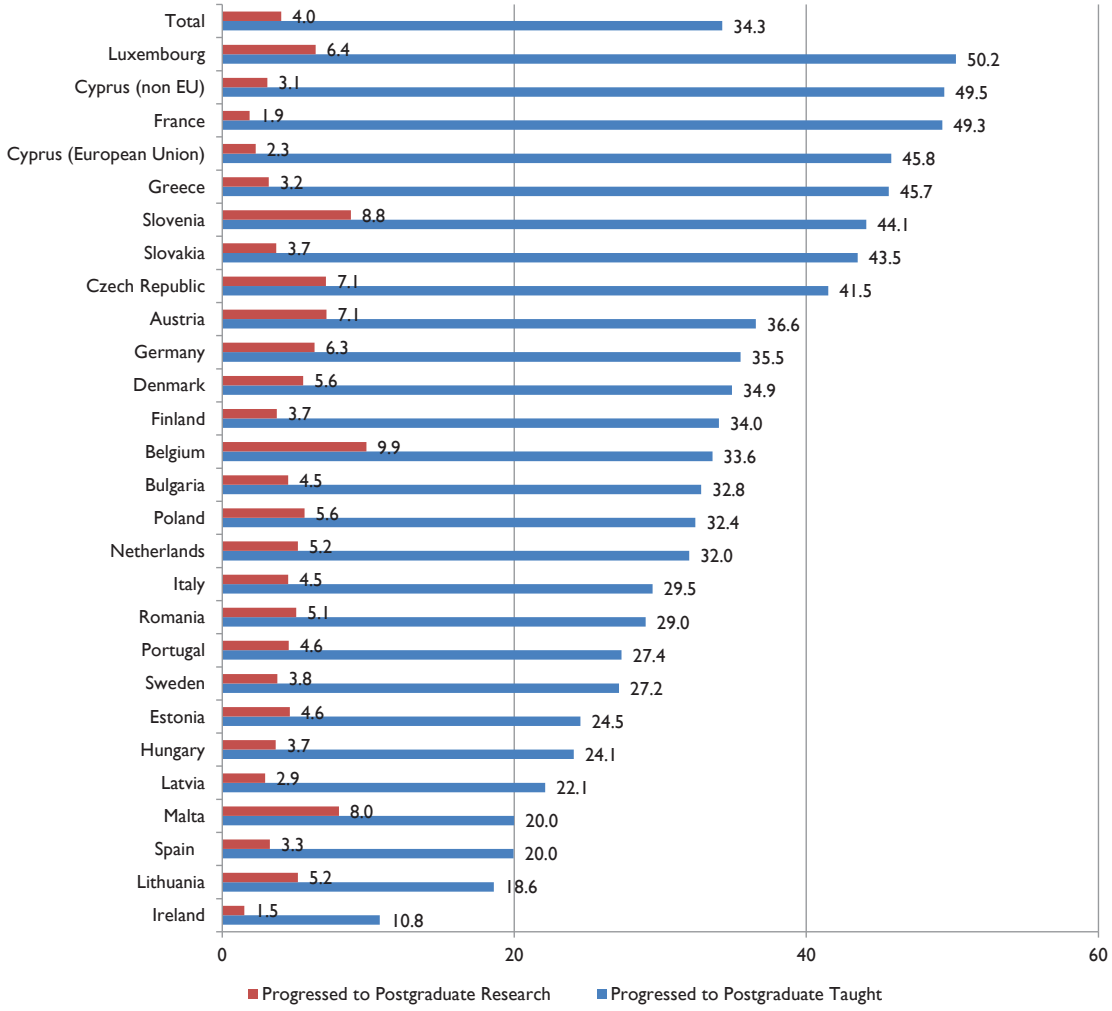
Table 6.1. The percentage of first degree qualifiers from UK higher education institutions by progression status and graduate's country/region of domicile: 2009-10 & 2010-11 combined

Country/region	Did not progress to postgraduate study	Progressed to taught higher	Progressed to research degree
Total	**88.2**	**9.8**	**2.0**
England	89.5	8.6	1.8
Northern Ireland	89.2	8.9	1.9
Scotland	89.4	7.9	2.7
Wales	89.7	8.5	1.8
European Union	61.7	34.3	4.0

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Progression rates vary from country to country across EU-domiciled graduates, although all except the Republic of Ireland have higher rates of progression to postgraduate study than UK-domiciled students. The highest rates for taught higher degrees are seen for graduates from Luxembourg, France, Cyprus, Greece, Slovenia and Slovakia; for research degrees, the highest rates are seen for Belgium, Slovenia, Czech Republic and Austria (Figure 6.1). Some of the countries with high overall rates of progression have low absolute numbers of graduates in the dataset. Looking at those countries with the largest number of graduates – France, Germany, Poland and Ireland – there are some interesting differences. France has a very high rate of progression to taught higher degrees (about half of the total), but a similar rate of progression to research degrees as for UK-domiciled students. Germany has a high rate of entry to research degrees (6.3%), but does not differ markedly from the EU average for taught higher degrees, with Poland following a similar pattern. Ireland differs little from the general UK pattern.

Figure 6.1. Percentage of EU-domiciled first degree qualifiers from UK higher education institutions by progression status to taught higher and research degree by country of origin: 2009-10 & 2010-11 combined

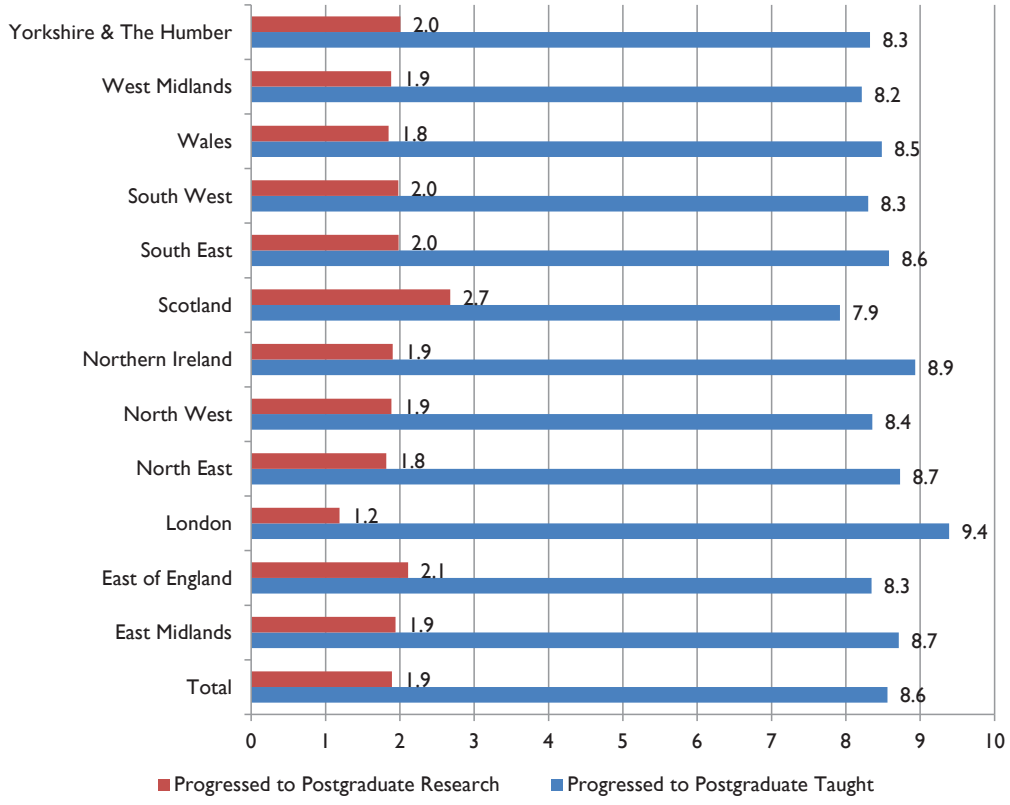


Compared to the differences between UK- and EU-domiciled graduates as a whole then, the differences in progression rates between those coming from the different UK home nations are relatively minor. The variation across English, Northern Irish and Welsh graduates in progression to both kinds of higher degree are neither statistically significant nor substantively meaningful. Essentially, students from these three countries have remarkably similar rates of progression to both taught higher degrees and research degrees. Scotland, however, has a slightly lower rate of progression to taught higher degrees and a higher rate of entry to research degrees (Table 6.1 combines across years, but the differences are broadly consistent from year to year).

What might these aggregate-level statistics tell us about the effect of different funding regimes on progression to higher degrees? All else being equal, we would expect to see higher rates of progression among Scottish students, most of whom will pay no tuition fees, than among students from other nations who pay higher fees. This applies for research degrees (where funding is more likely to be available), but not for taught higher degrees (where it is not). Instead the highest rate of progression to taught higher degrees is for English students, who would have studied under the least financially propitious system (in relation to tuition fee liability) of the four. It is worth bearing in mind that undergraduate degrees in Scotland are generally of four years' duration and some result in the award of an (undergraduate) Masters title. However, for this to be a sufficient explanation, we would have to see a lower rate of progression to taught higher degrees for graduates of Scottish institutions, rather than Scottish graduates. This does not appear to be the case (see Tables 6.2 and 6.3).

As England is numerically dominant in the graduate dataset there is a possibility that the rate of progression for English-domiciled graduates is simply a statistical artefact, hiding variation across the English regions. Figure 6.2 disaggregates domicile by English region and shows that, with the exception of London, this does not appear to be the case. Instead, it seems to show that British students' rate of progression to higher degrees seems little affected by geography: both Wales and Northern Ireland present themselves like the English regions. Only Scotland and London appear different: Scotland has the highest rate of progression to research degrees and the lowest to taught higher degrees; London is the opposite. Since the funding regulations for London students are identical to those for other English students, we cannot look to undergraduate tuition fees (or postgraduate funding arrangements) to account for that. We might draw a similar conclusion for Scotland. It is difficult to determine what might lie behind the different rates in London, but it could be related to the quite specific features of the graduate labour market there.

Figure 6.2. Percentage of first degree qualifiers by progression status to taught higher and research degree by region of residency: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Student funding arrangements and progression to higher degrees

Perhaps the most interesting question in relation to progression to postgraduate study by country is the effect of different funding regimes on rates of continuation. Here we can follow Wakeling and Jefferies (2012) by conducting a 'natural experiment' – that is using the changes to undergraduate funding across the four countries to investigate graduates' behaviour. Thus we could hypothesise that the absence of fees for Scottish and EU undergraduates in Scotland will lead to higher rates of progression to postgraduate study than we would expect to see among English undergraduates in Scotland, which we would expect to be higher in turn than all undergraduates in England who would be paying the highest tuition fees of the three groups.

Table 6.2. Rate of progression (percentage) to taught higher and research degrees by country of residence and country of first degree gained: 2009-10 & 2010-11 combined

Domicile	Progression to taught higher degree	Progression to research degree
First degree from English institution		
Total	**9.6**	**1.9**
England	8.4	1.8
European Union	35.2	3.9
Scotland	11.1	3.6
First degree from Scottish institution		
Total	**10.2**	**3.1**
England	12.7	4.5
European Union	31.2	5.7
Scotland	7.7	2.6

Note: Excludes domicile of Channel Islands/Isle of Man, UK not specified, Northern Ireland, and Wales.

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

The results in Table 6.2 do not support this simple hypothesis. Looking at progression to a taught higher degree, Scottish graduates from Scottish institutions – who are not liable for tuition fees – had a lower rate of progression than both English graduates from Scottish institutions and English graduates from English institutions. Scottish graduates from English institutions had a higher rate of progression than their compatriots who did not move, despite being liable for fees of £3,000+. Similarly, EU students are more likely to progress to taught higher degree study in England than in Scotland, where, like Scottish graduates, they would have been exempt from fees. Results are not quite as clear-cut for progression to a research degree. Here, English graduates in England have the lowest rate of progression and EU students have a lower rate of progression in England than in Scotland. However, Scottish graduates from English institutions have a higher progression rate than Scottish graduates in Scotland.

These results are not sufficient to conclude that fees have no appreciable impact on progression to higher degrees. There are a number of further factors that would need to be considered before such a judgement could be made. Thus it would be necessary to be sure that the differences across countries/graduate domiciles are not related to other factors associated with postgraduate progression (e.g. attainment, graduates' backgrounds, subject discipline and so on). The results suggest that an automatic association of undergraduate fees with a drop-off in postgraduate enrolments is not supported by evidence to date. However, we must also consider the question of the balance between tuition fees and maintenance costs, which have shifted considerably under the most recent funding arrangements. The living costs for an extra year of study (i.e. a four-year Scottish degree versus a three-year English degree) may have been more important in students' minds than the cost of tuition fees.

Progression by country of first-degree study

An alternative way of exploring intra-UK differences in progression to postgraduate study is to look at rates according to the country from which a student graduated (Table 6.3). This gives a somewhat different picture to that seen in Table 6.1 and Figure 6.2. Those graduating from institutions in Wales (whatever their country of domicile) had the highest rate of progression to a taught higher degree (11.4%). It is worth noting here that there were more English graduates than Welsh graduates from Welsh institutions progressing to a taught higher degree in the dataset. Graduates from Scottish

institutions had the second highest rate (10.2%), despite Scottish graduates having the lowest rate across those from the four nations. For research degrees, Scotland maintains the high rate of progression seen for Scots, with the 3.1% of graduates following this path being 1.5 times the rate seen for the other countries. We can speculate that Scottish institutions are doing something different to institutions elsewhere in the UK that encourages graduates to stay on. Equally, the four-year undergraduate degree may facilitate direct entry to a research degree in the same way as for a four-year undergraduate Masters degree in England. Of course graduates from the longer Scottish degree will often be one year older, which could help raise the progression rate, but that does not appear to apply to taught higher degrees to the same extent (since the rate is highest in Wales, where first degrees are typically three years long). It is also worth noting here that England and Northern Ireland, which until 2012 had very similar funding systems, also had very similar patterns of progression to postgraduate study (in spite of the geographic and demographic differences between them).

Table 6.3. Number and percentage of first degree qualifiers by progression status to postgraduate taught and postgraduate research by country of graduating institution: 2009-10 & 2010-11 combined

	Did not progress to postgraduate	Progressed to taught higher degree		Progressed to research degree	
Country	studies	Number	Percentage	Number	Percentage
Total	**408,175**	**44,305**	**9.8**	**9,025**	**2.0**
England	338,410	36,110	9.6	7,070	1.9
Northern Ireland	10,750	1,140	9.6	245	2.1
Scotland	35,430	4,025	10.2	1,215	3.1
Wales	23,585	3,030	11.4	495	1.9

Note. Excludes Conservatoire for Dance and Drama (multiple locations)

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Movement between countries for postgraduate study

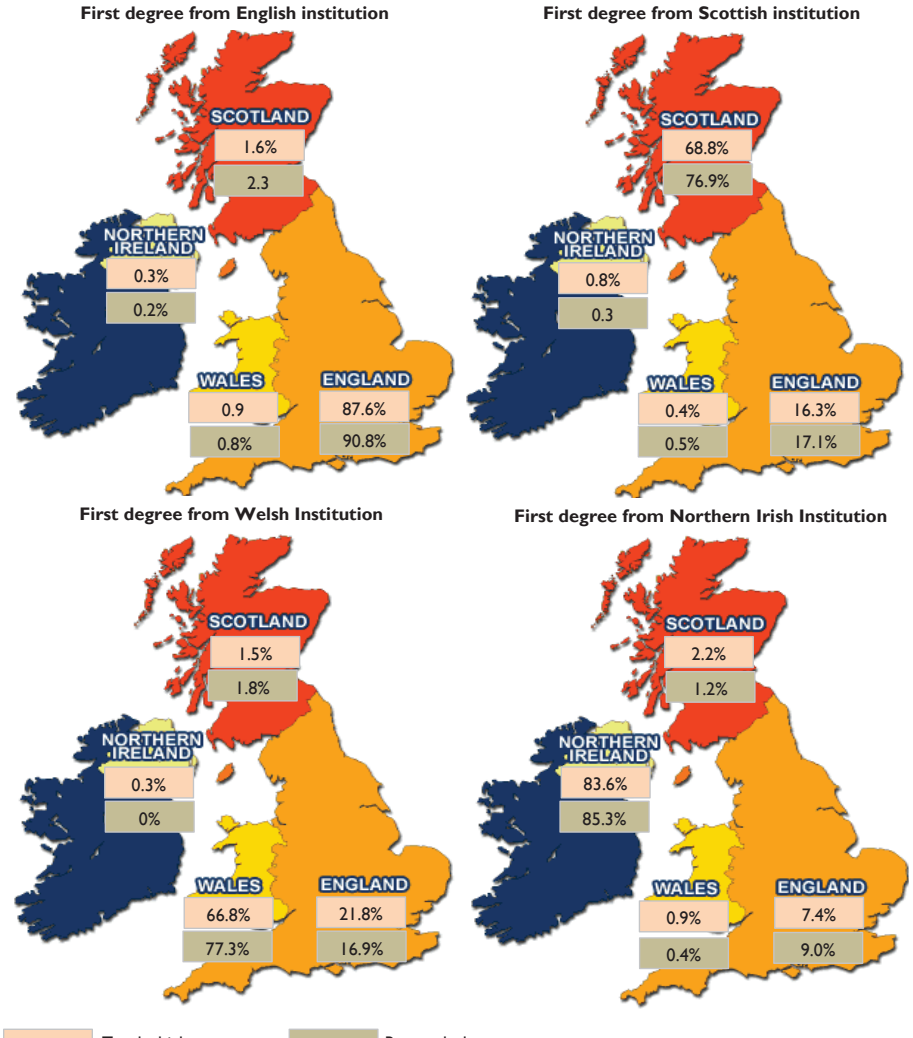
We can also investigate whether graduates entering a higher degree move countries or stay put between levels. Can we characterise some countries as 'exporters' or 'importers' of those progressing immediately to a higher degree, for instance? Figure 6.3 show that the retention[7] rate varies across both levels and countries. England retains the highest proportion of graduates, with 88% of those progressing to a taught higher degree and 91% progressing to a research degree from an institution in England staying in England for their postgraduate education. Northern Ireland is a fairly close second, retaining 84% and 85% of those destined for taught and research higher degrees respectively. While England and Northern Ireland comprise one distinct set, Wales and Scotland form another with about two thirds of graduates from their institutions who progress to taught higher degree study staying put, increasing to three quarters for research degrees.

Since England hosts the majority of the institutions in the UK, it is perhaps not surprising that its rate of 'retention' is the highest, since there are many more English institutions to move to than Scottish, Welsh or Northern Irish ones. That makes Northern Ireland's results all the more interesting since there are only four institutions

[7] In this report, the term 'retention' refers to a situation where a graduate progresses to study in the same institution and/or country. Thus a graduate from a Scottish institution who progresses to a higher degree in Scotland is 'retained'. We are not referring to whether the graduate continues successfully on their higher degree programme having enrolled.

there, only two of which receive substantial numbers of graduates progressing to higher degrees. No doubt geography plays a major part here: Northern Irish students tend to stay 'home' for their first degrees and leavers are often 'reluctant' ones, moving out of necessity because of the imbalance between supply and demand of places in the province (McQuaid and Hollywood, 2008).

Figure 6.3. Country of destination (percentage) of first degree qualifiers progressing to taught higher and research degrees by country were first degree gained: 2009-10 & 2010-11 combined



Notes: Not specified/not available: 9.7% England, 5.8% Northern Ireland, 13.7% Scotland, and 9.6% Wales

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Calculating a net import/export statistic shows that the overall gain or loss by each country is relatively small. England and Northern Ireland are net gainers, receiving a greater number of graduates who enter a taught higher degree than they send to higher degrees, but not by much. Excluding those for whom no 'country of destination' data were available, England gains 345 students and Northern Ireland less than 10. Scotland loses about 45 students, with Wales' net loss standing at 310 across the two years. At research degree level, England has a slight net gain (+75), with Scotland (-45), Wales (-25) and Northern Ireland (-5) having small net reductions. Seen in the context of the more than 50,000 graduates entering higher degrees in the dataset, this tells a story of very little net movement across countries between undergraduate and postgraduate levels, at least in this immediate transition. The box below provides some further statistics on cross-country movement.

Selected statistics on movement across countries during progression to a taught higher degree

The most common pattern is **no movement**. Those who are domiciled in a country and remain there for their first degree and higher degree comprise **88%** of the total.

Almost **all the movement** (**99%**) seen is between **two countries**. That is, only a very small number were domiciled in one country, graduated from a second country and moved for their taught higher degree to a third.

Nearly all graduates remain in the country where they took their first degree when progressing to a taught higher degree. Only about **6%** move.

Only **9%** of those progressing to a taught higher degree do so **outside of their country of domicile**.

Of those progressing to a taught higher degree, **around two-fifths of those who leave** their country of domicile for their first degree **subsequently return for their higher degree.**

The **largest single cross-border transfer** is from **Wales to England**.

More **English graduates move from England to Scotland** for their taught higher degree **than remain in Scotland** having done their first degree there.

Of **Scottish graduates** completing their first degree in England, **four times as many remain in England** for their taught higher degree **than return to Scotland**.

A number of patterns of cross-country movement were not followed by any graduates. For instance, no Welsh students completed a first degree in Scotland and then returned to Wales for their taught higher degree.

For those students who progressed to a taught higher degree outside their country of domicile, England was the most popular destination (1,200 graduates). For English students, Wales (940 graduates) was more popular than Scotland (680 graduates).

As noted above, our data provide a glimpse at the proportion of graduates moving outside the UK for a higher degree. This has been identified as a concern by some, given the potential for high-quality, cheaper postgraduate education taught in English in other countries (with the Netherlands and Nordic countries frequently mentioned). Across the two academic years 2009-10 and 2010-11, almost 2,700 graduates entered a taught higher degree in a non-UK institution. However, a large majority of these graduates were EU-domiciled and were presumably mostly returning to their home country at this point. Only 735 graduates progressing to a taught higher degree overseas were UK-domiciled, which is approximately 6% of those entering a taught higher degree from among British graduates. The equivalent figure for research degrees was 3%. English students, who had been subject to the highest undergraduate tuition fees, are slightly underrepresented among those leaving the UK. Previous research looking at British students who move abroad for further study suggested they tend to be from relatively privileged backgrounds (Brooks and Waters, 2011). There was a slight shift in representation towards NS-SEC classes 1 and 2 among those leaving the UK, but it was not substantial.

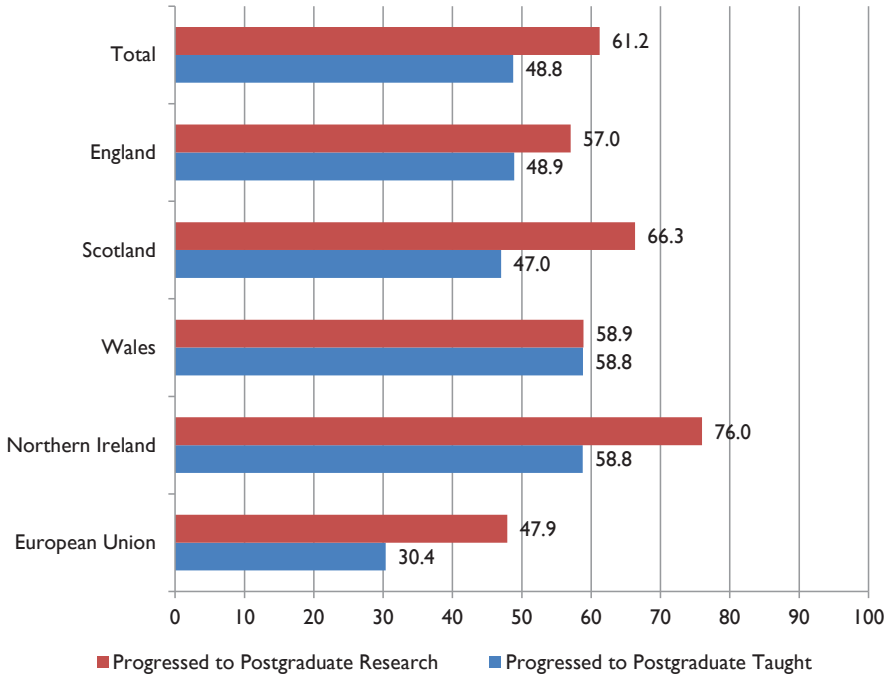
Summary

Our findings in this section show that the main geographically based difference in progression to higher degrees is between UK- and EU-domiciled graduates, with the latter progressing at a substantially higher rate. Although there is some variation across individual EU countries, there is a clear progression gap between graduates from each EU state and those from the UK, with the exception of the Republic of Ireland. Within the UK, Scottish graduates had slightly lower rates of progression to a taught higher degree and slightly higher rates of entering a research degree as their first destination. There was little difference observed across England, Wales and Northern Ireland. Drilling down to look at the English regions also showed few differences, except that London saw the highest rate of progression to a taught higher degree and lowest to a research degree of all the geographical areas examined. Indeed, an overall impression from the analysis of progression to postgraduate study across the home nations is one of little net movement and an apparent preference for remaining within the same system. This is perhaps underpinned by the effective similarity of postgraduate funding arrangements (or lack thereof) across the four UK higher education systems. The different undergraduate student funding regimes in place across the home nations at the time of data collection did not appear to lead to lower rates of progression to higher degrees for those studying in higher fee systems (and there was some suggestion of the reverse). However, this does not necessarily mean that future graduate behaviour will follow suit under what is arguably a radically different undergraduate funding model in England. Only a small minority of UK students move outside of the UK for higher degree study; in purely numerical terms there does not seem any great cause for alarm, at least for 2009-10 to 2010-11. This group of educational emigrants does bear further, more detailed statistical investigation, however, to support the qualitative research undertaken by Brooks and Waters (2011), and Findlay et al. (2012). In particular, it is important to understand changes in the numbers studying overseas both retrospectively and prospectively, and to look in more detail at their characteristics – are they, for instance, the most talented students or do they represent displaced 'second chancers'?

If we were to conceive, perhaps unhelpfully, of the UK's four national systems as being in competition with each other in ensuring progression of graduates to higher degrees, are there clear-cut winners? It would appear not, although Welsh institutions do have a slightly higher rate of progression to taught higher degrees for their graduates, with Scottish institutions matching this performance for research degrees.

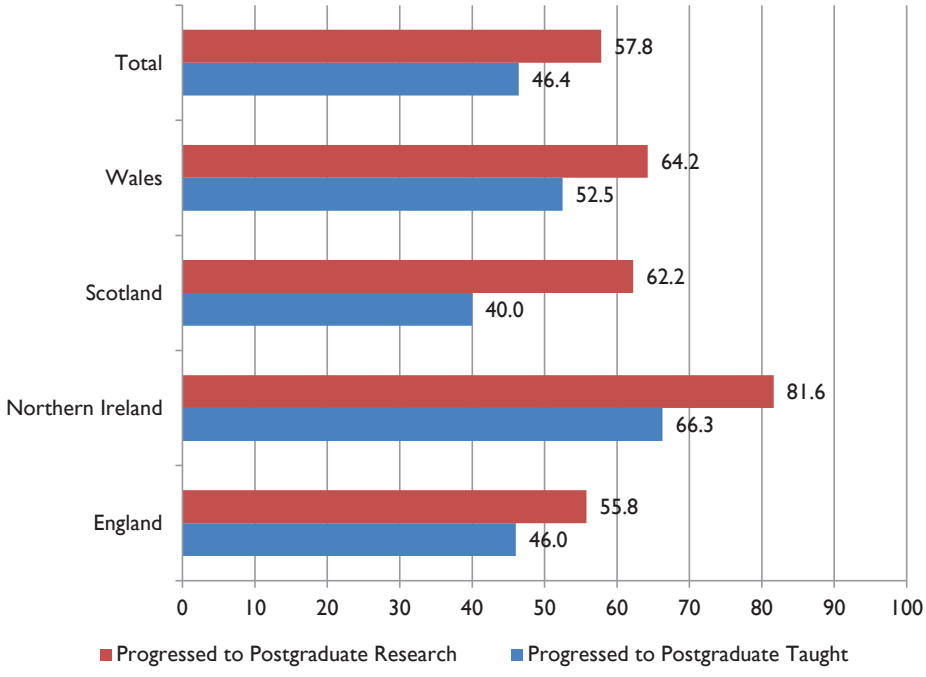
We can use data on the destination institution (rather than country) of those progressing to higher degrees to investigate the success of institutions in different countries in retaining their graduates. Figures 6.4 and 6.5 show that Northern Irish institutions have the highest loyalty rate for both kinds of higher degree and are particularly successful at holding on to their graduates entering research degrees. Scottish institutions retain more than three-fifths of their graduates progressing to research degrees, but only two-fifths of those entering taught higher degrees. This is a lower rate than seen in English institutions, even though Scottish-domiciled graduates are about as 'loyal' as English graduates. On the whole then, Northern Irish and to some extent Welsh institutions do well in holding on to those graduates progressing to higher degrees. For Northern Ireland this may relate to its geographical separation from mainland Britain, although graduates also have the option of higher degrees in the Republic of Ireland. It would be worth exploring further whether there is anything peculiar to the practice of graduate advising or undergraduate culture in the two countries that could help explain the differences in institutional loyalty seen between levels.

Figure 6.4. Percentage of first degree qualifiers from UK higher education institutions who stayed at the institution of their first degree by progression status to taught higher and research degree *by country of residency*: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Figure 6.5. Percentage of first degree qualifiers who stayed at the institution of their first degree by progression status to taught higher and research degree *by country of first degree institution*: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

In the next section, we turn to look in more detail at the rates of progression to higher degrees across institution, including identifying which institutions have the highest rates of progression and also which individual institutions and groups of institutions retain their graduates across levels of study.

7 Patterns of transition to postgraduate study by institution

Key points

- Rates of progression to higher degrees vary widely by institution. There is greater variance in rates of progression to taught higher degrees. Small specialist institutions tend to have high rates of progression, even compared to similar subjects in larger institutions.
- For research degrees, there is a small number of institutions with very high rates of progression and a large number with low rates. One in five of the graduates progressing to a research degree graduated from the 'big five' research universities.
- There are clear differences in rates of progression to higher degrees between institutional mission groups. For taught higher degrees, 1994 Group graduates are the most likely to progress and GuildHE graduates the least likely. For research degrees, the Russell Group provides well over half of the graduates making that transition. Graduates of the 'Sutton Trust 30' most selective universities account for 70% of those progressing to a research degree
- However, there is also a range of institutional rates of progression within mission groups, particularly for taught higher degrees. Some post-92 institutions have a higher rate of progression than some Russell and 1994 Group universities.
- Some institutions are net 'importers' and others net 'exporters' of graduates progressing to higher degrees. London-based institutions do particularly well in this regard.
- Current and former 1994 Group institutions tend to receive fewer graduates progressing to research degrees than they send. On a group-by-group basis, non-aligned institutions show a net gain of graduates entering a higher degree.
- On average, institutions 'retain' about 40-45% of their graduates who go immediately on to a higher degree, but this masks quite large variations. There are no obvious patterns and only a weak association is seen between progression and retention rates.

Institution effects

Students are taught in institutions of different sizes, with different histories and missions, in different locations, and that have different and sometimes unique cultures. The student experience in a specialist performing arts college, for example, will differ to that in a new, semi-rural, campus-based university, which will be different again to an old, research-intensive institution in a large city. We know from much previous research that the composition of the student body varies considerably between institutions of different kinds and even across universities of ostensibly similar profile. This is reflected in the balance of subject disciplines an institution provides and the socio-demographic profile of its intake in relation to socio-economic class, school type, gender, ethnicity and region/nationality. It is also seen in the qualifications undergraduate entrants hold, the split of activity between undergraduate, taught postgraduate and research degrees, between full-, part-time and distance modes of study and in the role research plays in an institution's mission, culture and financial model. Perhaps most importantly, the distribution of students across institutions is quite different at undergraduate and postgraduate levels, just as the distribution by subject discipline is not the same for undergraduates and postgraduates. Research students in particular are concentrated in certain kinds of institutions (Artess *et al.,* 2008).

The research discussed earlier has focused on overall rates of progression to postgraduate study and the effect of individuals' background characteristics. In a small number of cases, such as a project funded by the HEA (Stuart *et al.,* 2008), researchers have investigated progression to postgraduate study in detail but within one or two institutions only. In this section, we investigate how progression to higher degrees varies by institution, looking at the rate of progression for both individual institutions and different types or category of institution. In encouraging access and widening participation to undergraduate study, a range of activities have been tried and there is an emerging literature about effective strategies to recruit and retain underrepresented groups. By way of contrast, almost nothing is understood about what is being or could be done to encourage and support graduates to progress to higher degrees. A potential first step towards such an exploration requires an understanding of which institutions already report high rates of progression to higher degrees (and, consequently, which do not). With such knowledge it would be possible to plan further, targeted investigation into institutional practices in order to identify techniques that could be used elsewhere, bearing in mind that some institutions with high progression rates may be achieving these without making deliberate interventions (or even being aware of the fact).

Overall rate of progression by institution

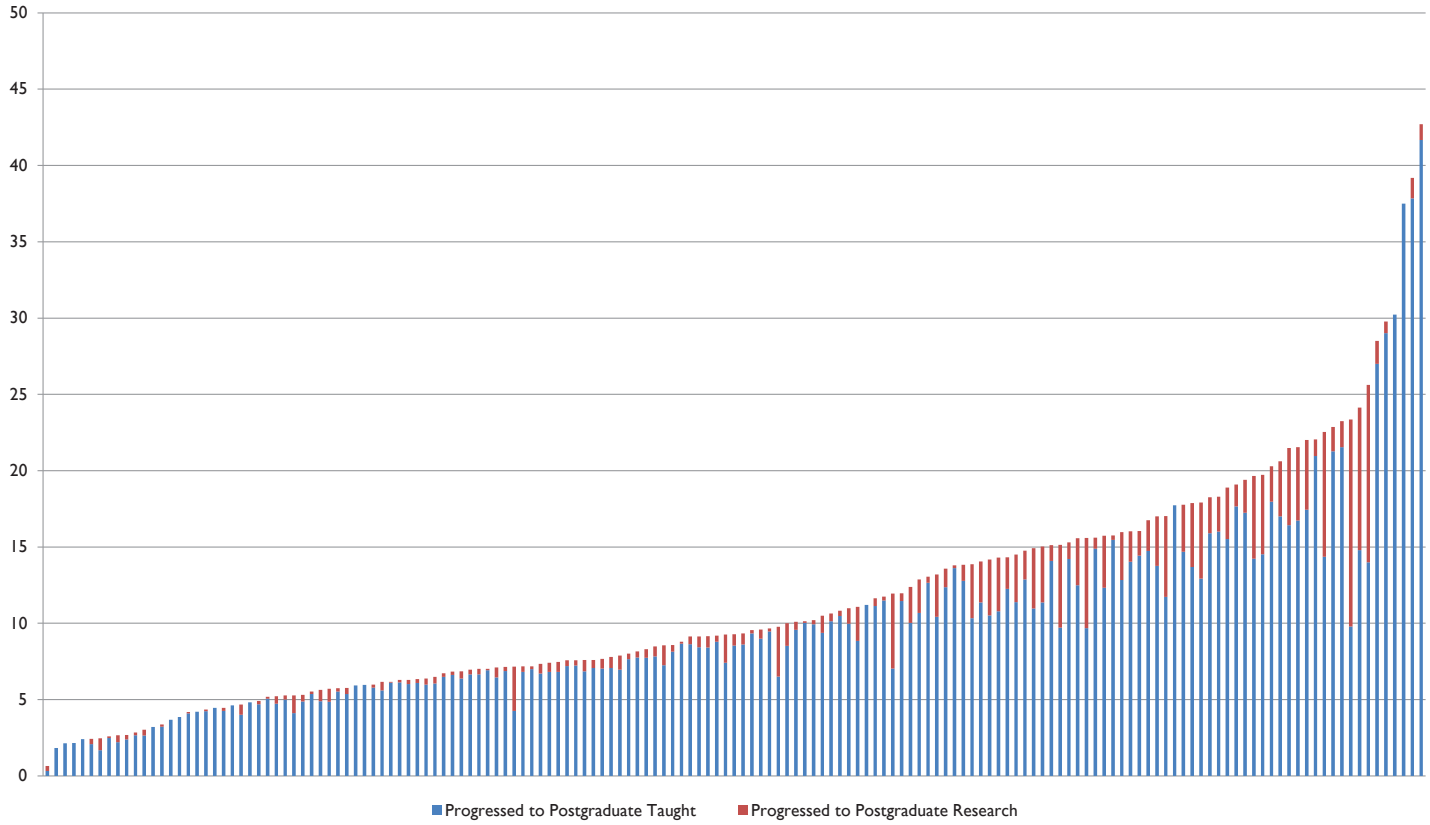
Figures 7.1 and 7.2 demonstrate the spread of progression to higher degrees across the institutions in our dataset. They show, respectively, the spread of rates of progression to taught and research higher degrees; and the numbers of graduates making those transitions. There is a wide range of progression rates, both overall and for different types of higher degree. Rates of progression for taught higher degrees by institution range from a high of 42% to a low of less than 0.5%. For research degrees, the equivalent range is from 13.6% to zero. The unweighted mean rate of progression to a taught higher degree for institutions was one in ten, with half of all institutions lying in the range 6% to 13%. For progression to a research degree, the unweighted institutional mean was 1.5% but the median value just 0.6%, pointing to a strong skew to the data: a small number of institutions have relatively high rates of progression to research degrees, with a large number of institutions having few graduates with that destination.

A useful way of conceiving of the relative rates of progression for individual institutions is to use z scores. These convert the rate of progression for an institution into a number of standard deviations above or below the mean and so account for the absolute difference in numbers progressing to the two types of higher degree. For taught higher degrees, institutions with very large z scores (roughly three standard deviations above the mean) are small, specialist institutions (among them the three 'royal' music colleges in England[8], the Courtauld Institute of Art and the University of Buckingham). Among larger generalist universities, Royal Holloway, Aberystwyth, University College London, Keele, York and Durham all feature prominently. Ignoring the specialist institutions, the Scottish institution with the highest rate was Heriot-Watt University; in Northern Ireland, Queen's University Belfast. For progression to research degrees, those with the highest z scores are research heavyweights (the University of Cambridge, Imperial College London and the University of Oxford in that order), plus St Andrews in Scotland. For Wales, the highest rate was seen at Swansea University and in Northern Ireland it was again Queen's University Belfast.

[8] The progression rate to taught higher degrees for graduates in Music (JACS 'W3') is higher than the mean for all disciplines. However, the progression rates for graduates of specialist music institutions is considerably higher than that of the discipline as a whole (40%+, against a mean of 15% for Music). A few university-based Music departments approach this rate (at the universities of Bristol, Durham, Manchester and York).

Looking at absolute numbers of graduates by institution progressing to higher degrees, the rank order shifts. The University of Manchester's graduates account for roughly one in 40 of all those progressing to taught higher degrees, although this is but a small increase on its overall share of all first-degree graduates (one in 45). Its next-door neighbour, Manchester Metropolitan University, produces almost as many graduates, but only just over half as many of those progressing to a taught higher degree. The largest absolute numbers are mainly in research-intensive Russell Group institutions based in big cities: in addition to Manchester, this includes Leeds, Nottingham, Sheffield, Birmingham, Cardiff, Belfast and Newcastle; Durham, Exeter and Oxford also make an appearance. Glasgow tops the Scottish list. The picture is similar for absolute numbers progressing to research degree by institution. Approximately one in every 13 first-degree graduates progressing to a research degree in 2009-10 to 2010-11 graduated from the University of Cambridge, which tops the list. One in five of those progressing to a research degree graduated from one of the 'big five' institutions (including the University of Cambridge, plus the University of Oxford, Imperial College London, the University of Manchester and University College London). The University of Glasgow, Cardiff University and Queen's University Belfast are the Scottish, Welsh and Northern Irish institutions respectively with the highest numbers of graduates entering research degrees.

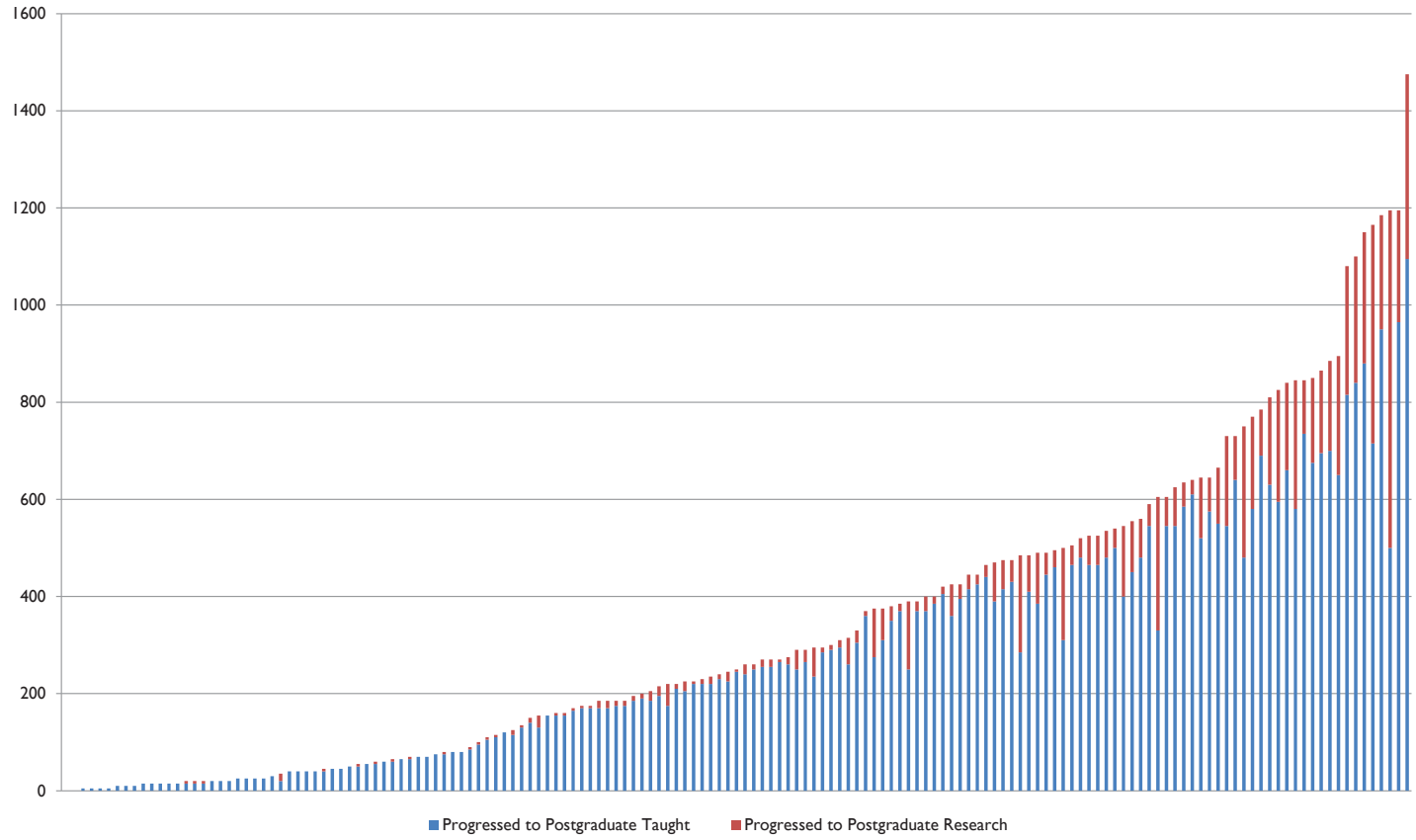
Figure 7.1. Percentage of first degree qualifiers by progression status to taught higher and research degree by first degree institution: 2009-10 & 2010-11 combined



Note: Name of institutions purposely excluded.

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Figure 7.2. Number of first degree qualifiers by progression status to taught higher and research degree by first degree institution: 2009-10 & 2010-11 combined



Note: Each bar represents one institution. Name of institutions purposely excluded.
Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Progression and institutional groupings

Higher education institutions in the UK are self-organised into various mission groups reflecting different, self-identified sectors of the higher education system. These groups have, over recent years, become more prominent in putting forward the views and interests of different kinds of institution. Although many institutions are not affiliated to any group and there are other overlapping associations of institutions, nevertheless the principal mission groups are increasingly taken as shorthand for institutions of particular kinds and characteristics. The Russell Group comprises mainly large, research-intensive institutions that have held university status for a long time. The 1994 Group is made up of smaller institutions with a strong research profile, but also an emphasis on teaching. Million+, which describes itself as a think tank and not a representative body or pressure group, has mainly post-1992 universities among its affiliates. GuildHE represents smaller, teaching-focused institutions, many of which have become universities quite recently. The University Alliance, which has 24 members (the same numbers as the Russell Group) describes itself as representing enterprising and innovative universities. There has been, of late, some shift in the membership profiles of the various groups; the group memberships used here reflect those in place in December 2012 (which are not, it should be noted, entirely identical to those in place when the graduates in the dataset completed their studies). Table 7.1 shows the rates of progression to higher degrees by mission group.

Table 7.1. The percentage of first degree qualifiers by progression to taught higher and research degree by mission group and Sutton Trust memberships of first degree institution: 2009-10 & 2010-11 combined

Country/region	Progressed to taught higher degree	Progressed to research degree
Total	**9.8**	**2.0**
Mission Group		
94 Group	14.3	2.1
GuildHE	5.1	0.3
Million+	7.7	0.5
Non-aligned	10.1	1.8
Russell Group	12.6	4.4
University Alliance	7.6	0.6
Sutton Trust		
Sutton Trust 30	12.6	4.4
Non Sutton Trust 30	8.5	0.9

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

There are some interesting differences in rates of progression across the mission groups. Graduates from 1994 Group institutions are most likely to progress to a taught higher degree, more likely even than those from Russell Group institutions. Graduates from Million+ and University Alliance institutions are only about half as likely to follow this path, with the lowest rate belonging to GuildHE institutions. Note too that the different groups represent different proportions of all graduates. The Russell Group, University Alliance and those at non-aligned institutions are of similar size, each roughly as big as the other three groups combined. The Russell Group provided one-third of those progressing to a taught higher degree, even though only about one-quarter of the graduates in the dataset came from Russell Group institutions.

Looking at rates of progression to research degrees, there is a substantial gap between Russell Group institutions and the others. Well over half of all those entering research degrees came from the Russell Group (5,605 of 9,025 research degree entrants across 2009-10 to 2010-11). The Russell Group also saw a rate of progression to research degrees more than twice that of the second-ranked 1994 Group. Indeed were the University of Cambridge its own mission group, with 695 graduates entering research degrees it would rank third in the list, equal with the University Alliance, and ahead of the 1994 Group, Million+ and GuildHE.

An alternative means of dividing institutions into groups is to use the categorisation the charity/pressure group the Sutton Trust has developed to target its research and development work in relation to widening participation. The Trust is concerned with improving access to the 'most selective' higher education institutions. It has constructed a group, which it labels the 'Sutton Trust 30', that it argues represents the 30 most academically selective higher education institutions in the UK[9]. Table 7.1 also shows the rates of progression for Sutton Trust 30 institutions and the rest. The Sutton Trust 30 institutions have higher rates of progression to higher degrees. There is a substantial gap in relation to taught higher degrees; for research degrees it is essentially a gulf. Whereas just under one-third of the graduates in our dataset attended a Sutton Trust 30 institution, two-fifths of those progressing to a taught higher degree and 70% of those entering a research degree were Sutton Trust 30 graduates.

[9] See p. 17 of the Sutton Trust (2011)

Before reflecting on which institutions or sets of institutions might demonstrate such strong rates of progression to higher degrees, it is first worth looking a little more closely at the rates of progression for different institutions within mission groups (Table 7.2). We can see there that there is some overlap across mission groups of institutional profiles for rates of progression to higher degrees. Looking at progression to taught higher degrees, the institutions with the highest rates of progression are in the Russell and 1994 Groups. However, the institutions with the highest rates of progression within the University Alliance and Million+ groupings have rates above those at some Russell Group and 1994 Group institutions. London Metropolitan University, for instance, would not come in the bottom five for progression rates to taught higher degree if it happened to be in the Russell Group. Similarly Edinburgh Napier University has a rate just below that of the top five in the 1994 Group. Turning to progression to research degrees, there is a clear hierarchical order here, with relatively little overlap between individual institutions. The Russell Group has the highest rate of progression, followed by the 1994 Group, then the others. Progression to a research degree is a rarity for GuildHE graduates, with no-one making this transition in either year in six of that group's institutions.

Table 7.2. Top and bottom five ranked institutions by percentage of progression to taught and research higher degrees by mission group: 2009-10 & 2010-11 combined

	Taught higher degree - top five									
	1994 Group		**Russell Group**		**University Alliance**		**Million+**		**GuildHE**	
1	Royal Holloway, University of London	21.5	London School of Economics	17.7	Coventry University	14.9	Edinburgh Napier University	14.1	Glyndŵr University	12.8
2	School of Oriental and African Studies	21.0	University College London	17.4	University of Bradford	12.4	London Metropolitan University	11.5	The University of Winchester	7.1
3	University of Lancaster	17.2	University of York	16.7	University of Lincoln	10.5	University of Abertay Dundee	11.1	St Mary's University College, Twickenham	7.0
4	University of Leicester	14.7	University of Durham	16.4	Teesside University	9.9	Middlesex University	10.0	The University of Chichester	6.6
5	University of Essex	14.2	University of Exeter	15.9	University of Salford	9.6	The University of Central Lancashire	9.4	The University of Worcester	6.1
	Taught higher degree - bottom five									
	1994 Group		**Russell Group**		**University Alliance**		**Million+**		**GuildHE**	
1	Goldsmiths College	13.6	The University of Manchester	10.5	Glasgow Caledonian University	5.6	The University of Westminster	6.0	Newman University	3.2
2	University of Sussex	12.3	Cardiff University	10.4	The University of Wales, Newport	5.4	Leeds Metropolitan University	5.8	Harper Adams University	2.7
3	University of East Anglia	12.3	University of Southampton	10.3	Sheffield Hallam University	5.4	The University of the West of Scotland	4.9	Bishop Grosseteste University	2.4
4	Loughborough University	10.0	University of Cambridge	9.8	University of Hertfordshire	4.9	Birmingham City University	4.7	The Arts University Bournemouth	2.1
5	-	-	University of Bristol	9.7	Bournemouth University	4.3	University of Cumbria	2.4	University College Plymouth St. Mark & St. John	1.7
	Research degree - top five									
	1994 Group		**Russell Group**		**University Alliance**		**Million+**		**GuildHE**	
1	The University of Sussex	3.4	The University of Cambridge	13.6	The University of Huddersfield	1.5	The University of Central Lancashire	1.1		1.1
2	The University of Leicester	3.1	Imperial College	11.6	The University of Bradford	1.2	Edinburgh Napier University	1.0	University College Plymouth St. Mark & St. John	0.8
3	Loughborough University	2.4	The University of Oxford	9.3	The University of Plymouth	0.9	The University of the West of Scotland	0.8	The University of Winchester	0.7
4	The University of Lancaster	2.2	The University of Warwick	5.4	University of Glamorgman	0.8	The University of Sunderland	0.6	Southampton Solent University	0.4
5	The University of East Anglia	2.1	The University of Bristol	5.4	Liverpool John Moores University	0.7	Anglia Ruskin University	0.5	York St. John University	0.2
	Research degree - bottom five									
	1994 Group		**Russell Group**		**University Alliance**		**Million+**		**GuildHE**	
1	Royal Holloway, University of London	1.7	The University of Leeds	2.7	The University of Lincoln	0.4	London Metropolitan University	0.3	Bishop Grosseteste University	0.0
2	The University of Essex	1.1	The University of Exeter	2.4	Oxford Brookes University	0.3	Leeds Metropolitan University	0.2	Falmouth University	0.0
3	School of Oriental and African Studies	1.1	King's College London	1.9	Teesside University	0.3	Middlesex University	0.1	Leeds Trinity University	0.0
4	Goldsmiths College	0.2	Queen Mary, University of London	1.6	Bournemouth University	0.2	The University of Bolton	0.1	Norwich University of the Arts	0.0
5	-	-	London School of Economics	1.4	The University of Wales, Newport	0.2	Bath Spa University	0.1	The Arts University Bournemouth	0.0
									University College Birmingham	0.0

Notes: Excludes institutions with <500 graduates in the dataset

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

How can we understand these inter-group differences? One possibility is that graduates from Russell Group institutions – which tend to be the most selective for undergraduate entry, demanding the highest grades from A-level equivalent qualifications – are more likely to be qualified to enter higher degrees. Since typically a 'good' Honours degree (upper second class or first class Honours) is needed to enter a research degree and to some extent a taught higher degree, we may find that Russell Group and 1994 Group graduates are more likely to achieve these grades and hence have a better opportunity to progress to a higher degree. We reran the analysis in Table 7.2, excluding graduates with lower than an upper second class Honours degree classification. Although the overall rates of progression for each mission group were higher for this well-qualified subset, the relative difference between the groups shifted very little. The same outcome followed a second reanalysis, this time limited to graduates with first class Honours. There are a number of other potential explanations for the observed inter-group differences, but with the data we have available it is not possible to determine whether these are accurate. Firstly, students at research-intensive institutions could be selected (including self-selection) into them based on a more 'academic' disposition. Alternatively, students may acquire such dispositions during their studies from the institutional or departmental culture in which they are based. As a crude dichotomy, we might expect graduates from institutions dedicated to engagement with business and the professions to enter with or develop a disposition to enter employment; those at institutions with a strongly research-focused mission may similarly develop a deeper interest in their subject, leading them towards a higher degree. This is often part of the rationale made for research-led teaching[10]. A third, less benign, possibility is that selectors give more weight to first degrees from certain institutions in making admission decisions; we would need application data to make a judgement about that (we have only enrolment data). Fourthly, it may be that the demographic composition of graduates from different institutional groups accounts for differences – in other words, it is not the groups themselves that cause the difference, but the kinds of students in the different groups. These potential explanations are not mutually exclusive.

Retention[11] of graduates progressing to a higher degree

The dataset includes information about both the institution graduated from and the institution progressed to for a higher degree. This information can be used to investigate the 'import' and 'export' of graduates across institutions in the same way as the movement of graduates across countries was analysed above. We can see in Table 7.3 that there is a 'transfer' of graduates into certain institutions and out of others across levels. By subtracting the number of graduates progressing to a higher degree in an institution from the number entering a higher degree in that institution we can calculate a net gain/loss for each institution. We should note here that some graduates progress to institutions outside of the UK and that some enter other sorts of institutions, not listed by HESA (for instance, the University of Law). There is an appreciable transfer to London-based, prestigious universities. University College London had a net gain of taught higher degree students of about 660 across the period 2009-10 to 2010-11, which meant it enrolled twice as many new graduates as it sent to taught higher degrees. King's College London, which gained 500 students, saw a similar outcome. Of the 34 institutions that had a net gain of students progressing to taught higher degrees, 22, including eight of the top ten, were London-based. Among institutions with a net loss of 100+ students, only four were London institutions. A number of factors could be behind the apparent pull of London; however, it closely mirrors a long-established and strong trend for graduates to move to the capital early

[10] Of course it may be that graduates from 'pure' academic subjects are more likely to move on to a vocationally focused Masters degree than those graduating from vocational first degrees. We do not have data about the subject discipline of postgraduate qualifications to examine this question further.

[11] As in section 6, retention here refers to graduates who progress to a higher degree at the institution that awarded their first degree.

in their careers (Hoare and Corver, 2010). A handful of the net gaining institutions do not have full-time undergraduates – Birkbeck, Open University, Cranfield University and the Royal College of Art all fall into this category. Institutional prestige may be a draw as Russell Group institutions are, by and large, less likely to be substantial net losers, although there are exceptions, such as Durham University, which loses almost 300 students net between levels, and the University of Cambridge, which loses about 240.

Table 7.3. Net gain/loss of graduates progressing from and to institutions for taught higher and research degrees: 2009/10 & 2010/11 combined

Graduates proceeding to a taught higher degree

Institution	From institution	To institution	Net gain/loss
Top 10			
University College London	675	1,335	660
King's College London	545	1,045	500
Imperial College	330	690	360
London School of Economics and Political Science	225	560	335
The City University	285	485	200
Cranfield University	-	190	190
Birkbeck College	-	160	160
University of London (Institutes and activities)	-	130	130
The Open University	-	115	115
The School of Oriental and African Studies	175	285	110
Bottom 10			
The University of Lancaster	575	410	-170
The University of Kent	690	510	-180
Aberystwyth University	465	285	-180
Liverpool John Moores University	430	230	-195
Royal Holloway, University of London	545	330	-215
Bangor University	415	190	-220
The University of Cambridge	500	265	-235
Coventry University	610	345	-265
University of Durham	840	545	-290
The University of Hull	640	295	-345

Graduates proceeding to a research degree

Institution	From institution	To institution	Net gain/loss
Top 10			
University College London	175	265	90
Imperial College	275	350	80
The University of Cambridge	695	760	65
The University of Birmingham	265	305	40
Cranfield University	-	25	25
The University of Bristol	270	290	20
The Open University	-	20	20
The University of Nottingham	235	255	20
University of London (Institutes and activities)	-	20	20
The University of East Anglia	80	95	10
Bottom 10			
The University of St Andrews	140	110	-35
The University of Sheffield	270	235	-35
The University of Glasgow	230	190	-40
Bangor University	60	15	-45
The University of Manchester	380	335	-45
The University of Sussex	110	50	-55
The University of Bath	190	130	-60
The University of Warwick	250	185	-65
The University of York	180	115	-65
University of Durham	260	160	-100

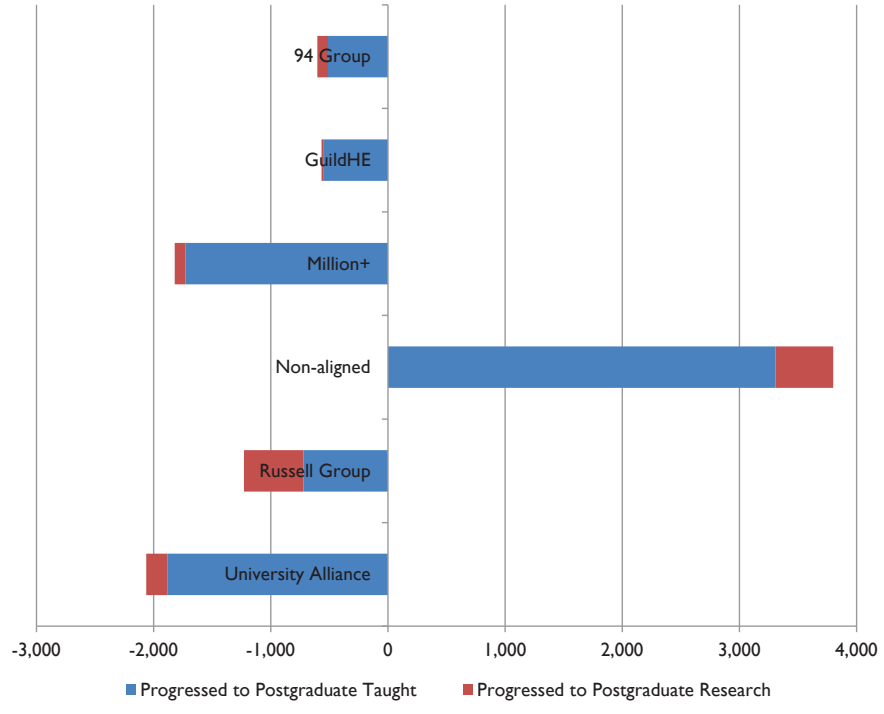
Note: Details may not sum to totals due to rounding. All numbers are rounded separately so a discrepancies will be found in the net gain/loss columns. This is a HESA reporting requirement.

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009/10 - 2010/11

The absolute shift in numbers at research degree level is smaller because the numbers making this transition are smaller. The 'London effect' is not present in anything like the same way as for transition to taught higher degrees, although both University College London and Imperial College benefit from a net gain of those progressing to research degrees too. The universities of Cambridge, Cranfield, Birmingham and Bristol are other net gainers. Perhaps surprisingly, the net losers include a number of the smaller research-intensive universities, either current or former members of the 1994 Group: the universities of Durham, York, Warwick, Bath and Sussex. Institutions in the GuildHE, Million+ and University Alliance groups tend to send few students to research degrees and receive very few, hence they make little net gain or loss, on the whole.

Having noted the movement between individual institutions in progression to postgraduate study, it is worth looking at a more aggregate level to see if there are transfers between mission groups. Do graduates gravitate to particular kinds of institution in general? The results here, as shown in Figure 7.3, are perhaps surprising. We have seen above that Russell Group institutions have strong progression to higher degrees, especially to research degrees. While the Russell Group is the destination for one-third of those progressing to taught higher degrees and over half of those entering research degrees, it is actually a net loser because more of its graduates progress to a higher degree than it receives. Some care is needed in determining what this might mean, however: it is possible that Russell Group institutions limit their research degree places or that new graduates with only a first degree find it difficult to compete, in entry to a Russell Group institution, with graduates of longer standing (who may hold additional qualifications). Some Russell Group graduates may be displaced into other institutions if seeking to progress directly to a research degree. They may be following funding or actively choosing to go to a different university. It also needs to be borne in mind that Russell Group institutions attract significant numbers of non-EU students to higher degrees. Non-aligned institutions are particularly successful in attracting those progressing to taught higher degrees. For many Masters programmes, institutions are constrained only by the number of students willing and able to enrol, there being no student number controls and less of a tradition of the provision of scholarships. That implies that graduates are more likely to be 'voting with their feet' in enrolling at non-aligned universities for a higher degree.

Figure 7.3. Net gain/loss of first degree qualifiers to taught higher and research degree by mission group: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

As well as looking at movers, the data allow us to identify those institutions that have higher and lower rates of 'retention' of their graduates who enter a higher degree. Tables 7.4 and 7.5 respectively show the top and bottom ten institutions ranked by the percentage of their graduates progressing to a higher degree who re-enrol for that qualification at their alma mater. The mean retention rate was quite consistent across the two types of higher degree: on average, institutions each retained 42% of their graduates who progressed to a taught higher degree and 45% of those entering a research degree. However, there was more variation in the level of retention for research degrees and a larger inter-quartile range. There is no clear pattern by institutional characteristics evident from the top and bottom ten institutions listed in Tables 7.4 and 7.5. We can surmise that for some institutions, geographic considerations strongly influence retention: both Northern Irish universities feature in both top tens, for instance. However, perhaps surprisingly, London institutions are not featured strongly among the 'losers' here. London has a high concentration of institutions and therefore in a practical sense it is easy to switch institution: in Bloomsbury it is often a case of simply crossing the street! The top ten retainers of taught higher degree entrants are predominantly post-1992 universities, but these institutions also feature in the bottom ten. The lack of any noticeably salient patterns suggests that there may be something at the level of institutional culture and practice that influences retention. We examined patterns of retention by mission group, but did not find any differences worthy of reporting.

To determine if there is an association between the rate of progression to a higher degree and the rate of retention on a higher degree at the same institution, we calculated a correlation coefficient statistic. The results showed a weak positive correlation between the two rates (r^2=0.36 for taught higher degrees; r^2=0.24 for research degrees). This means that there is a slight tendency for institutions with high rates of progression to higher degrees also to have high rates of retention of their graduates. This tendency is stronger for taught higher degrees. Institutions that have high rates of retention and progression at taught higher degree level include the 'royal' music colleges and some other specialist institutions; among universities, Aberystwyth, Lancaster and Keele all do reasonably well on both measures. For research degrees, Aberdeen, Birmingham, Strathclyde and Swansea are among universities around one standard deviation above the mean on both measures. Institutions with high rates of progression but low rates of retention include Bangor University, Heriot-Watt University and LSE for taught higher degrees, and the universities of Sussex and York for research degrees.

Table 7.4. Top and bottom 10 ranked institutions by percentage of graduates progressing to a taught higher degree who remain in the same institution: 2009-10 & 2010-11 combined

Ranking	Name of institution	Percentage
1	Teesside University	77.6
2	The Queen's University, Belfast	72.2
3	The University of Central Lancashire	70.4
4	University of Chester	67.6
5	Liverpool Hope University	66.9
6	University of Hertfordshire	66.3
7	Swansea University	63.6
8	University of Bedfordshire	62.0
9	University of Ulster	60.8
10	The University of Worcester	59.8
101	Heriot-Watt University	27.5
102	Southampton Solent University	27.2
103	Roehampton University	26.1
104	London School of Economics and Political Science	24.6
105	Edinburgh College of Art	22.2
106	London South Bank University	21.7
107	The University of the West of Scotland	21.2
108	The University of St. Andrews	20.9
109	The University of Cambridge	12.5
110	The University of West London	0.0

Note: Institutions with <100 graduates progressing to taught higher degree during this period are excluded

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Table 7.5. Top and bottom 10 ranked institutions by percentage of graduates progressing to a research degree who remain in the same institution: 2009-10 & 2010-11 combined

Ranking	Name of institution	Percentage
1	The University of Keele	84.8
2	The University of Strathclyde	82.0
3	The Queen's University, Belfast	81.8
4	University of Ulster	81.3
5	Swansea University	79.7
6	The University of Central Lancashire	77.2
7	Loughborough University	75.5
8	The Manchester Metropolitan University	75.0
9	Aberystwyth University	71.7
10	The University of East Anglia	71.6
45	The Nottingham Trent University	45.2
46	The University of St. Andrews	45.1
47	Heriot-Watt University	42.1
48	The University of York	41.1
49	Aston University	37.2
50	Royal Holloway, University of London	34.9
51	Queen Mary, University of London	32.8
52	The University of Sussex	32.7
53	King's College London	32.5
54	Bangor University	22.0

Note: Institutions with <40 graduates progressing to a research degree during this period are excluded

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

These two groups of institution would provide very interesting case studies for further investigation of the institutional determinants of transition to higher degrees, particularly the extent to which undergraduates are encouraged to consider postgraduate study and/or receive directed information, advice and guidance at institution or school/department level. While further investigation would benefit from some statistical modelling to account for the potential influence of disciplinary mix, student demographics and so on, sampling a small number of institutions with contrasting rates of progression to higher degrees and retention could provide a fruitful basis for determining whether and how institutional practices might be used to, for instance, widen participation at postgraduate level. Although there is a developing knowledge base about widening participation policy and practice for initial entry to undergraduate study, very little is understood at postgraduate level about 'what works' or even whether any kinds of interventions exist. Such an analysis could consider the extent to which there is a relationship between student satisfaction scores reported through the National Student Survey (NSS) and retention of graduates for higher degree study. It is possible that students who are highly satisfied with their first degree institution will stay on there for a higher degree. A very cursory look at this using NSS scores for 2011 by institution and retention rates for taught higher degrees did not show any obvious pattern. We need to note that there is more variation by institution in retention rates than there is in the overall satisfaction score from the NSS. It is also likely that course-level NSS scores would be a more appropriate measure for any test of this relationship. Further research on the difference in postgraduate progression and retention rates across institutions should consider whether these are associated with student satisfaction, as measured through the NSS. A further possibility is that the level of tuition fees for postgraduate courses affects students' likelihood of staying put or moving institution (see Wales, 2013).

We undertook some analysis to determine whether the demographic characteristics of students 'staying put' for a higher degree differed from movers. We found that, to a limited extent, men, students from lower socio-economic groups and white British students were more likely to stay. However, any such differences observed were not substantial.

Summary

To summarise, there is broad variation in rates of progression to higher degrees by institution, although the variation is greater for research degrees, where rates are also quite skewed with much of the overall progression being accounted for by a relatively

small number of institutions. Small specialist institutions, especially in the arts, tend to have high rates of progression to taught higher degrees (considerably above that for the same discipline in universities for the most part). Transition to research degrees is most common in the most research-intensive institutions. The large pre-1992 civic universities provide a substantial part of all the graduates entering taught higher degrees, with the 'big five' universities in relation to research doing the same for research degree entrants in our dataset of graduates.

We saw clear differences across mission groups in rate of progression to higher degrees. For taught higher degrees, rates were highest in the 1994 Group and then Russell Group. The Russell Group showed considerably higher rates of progression to research degrees than the others. These results were repeated when using the Sutton Trust 30 group of the most selective institutions at undergraduate level. The relative outcomes (i.e. the difference between groups) did not shift noticeably if controlling for graduates' degree classification attained. There was, however, some overlap in rates of progression between the mission groups with certain Russell Group institutions having lower rates of progression to taught higher degrees than seen in some post-1992 institutions.

There were institutional 'winners' and 'losers' in the patterns of 'import' and 'export' across institutions in the transition to higher degrees. A clear attraction to London-based institutions was evident for taught higher degrees, with some London-based universities seeing considerable net gains in the sending/receiving equation. A few Russell Group institutions were substantial 'exporters' here. Less of a London effect was apparent with research degree progression, although University College London and Imperial College London again saw net gains. Smaller research-intensives tended to be exporters. Looking at shifts on a mission group basis, there was a substantial transfer of graduates to non-aligned universities for higher degree entry.

Finally, we found variation in institutions' retention of their graduates progressing to higher degrees. As a rule of thumb, around 40-45% of those graduates progressing to a higher degree remained with their first-degree institution. There were few clear patterns of retention, including across the mission groups; clearly though, particular institutions are very successful in this regard. In general, we found only a weak positive association between the overall higher degree progression rate for an institution and its staying on rate.

Two sets of implications can be suggested, together with a caveat. In considering rates of progression across institution, we need to be very mindful of what these signify. There is a temptation, which could be considered unhelpful, to necessarily equate a higher rate of progression to Masters and doctoral degrees as a sign of 'success'. We need to remember that entry directly to graduate employment is also a positive outcome and one many graduates might themselves emphasise more strongly than further study. Similarly, in considering the flow of graduates between institutions, we do not seek to emphasise competition between institutions. Institutions' first duty is to give their graduates the best possible education and support in their postgraduate transitions. By so doing they are also supporting their broader public mission. If a graduate's best option is considered to be a higher degree elsewhere, any institution supporting their own graduate to make that transition is successfully fulfilling its duty.

Turning to implications, firstly, as we have indicated, there is a prima facie case for believing that institutional practices are influencing rates of progression to higher degrees. Further, more detailed statistical analysis is required to more fully substantiate this belief, but based on the relatively simple picture presented here, some institutions have particularly high rates of progression to higher degrees. Investigating whether this is the result of particular practices would help to provide useful knowledge about the immediate transition to higher degrees that could be shared across the sector. Secondly, it is vital that institutions, representative bodies, higher education funders and policy makers remain sensitive to the potential for inequalities of access to higher degrees to be caused or exacerbated by institutional differences in progression. We know that certain kinds of students tend to be present in certain kinds of institutions, and much effort and attention is directed at this issue regarding undergraduate widening participation. Even if, hypothetically, there were no direct impact of a graduate's background on her progression to a higher degree, inequalities might still arise indirectly through graduates being differentially distributed across types of institution, which in turn exhibit quite different rates of progression to a higher degree. It is to the consideration of the possible influence of background characteristics on progression to higher degrees that we now turn.

8 Patterns of transition to postgraduate study by background characteristics

Key points

- Graduates from lower occupational socio-economic backgrounds are slightly underrepresented among those progressing to higher degrees and have slightly lower rates of progression than those from more advantaged backgrounds, particularly for research degrees.
- Similar findings result when using alternative measures of socio-economic background such as level of parental education and type of secondary school attended. Those with graduate parents and those attending independent secondary schools had higher rates of progression.
- There is very little variation by occupational socio-economic background in the source of finance reported by graduates progressing to higher degrees. About one-fifth of those progressing to a research degree and four-fifths progressing to a taught higher degree funded themselves.
- Rates of progression differed markedly across ethnic group. For some groups, rates are very low indeed, particularly for research degrees, and this is a cause for concern.
- Men were more likely than women to progress to a higher degree, especially for research degrees. Controlling for degree classification and subject of first degree does not alter this conclusion. Men appear to have an advantage across the disciplines, not just in historically male subjects such as the STEM disciplines.

Context

We noted in the introduction that many commentators and some previous research has raised concerns about the impact of changes to higher education student funding arrangements on the capacity or desire to enter postgraduate study among graduates from less advantaged backgrounds. There is also a very large literature on inequalities of access to earlier levels of education, including undergraduate study, which indicate disadvantages for students from lower socio-economic groups, state schools and male students. There are some indications of inequalities across ethnic groups, although typically in initial entry to higher education, minority ethnic groups have a higher rate of entry than the white British group (Jackson, 2012).

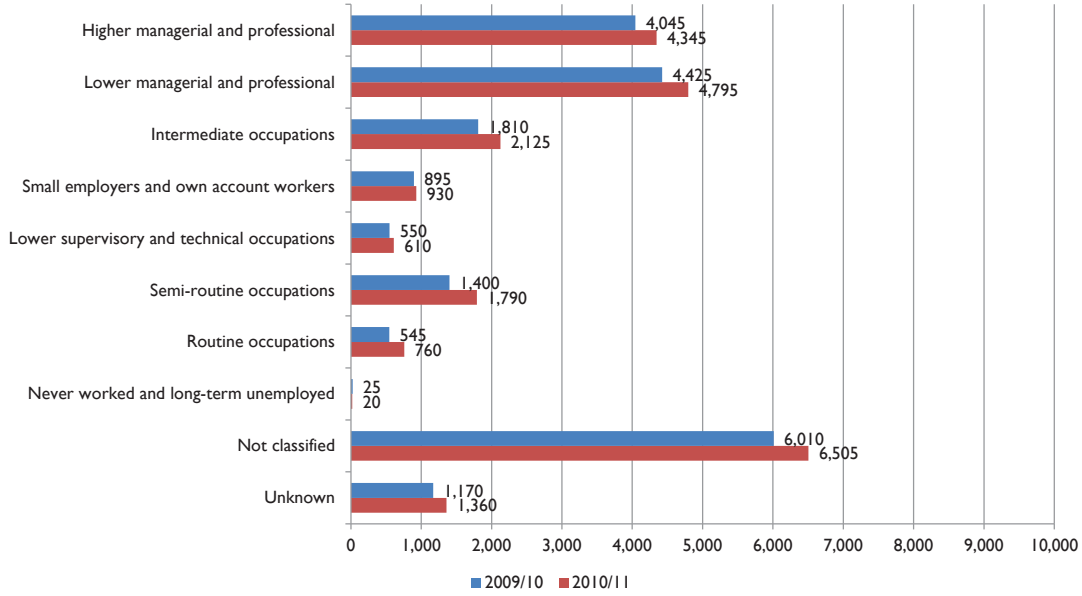
In this section we examine some of these issues in more detail, namely whether the rate of progression to higher degrees is associated with socio-economic background, school type, gender and ethnicity. In so doing we are building on earlier research by Wakeling (2005, 2009a, 2009b), Wales (2013) and Purcell et al. (2012), which covered earlier academic years[12]. We add level of parental education as an additional variable in connection with differences in rates of progression and we also analyse graduates' source of funding for their higher degree. As noted at the end of the previous section, we need to remember that graduates are not randomly distributed across institutions and subject disciplines according to their background characteristics, which will to some extent confound any simplistic analysis of either set of variables. With the exception of gender, figures reported in this section relate to UK-domiciled graduates only.

[12] This section of the report will also complement forthcoming analysis of access to postgraduate study by HEFCE.

Socio-economic background

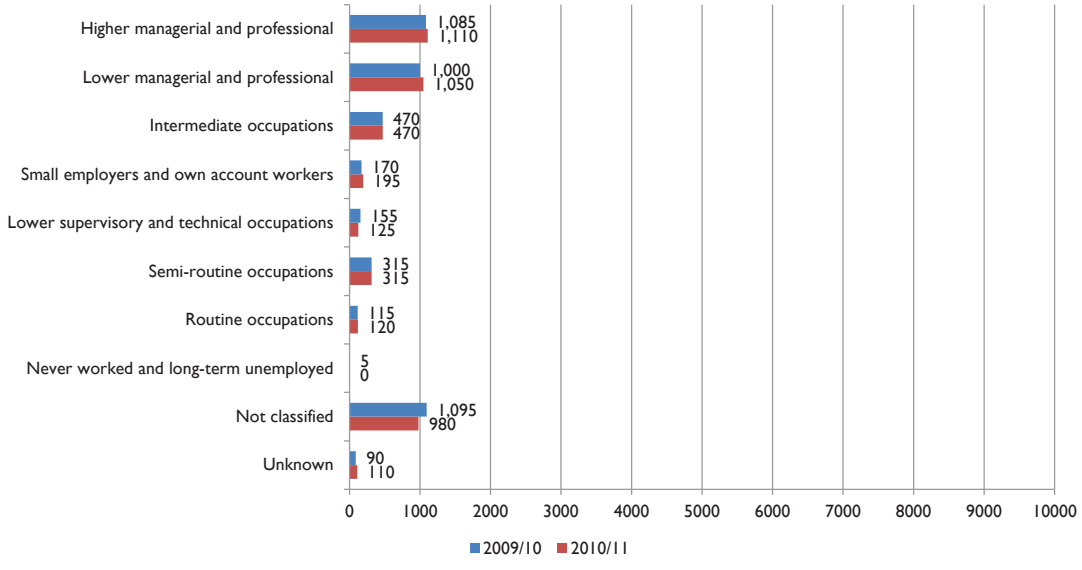
Figures 8.1 and 8.2 show the numbers of graduates from each socio-economic classification category (henceforth 'social class') progressing to a taught higher degree and research degree respectively for each of 2009-10 and 2010-11. There is variation across the two academic years in the overall number of graduates making the transition to higher degrees, but the differences between groups remain remarkably constant. It is worth noting here that the largest single group in the dataset is 'not classified', with a substantial number of students classified as 'unknown'. This group has been reported in the analysis, rather than ignored, as it is recognised that the 'unknown' group is not simply a representative subset of all students (Harrison and Hatt, 2009). The existence of this group (added to the non-response rate to the DLHE survey) means some caution is required in interpreting the results. On the other hand, our findings do accord with those of Wakeling (2009a) and Wales (2013) for previous academic years.

Figure 8.1. Number of first degree qualifiers by progression to taught higher by socio-economic classification category: 2009/10 & 2010/11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009/10 - 2010/11

Figure 8.2. Number of first degree qualifiers by progression to research degree by socio-economic classification category: 2009-10 & 2010-11 combined

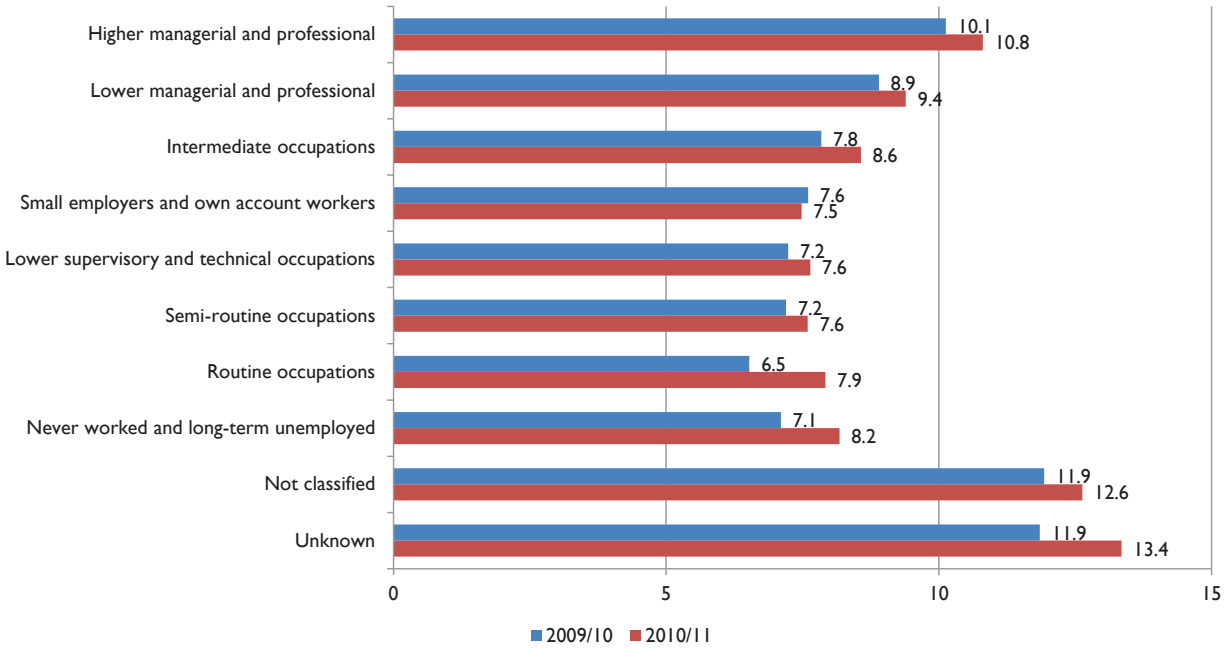


Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Those from managerial and professional household backgrounds comprise a substantial numerical majority of graduates progressing to a higher degree. We know that they comprise a majority of graduates as a whole, but taking that into account, they remain overrepresented among graduates entering higher degrees. There are more graduates from managerial and professional backgrounds than from other backgrounds (where classified/known) at both taught higher degree and research degree levels. Graduates from managerial/professional backgrounds (NS-SEC classes 1 and 2) outnumber those from semi/routine occupations (NS-SEC classes 6 and 7) by seven to two in 2010-11 among those progressing to a taught higher degree. The equivalent statistic for research degrees is five to one. HESA provides performance indicators for initial entry to full-time first degrees on an annual basis, where it reports the percentage of entrants from NS-SEC classes 4, 5, 6 and 7. The statistic for 2007-08 entrants was 29.5%[13]. In our dataset, we find that 26.6% of those progressing to a taught higher degree and 22.3% of those progressing to a research degree in 2010-11 were from classes 4-7. In both cases then, there is a drop in the percentage of graduates from class 4-7 backgrounds. This decline is more substantial among those progressing to research degrees.

Moving from numbers of graduates to progression rates, we see a similar picture (Figures 8.3 and 8.4). Rates of progression to taught higher degrees show some social class differences, although there is variation across academic year. In 2009-10 there is a decline in the progression rate to taught higher degrees as one goes 'down' the social classes, with the highest rate for 'higher managerial and professional occupations' (class 1), declining at each successive step until 'routine occupations' (class 7), which has the lowest rate. In 2010-11, however, there is no clear difference between classes 4-7, although this group has a lower progression rate than classes 1-3. Note that the progression rates for the 'not classified' and 'unknown' groups are highest of all. A similar pattern is seen for progression to a research degree. There is a little volatility across academic years, but the basic pattern is repeated. Indeed, while the raw differences between rates of progression for classes 1 and 7 is smaller for progression to a research degree (2.8 – 1.2 = 1.6%) than for taught higher degrees (10.8 – 7.9 = 2.9%), the relative differences give the opposite picture. Class 1 graduates are more than twice as likely to progress to a research degree than Class 7 graduates (2.8/1.2 = 2.3), whereas for taught higher degrees, this drops to only two-fifths more likely (10.8/7.9 = 1.4).

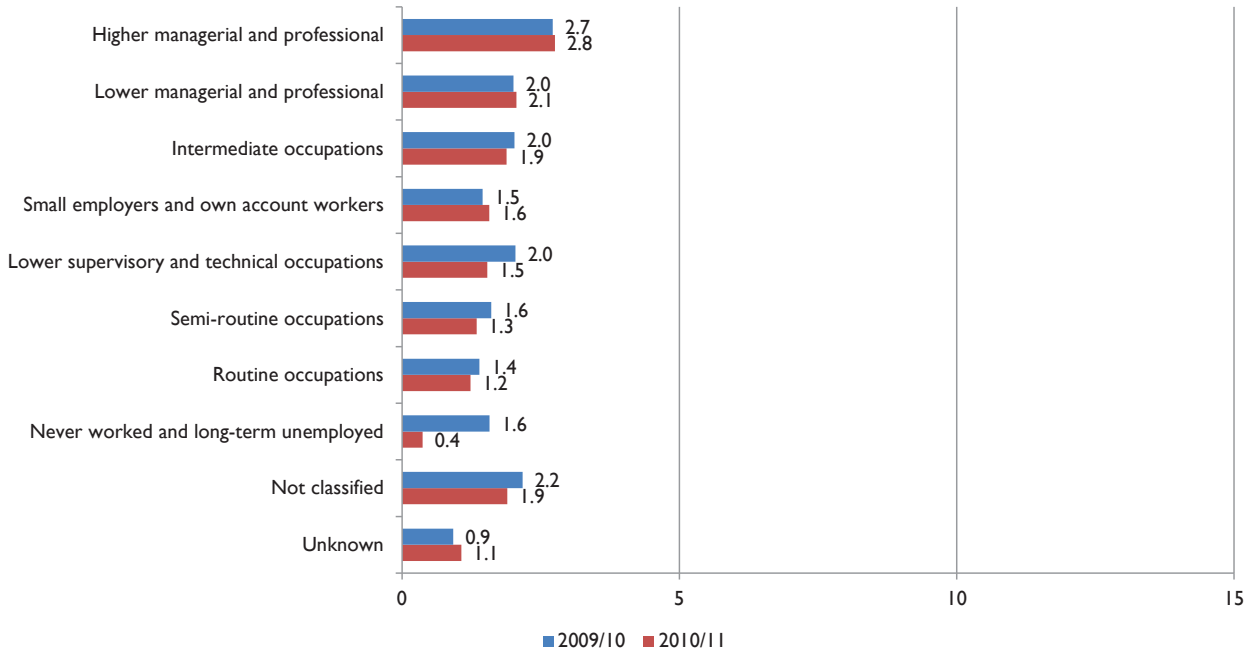
Figure 8.3. Percentage of first degree qualifiers by progression to taught higher by socio-economic classification category: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

[13] See HESA Performance Indicators: Widening Participation of Underrepresented Groups: http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=2060&Itemid=141 (Table T1a).

Figure 8.4. Percentage of first degree qualifiers by progression to research degree by socio-economic classification category: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

On the basis of these statistics, we can confirm social class differences in progression to higher degrees, replicating the findings of Wakeling (2009a) and Wales (2013) for earlier years. These differences apply to both taught and research higher degrees. This gives cause for concern. Further work should consider the extent to which these differences are attenuated if taking into account academic factors such as subject discipline and institutional differences.

An interesting question, however, especially pertinent given the concerns raised about student funding and the impact of increased undergraduate fees, relates to the interplay of socio-economic background and postgraduate finance. The DLHE survey now contains data on how those progressing to postgraduate study are financing their tuition fees, a variable that was not available previously. Tables 8.1 and 8.2 present the source of finance for postgraduate study reported by those progressing to taught and research higher degrees respectively. Perhaps surprisingly, there is very little variation in the source of support for taught higher degrees across the social classes. If social class differences were simply a reflection of underlying access to financial resources (through the graduate's family, for instance), then we would expect to see a higher proportion of self-funders as we move up the classification because we would expect entrants from classes 4-7, on balance, to be more dependent on sponsorship of some kind in order to continue. This is manifestly not the case. However, some caution is needed here, recalling that classes 4-7 have lower rates of overall progression. Those graduates who are unable (or unwilling) to fund themselves at postgraduate level do not appear in Table 8.1 (or Table 8.2). It may be that those class 4-7 graduates who do progress are atypical in their access to financial resources. We also, of course, do not have data about the level of debt graduates are carrying, which might influence their capacity or willingness to progress. Nevertheless, the results in Table 8.1 do not in themselves suggest that social class differences in progression to taught higher degrees are principally related to funding.

Results for research degree funding by NS-SEC classification are broadly similar. Here we can note that the proportion of graduates who fund themselves is one-fifth – in contrast to taught higher degrees where only one-fifth have sponsorship. Again, although there are some differences across the social classes in relation to the precise source of funding, there is little difference in the percentage funding themselves through a research degree and no clear pattern by social class.

Table 8.1. Percentage of first degree qualifiers by progression to taught higher degree by socio-economic classification category and source of funding for postgraduate study: 2009-10 & 2010-11 combined

Socio-economic classification	Self-funding	Grant or award	Sponsorship	Employer-provided financial support	Other
Higher managerial and professional	80.7	10.1	3.1	1.6	4.4
Lower managerial and professional	79.5	11.0	3.0	2.1	4.4
Intermediate occupations	80.1	10.9	2.8	1.8	4.4
Small employers and own account workers	82.3	7.3	3.5	1.9	5.0
Lower supervisory and technical occupations	79.2	11.1	3.0	2.6	4.0
Semi-routine occupations	78.6	11.2	3.2	2.2	4.8
Routine occupations	81.2	11.7	2.2	1.2	3.7
Never worked and long-term unemployed	~	~	~	~	~
Not classified	79.1	11.2	3.4	2.0	4.2
Unknown	75.5	9.8	4.1	4.4	6.3

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Table 8.2. Percentage of first degree qualifiers by progression to research degree by socio-economic classification category: 2009-10 & 2010-11 combined

Socio-economic classification	Self-funding	Grant or award	Sponsorship	Employer-provided financial support	Other
Higher managerial and professional	17.9	66.0	9.9	3.1	3.1
Lower managerial and professional	18.2	66.0	11.1	2.2	2.6
Intermediate occupations	17.6	64.4	12.2	3.1	2.7
Small employers and own account workers	19.2	62.0	14.1	3.9	0.9
Lower supervisory and technical occupations	14.7	66.1	12.7	3.3	3.3
Semi-routine occupations	18.4	62.6	12.1	3.3	3.6
Routine occupations	18.1	62.8	14.6	2.0	2.5
Never worked and long-term unemployed	~	~	~	~	~
Not classified	23.2	59.2	10.4	3.4	3.8
Unknown	39.5	45.7	7.0	7.0	0.8

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Alternative measures of socio-economic background are frequently employed in the literature on access to higher education, in public debate and also reported by funding and statistical agencies, including HESA. Two such measures are the proportion of students who attended a state secondary school and the level of education of a student's parents. The latter measure is known to have one of the very strongest levels of association with access to initial higher education (Thomas and Quinn, 2007). Table 8.3 shows these and other background characteristics (the remainder of which are discussed further below).

Graduates who attended an independent secondary school were more likely to progress to a taught higher degree and to a research degree than those who attended state school. In both cases there is a clear difference. This replicates findings by Wakeling (2009a), Wales (2013) and, in an earlier study, Power et al. (2003). Note, however, that the rate of progression to a taught higher degree is higher still for the roughly 15% of graduates with unknown school type. Whereas around 7% of school pupils attend an independent school, around 11% of the graduates in our dataset had done so, rising to 15% of those entering a research degree and 16% entering a taught higher degree. Repeating the analysis in Tables 8.1 and 8.2 for the state/independent

school split, there is a gap in self-sponsorship, with 24% of independent school pupils progressing to a research degree being self-funded, compared to 17% from state schools (31% from unknown school type). There is less of a noticeable difference for taught higher degrees (82% and 80% respectively). We cannot readily assume that social class is perfectly correlated with income and wealth. It seems reasonable to assume, however, that there is a closer relationship between type of secondary school attended and familial economic resources, since independent schools are fee paying (at or above the level of annual fees for a Masters degree) and hence will be beyond the means of many families. On this measure then there is perhaps more of a hint that there are financial barriers for some potential students, although the differences between the two groups are not especially large.

Turning to parental education the story is a similar and familiar one. Those who report that their parents have a higher education qualification also progress more frequently to both kinds of higher degree. We should note here though that the 'unknown' group is very large (most likely due to graduates entering higher education before that information was collected via the UCAS application system). In 2009-10, more than half of the graduates were missing the parental education variable.

Table 8.3. Percentage of first degree qualifiers by progression to taught higher and research degree by selected background characteristics

	Progressed to taught higher		Progressed to research degree	
Background characteristic	**2009/10**	**2010/11**	**2009/10**	**2010/11**
School type				
Private school	12.3	12.5	2.5	2.5
State school or college	7.9	8.5	1.9	1.8
Unknown	15.5	17.6	2.2	2.2
Parent higher education qualification				
Yes	13.0	12.3	1.6	2.2
No	8.9	8.3	1.0	1.4
Refused	9.6	9.7	1.1	1.9
Unknown	8.2	8.9	2.7	2.2
Sex				
Male	10.7	11.2	2.9	2.7
Female	8.6	9.2	1.4	1.4
Ethicity				
White	8.0	8.5	2.1	2.0
Black or Black British - Caribbean	4.8	5.2	0.3	0.3
Black or Black British - African	11.5	13.5	1.0	0.9
Other Black background	8.6	9.1	0.9	0.4
Asian or Asian British - Indian	8.6	8.8	0.9	0.8
Asian or Asian British - Pakistani	8.5	8.9	0.9	0.5
Asian or Asian British - Bangladeshi	6.4	7.3	0.6	0.4
Chinese	13.2	15.0	3.2	2.9
Other Asian background	12.1	13.5	1.8	1.8
Other (including mixed)	9.4	11.1	1.8	1.7
Unknown	8.9	11.0	2.8	2.8

Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Ethnicity

Table 8.3 also reports rates of progression to higher degrees by ethnic group. As with all the measures in this section, some graduates are missing data about their ethnic background, although the extent of 'missingness' is much lower (around 2% have an 'unknown' ethnic group). There are some minor changes in rates of progression by ethnic group across academic years, but by-and-large the rates are fairly stable for both kinds of higher degree. Looking at progression to a taught higher degree by ethnicity, it would appear there are three relatively distinct sets of graduates. There are groups with a high rate of progression (11-15%): black or black British – African; Chinese; and other Asian background. There are groups with rates of progression just below the overall mean for UK-domiciled students of about 9%: white; other black background; Asian or Asian British – Indian and Pakistani. Finally there are groups with a much lower progression rate: black or black British – Caribbean; Asian or Asian British – Bangladeshi. The 'other (including mixed)' group sits outside of these sets. There are some troubling differences here that require further, more detailed investigation.

More troubling still are the between group differences in progression to research degrees. Here the Chinese group has the highest rate of progression, followed by white and other Asian background graduates. Black African, other black, Indian and Pakistani groups have similar, considerably lower rates of progression to research degrees in 2009-10, but these drop sharply in 2010-11. The rate of progression for Bangladeshi and black Caribbean graduates are exceptionally low. Indeed the absolute numbers of graduates identifying as from these latter two ethnic groups are tiny – less than ten per year.

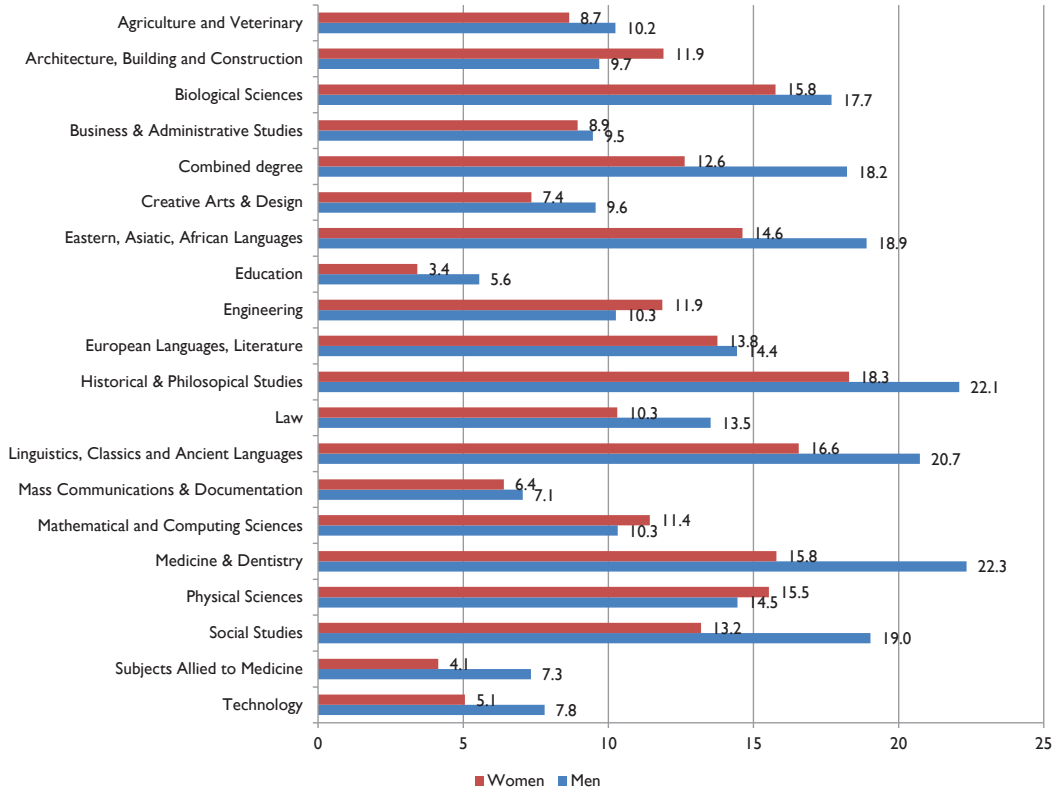
Some of the apparent ethnic group differences in progression may be related to undergraduate subject choices and possibly to attainment. However, there are well documented concerns about an apparent 'ethnic penalty' in degree classification (Broecke and Nicholls, 2007; HEA and ECU, 2008; Stevenson, 2012), which could further compound differences in rates of progression to higher degrees. In any case, the very small numbers of graduates progressing to higher degrees from certain groups, particularly from the black Caribbean and Bangladeshi groups means that very few such individuals are part of the supply 'pipeline' for those careers requiring postgraduate qualifications for entry. Sectors employing doctoral graduates – including, of course, higher education itself – thus face a regrettable lack of diversity in their workforce.

Gender

Finally, Table 8.3 reports progression to higher degrees by gender. There has been something of a shift in discussion of gender inequalities in education from female to male disadvantage. In the post-war period, there has been a long-term trend for girls first to catch up with and then latterly to outperform boys in schooling, accessing university and, most recently, in degree-level attainment (Thompson and Bekhradnia, 2009). Concerns continue to be expressed about women's representation among higher education staff and, in particular, among the professoriate and in senior management roles. Sustained attention has also been given to women's representation in STEM disciplines, both in the UK and internationally. However, others have also suggested there should be attention given to male access to undergraduate study (e.g. Thompson and Bekhradnia, 2009; see also recent comments by David Willetts, Minister for Universities and Science (cited in Garner, 2013)).

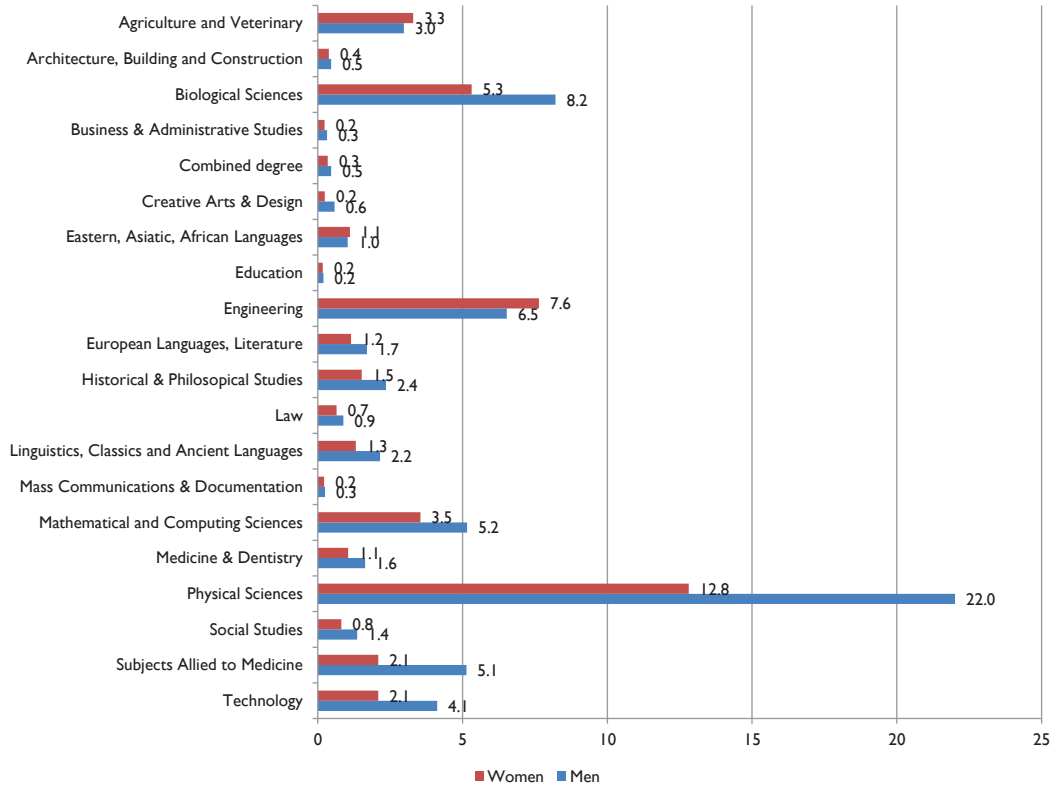
Our data show an educational advantage for men in progressing to higher degrees. Men were more likely to enter a taught higher degree than women in 2009-10 and 2010-11, with the gap being around two percentage points. Progression to a research degree saw a stark gender gap, with men's rate essentially twice that of women's. This consistent and clear gap in progression for both types of degree is concerning. It is also highly unlikely to be as a result of financial factors. As we know that there are very different distributions of men and women across disciplinary areas, we calculated men's and women's rates of progression to higher degrees across the two years for those graduates with an upper second class Honours degree. The results are shown in Figures 8.5 and 8.6. These show that, with one or two exceptions, gender inequalities in progression to a higher degree are replicated in each subject discipline. Importantly, it is not simply in male-dominated disciplines where men have higher rates of progression to higher degrees; this is the case in virtually all subjects.

Figure 8.5. Rate of progression to taught higher degrees (upper second class honours or better only) by subject discipline and gender: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Figure 8.6. Rate of progression to research degrees (upper second class honours or better only) by subject discipline and gender: 2009-10 & 2010-11 combined



Source: HESA Student Record and Destinations of Leavers from Higher Education survey 2009-10 - 2010-11

Summary

Taken together then, the various measures of background characteristics point to inequalities in progression to higher degrees across socio-economic background, ethnicity and gender. Students from lower socio-economic backgrounds and from certain ethnic groups are present in quite small numbers among graduates progressing to higher degrees. Women have lower rates of transition to higher degrees than men, a discrepancy that persists when controlling for subject discipline and degree classification. These findings suggest there is work to do on widening participation to postgraduate study and that it is not simply limited to questions of student funding. Graduates from more advantaged social class backgrounds were as likely to be self-funding a taught higher degree as those from less advantaged backgrounds, when we might have expected the difference in progression rates to higher degrees to have been attributable to a greater proportion of those from social classes 1-3 able or willing to pay their own tuition fees. That said, it must be remembered that our data do not contain detailed measurements of graduates' financial means or existing debt. Further research to determine in more detail the patterns of progression to postgraduate study by socio-economic background, gender and ethnicity should be accompanied by investigation of graduates' and higher education institutions' decision-making processes.

9 Conclusions and recommendations

This report has analysed factors associated with transition to higher degree study for full-time, UK- and EU-domiciled first-degree graduates who responded to the DLHE survey in 2009-10 and 2010-11. Three facets of transition in particular have been highlighted patterns of progression across institutions and across the UK home nations, and variations in progression for different demographic groups. It has also been possible to make observations about some of the financial aspects of the transition to postgraduate study for this group. In this concluding section of the report, we review some of the main findings, consider implications and make recommendations for further research.

Before turning to the main findings, it is worth reiterating a point made elsewhere in the report: we should not assume that a graduate entering a higher degree has necessarily succeeded, nor that one who has not done so has failed in any way. Quite apart from the possibility that a non-entrant may return to a higher degree at a later point, graduates can enter higher degrees for negative or positive reasons, and we have no way to determine the extent to which these apply using the data available to us. One graduate entering a taught higher degree might be a 'discouraged worker', unable to find suitable employment; another may simply want to carry on a student lifestyle for a further year; a third may be fulfilling a long-held ambition to deepen their subject knowledge; and a fourth may be completing a qualification required to enter their chosen career. Similarly, a student not entering a higher degree could be unemployed, could have had their application rejected on academic grounds, could have secured an interesting and well-paid job, or could have decided to start a family or travel abroad. In the same way, we cannot say that an institution that sends a substantial proportion of graduates to higher degrees is doing 'better' than one that does not.

Academic factors

We found, following Purcell et al. (2012), Stuart et al. (2008), Wakeling (2009a) and Wales (2013), that there is a strong association between degree classification and progression to a higher degree. Graduates with higher attainment were more likely to progress to higher degrees, particularly research degrees. This is a result we would surely expect, but it is reassuring to confirm it. Although we should be aware of the shortcomings with the British degree classification system, which is increasingly being seen as unfit for purpose (Burgess, 2007), nevertheless we can have some confidence that those progressing to higher degrees tend to be graduates with upper second class Honours degrees or better.

Subject disciplinary differences were also identified as an important source of variance in progression to higher degrees. In general, disciplines that fall into Becher's (1989) category of 'pure' subjects had higher rates of progression, with 'applied' subjects having lower rates. Some subjects have good opportunities for funded postgraduate study – such as doctoral programmes in the physical sciences – whereas in other areas, funding is very difficult to come by (such as in the arts and humanities). Graduates from certain applied subjects will have been preparing for and dedicated to particular professions or career areas and hence less inclined to undertake further study – Medicine and Business Studies are two examples. However, we also noted that similar subject disciplines sometimes had quite different rates of progression to higher degrees, despite sharing similar characteristics – Sociology, Social Policy and Politics were highlighted as an example. Here there could be benefit from further, more detailed research on disciplinary practices and graduate pathways for paired cognate subjects.

Institutions

The report clearly shows considerable variation in the patterns of progression to higher degree across different institutions and groups of institutions. These institutional differences seem to be prominent in structuring the transition to postgraduate study. We saw that graduates at the more selective institutions are more likely than those at other types of institution to progress to higher degrees, with this trend especially pronounced for entry to research degrees. While there is a broad range of progression rates to taught higher degree, research degree entry is skewed towards the most selective institutions, with the 'big five' research universities (Cambridge, Oxford, Imperial College London, University College London and Manchester) featuring prominently. Although progression to research degrees is dominated by the most selective institutions, there is more of an overlap by mission group in progression to taught higher degree, with some of the less selective institutions having higher rates of progression than certain universities in the Russell Group and 1994 Group.

This apparent channelling of higher degree opportunities according to institution type has potential consequences for equality of opportunity. If those entering higher degrees tend mainly to be drawn from certain kinds of institutions, then there is a risk that the likelihood of entering a higher degree – and particularly a research degree – is effectively determined for many on initial entry to undergraduate study. While we would not expect entry to higher degrees to be entirely independent of first-degree institution, a fair and efficient system should surely leave plenty of scope for high-achieving students outside of the most selective research-intensive universities to move into higher degrees and academic research. We should note here that students are not randomly distributed across institutions by socio-economic background or ethnic group, nor are funding opportunities. Advice and guidance on accessing higher degrees may also be more readily available at institutions where such destinations are already more common. Accepting substantial institutional differences in rates of progression to higher degrees could mean accepting inequalities across different demographic groups. Transposed to post-16 transition, this has generally not been accepted: there is broadly bipartisan support for early identification of talented pupils in those schools and areas without strong traditions of higher education participation. It seems reasonable to extend this approach to postgraduate transitions.

As well as variation in rates of progression by institution, we also found differences in the proportion of institutions' graduates progressing to higher degrees who stayed in their first-degree institution for their subsequent qualification. Similarly, institutions had different fortunes when it came to attracting graduates from elsewhere to their higher degrees. There was a substantial transfer of graduates into 'non-aligned' universities, with some other notable net 'importers', many of which were London-based.

There is scope for more detailed case-based research with institutions to determine how differences in rates of progression to higher degrees come about. This could examine institutional practices in information, advice and guidance for higher degree study, institutional policies, and financial packages and fee levels. Pairing similar institutions that exhibit different patterns of transition to higher degrees could be a productive means for doing this. It may be that these differences are not the result of deliberate efforts.

Background characteristics

Our analysis has identified apparent inequalities in transition to higher degrees by gender, social class and ethnicity. This confirms, and to some extent extends, findings from previous research. Our findings regarding social class inequalities are important as these have been singled out for concern in recent public debate. However, we wish to emphasise the inequalities observed by gender and ethnicity as these are often overlooked.

We found that women had lower rates of progression to higher degrees than men, confirming earlier findings by Wakeling (2009a) and Wales (2013). This is contrary to recent trends at all earlier levels of the education system, including most recently at undergraduate level, where women have higher attainment and higher rates of transition than men (Thompson and Bekhradnia, 2009). Men were more likely than women to enter both kinds of higher degree, with differences particularly marked for research degrees. Men are more likely to study disciplines at first degree that have a high rate or progression to higher degrees (research degrees in particular), which might account for some or all of the gender differences. We controlled for this and for attainment by looking at each subject discipline selecting only those graduates with upper second class Honours or better; we found that gender differences remained for almost all disciplines. Notably then, women had lower rates of progression to higher degrees in arts, humanities and social sciences disciplines and not just STEM subjects.

Turning to ethnicity, we found a number of differences in patterns of progression across ethnic groups, confirming findings by Wakeling (2009b) and Purcell et al. (2012). There were broadly three distinct sets of ethnic groups in progression to a taught higher degree, with the black Caribbean and Bangladeshi groups showing lower than average rates of progression. These same two groups had exceptionally low rates of progression to research degrees, with less than ten graduates from each group making this transition per academic year. Even taking into account differences in the absolute size of different ethnic groups in the graduate population and subject effects, this signals a substantial underrepresentation of those groups. If we wish to have a higher education sector that represents the society in which it is based and that seeks out academic talent across all groups, then there are clearly grounds for concern.

We found differences by social class background in progression to taught and research higher degrees, whether basing the measure on occupational background, parental education or type of secondary school attended. Students from more advantaged groups in social class terms had higher rates of progression than those from less advantaged groups. The latter were thus underrepresented among those entering taught and especially research higher degrees. The proportion of students from NS-SEC social classes 4-7 decreases across levels. Although social class differences do not appear as stark as in earlier educational transitions, there remains a risk that gains made in widening participation at undergraduate level may be negated by inequalities in access to higher degrees.

A complex and detailed investigation of demographic differences in progression to higher degrees is outside the scope of this project. Further research is required to probe these differences in greater depth by examining the relative contribution of different background and academic factors to progression.

Finance

The role of student funding in influencing transitions to higher degrees was not the primary focus of this report and there are limits to the data at our disposal in this respect. We have no direct information on postgraduate fees, nor on individuals' financial means or levels of accrued debt. Nevertheless, we were able to make some observations. We found little, if any difference in sources of funding for those progressing to higher degrees by social class background (although we did find that independently schooled pupils were a little more likely to self-fund their higher degree). We also found no evidence that differences in undergraduate funding arrangements across the UK home nations had led to different rates of progression to higher degrees across countries.

These results should not be interpreted as an argument that finance does not matter in access to higher degrees. We do not have the right kind of data to make a determination about that, but it is self-evident that graduates without sponsorship or independent means will not be able to pay for further studies. We see no direct evidence in our findings that undergraduate debt per se has been a deterrent to take

up of higher degrees, since there has been a slight increase in progression over the period 2001-02 to 2010-11 as debt levels have increased. However, the absolute levels of debt under the new funding arrangements for 2012 entrants will be considerably higher and so predictions of future patterns of progression to higher degree are inevitably speculative. If Wales' (2013) finding that increased postgraduate fees suppress demand is correct, then the recent increase in postgraduate fees (HEFCE, 2013) may well be much more of a deterrent than undergraduate funding arrangements, especially given the absence of a system of postgraduate student grants or loans across the UK.

Countries

Our results show some interesting differences between the UK home nations in rates of progression to higher degrees, although perhaps the main finding was a broad similarity of outcome. The most striking difference we observed was the much higher rate of progression to higher degrees for graduates of UK institutions who were domiciled in other EU countries. Overall, the amount of net movement between countries in the transition to higher degrees was small. This is consistent with trends at undergraduate level where the long-term pattern is for students to remain in-country (Wakeling and Jefferies, 2012; Raffe and Croxford, 2012).

We were able to identify graduates who moved to institutions abroad to take a higher degree. Around one in 20 of those entering a higher degree did so. This group bears further statistical investigation, but the rate is low enough to assuage any concerns about a 'brain drain' of graduates to lower-fee programmes. We are not able to determine whether this represents an increase or decrease on previous years, nor whether these graduates are heading to mainland Europe, to the US, Ireland or elsewhere.

Recommendations

As a result of our research, we recommend the following avenues for further investigation:

- Institutional differences in rates of progression should be studied in detail, preferably by means of case studies of matched pairs with similar characteristics but different rates of progression to higher degrees. This could also incorporate investigation of institutions that have substantially higher or lower rates than those in similar mission groups and institutions that are net 'importers' or 'exporters' of their graduates progressing to higher degrees. The focus should be on institutional practices and policies; information, advice and guidance; and postgraduate funding arrangements.
- Similar research should be conducted taking different subject disciplines rather than institutions as the case studies. It may be possible to combine these two projects by looking at particular departments (subjects within institutions). This research could also incorporate a statistical analysis of any association between NSS results for departments/schools/institutions, and progression/retention rates at higher degree level.
- A better understanding is required of transitions to postgraduate study that take place more than a year after completion of the first degree and of the impact of undergraduate debt on progression. We understand that research currently being undertaken by HEFCE and for the British Academy is addressing these issues.
- A more complex statistical analysis of rates of progression by gender, ethnicity and social class should be carried out. This should consider the continued association of these background characteristics with progression to higher degrees once other factors such as degree-level attainment, subject discipline and institution have been factored in. It could also look at whether those from certain backgrounds are more likely to move institution and/or region and identify whether certain institutions or subject disciplines have more success in widening postgraduate participation to particular groups.
- Progression from taught higher degrees should be investigated further. This transition has been identified as particularly important for arts, humanities and social sciences disciplines where Masters degrees are often a stepping stone to a doctorate.
- The analysis in this report should be updated in two years' time to monitor changes in patterns of transition to higher degrees.

Appendix: further technical details

Variables

Full descriptions of the HESA Student Record and Destinations of Leavers from Higher Education survey for 2009-10 and 2010-11 are provided on HESA's website (under 'Data collection', then either 'DLHE' or 'Student', plus the appropriate year). It may be useful to explain some of the variables used in this report in a little more detail.

Subject discipline. The subject a student has studied is characterised using a standardised classification referred to as 'JACS' (Joint Academic Classification System). JACS has three levels: the detailed subdiscipline; discipline; and discipline group. In this report we use the discipline group. There are hundreds of subdisciplines listed, nearly 150 disciplines, but only 20 discipline groups. As an example:

V Historical and Philosophical Studies
V500 Philosophy
V510 Metaphysics

Disciplines within groups are typically cognate, although perhaps inevitably, some discipline groups are more coherent than others. Biological Sciences, for instance, which comprises Genetics, Biology, Zoology, Biochemistry and so on, is arguably comprised of disciplines more similar to each other than those in the group Social Studies (e.g. Sociology, Political Science, Economics, Anthropology).

Students and graduates may complete a qualification that includes more than one subject discipline. To enable analysis of subject disciplines therefore each graduate in the dataset has been divided into a full-person equivalent (FPE) for each subject discipline. Any reporting of subject discipline in this document therefore represents an aggregation of these FPEs. As we have reported at the level of discipline group, fewer graduates will be divided.

Some examples may help to illustrate this. A graduate with a joint Honours degree in History and Philosophy would be assigned as 1.00 FPE to Historical and Philosophical Studies (since both disciplines are in the same disciplinary group). A graduate with a joint Honours degree in History and Politics would be assigned 0.50 FPE to Historical and Philosophical Studies and 0.50 to Social Studies. A graduate in Philosophy, Politics and Economics would be assigned 0.33 to Historical and Philosophical Studies and 0.67 to Social Studies, and so on. Students with complex combinations or on a programme designed to cover a range of subjects will appear in the 'Combined' category.

Occupational social class. This is principally collected at the point of application for undergraduate study via UCAS, although it may be collected by institutions for those entering via other routes. It is only reported in this document for UK-domiciled students. Students are assigned an occupational class using the highest earner in their household (or via their own occupation if over 25). The National Statistics Socio-Economic Classification (NS-SEC) schema employed is the 'official' schema used in the UK.

School type. This variable, again mainly provided through UCAS, is derived by HESA from a classification of the graduate's previous institution (i.e. for graduates in our dataset, the institution attended prior to beginning the qualification they have recently obtained).

Parental education and Ethnicity are self-reported (the former in answer to the question:

> The following question is about your parents' level of education. This includes natural parents, adoptive parents, step-parents or guardians who have brought you up.
>
> Do any of your parents (as defined above) have any higher education qualifications, such as a degree, diploma or certificate of higher education?
> - Yes
> - No
> - Don't know
> - Information refused

Institution groups. These are based on institutions' membership of mission groups as at December 2012 (information on membership taken from mission group websites).

Representation of numbers

Data sourced from the Higher Education Statistics Agency are subject to their rounding strategy[14], which they describe as follows:

> Due to the provisions of the Data Protection Act 1998 and the Human Rights Act 1998, HESA implements a strategy in published and released tabulations designed to prevent the disclosure of personal information about any individual. These tabulations are derived from the HESA non-statutory populations and may differ slightly from those published by related statutory bodies. This strategy involves rounding all numbers to the nearest 5. A summary of this strategy is as follows:
>
> - 0, 1, 2 are rounded to 0;
> - all other numbers are rounded to the nearest multiple of 5.
>
> So for example 3 is represented as 5, 22 is represented as 20, 3286 is represented as 3285 while 0, 20, 55, 3510 remain unchanged.
>
> This rounding strategy is also applied to total figures; the consequence of which is that the sum of numbers in each row or column will rarely match the total shown precisely. Note that subject level data calculated by apportionment will also be rounded in accordance with this strategy.
>
> Average values, proportions and FTE values prepared by HESA will not be affected by the above strategy, and will be calculated on precise raw numbers. However, percentages calculated on populations which contain 52 or fewer individuals will be suppressed and represented as '..' as will averages based on populations of 7 or fewer.

Non-response bias

As discussed in the main text, there is some non-response to the DLHE survey (running at just under 20% for first-degree graduates). While the overall rate of response to the survey is very high[15], non-response is rarely a completely random event. It is possible, for instance, that those with certain graduate destinations are less

[14] HESA rounding strategy: http://www.hesa.ac.uk/index.php/content/view/1146/178/

[15] For comparison, the most recent British Quarterly Labour Force Survey, which is managed by the Office for National Statistics, had a response rate around 50% (see ONS, 2013, p. ii).

likely to respond to the survey, although it is very difficult to determine the likely bias introduced. There may be some stigma associated with reporting certain destinations such as unemployment; on the other hand, unemployed graduates will have more time to complete the survey and may be more readily contactable at home addresses, for instance, than graduates who have moved away for work.

Table A1. DLHE response rate by selected categories - 2009-10 and 2010-11 combined (except where specified)

Variable	Response rate
Gender	
Male	81.0
Female	81.6
Age	
Mean age respondents	23.4
Mean age non-respondents	23.5
Ethnicity	
White	83.8
Black or Black British - Caribbean	77.0
Black or Black British - African	74.8
Other Black background	72.1
Asian or Asian British - Indian	85.5
Asian or Asian British - Pakistani	81.5
Asian or Asian British - Bangladeshi	81.8
Chinese	78.1
Other Asian background	79.4
Other (including mixed)	78.9
Unknown	76.7
Non-UK	58.3
Parental education	
Parent(s) HE	82.2
Parent(s) No HE	82.1
Information refused	79.8
Unknown	80.6
Institution attended for obtained qualification	
Average rate by institution (unweighted)	81.2
Maximum (Harper Adams University College)	97.9
Minimum (Royal Academy of Music)	61.7
Standard deviation	5.3
State school indicator	
Private school or college	82.7
State school or college	83.4
Unknown	71.1
Degree classification (first degree graduates only)	
I	86.1
II.i	82.6
II.ii	77.9
III/Pass	71.6
Unclassified	82.7
N/A	72.9
NS-SEC (first degree graduates only)	
Higher managerial and professional	85.2
Lower managerial and professional	83.5
Intermediate occupations	84.2
Small employers and own account workers	83.1
Lower supervisory and technical occupations	84.7
Semi-routine occupations	81.9

Table A1 provides further analysis of non-response for salient variables. For some variables, little bias on the basis of non-response is likely as the difference in response rate across categories is minor. Men, for instance, have a very slightly lower response rate than women. Similarly, there is virtually no age difference between respondents and non-respondents.

The most noticeable difference in response rates is between UK- and EU-domiciled graduates. Here we can see that EU graduates have a very substantially lower response rate than those domiciled in the UK. This means that we must be cautious in interpreting evidence in relation to EU-domiciled graduates.

There is some variation in response rate across subject disciplines, although this is within a fairly limited range. The exception is Medicine and Dentistry, which has a very high response rate (90%+). There is greater variation on the basis of institution attended for the first degree. However, this would appear to be a reasonably random distribution. There is little substantive variation in response rate across mission groups, for instance. Institutions with very low response rates are mainly small specialist colleges; however, so are those with the highest response rates.

For the variables NS-SEC, ethnicity and degree classification there are some systematic, if quite small differences in response rate across categories. Graduates from 'higher' socio-economic backgrounds are more likely to have responded to the survey than those from 'lower' groups (although this is not the case when using other measures such as school type and parental education). Graduates of white and Indian ethnicity have slightly higher response rates. It is also the case that the likelihood of response declines with attainment – i.e. graduates with first class Honours have a higher response rate than those with an upper second, who in turn have a higher rate than lower second class Honours graduates and so on.

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