

Postgraduate education in the United Kingdom

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1. In 2004 HEPI produced a report reviewing the extent and nature of postgraduate education. The present report updates the 2004 study and looks in more depth at a number of issues. The full report¹, available on the HEPI website, covers the following ground:

- Nature of postgraduate education
- Students – current numbers, profile and trends
- Institutional differences and regional disparities
- Costs and benefits of postgraduate education
- Quality assurance and public information
- Future demand

Nature of postgraduate education

2. Postgraduate education covers a huge range of provision, from research doctorates to short postgraduate certificates and professional programmes. Although the Quality Assurance Agency's Data Underlying Qualifications Framework provides a taxonomy of postgraduate qualifications and how they relate to each other, there remains a degree of confusion and uncertainty about the nomenclature, which is uncontrolled, and levels of different types of provision.

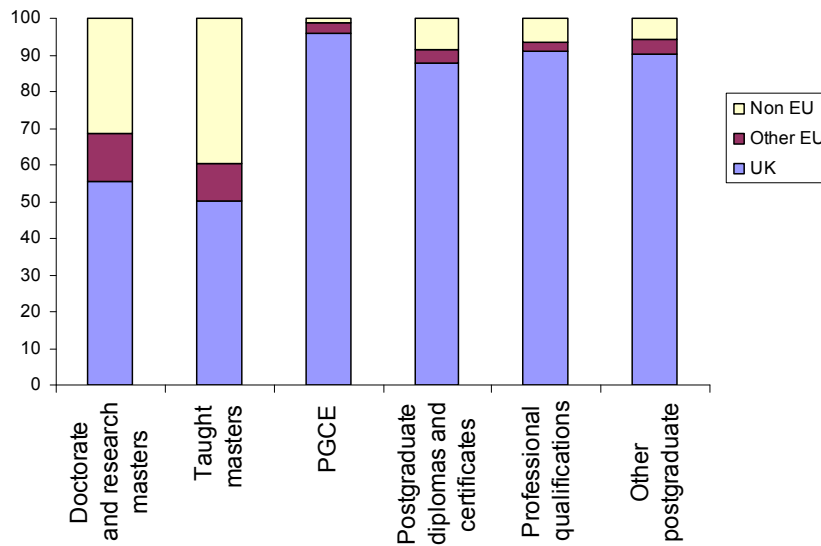
Students

Numbers

3. In 2007-08, over 270,000 students enrolled for the first year of a postgraduate course. The total postgraduate population in all years was 501,135 students. Overall, the postgraduate sector has grown by 12 per cent since 2002-03, but the biggest growth area has been masters degrees, where numbers have grown by 27 per cent. Growth in doctoral students has been a more modest 9 per cent. These domestic growth rates are far lower than those of students from overseas (EU and beyond) and, as is illustrated in Figure 1, 50 per cent of masters students and 44 per cent of doctoral students are now from overseas.

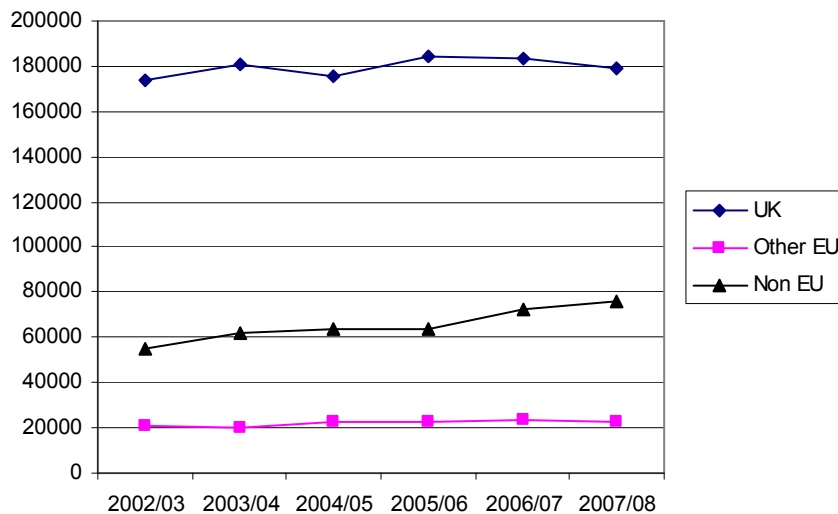
¹ In the interest of husbanding space, footnotes and sources are omitted in this summary report, but are included in the full report, available at www.hepi.ac.uk.

Figure 1: Percentage of first year postgraduates by domicile 2007-08



4. Looking at trends in participation for students from the UK, EU and outside the EU, Figure 2 shows that most of the growth in the sector has been driven by overseas students, with numbers of UK-domiciled students fairly steady – actually reducing since 2005-06. The UK attracts a large number of international students and its 11.6 per cent market share of all international postgraduate students is second only to the US.

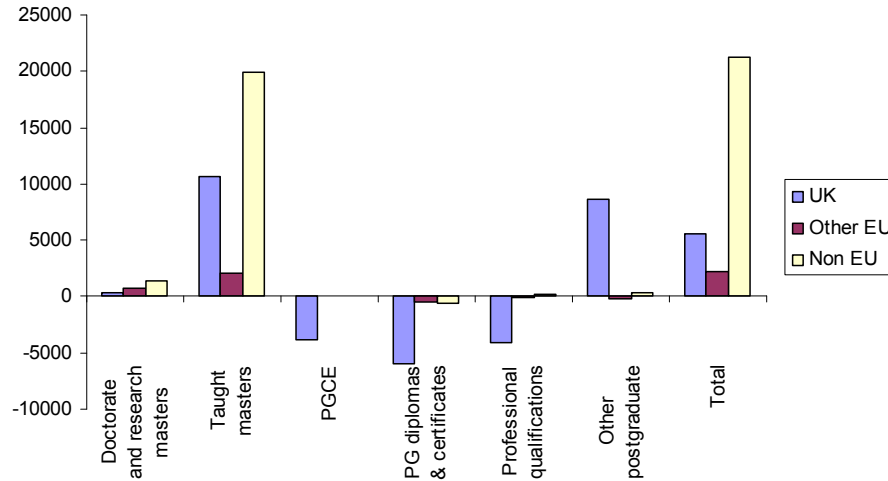
Figure 2: Trends in first year postgraduates by domicile



5. Figure 3 below shows changes in numbers of first year postgraduates. Most of the reduction in UK-domiciled students over the last two years seen in the previous figure has been due to declining numbers taking PGCEs (which tend to fluctuate according to the need for teachers in a particular subject area), professional qualifications, certificates and diplomas. The number of UK students taking masters courses has increased steadily, though the number of UK doctoral

students has barely increased – by 3 per cent over the period. This is despite the increasing number of students with masters degrees, from which the majority of UK doctoral students are recruited, and despite the increasing proportion of undergraduates being awarded firsts and upper second class degrees. The future strength of the UK research base will depend in part on doctoral study and a research career becoming more attractive to UK-domiciled students.

Figure 3: Change in numbers of first year postgraduates by domicile between 2002-03 and 2007-08



Gender

Table 1: Percentages of males and females amongst UK domiciled postgraduates 2007-08

	%F	%M
Doctorate or research masters	48	52
Taught doctorates	75	25
Taught masters	55	45
PGCE	70	30
PG diplomas and certificates	64	36
PG professional qualifications	65	35
Other postgraduate	71	29
All full-time	57	43
All part-time	62	37
Under 31	61	39
31 and over	60	40
Total postgraduate	60	40

6. Table 1 above shows that amongst UK-domiciled postgraduate students the female: male ratio is about 60:40 – a ratio that has remained steady over the last few years. The only area where men outnumber women is in doctoral study,

though the difference has reduced recently and in fact the proportion of male: female research students more or less exactly matches the male: female balance in the young population (where males are in a majority).

Ethnicity

7. Participation amongst ethnic minorities has increased substantially in the last 8 years; and there are important differences in participation between ethnic groups, and in particular differences in participation according to the nature of provision (taught masters and research).

8. Table 2 below shows that currently one in five UK domiciled taught postgraduate students is from an ethnic minority (but it should be noted that the large numbers of 'not known' in the table mean that care is needed in drawing firm conclusions). This could indicate the success of active efforts to widen participation by governments and universities, but may also be influenced by the time taken by immigrants who arrived in earlier decades to attain a level of financial stability whereby their children can consider higher education.

Table 2: Relative proportions of UK domiciled taught postgraduates by ethnicity

	Total of known ethnicity	Not known	White	Total of ethnic minorities	% white	% ethnic minorities
2000-01	52025	10030	43730	8295	84	16
2001-02	54415	10090	45210	9210	83	17
2002-03	58780	8935	48615	10165	83	17
2003-04	61680	9575	51400	10280	83	17
2004-05	61410	8035	50945	10465	83	17
2005-06	67085	6910	54980	12105	82	18
2006-07	69030	5790	55795	13235	81	19
2007-08	73465	4950	58475	14985	80	20

9. In postgraduate research study the proportion of ethnic minorities is smaller (14.9 per cent in 2007-08), having increased from 10.9 per cent in 2001-02.

Subject of study

10. Business and administrative studies is the most popular subject area at taught postgraduate level, followed by social sciences. The proportion of science, technology, engineering and mathematics (STEM) to non-STEM subjects has not changed significantly in the last five years. At research postgraduate level, science subjects dominate, especially engineering and technology, biosciences and physical sciences, whilst social sciences top the non-STEM subjects. This continuing strong showing for STEM subjects very likely reflects the balance of Research Council and other support available. However, one matter for concern, not shown in this table, is that in computer science and engineering, not only are UK-domiciled students significantly outnumbered by international students, but numbers of UK students

registering on such courses are declining. Table 3 below shows the changes in subject of study between 2002-03 and 2007-08.

Table 3: Change in subject of study amongst FTE taught postgraduate students in all years between 2002-03 and 2007-08

	Taught		Research	
	2006-07	% change since 2002-03	2006-07	% change since 2002-03
Medicine & dentistry	4275	42	7,385	19
Subjects allied to medicine	13865	35	4,930	10
Biological sciences	10760	36	11,500	14
Veterinary science	155	190	450	23
Agriculture & related subjects	1335	-10	635	-43
Physical sciences	5755	27	10,935	7
Mathematical sciences	2215	46	2,500	21
Computer science	12735	-12	4,345	26
Engineering & technology	17385	18	12,425	8
Architecture, building & planning	6520	37	1,505	9
Social studies	22275	30	8,540	16
Law	9445	9	1,795	-3
Business and administrative	59855	22	4,340	14
Mass communications	6475	23	755	29
Languages	7705	17	5,650	9
Historical and philosophical	6845	23	6,380	9
Creative arts and design	10335	43	2,595	3
Education	14180	51	4,125	6
Combined	215	19	370	635
% STEM	32		60	
% non-STEM	68		40	

Offshore provision

11. In 2002 only a small number of universities, such as Nottingham, were offering education to students studying wholly abroad through pioneering overseas campuses, and the Open University was the main institution offering postgraduate programs by distance education. Last year, 111 out of 166 institutions were offering some form of offshore provision to over 190,000 students, of which around 61,000 were postgraduates. This is a rapid area of expansion for UK HEIs. Table 4 below shows the universities most active in making offshore provision. It will be seen that there is a category of provision where students are registered with the UK institution but are educated by an overseas partner institution, yet receive the degree of the UK institution as if they were studying in this country. The quality assurance of such provision is a particular challenge for the UK institutions concerned.

Table 4: Top ten universities providing overseas provision by type of provision, 2007-08

	Students registered at a UK HEI			Students studying for an award of a UK HEI	
	Overseas campus of reporting HEI	Distance, flexible or distributed learning	Other (including collaborative provision)	Overseas partner organisation	Other arrangement
1	Nottingham	Open University	Middlesex	Wales	East Anglia
2	Heriot-Watt	Leicester	Derby	Bradford	Imperial
3	Cranfield	Heriot-Watt	Staffordshire	Sunderland	Westminster
4	Kent	Strathclyde	Northumbria	Liverpool JM	n/a
5	UC Birmingham	Manchester	UCLAN	Anglia Ruskin	n/a
6	London Business School	Portsmouth	London Met	Teesside	n/a
7	Chichester	Robert Gordon	Greenwich	Liverpool	n/a
8	Swansea Metropolitan	Hull	Hertfordshire	Lancaster	n/a
9	Westminster	Greenwich	East London	Ulster	n/a
10	n/a	Warwick	Napier	Stirling	n/a

Institutional differences

12. Table 5 below shows that while most doctoral students have remained concentrated in Russell Group and 1994 Group universities, post-1992 institutions have attracted a good proportion of the growing number of masters students. In 2007-08, Westminster and Northumbria for example were among the top 10 English institutions for the number of postgraduate taught students, as was the Open University.

Table 5: Ten institutions with the most postgraduate taught and research students 2007-08

	Taught			Research	
	No. Students (headcount)	% UK share of FTEs		No. Students (headcount)	% UK share of FTEs
Birmingham	5950	2.21	Cambridge	4905	5.81
Leeds	5100	2.09	Oxford	4405	5.49
Manchester	5400	2.07	Manchester	3720	4.31
LSE	4380	1.99	UCL	2810	4.16
Open Uni	7890	1.88	Imperial	2820	3.19
UCL	4695	1.85	Nottingham	2625	2.99
Nottingham	4275	1.83	Edinburgh	2565	2.93
Westminster	5025	1.81	Birmingham	2530	2.65
Warwick	5485	1.77	Leeds	2060	2.3
Northumbria	5060	1.76	Sheffield	2005	2.26

13. The older established universities tend to attract the most international students, in spite of their higher fees. The fees shown in Table 6 below only give a

rough indication, as even amongst classroom based subjects, fees may vary between departments.

Table 6: Fees at ten institutions where overseas postgraduates represent the highest proportion of their total postgraduate student population in 2007-08 (institutions with 500+ postgraduate students only)

	Overseas PG as % of total student body	Overseas fees: classroom based subjects (£)	Overseas fees: science/ lab based subjects (£)
Cambridge ²	43	11,097	13,095
Oxford	37	12,775	14,315
Cranfield	36	No info	No info
St Andrews	34	10,950	13,200
Imperial College	34	15,800	15,800
LSE	31	12,936	16,686
SOAS	31	10,920	11,460
Essex	29	9,450	9,450
UCL	26	12,440	16,220
London School of Hygiene	26	14,160	15,960

14. Overall, there has been an increase in the proportion of first degree graduates progressing to taught postgraduate study within six months of graduation. 1994 Group and Russell Group universities dominate the top ten institutions with the largest such numbers, as Table 7 shows.

Table 7: Ten HEIs with the highest percentage of first degree graduates progressing to taught postgraduate study within 6 months in 2002-03 and 2007-08 (HEIs with 50+ students progressing to PG study)

2002-03	% progressing to PGT	2007-08	% progressing to PGT
SOAS	22.2	SOAS	20.9
Royal Holloway	18.2	Royal Holloway	17.7
LSE	16.5	Lancaster	16.1
Essex	15.4	Heriot-Watt	16.1
Wales (Aberystwyth)	14.9	UCL	16.1
Teesside	14.7	Oxford	15.7
Goldsmiths	14.2	Kent	15.7
St Andrews	14.0	LSE	15.3
Kent	13.8	Goldsmiths	15.3
UCL	13.6	St Andrews	15.1
% all England students	7.7	% all England students	8.8

² Fees for Oxford and Cambridge include college fees.

15. SOAS and Royal Holloway have consistently topped these tables. Neither of these are among the most prolific providers of either postgraduate taught or research programmes, and it is not clear why their graduates should so consistently go on to postgraduate study.

16. Table 8 shows that on average, students at 1994 Group universities are most likely to go directly on to taught postgraduate study. Guild HE institutions include many of the more practice-based music conservatoires and art colleges where students are less likely to pursue a masters course immediately after graduating.

Table 8: Percentage of first degree graduates progressing to taught postgraduate study within 6 months, 2007-08

	% progressing to PGT
1994 Group mean	12.8
Russell Group mean	10.6
University Alliance mean	7.0
Million Plus mean	8.1
Guild HE mean	3.7

17. However, unsurprisingly, Russell Group universities dominate among those with high proportions proceeding directly to postgraduate *research* degrees – shown in Table 9. Overall, the percentage of first degree students progressing directly to research degrees has declined slightly, though from a larger cohort.

Table 9: Ten HEIs with highest percentage of first degree graduates progressing to research PG study within 6 months (HEIs with 30+ PGR destinations only)

2002-03	% progressing to PGR	2007-08	% progressing to PGR
Imperial	11.9	Imperial	11.3
Cambridge	9.4	Cambridge	10.7
Oxford	7.8	Oxford	10.3
York	6.4	Bath	6.6
Bath	6.0	UCL	5.7
Manchester	5.7	York	5.4
St Andrews	5.6	Strathclyde	5.4
Kent	5.4	St Andrews	5.2
Dundee	5.2	Durham	5.0
Glasgow	5.2	Bristol	5.0
% all England students	2.0	% all England students	1.9

Costs and benefits

18. At taught masters level, the number receiving public funding has reduced, with the number of publicly funded doctoral students increasing. Table 10 shows that one in five research students benefits from an institutional waiver – a high figure, attesting the importance of research students to an institution's research.

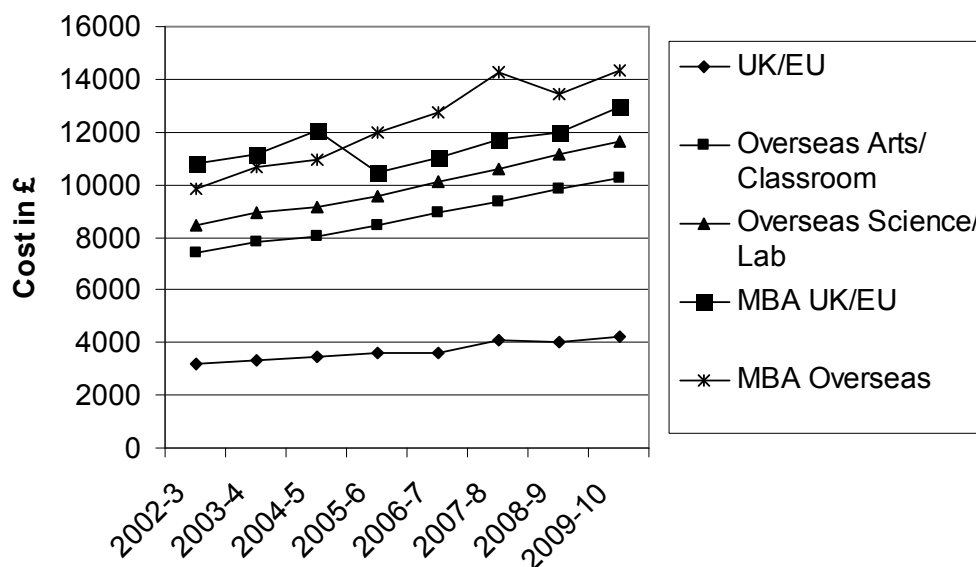
Table 10: Source of fee for UK and EU domiciled postgraduate research students (non-dormant students) 2007-08

Funding source	Percentage
Institutional waiver	18.9
Public	34.1
Private	38.5
International	1.8
Other	4.9
Not known	1.7

19. Masters fees, which are uncapped, continue to increase (fees for UK/EU students have increased on average by 33.7 per cent since 2002-03). The number of masters students continues to rise, so the fees do not on the surface appear to be a deterrent. However, studies asking undergraduates whether they will go on to postgraduate education indicate that those from lower socio-economic backgrounds are likely to be more worried about debt. Many will still undertake postgraduate study, but are more likely to study part-time whilst working.

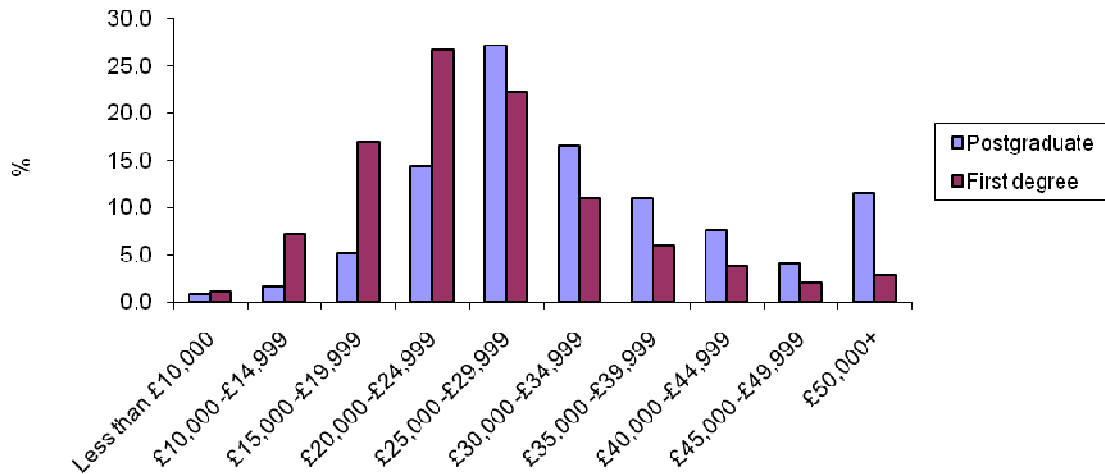
20. Fees have increased at an even faster rate for overseas students (37.7–46.2 per cent depending on the subject), though fees cannot continue to increase indefinitely: the market share of the US, which is more expensive, diminished last year. Nevertheless, the UK has a particular advantage with its one year courses. Figure 4 below shows the average fee levels for a one-year masters program.

Figure 4: Average fee levels for a one year masters course



21. Figure 5 illustrates the larger salaries on graduation that postgraduates attract than undergraduates – in part because they are older, and in general will have more work experience. The total for postgraduates also includes salaries of MBA students, who doubtless disproportionately influence the figures.

Figure 5: Relative salaries of postgraduates and first degree leavers in 2008, 3.5 years after graduation in 2005



22. Table 11 below shows salary differences according to qualification levels, and shows that for postgraduates, this premium has decreased slightly: salaries of those with first degrees are closer now to those with postgraduate degrees than they were in 2002-03. This could be a sign of decreasing returns to postgraduate education, and if so would be a matter of some concern: with the cost of a masters rising well beyond inflation, it may come to be seen as an uneconomical option, especially by those from less advantaged backgrounds. However, the data on the social backgrounds of postgraduate students are particularly poor, and there is no evidence on the basis to judge whether or not this is occurring.

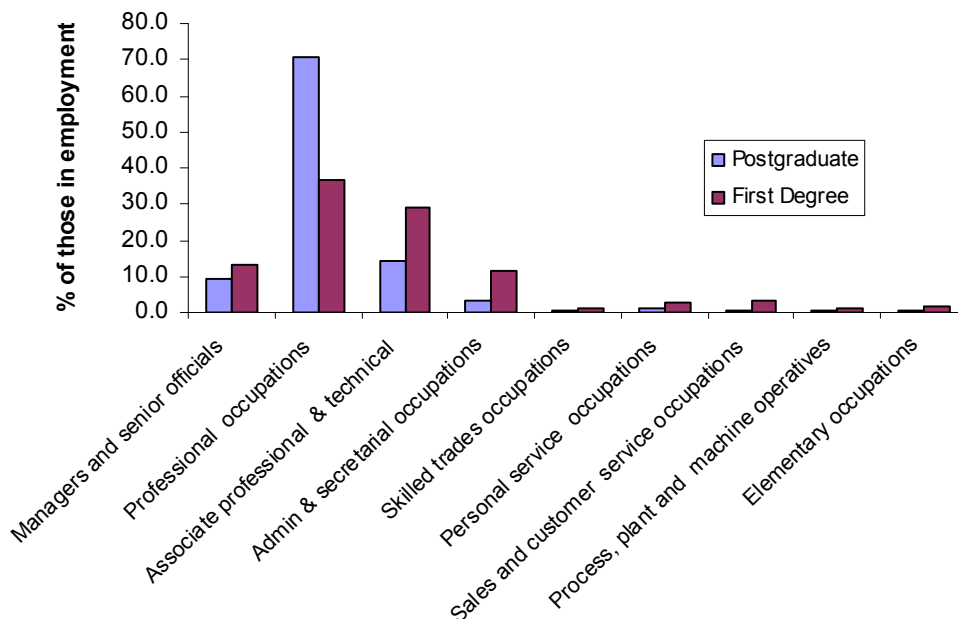
Table 11: The postgraduate premium: salaries postgraduates and first degree leavers obtaining employment six months after graduation, from those who graduated in 2007-08

	2002-03		2007-08		Percentage increase in salary 2002-3 to 2007-8
	Mean salary of those in full-time employment six months after graduation	Post-graduate premium (%)	Mean salary of those in full-time employment six months after graduation	Post-graduate premium (%)	
Postgraduate	20,951	0	24,442	0	17
First class	17,756	18	21,286	15	20
Upper second	15,981	31	19,198	27	20
Lower second	15,219	38	18,224	34	20
Third class	15,180	38	18,479	32	22

23. Postgraduates are much more likely to enter the professions: Figure 6 shows that 3.5 years after graduation, 94 per cent of postgraduate qualifiers are employed in the top 3 occupational types, compared to 78 per cent of undergraduates. A postgraduate qualification is a relatively sure way into professional-level jobs, as recognised by the Milburn committee, and any policies

aimed at increasing social diversity in the professions should look at encouraging participation right up to postgraduate level.

Figure 6: Postgraduate and first degree leavers employment 3.5 years after graduating in 2004-05



International standards and quality assurance

24. The diversity of the market for postgraduate education is huge, and UK HEIs have shown great success at meeting these varied demands, offering courses that range from pure academic pursuits to professional accreditations. In the face of such diversity, consistent and readily-understandable course definitions are needed if students are to find the best course to meet their needs.

25. In particular, there remains huge variety within masters degrees: some are designed to develop professional practice, whilst others aim to train the kind of research skills needed for a PhD. Some aim to deepen students' knowledge within a subject they have already studied, whilst others are accessible to those with no prior knowledge of the topic. The previous HEPI review of postgraduate education (2004) proposed a nomenclature which reflects the function of study, such as 'professional masters', 'research training masters' and 'conversion masters' – a recommendation which remains pertinent.

26. The Bologna process has brought major changes to the higher education landscape in Europe. Countries have an incentive to show they are Bologna compliant because it is important for their own citizens seeking work abroad to have internationally recognised qualifications, and in order to attract international students, who need reassurance that the courses offered are equivalent to those elsewhere. The UK faces a particular challenge in respect of its relatively shorter courses, such as the one year masters. While shorter courses are attractive in

terms of saving international students money, there is a need to provide assurance that the depth and quality of education provided is equivalent. This has, by and large, been successfully achieved at an official level through the Bologna process, with the status of UK qualifications being formally recognised, although the onus remains on universities to continue to provide this reassurance in the face of increasing competition from institutions abroad.

27. The quality assurance processes currently provided by the QAA are generally considered rigorous and efficient by the universities it serves, and as a body it is highly regarded internationally. The fact that it has a 'light touch' in terms of regulation is in many ways well-suited to a diverse higher education environment, where there is no centralised curriculum. However, at present it is not concerned to ensure that common standards are being met amongst HEIs, and as the recent 'Students and Universities' report by the Department of Innovation, Universities, Science and Skills pointed out, there is no body in the UK that can provide assurance about this.

28. This is potentially difficult, especially given the generally shorter courses in this country than in most others. Not only is it important to reassure international students that all UK qualifications represent the highest standards of education, but it is important for the career prospects of all graduates seeking employment – whether in the UK or abroad. Although many employers declare that workplace skills are as important as academic qualifications, the fact remains that employers tend to look on the CVs of those who graduated from prestigious institutions with greater favour than those with equivalent or better qualifications from others. Without the ability to assess or at least describe standards at a national level, it is hard to see how this situation can change.

29. The IUSS report recommends that the QAA should be reformed and given the remit to assess standards as well as processes, and that it should be assured greater independence from the institutions it audits by receiving part of its funding from HEFCE. It would be important to avoid the QAA coming to represent an 'Ofsted for universities', and to ensure that any new system should not lead to a loss of autonomy for institutions or place a greater burden of bureaucracy upon academics, but such an arrangement would help create and retain confidence in the standards of qualifications.

30. This report of the current state of postgraduate education describes a diverse, growing and successful sector. It is produced against a background of an official review of postgraduate education, being undertaken by Professor Adrian Smith (Director General of Science and Research at the Department for Business, Innovation and Skills) and suggests that the issues that that review will need to take into account include: the encouragement of doctoral study by UK-domiciled students; whether the present level of concentration of postgraduate research students is appropriate; and the question of the assurance of standards, including in relation to offshore provision (and the associated need to ensure that the nomenclature and levels of courses are not misleading).