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Issues paper

This report is for information only

This report extends the findings of the 2005 report 'PhD research degrees: Entry and completion' (HEFCE 2005/02) to include data from 2003-04, 2004-05 and 2005-06. This report also provides analysis of equal opportunities data not previously examined.

PhD research degrees: update

Entry and completion

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PhD research degrees: update

Entry and completion

To	Heads of publicly-funded higher education institutions in the United Kingdom
Of interest to those responsible for	Student data, Research, Planning
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Executive summary

Purpose

1.   This report extends the findings of the 2005 report 'PhD research degrees: Entry and completion' (HEFCE 2005/02) to include data from 2003-04, 2004-05 and 2005-06. We examined rates of completion for the cohort of students that began on a doctorate degree mainly by research in UK higher education institutions in academic year 1996-97 over 10 academic years; from their start in 1996-97 through to 2005-06.

2.   This report also provides information on ethnicity and disability which was not analysed in the 2005 report, while analysis of a second cohort of PhD[1] students provides further evidence of the trends we have identified in PhD study. It is intended to inform discussion about the quality of supervision of postgraduate research in general, and the time and rate of PhD completion in particular.

Key points

Examining the 1996-97 cohort 10 years on

3.   By considering a further three academic years, this report shows that of the students who started a full-time PhD programme in 1996-97, 76 per cent completed their PhD within 10 years. This is a rise of four percentage points compared to the 72 per cent of the same cohort who completed within seven years.

4.   For those starting a part-time PhD programme in 1996-97, 48 per cent completed their PhD within 10 years. This is a rise of 13 percentage points compared to the rate of completion after seven years.

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[1] In this document the term 'PhD' is used to refer to all 'doctorate degrees mainly by research', including small numbers of specialist doctoral degrees such as Doctor of Education (EdD) and Doctor of Engineering (EngD).

Ethnicity and disability

5.   For those students who started a full-time PhD programme in 1996-97, the report shows that 67 per cent of those of Black/Black British ethnicity completed their PhD within 10 years. The corresponding figure for White students was 76 per cent. The difference is partly but not entirely explained by other factors discussed in this report.

6.   For those students starting a part-time PhD programme in 1996-97, the report shows that those of Asian/Asian British or Black/ Black British ethnicity have lower rates of PhD completion (42 and 31 per cent respectively) compared to White students (45 per cent). These differences are partially explained by the other factors examined (such as age of student, subject or institution of study) and the small numbers involved in some ethnic groups[2].

7.   In terms of disability, for those students starting a full-time PhD programme in 1996-97, 72 per cent of students with an unregistered disability[3] completed their PhDs within 10 years, compared to 77 per cent for those students whose disability status was returned as 'none'. This difference can be explained through other factors examined in the report.

8.   Of those students starting a part-time PhD programme in 1996-97, 42 per cent of those with an unregistered disability completed their PhD within 10 years compared to 48 per cent of the students with no disabilities. This difference can be explained through other factors examined and the small number of part-time students returned with unregistered disabilities[4].

Comparison of the seven-year analyses of the 1996-97 and 1999-2000 cohorts

9.   The PhD completion rates after seven years for those students on full-time PhD programmes has increased. Seventy-two per cent of the cohort that began studying in 1996-97 completed them within seven years, rising to 75 per cent for the cohort which began studying in 1999-2000.

10.   For part-time students, PhD completion rates after seven years have been relatively stable at around 35 per cent for both cohorts.

Action required

11.   No action is required in response to this document.

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[2] See paragraphs 93 to 100 for further details.

[3] As collected through the Higher Education Statistics Agency's individualised student record in 1996-97. See Annex D for further detail.

[4] See paragraphs 81 to 86 for further details.

Introduction

12.   This report provides updated information on the characteristics and profiles of students on PhD programmes. In updating the 2005 report 'PhD research degrees: Entry and completion' (HEFCE 2005/02) we have also encompassed different aspects which are described in the sub-sections below and involve analyses of students that commenced PhD[5] programmes in academic years 1996-97 and 1999-2000.

Looking at 10 years' data

13.   The 2005 report 'PhD research degrees: Entry and completion' (HEFCE 2005/02) examined the rates of completion for a cohort of students attending UK higher education institutions who began on a PhD in the 1996-97 academic year. We followed their progress for seven academic years, from their start in 1996-97 through to 2002-03, based upon the most recent data available at the time.

14.   Since then data have become available for 2003-04, 2004-05 and 2005-06 HESA collections enabling us to look at the progress of PhD students over 10 years rather than seven.

15.   By looking at 10 years of data we have been able to update the characteristics of PhD study in three ways:

  a.   Provision of more accurate information regarding PhD completion rates and the time it takes for students to complete PhDs.

  b.   Consideration of how students progress through their PhD study over an extended period of 10 academic years.

  c.   Analysis of PhD completion rates by student and programme attributes after a period of 10 academic years.

16.   This report updates each of these aspects. In our approach to (b) we compare findings related to the 1996-97 cohort identified in HEFCE 2005/02 to our updated analysis. In this way we can identify any key changes occurring in the additional three-year period which may be of significance in future consideration of provision for PhD students.

17.   It should be noted that in terms of (c) above, this update provides information regarding the PhD students' ethnicity profile and disability status. These student attributes were not considered in the 2005 report. While this document reports the disability and ethnicity profiles of the original cohort over the 10-year period we have also re-examined the seven-year period in respect of these attributes for the original cohort.

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[5] In this document the term 'PhD' is used to refer to all 'doctorate degrees mainly by research', including small numbers of specialist doctoral degrees such as Doctor of Education (EdD) and Doctor of Engineering (EngD).

This analysis is reported at Annex A, which seeks to provide a further overview of these attributes.

Comparison of two different cohorts

18. In order to provide further evidence in terms of findings related to PhD study, we have also analysed a second cohort of students that began studying in the 1999-2000 academic year.

19. We have been able to follow this second cohort over seven academic years, from their start in 1999-2000 through to 2005-06. This is the most recent cohort that we have been able to analyse over a seven-year period, thus enabling comparability with the original 1996-97 cohort and associated findings. We make comparisons in this report and have provided full analysis of the 1999-2000 cohort at Annex C.

Structure of this update

20. This document updates trends and profiles in the study of PhD programmes. Information regarding the more recent 1999-2000 cohort of PhD students could be considered of greater relevance than information regarding the 1996-97 cohort. However, this update aims to present the most up-to-date and complete information currently available regarding the characteristics of PhD study. In this respect, particularly in terms of part-time PhD study, it is appropriate for us to provide full documentation of the 1996-97 cohort whose progress we have followed for 10 academic years.

21. Readers are invited to refer to HEFCE 2005/02 for full documentation of the seven-year analysis of students starting a PhD in 1996-97 and Annex A of this report provides information regarding the ethnicity and disability attributes as an addition to this analysis. Full documentation of students commencing PhD programmes in 1999-2000, whose progress is also followed for seven academic years, is given at Annex C of this report.

22. Table 1 details where the different aspects of PhD study considered by this report can be found.

Table 1 Locations of aspects considered

Cohort	Aspect considered	Period of analysis considered	Report reference
1996-97 cohort	Time to PhD completion	10 academic years	Page 9
		Seven academic years	HEFCE 2005/02
	Students' overall progression through PhD programmes	10 academic years, comparisons made to seven academic years	Page 12
		Seven academic years	HEFCE 2005/02
	Differences in completion rates depending on programme and student attributes, including disability and ethnicity attributes	10 academic years	Page 18
	Differences in completion rates depending on programme and student attributes, except disability and ethnicity attributes	Seven academic years	HEFCE 2005/02

	Differences in completion rates depending on programme and student attributes, disability and ethnicity attributes only	Seven academic years, and comparison to 10 academic years	Annex A
1999-2000 cohort	Time taken to complete PhD	Seven academic years	Annex C
	Students' overall progression through PhD programmes	Seven academic years	Annex C
	Differences in completion rates depending on programme and student attributes, inclusive of disability and ethnicity attributes	Seven academic years	Annex C

23.   In updating the characteristics of PhD study this report is structured as follows:

    a.   Analysis of the time it takes for students to complete their PhD ─ for the original 1996-97 cohort over a period of 10 academic years ─ to provide an overview of PhD completion rates.

    b.   Comparison of the seven-year and 10-year analyses of the 1996-97 cohort in terms of how students progress through their PhD programmes.

    c.   Analysis of PhD completion rates by student and programme attributes for the original 1996-97 cohort after a period of 10 academic years.

    d.   A number of comparisons to identify notable similarities, differences and changes in the findings of the analyses of students starting PhDs in 1996-97 over seven and 10 academic years, and that of students starting in 1999-2000.

Data source and definition of the cohort

24.   The analyses presented in this updated report all use the same methods and definitions that we used in HEFCE 2005/02[6]. These processes are discussed further in HEFCE 2005/02; paragraphs 20 to 25 and Annex B of that report. The data definitions remain the same as those described in Annex A of HEFCE 2005/02. Additional definitions regarding ethnicity and disability data used within this update are detailed at Annex D.

25.   Note that improvements have been made in our ability to validate and archive student records. This causes slight and insignificant differences between the numbers in the original 1996-97 cohort reported here and in HEFCE 2005/02. The proportions of students, in terms of entry to PhD programmes and the starting cohort, remain unchanged from those reported originally.

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[6] A revision made to the methods and definitions used in this updated analysis ensures that we now exclude students who fail to be active on either a PhD or MPhil programme after the first year of study.

Terminology and reporting procedures

26.   Throughout this report, the outcomes in relation to gaining a PhD award are classified into three groups:

a.   **PhD completed**; a student has completed a PhD within the period. The process of PhD completion involves submission of a thesis for PhD assessment, followed by a successful PhD viva (oral examination) around two months later. A student would then be awarded their PhD by a higher education institution's (HEI's) Board of Studies or equivalent.

b.   **Remains active on PhD**; a student has not completed a PhD but is still active on a PhD course at the end of the period.

c.   **Not active**; a student has not completed their PhD and was not active on a PhD course at the end of the period[7].

27.   As in the 2005 report, we have prepared simple summaries. These are split throughout the report by the student's mode of study at the start of the PhD programme, since part-time students cannot be expected to finish a PhD programme in the same time as full-time students.

28.   In preparing these simple summaries we found that when considering the various splits by student and programme attributes, some categories contained small numbers of students. Results and percentages relating to small numbers can often be ambiguous and potentially misleading. For this reason we have not reported the results if a particular category of student or programme attribute involves less than 50 students. This is an issue that predominantly arose with the disability and ethnicity profiles, and results are reported here in relation to relatively small numbers of students. It should be stressed that caution must be exercised in the use and interpretation of these results.

29.   Note that in tables throughout this report, cells containing less than 50 students are denoted by an asterisk (*). Also, we have not reported any percentages below 0.5 per cent and such cases are denoted by two asterisks (**).

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[7] Note that in terms of our analysis, if a student has at any point been returned on the Higher Education Statistics Agency (HESA) student records with mode of study as 'writing-up' then they will have been recorded as 'not active' for that particular time. Therefore should a student be 'writing-up' come the end of the period examined, their outcome will be recorded as 'not active'. Whilst we acknowledge that some students with this outcome will go on to complete their PhD this approach has been taken due to the fact that the manner in which a 'writing-up' student is returned on the HESA records is at the HEI's discretion. As a result, reliability and consistency of data relating to students returned as 'writing-up' has been seen to be poor and inadequate.

30. In addition to the simple summaries we have again modelled the student propensity to complete a PhD. This allows the differences in PhD completion rates attributed to different characteristics to be isolated and identified, an approach which is described more fully in HEFCE 2005/02, paragraphs 53 to 58 and 62 to 64. In contrast to HEFCE 2005/02 the main body of this document does not provide the consistency percentages[8] obtained from the propensity modelling. We found that little is gained from the inclusion of these percentages in this update; they are provided alongside the model results in the full documentations at Annexes A, B and C.

Extension to 10-year analysis

31. The availability of data for the 2003-04, 2004-05 and 2005-06 academic years has enabled us to extend the period of analysis of students starting a PhD in 1996-97 and provide updated information on the characteristics of PhD study. We have now followed the progress of these students for 10 academic years, from their start in 1996-97 through to 2005-06.

Starting cohort

32. The total cohort reported in HEFCE 2005/02 consisted of 18,523 PhD students. The methods and processes used in this updated analysis to link HESA student records and define the cohort remain largely the same as those described in HEFCE 2005/02 (paragraphs 20 to 25, and Annex B of that report[9]. While this has enabled us to identify the 1996-97 cohort, note that the numbers of students reported here are slightly different[10]. These differences are slight and insignificant; the proportions of students, in terms of entry to PhD programmes and the starting cohort remain unchanged from those reported originally.

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[8] Consistency shows the percentage of students who probability of completing increases with a change in the attribute to the reference group. See HEFCE 2005/02 paragraph 56 for further details.

[9] A revision has been made in that we now exclude students who fail to be active on either a PhD or MPhil programme after the first year of study. References made to the seven-year analysis in this section of the report refer to the 1996-97 cohort defined using this revised definition. A result of this revision is that, while table notes refer the reader to related information in tables of HEFCE 2005/02, the contents of those referenced tables will not match the contents of the tables given in this report.

[10] Our analysis methods involve a number of criteria for inclusion in the cohort (described in paragraphs 20 to 25 of HEFCE 2005/02 and Annex B of that report). HEFCE 2005/02 considered a seven-year period; students had only seven years to meet these inclusion criteria. In this section we consider 10 academic years. Students therefore have longer to meet the inclusion criteria and so a smaller number are excluded. As such the 1996-97 cohort reported in respect of 10 academic years is larger than that reported for seven-academic years.

33.   The 1996-97 starting cohort reported on in the following analysis consists of 18,469 PhD students. Of this cohort, 13,632 are studying on full-time PhD programmes and 4,837 on part-time PhD programmes.

Time taken to complete PhD

34.   This report firstly updates analysis of the time it takes students to complete their PhD for the 1996-97 cohort of students. The original report detailed this in a series of charts (HEFCE 2005/02, Figures 1 to 3). We have recreated these charts below to include data from 2003-04 through to 2005-06.

35.   The distribution of the time taken to complete the PhD for full-time students receiving support from a Research Council is shown in Figure 1. Such students starting their course in 1996-97 would normally have three years of funding to complete their PhD studies. Assuming no significant delay in their studies, they would have been expected to submit their thesis for PhD assessment early in the 1999-2000 academic year. It would be usual for the PhD viva to then take place around two months later, with another month or so for corrections if the viva were successful. The student would then have been awarded their PhD by a Board of Studies (or equivalent) between January and April 2000. This is usually the completion date recorded on the HESA records. Under these conditions, we would record the student completing their PhD within four years (September/December 1996 through to January/April 2000).

Figure 1 Time to PhD completion or last PhD activity for full-time Research Council students who began their studies in 1996-97

Figure 1 note: A broken line has been used for data points up to the last three academic years to highlight the extension of the analysis period from seven to 10 years. The values for 'not active on a PhD after' and 'actively studying in' for 2006-07 are not given because no information is currently available on student activity after 31 July 2006.

36.   Figure 1 shows that 36 per cent of full-time Research Council students who completed their PhD did so before 1 August 2000, having begun their studies in 1996-97 (in other words, within four years). In the last five years of the period examined, PhD completions level off with around 80 per cent of these students completing their PhD by 1 August 2006.

37.   It also shows that around 5 per cent of full-time students are not active on a PhD programme after 1 August 1997, having not completed a PhD. This figure for non-completion rises to 16 per cent by 1 August 2005. At 31 July 2006 only 1 per cent of full-time students with Research Council funding remained active on a PhD programme having not yet completed a PhD.

38.   Figure 2 provides the equivalent information for full-time students who do not receive Research Council funding. The pattern is broadly similar to Figure 1. Of the non-Research Council students who complete their PhD, 29 per cent did so before 1 August 2000. PhD completions again level off in the later years with around 75 per cent having completed their PhD by 1 August 2006. The proportion of inactive students is larger amongst those who do not receive Research Council funding than those who do, particularly towards the end of the period where it approaches 25 per cent.

39.   In terms of non-Research Council students, 4 per cent of full-time students remained active at the end of the 10-year period, having yet to complete their PhD.

Figure 2 Time to PhD completion or last PhD activity for full-time non-Research Council students who began their studies in 1996-97
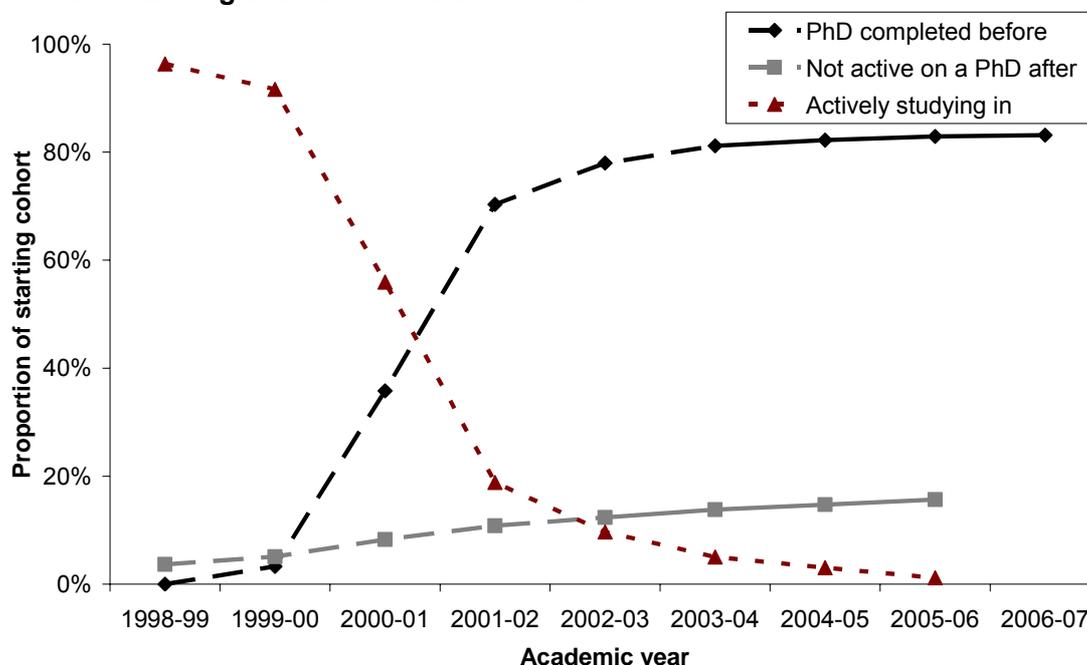

Figure 2 note: A broken line has been used for data points up to the last three academic years to highlight the extension of the analysis period from seven to 10 years. The values for 'not active on a PhD after' and 'actively studying in' for 2006-07 are not given because no information is currently available on student activity after 31 July 2006.

40.	Figure 3 shows the time taken to complete PhD studies for those on part-time programmes; by 1 August 2006, 48 per cent of the cohort had completed. It shows that a considerable proportion of part-time students became inactive on PhD courses over the 10-year period. Around 10 per cent of the cohort became inactive before 1 August 1998 and this figure rises steadily to 41 per cent by 1 August 2005.

41.	The part-time group has the largest proportion of students remaining active on a PhD programme at the end of 10 years; 11 per cent of part-time students were still actively working to complete their PhD.

Figure 3 Time to PhD completion or last PhD activity for part-time starters who began their studies in 1996-97
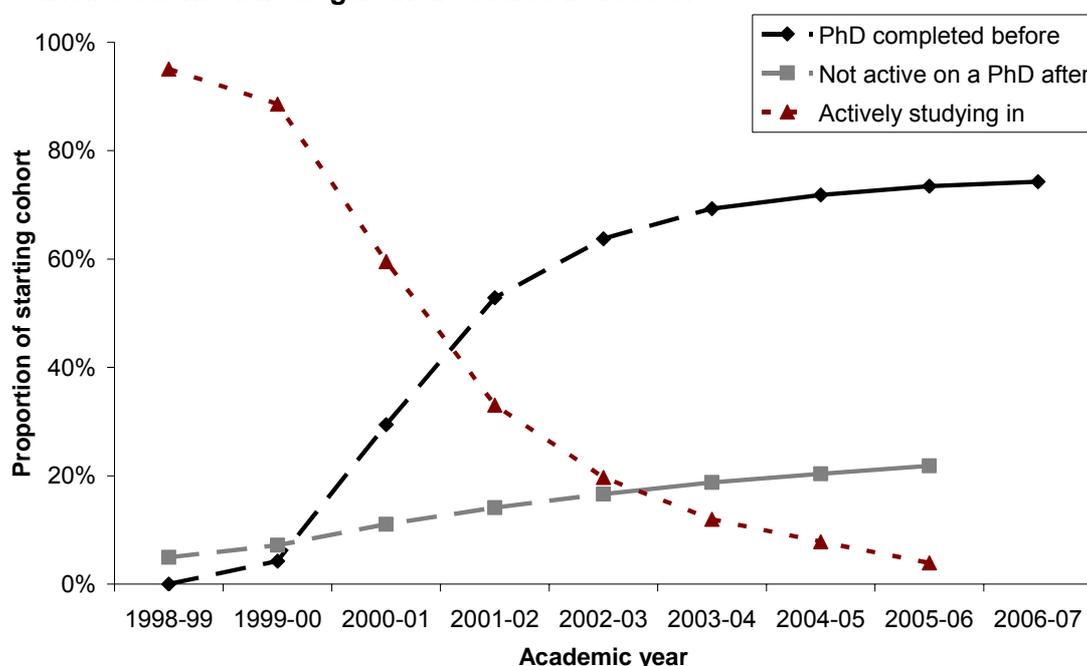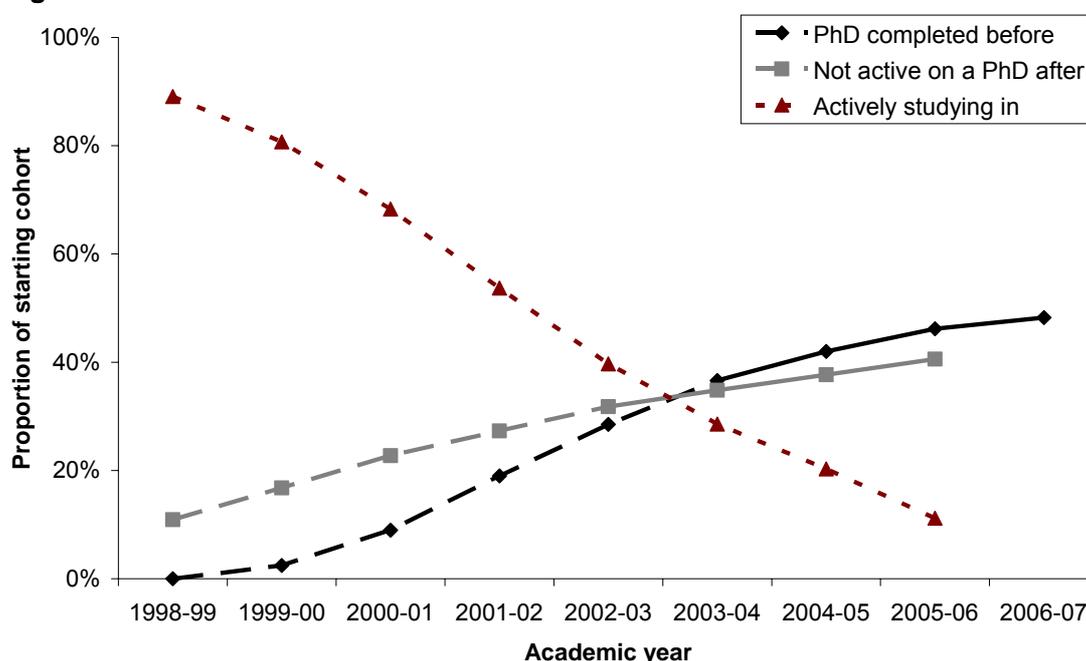

Figure 3 note: A broken line has been used for data points up to the last three academic years to highlight the extension of the analysis period from seven to 10 years. The values for 'not active on a PhD after' and 'actively studying in' for 2006-07 are not given because no information is currently available on student activity after 31 July 2006.

42.	The charts above suggest that, after 10 academic years the number of PhD completions levels off. This indicates that we are nearing the final distribution of PhD outcomes; the majority of students who are ever going to complete their PhD have done so after 10 years. Of the 18,469 students that started a PhD programme in 1996-97, only 5 per cent (981 students) were still active on a PhD programme at 31 July 2006, with the potential to yet complete their PhD.

43.	It is this finding that has led to these updates; we are now sufficiently close to the final distribution of PhD outcomes to gauge more accurately the trends and profiles for PhD completion rates. Comparison of findings identified in the 2005 report to those of the

updated analysis can therefore be used to identify any key changes occurring in the later three years.

44.   It is possible or even likely that a small number of those students identified as 'not active' on a PhD programme at the end of 10 years will eventually complete their PhD. Table 2 compares the outcomes identified in the 10-year analysis of students commencing PhD study in 1996-97 to those reported in the original seven-year analysis. It shows that, of the 4,085 students recorded as being inactive at the end of the seven academic years, 4 per cent resurrected their studies and completed their PhD in the additional three years analysed. A further 5 per cent again became active on a PhD programme at the end of 10 years.

45.   Few students resurrected their PhD studies in the additional three years analysed and we believe that, if we were to follow their progress for another three years to cover 13 years, the proportions that resurrect their studies would have declined from those shown in Table 2. We are therefore confident that the vast majority of students identified by the 10-year analysis as being inactive are unlikely ever to complete their PhD.

Table 2 Comparison of outcomes identified by the seven-year and 10-year analyses

Outcome after seven academic years	Outcome after 10 academic years	No. of students	% of seven-year outcome
PhD completed		11,389	
Remains active on PhD	PhD completed	1,215	41%
	Remains active on PhD	767	26%
	Not active	1,013	34%
Not active	PhD completed	152	4%
	Remains active on PhD	214	5%
	Not active	3,719	91%
All		**18,469**	

Note: In some cases, percentages do not add to 100 per cent because of rounding.

46.   Table 2 also shows that 41 per cent of students recorded at the end of seven years as remaining active on a PhD had completed their PhD by the end of 10 years. Taking this into account, and allowing for some students to resurrect their PhD studies, we believe it is reasonable to anticipate that around 72 per cent of the students who started a PhD programme in 1996-97 will eventually gain their PhD qualification.

How students progress through PhD programmes

47.   In paragraphs 50 to 67 we discuss the following aspects of, and variations on the 'standard' pathway through a PhD programme:

- starting mode of study
- changing mode
- moving between institutions
- breaks in PhD programmes

- gaining an MPhil award.

48.   We present profiles of the 1996-97 cohort in relation to each of the aspects above, along with a comparison of these results for the seven-year and 10-year analyses of this cohort. This comparison, along with the distribution of time taken to complete, is intended to provide an overview of PhD study and the overall progression paths through PhD programmes.

49.   It should be noted that in terms of any comparisons made, only significant findings are reported here. Minor differences, such as a proportion changing by a small amount, are generally not commented on. Further, analysis has shown that the proportions of students gaining an MPhil award remain much the same as reported in HEFCE 2005/02. Consequently, we have not discussed this further in the following comparisons.

PhD completion rates by starting mode of study

50.   The achievement of students, depending on the mode of study at the start of their PhD programme, is shown in Table 3. It shows that 76 per cent of full-time starters and 48 per cent of part-time starters completed their PhD in the 10 years from 1996-97 to 2005-06. A further 4 per cent of full-time and 11 per cent of part-time starters were still active on their PhD programme after 10 years, having yet to complete.

Table 3 PhD completion rates by starting mode of PhD programme

Start mode	PhD completion	Active	Not active	All students	% PhD completion	% PhD completion or active
Full-time	10,423	440	2,769	13,632	76%	80%
Part-time	2,333	541	1,963	4,837	48%	59%
Total	**12,756**	**981**	**4,732**	**18,469**	**69%**	**74%**

51.   Table 4 shows the PhD completion rates after seven and 10 years by the starting mode of the student's programme. It shows that for part-time students the completion rate increased by 13 percentage points; 35 per cent of students completed their PhD by the end of seven years, rising to 48 per cent after 10 years. For full-time students, the proportion of students that have completed their PhD increases by four percentage points from 72 per cent to 76 per cent.

Table 4 PhD completion by starting mode of PhD programme

Start mode	Seven years		10 years	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Full-time	72%	83%	76%	80%
Part-time	35%	65%	48%	59%
Total	**62%**	**79%**	**69%**	**74%**

Note: See Table 14 of HEFCE 2005/02 and Table 3 above for related information.

52.	Table 4 also shows the reduction in the difference between the '% PhD completion' and '% PhD completion or active' figures between the seven-year period and the 10-year period. It indicates that of those who are going to complete a PhD, the majority have done so after 10 academic years. Only a further 4 per cent of full-time students remain active on PhD programmes at the end of 10 years and it is probable that around 77 per cent of full-time students will eventually complete their PhD. In terms of our cohort of part-time students, a further 11 per cent remained active at the end of 10 years and around 51 per cent are anticipated to eventually complete[11]. This finding enables us to conclude that part-time students are less likely to complete a PhD than full-time students, although this likelihood is not as considerable as stated in HEFCE 2005/02.

Changing mode

53.	The full-time and part-time modes referred to in this report refer to the students' mode of study at the start of the programme. Tables 5 and 6 show proportions and outcomes of students changing active modes during their PhD studies.

Table 5 Mode changes for PhD programme cohort

| | Start mode | | | | All students | |
| | Full-time | | Part-time | | | |
Mode switch?	No. of students	%	No. of students	%	No. of students	%
No	11,003	81%	4,236	88%	**15,239**	**83%**
Yes	2,629	19%	601	12%	**3,230**	**17%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

Table 6 PhD completion by mode changes for PhD programme cohort

Start mode	During course	No. of students	% PhD completion	% PhD completion or active
FT	FT only	11,003	78%	81%
	FT to PT	2,629	68%	76%
All FT		**13,632**	**76%**	**80%**
PT	PT only	4,236	46%	57%
	PT to FT	601	62%	74%
All PT		**4,837**	**48%**	**59%**
Total		**18,469**	**69%**	**74%**

Table 6 note: FT = full-time, PT = part-time

54.	Around one fifth of students who started a full-time PhD changed their mode of study to part-time at some point during their studies. The rate of PhD completion is 10 percentage points lower for these students than for those who remained full-time for the whole of their studies (68 per cent compared to 78 per cent).

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[11] The proportions anticipated to eventually complete their PhD are taken from analysis of the changes in outcomes identified by the seven-year and 10-year analyses of the 1996-97 cohort, allowing for resurrection of study and extended periods to completion.

55.   Both the seven-year and 10-year analyses of the 1996-97 cohort of PhD students have shown that around one fifth of students changed their mode of study from full-time to part-time at some point during their studies. The original analysis showed that these students had a PhD completion rate 16 percentage points lower than that of those who remain full-time.

56.   Table 7 details the PhD completion rates after seven and 10 years, split by whether or not the student changed their mode of study. It shows that when we look at 10 academic years the completion rate of students who change to part-time study is only 10 percentage points lower than those remaining full-time. The reduction of this difference suggests that, in the longer term, those who make this change do not significantly decrease their chances of eventually completing a PhD.

Table 7 PhD completion rates by mode changes

Start mode	During course	Seven years		10 years	
		% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
FT	FT only	75%	83%	78%	81%
	FT to PT	59%	83%	68%	76%
All FT		**72%**	**83%**	**76%**	**80%**
PT	PT only	33%	63%	46%	57%
	PT to FT	53%	78%	62%	74%
All PT		**35%**	**65%**	**48%**	**59%**

Note: Table 9 of HEFCE 2005/02 and Table 6 above for related information.

Breaks in PhD programmes

57.   Although it is difficult to estimate the number of students who take short breaks in their PhD programmes, we are reasonably confident in our identification of students who are inactive for an entire academic year, that is from 1 August until 31 July in the following year. We have calculated the proportion of students who have been inactive for at least one academic year, and then resumed their PhD programme for both the seven-year and 10-year analyses and these are shown in Table 8.

Table 8 Proportions of students inactive for one or more academic years and have resumed their course

Start mode	Seven years	10 years
Full-time	5%	6%
Part-time	11%	14%
Total	**6%**	**8%**

Note: See Table 13 of HEFCE 2005/02 for related information.

58.   Table 8 shows that the proportion of students who were active on their PhD at the end of the period examined, and had taken a break during the course of their studies, were higher after 10 years than after seven. After 10 years, 8 per cent of the cohort had taken a break in their studies, compared to 6 per cent at the end of seven years.

Moving between institutions

59.   Table 9 shows the numbers of students moving HEI during their PhD programmes.

Table 9 Institutional movement during PhD programme

HEI attended	Full-time		Part-time		All students	
	No. of students	%	No. of students	%	No. of students	%
Single HEI	13,017	95%	4,461	92%	17,478	95%
Moves HEI	615	5%	376	8%	991	5%
Total	13,632	100%	4,837	100%	18,469	100%

60.   The PhD completion rates of starters on full-time PhD programmes, split by whether they moved HEI during their studies are shown in Table 10. It shows that 77 per cent of full-time students who remain at the same HEI complete a PhD within 10 years. For those that do move HEI, the figure is lower at 73 per cent.

Table 10 PhD completion by institutional movement for full-time starters

HEI attended	No. of students	% PhD completion	% PhD completion or active
Single HEI	13,017	77%	79%
Moves HEI	615	73%	85%
Total	13,632	76%	80%

61.   Table 11 provides the completion rates for part-time starters. Completion rates for those part-time students that move HEI remain lower; 41 per cent compared to 49 per cent for those remaining at the same HEI.

Table 11 PhD completion by institutional movement for part-time starters

HEI attended	No. of students	% PhD completion	% PhD completion or active
Single HEI	4,461	49%	58%
Moves HEI	376	41%	78%
Total	4,837	48%	59%

62.   Table 12 shows the proportions of students who move institution during their PhD programme for the seven-year and 10-year analyses of the 1996-97 cohort. For full-time students we see that, when we consider 10 academic years, the proportion rises by one percentage point from its equivalent value after seven academic years. Larger numbers of part-time students move HEI during the additional three years examined; the proportion rises by two percentage points in the case of these students.

Table 12 Proportions of students who have moved HEI during their PhD programme

Start mode	Seven years	10 years
Full-time	4%	5%
Part-time	6%	8%

Note: See Table 10 of HEFCE 2005/02 and Table 9 above for related information.

63.   Table 13 shows the PhD completion rates after seven and 10 academic years for full-time students, split by whether or not they moved HEI during the course of their PhD studies. We see a difference of five percentage points between the two completion rates, whether the student moved HEI or not.

Table 13 PhD completion by institutional movement for full-time starters

HEI attended	Seven years		10 years	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Single HEI	72%	83%	77%	79%
Moves HEI	65%	89%	73%	85%
Total	**72%**	**83%**	**76%**	**80%**

Note: Table 11 of HEFCE 2005/02 and Table 10 above for related information.

64.   When we consider the PhD completion rates for part-time students by whether or not they moved HEI we see that the differences between the rates after seven and 10 academic years are larger than for those starting full-time. Table 14 shows that the PhD completion rate for part-time students who do not move HEI is 14 percentage points higher after 10 years compared to 35 per cent after seven years. For those that do move HEI, the completion rate is 13 percentage points higher after 10 years compared to the rate after seven years.

Table 14 PhD completion by institutional movement for part-time starters

HEI attended	Seven years		10 years	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Single HEI	35%	64%	49%	58%
Moves HEI	28%	80%	41%	78%
Total	**35%**	**65%**	**48%**	**59%**

Note: See Table 12 of HEFCE 2005/02 and Table 11 above for related information.

Gaining an MPhil award

65.   Although we have defined the cohort of students as being on PhD programmes, some of these students will qualify with an MPhil, either on the way to a PhD or as the final qualification. Table 15 shows the percentage of students who gained an MPhil.

Table 15 MPhil award rates for students starting a PhD course in 1996-97

Start mode	PhD award	Active	Not active	All
Full-time	4%	9%	11%	**6%**
Part-time	1%	5%	7%	**4%**
Total	**3%**	**7%**	**9%**	**5%**

66.   Table 15 shows that 4 per cent of full-time students who complete a PhD also gain an MPhil during their PhD studies. It also shows that 11 per cent of full-time PhD students who did not complete a PhD and were not still active in 2005-06, gained an MPhil at some point during their non-completed PhD studies.

67.   Table 16 shows the distribution of students who have been awarded either a PhD or MPhil after 10 years.

Table 16 PhD or MPhil award by starting mode of PhD programme

Start mode	PhD or MPhil award	Active	Not active	All students	% PhD or MPhil award	% PhD or MPhil award or active
Full-time	10,770	400	2,462	13,632	79%	82%
Part-time	2,494	513	1,830	4,837	52%	62%
Total	**13,264**	**913**	**4,292**	**18,469**	**72%**	**77%**

PhD completion rates by programme and student attributes

68.   In this section we concentrate on whether a student completes the PhD programme or not after 10 years. We have examined the differences in PhD completion rates according to the following attributes:

   a.   Age on entry.
   b.   Disability status.
   c.   Domicile of student.
   d.   Ethnicity.
   e.   Previous qualifications and route to PhD programme.
   f.   Sex.
   g.   Source of student sponsorship.
   h.   Subject area.
   i.   Institution and subject area within institution.

69.   It should be noted that HEFCE 2005/02 did not include information regarding the PhD students' ethnic profile and disability status. This updated report considers such attributes. The disability and ethnicity profiles of the 1996-97 cohort of PhD students have been ascertained, and we have followed the students' progression for both seven years and 10 academic years with respect to these attributes. In the following section we report

the rates of PhD completion by ethnicity and disability after a period of 10 academic years[12].

70.   As in HEFCE 2005/02, the propensity to complete a PhD has been modelled for the 1996-97 cohort of PhD students, this time over 10 years. When considering the attributes of PhD students and programmes, this allows the completion rates for students with different characteristics to be isolated and identified; for each characteristic we have derived a PhD completion rate relative to that of the reference category (marked as REF in the appropriate tables). This relative completion rate can be said to describe the effect of a particular characteristic once the other factors in the model have been taken into account. For example, a relative completion rate of minus three per cent for part-time students with an unregistered disability[13] shows that, taking into account all the other factors in the model, these students are still three percentage points less likely to complete their PhDs than students in the reference category with no disability[14].

71.   A summary of this example is shown in Table 17.

Table 17 Calculation of example 'relative % PhD completion' rate

Disability status	Observed completion rate	Expected completion rate, accounting for factors measured by the modelling	Relative % PhD completion rate = Observed difference – Expected difference
None (reference category)	48%	48%	
Disability - unregistered	42%	45%	
Difference	**-6%**	**-3%**	**-3%**

72.   This paragraph describes the method of calculating the relative rates. The disability status is changed to 'none' for all part-time students as the reference category and the expected completion rates are calculated and summarised. For students with an unregistered disability this gives an expected completion rate of 45 per cent. Students with no disability are, of course, unchanged at 48 per cent. The unadjusted difference of six percentage points (48% - 42%) between those with an unregistered disability and those with no disability can now be divided into two parts:

    a.   Part of this difference (48% - 45% = 3% points) is due to the differing profiles of students who have an unregistered disability compared to those with no disability, i.e. the part that is due to student with unregistered disabilities being old/younger, more male/female dominated etc than those with no disability.

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[12] Results of the seven-year analysis in respect of these attributes are reported at Annex B, where we aim to provide a more comprehensive overview of these two attributes; we have made comparisons between the results of the seven-year and 10-year analyses.

[13] As recorded through HESA field 15, DISALL.

[14] The approach is described more fully in HEFCE 2005/02, paragraphs 53 to 58 and 62 to 64.

b.   The remaining difference of three percentage points is due to other differences between the two groups. This could be other factors we have not measured, or, the direct result of having an unregistered disability. This is what is referred to as the 'relative % PhD completion' rate.

73.   The relative rates of PhD completion enable us to gauge the position of a particular category in relation to other categories of that attribute. For example, for the disability attribute, this process would allow us to gauge the position of those categorised as having no disability compared to those categorised as having an unregistered disability. As we have calculated that relative rates of PhD completion in each of the three analyses discussed by this report (seven-year analyses of the 1996-97 and 1999-2000 cohorts, and 10-year analysis of the 1996-97 cohort) we have been able to ascertain the relative positions of categories within attributes (such as being categorised as having an unregistered disability within the disability attribute) on three separate occasions. The commentary provided in the following section highlights instances where any changes occur in these relative positions.

74.   We generated new propensity models to extend our analysis to include data from 2003-04, 2004-05 and 2005-06, as well as ethnicity and disability variables. These models are detailed at Annex E[15].

75.   The following tables present simple summaries of each attribute 'a' to 'h' above. They are based on the original cohort and examine students' progress for the 10 academic years from 1996-97 through to 2005-06.

76.   Analysis has shown that completion rates are sensitive to small numbers. Consequently any conclusions drawn in relation to categorisations involving small numbers can be unsafe and misleading. For this reason PhD completion rates and results of the propensity modelling are not reported in cases where a categorisation includes less than 50 students. In the summary tables that follow, such cases are denoted by an asterisk (*).

77.   When discussions refer to factors taken into account by the modelling, these refer to those given in paragraph 68 above.

Age on entry

78.   The age profiles of PhD students are shown in Table 18. We see that part-time study involves a much higher proportion of older students (71 per cent). Conversely, the greater proportion of full-time students falls into the younger age band; 44 per cent are aged under 25.

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[15] Annex E also shows the propensity models generated for the two other analyses discussed in this update; that of the 1999-2000 cohort and the extension of the original seven-year analysis to include ethnicity and disability information for the 1996-97 cohort.

Table 18 Age on entry of PhD students

Age group	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Under 25	6,003	44%	491	10%	**6,494**	**35%**
25 to 29	3,922	29%	915	19%	**4,837**	**26%**
Over 30	3,707	27%	3,431	71%	**7,138**	**39%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

79.   Tables 19 and 20 show the PhD completion rates for students on full-time and part-time programmes respectively. In both cases the lowest completion rates exist among the older students whereas the younger age group has the highest completion rates.

80.   Note that age is modelled as a continuous variable, so there is no age group reference category. The relative completion rates are derived by setting the age on entry for all students to 23, the modal age on entry.

Table 19 PhD completion by age on entry for full-time students

Age group	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Under 25	6,003	81%	83%	0%
25 to 29	3,922	75%	79%	-2%
Over 30	3,707	70%	75%	-7%
Total	**13,632**	**76%**	**80%**	**N/A**

Table 20 PhD completion by age on entry for part-time students

Age group	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Under 25	491	57%	63%	0%
25 to 29	915	55%	63%	-4%
Over 30	3,431	45%	58%	-10%
Total	**4,837**	**48%**	**59%**	**N/A**

81.   Both the full-time and part-time models show that there are significant differences in PhD completion rates depending on age. The modelling indicates that as a student's age on commencement increases, there is a decreasing probability of PhD completion. The negative association between age and rates of PhD completion is further demonstrated by Figure 4, which shows the variation in 10-year completion rates by age and sex.

Figure 4 PhD completion rates by age and sex
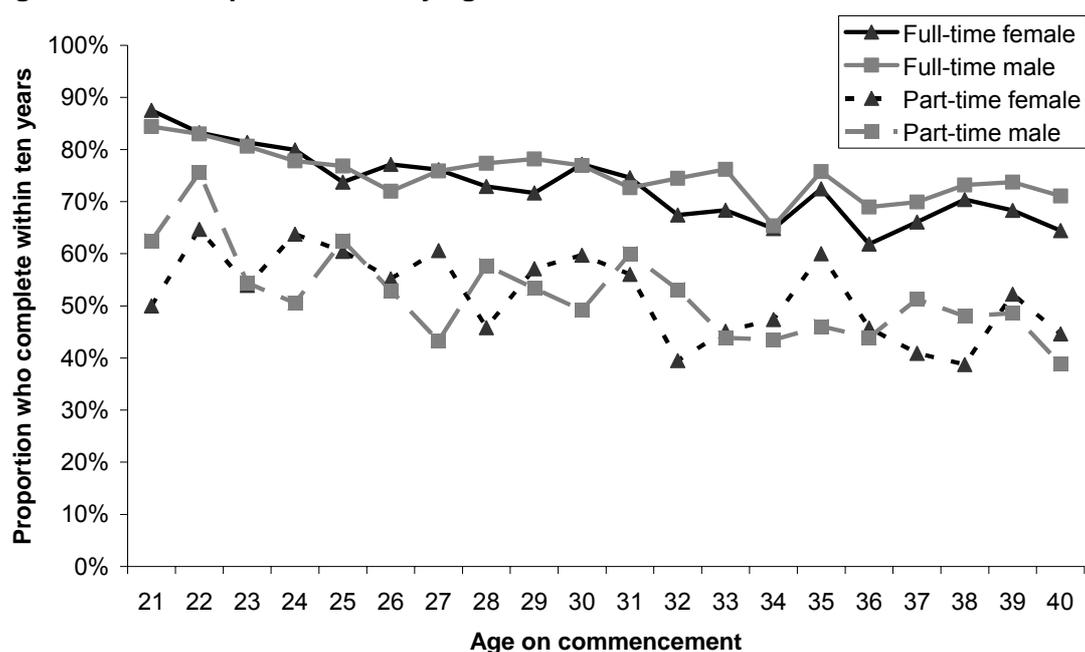
Disability status

82. The disability profile of the cohort of PhD students is shown in Table 20[16]. It shows that in each case 98 per cent of students are returned as having a disability status of 'none'. Few students are returned as having either a registered or unregistered disability.

Table 20 Disability profile of PhD student

Disability	Full-time		Part-time		All	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
None	13,362	98%	4,763	98%	18,125	98%
Not known/not given	*	**	*	**	53	**
Disability – registered	*	**	*	**	*	**
Disability – unregistered	197	1%	50	1%	247	1%
Total	13,632	100%	4,837	100%	18,469	100%

Note: * less than 50 students, ** percentage less than 0.5 per cent.

83. Table 21 shows the rates of completion for starters on full-time PhD programmes split by the student's disability status in the year of entry. It shows that students returned with an unregistered disability have the lower rate of PhD completion; 72 per cent compared to 77 per cent for students whose disability status is returned as 'none'.

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[16] Changes to the collection of disability information were introduced to the 1998-99 HESA student record. These changes are discussed in the data definitions provided at Annex D, and as a result in all analyses discussed by this report we consider only a student's disability status in the year of entry.

84.   The full-time modelling shows that after other factors are taken into account, those returned as having an unregistered disability have a relative completion rate of 0 per cent. This indicates that, despite these students having the lower actual rate of PhD completion, there is no distinction between the two groups of students in terms of the model results.

Table 21 PhD completion by disability status for full-time students

| Disability status | No. of students | Actual results | | Model results |
		% PhD completion	% PhD completion or active	Relative % PhD completion
None	13,362	77%	80%	REF
Disability – unregistered	197	72%	74%	0%
Total	**13,632**	**76%**	**80%**	**N/A**

Note: Results are not reported in this table for the categorisations of 'Not known/not given' and 'Disability – registered' as less than 50 students fell into these categories. These rows are not reported as all of the information in the row would not be shown.

85.   It is noteworthy to compare this finding to that of the seven-year analysis which indicates that, after taking account of other factors, students with an unregistered disability are less likely to complete a PhD within seven years than those with no disability. The 10-year analysis shows that these students and students with no disability are equally likely to have completed a PhD after 10 academic years. Comparison of the seven-year and 10-year analyses by disability status is discussed further at Annex A.

86.   Table 22 shows the equivalent information for part-time students. We see that, as with full-time students, those with the highest actual PhD completion rate are students returned with a disability status of 'none' (48 per cent). The part-time modelling shows that once other factors are taken into account students returned with an unregistered disability have a lower relative PhD completion rate of -3 per cent.

Table 22 PhD completion by disability status for part-time starters

| Disability status | No. of students | Actual results | | Model results |
		% PhD completion	% PhD completion or active	Relative % PhD award
None	4,763	48%	60%	REF
Disability – unregistered	50	42%	52%	-3%
Total	**4,837**	**48%**	**59%**	**N/A**

Note: Results are not reported in this table for the categorisations of 'Not known/not given' and 'Disability – registered' as less than 50 students fell into these categories. These rows are not reported as all of the information in the row would not be shown.

87.   Analysis has shown that, despite completion rates being lower, the distribution of time taken to complete a PhD for students with an unregistered disability is not materially different to that of students with no disability.

Domicile of students

88.   The geographical distribution of the PhD students is shown in Table 23. The majority of students studying PhD programmes in the UK are home-domiciled (65 per cent). However, there are significant numbers coming from both the European Union (EU) and non-EU countries. Around 80 per cent of part-time students are home-domiciled, whilst 59 per cent of full-time students are home-domiciled.

Table 23 Domicile of PhD students

Domicile	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Home	8,103	59%	3,932	81%	**12,035**	**65%**
EU	1,621	12%	315	7%	**1,936**	**10%**
Non-EU	3,908	29%	590	12%	**4,498**	**24%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

89.   Table 24 shows the rates of PhD completion for starters on full-time PhD programmes split by the student's domicile. We see that for full-time students the highest completion rates are associated with those whose domicile is the EU (78 per cent). Home-domiciled students and those from non-EU countries have completion rates one and two percentage points lower respectively.

90.   The actual completion rate for non-EU students is one percentage point lower than that for home students, according to the modelling for full-time students. However, when the other factors we have included in our modelling are taken into account, non-EU students and, to a lesser extent, EU students have a higher relative completion rate than home students.

Table 24 PhD completion by domicile for full-time students

Domicile	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
EU	1,621	78%	81%	5%
Home	8,103	77%	79%	REF
Non-EU	3,908	76%	80%	3%
Total	**13,632**	**76%**	**80%**	**N/A**

91.   Table 25 is the equivalent to Table 24 for starters on part-time PhD programmes. It shows that non-EU students have the highest rates of PhD completion amongst part-time students. Home-domiciled students have both the lowest PhD completion rates and the lowest PhD completion or still active rates.

92.   The part-time modelling shows that, as with full-time students, non-EU and EU students have higher relative rates of completion, after other factors are taken into account.

Table 25 PhD completion by domicile for part-time students

Domicile	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
EU	315	51%	59%	1%
Home	3,932	47%	59%	REF
Non-EU	590	55%	65%	7%
Total	**4,837**	**48%**	**59%**	**N/A**

93.   The propensity modelling for full-time students shows that students whose domicile is recorded as non-EU are three percentage points more likely to complete a PhD after 10 academic years than students who are home domiciled. It is noteworthy to mention that after seven academic years the equivalent students in both the 1996-97 and 1999-2000 cohorts are eight percentage points more likely to complete a PhD. However, when considering a 10-year period for the 1996-97 cohort, the gap between the propensity to complete a PhD of home-domiciled students and non-EU students narrows when we allow a longer time to completion. To a lesser extent, the same applies to students whose domicile is returned as the EU. A similar effect is seen for part-time students.

Ethnicity

94.   Table 26 shows the distribution of the ethnicity of PhD students. We see that the ethnicity of 48 per cent of PhD students is described as White.

95.   It is important to note that there are a substantial number of instances where ethnicity information has not been provided; 41 per cent of the cohort is returned as 'not known/not given'. Consequently numbers from different ethnic backgrounds are relatively small, particularly when the cohort is split by mode of study. Caution should therefore be exercised in the interpretation of the following results.

Table 26 Ethnicity of PhD students

Ethnicity	Full-time		Part-time		All	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Asian/Asian British	753	6%	124	3%	**877**	**5%**
Black/Black British	177	1%	81	2%	**258**	**1%**
Chinese	340	2%	84	2%	**424**	**2%**
Not known/not given	5,746	42%	1,771	37%	**7,517**	**41%**
Other	360	3%	123	3%	**483**	**3%**
White	6,256	46%	2,654	55%	**8,910**	**48%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

96.   The rates of PhD completion for starters on full-time PhD programmes, split by the student's ethnicity, are shown in Table 27. The lowest actual PhD completion rates are found amongst the relatively small number of students describing their ethnicity as Black/Black British (67 per cent).

97.   The propensity modelling for full-time students shows that the size and significance of the difference in PhD completion rates, depending on ethnicity, varies depending on the domicile, source of funding, previous qualifications, and the student's subject area. The modelling shows that the lower actual PhD completion rates of students returned as Black/Black British are partly explained by the other factors taken account of in the modelling.

Table 27 PhD completion by ethnicity for full-time students

| Ethnicity | No. of students | Actual results | | Model results |
		% PhD completion	% PhD completion or active	Relative % PhD completion
Asian/Asian British	753	74%	79%	-1%
Black/Black British	177	67%	75%	-4%
Chinese	340	75%	80%	2%
Not known/not given	5,746	78%	81%	-1%
Other	360	73%	76%	-1%
White	6,256	76%	79%	REF
Total	**13,632**	**76%**	**80%**	**N/A**

98.   Table 28 shows the information given in Table 27 but for starters on part-time PhD programmes. It shows that, as with full-time students, Black/Black British students have substantially lower rates of PhD completion than those returned with any other ethnic background including unknown; 31 per cent of students describing their ethnicity as Black/Black British had completed a PhD after 10 years.

99.   The low completion rates observed for part-time Black/Black British students are consistent with the findings of the part-time modelling. After other factors are accounted for, these students have a relative rate of PhD completion of -9 per cent. The only other ethnic group to have a lower completion rate relative to White students is the Asian/Asian British group (minus six per cent).

Table 28 PhD completion by ethnicity for part-time students

| Ethnicity | No. of students | Actual results | | Model results |
		% PhD completion	% PhD completion or active	Relative % PhD completion
Asian/Asian British	124	42%	48%	-6%
Black/Black British	81	31%	49%	-9%
Chinese	84	52%	62%	0%
Not known/not given	1,771	54%	64%	1%
Other	123	49%	62%	2%
White	2,654	45%	57%	REF
Total	**4,837**	**48%**	**59%**	**N/A**

100.   Students returned with Black/Black British ethnicity have the lowest rates of PhD completion observed among both full-time and part-time students. Annex A shows that this is also consistent with the results of the seven-year analysis of the 1996-97 cohort in

respect of their ethnicity attributes. It shows that the propensity of these students to complete a PhD, after accounting for other factors, is consistently lower than that of other ethnic groups.

101.   The propensity modelling indicates that the relative difference in PhD completion rates for reported ethnic groups reduces over time – so is less apparent over 10 years rather than seven. For example, full-time Black/Black British students have a relative seven percentage point lower rate of completion than White students over seven years but this difference reduces to four percentage points over 10 years.

Previous qualifications and route to the PhD programme

102.   Table 29 shows the PhD completion rates for starters on full-time PhD programmes split by their route to the PhD programme and, if they qualified in the previous year, the nature of that qualification. First degrees are divided into first class honours and 'other' and are distinguished from masters degrees.

103.   The pattern of actual completion rates across these categories is complex. Those with first class degrees do best at PhD level, whether they study their PhD at the same HEI or at a different one. The completion rates for those who obtained their masters degrees are higher than for other classes of degree when students are studying at the same HEI. This is reversed when we look at students attending different HEIs for their PhDs where the higher rates exist amongst students with other classes of degree; those with masters have the lowest completion rates, including those who did not qualify in the previous year.

Table 29 PhD completion by previous study for full-time students

HEI attended	Qualification in previous year		No. of students	Actual results		Model results
				% PhD completion	**% PhD completion or active**	**Relative % PhD completion**
Same HEI	Masters		1,187	76%	81%	2%
	Degree	First	1,105	83%	84%	3%
		Upper second / other	1,246	74%	77%	-4%
	Total from same HEI		**3,538**	**78%**	**80%**	**N/A**
Different HEI	Masters		858	73%	77%	0%
	Degree	First	693	85%	87%	2%
		Upper second / other	1021	81%	82%	-1%
	Total from different HEI		**2,572**	**79%**	**82%**	**N/A**
No masters/degree award			7,522	75%	79%	REF
Total			**13,632**	**76%**	**80%**	**N/A**

104.   The modelling for full-time students shows that PhD completion rates vary significantly depending on the student's previous study. The size and significance of the difference varies by the student's subject area of study, ethnicity and source of funding. This modelling suggests that, even after taking account of other factors, students with first class degrees have the highest completion rates. Those with other classes of first

degree have the lowest relative PhD award rates. The varying relative PhD completion rates make it hard to differentiate those with masters degrees from those without an award in the previous year.

105.   Table 30 shows PhD completion rates for part-time students split by their qualifications gained in 1995-96. It shows that more than three-quarters of part-time students did not graduate in the previous year, so the numbers of students with different qualifications from the same and different HEIs are relatively small. As with full-time students, the actual completion rates suggest that those with a first class degree do better, with the results for other categories forming no simple pattern.

Table 30 PhD completion by previous study for part-time students

HEI attended	Qualification in previous year		No. of students	Actual results		Model results
				% PhD completion	% PhD completion or active	Relative % PhD completion
Same HEI	Masters		344	55%	64%	8%
	Degree	First	69	57%	68%	8%
		Upper second / other	149	48%	58%	1%
	Total from same HEI		**562**	**53%**	**63%**	**N/A**
Different HEI	Masters		236	49%	62%	2%
	Degree	First	*	*	*	*
		Upper second / other	118	49%	57%	-3%
	Total from different HEI		**394**	**51%**	**62%**	**N/A**
No masters/degree award			3,881	47%	59%	REF
Total			**4,837**	**48%**	**59%**	**N/A**

Note: * Less than 50 students so not included.

106.   The part-time model shows that the differences in PhD completion rates depending on the student's previous study varies by subject area of study, and ethnicity. The results of the modelling suggest that, after allowing for other factors, having a masters or first class degree from the same HEI is associated with the highest completion rates, although this result is not consistent. In terms of qualifications from a different HEI, students with a masters degree from a different HEI have higher relative completion rates than those with other degrees from different HEIs.

107.   The relative PhD completion rates for the three comparator groups are similar in terms of the previous study for HEFCE 2005/02.

Sex

108.   Table 31 shows the sex profile of PhD students split by their starting mode of the programme. It shows that for both full-time and part-time programmes, the majority are male students.

Table 31 Sex of PhD students

Sex	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Female	5,179	38%	2,126	44%	**7,305**	**40%**
Male	8,453	62%	2,711	56%	**11,164**	**60%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

109. Table 32 shows that the PhD completion rates for male starters on full-time PhD programmes is one percentage point higher than that for female students; 10 years after commencing on their programmes, 77 per cent of men have completed their PhD studies and gained an award, compared to 76 per cent of women. The modelling for full-time students indicates no difference between men and women; women have a relative PhD completion rate of 0 per cent.

Table 32 PhD completion by sex for full-time students

Sex	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Female	5,179	76%	80%	0%
Male	8,453	77%	79%	REF
Total	**13,632**	**76%**	**80%**	**N/A**

110. Table 33 shows the PhD completion rates by sex for part-time starters on PhD programmes. In this case the completion rate for women is higher than the equivalent rate for men (50 per cent compared to 47 per cent).

111. The part-time modelling shows that the differences in rates of completion by sex vary significantly depending on the student's subject area and ethnicity. The model results show that the higher completion rate for part-time women is partly explained by other factors.

Table 33 PhD completion by sex for part-time students

Sex	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Female	2,126	50%	61%	3%
Male	2,711	47%	58%	REF
Total	**4,837**	**48%**	**59%**	**N/A**

112. In terms of the relative PhD completion rates for the three comparator groups, for full-time students there is a one percentage point advantage for men when considering the 1996-97 cohort over seven years. This difference disappears over 10 years for the same cohort. No difference is seen in the 1999-2000 cohort. For part-time students, there

is a slight advantage for women for the three comparator groups varying between one and three percentage points.

Source of student sponsorship

113.   Table 34 shows the sources of sponsorship for students starting PhD programmes. The most common sources of sponsorship for full-time students are the Research Councils. Few students starting part-time PhD programmes have Research Council sponsorship and the majority (58 per cent) have no financial backing at all.

Table 34 Source of student sponsorship

Source of funding	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Charity / British Academy	767	6%	50	1%	**817**	**4%**
Government	620	5%	248	5%	**868**	**5%**
Institution	2,118	16%	613	13%	**2,731**	**15%**
No financial backing	3,051	22%	2,792	58%	**5,843**	**32%**
Other	817	6%	454	9%	**1,271**	**7%**
Overseas	2,044	15%	69	1%	**2,113**	**11%**
Research Councils	3,363	25%	29	1%	**3,392**	**18%**
UK industry	852	6%	582	12%	**1,434**	**8%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

114.   Table 35 shows the rates of PhD completion for those students who started on a full-time PhD programme in 1996-97 for each of the sources of student sponsorship. It shows that those funded by charities have the highest PhD completion rates (84 per cent). Those with no financial backing have much lower completion rates with 68 per cent completing a PhD in 10 years; 16 percentage points lower than the rate for those with charity sponsorship.

Table 35 PhD completion by source of funding for full-time students

Source of sponsorship	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Charity / British Academy	767	84%	85%	11%
Government	620	78%	80%	8%
Institution	2,118	77%	80%	6%
No financial backing	3,051	68%	75%	REF
Other	817	66%	70%	4%
Overseas	2,044	80%	83%	8%
Research Councils	3,363	83%	84%	7%
UK industry	852	73%	76%	7%
Total	**13,632**	**76%**	**80%**	**N/A**

115.   The modelling for these full-time students shows significant variation depending on a student's source of funding. The size and significance of the difference depends on the

student's age, ethnicity, domicile, disability status, previous qualifications, and subject area. Those students funded by charities or the British Academy have the highest relative PhD completion rates, once other factors have been taken into account.

116.   Table 36 is the equivalent to Table 35 for those starting part-time PhD programmes. It shows that the highest PhD completion rates are recorded amongst the small number of students with overseas backing. Few part-time students receive any financial backing; 2,792 students form the group with no financial backing which has a PhD completion rate of 49 per cent.

117.   The modelling shows that for part-time students there are significant differences in the PhD completion rate depending on the source of funding. The size and significance of this difference varies by the ethnicity of the student. The model results show that, when other factors have been taken into account, students with overseas backing have substantially higher relative PhD completion rates.

Table 36 PhD completion by source of funding for part-time students

Source of sponsorship	No. of students	Actual results		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Charity / British Academy	50	62%	64%	6%
Government	248	51%	62%	4%
Institution	613	49%	59%	-2%
No financial backing	2,792	49%	60%	REF
Other	454	43%	56%	-3%
Overseas	69	77%	88%	22%
Research Councils	*	*	*	*
UK industry	582	42%	52%	-2%
Total	**4,837**	**48%**	**59%**	**N/A**

Note: * Less than 50 students in the cohort so not included here.

118.   In terms of relative PhD completion rates, there is little difference between the three comparator groups for both full-time and part-time students.

Subject area of study

119.   Table 37 shows the number of PhD students in each subject area split by mode of study. The highest concentration of full-time PhD students is seen in biological and physical sciences, and engineering. For part-time students, education, medicine and veterinary sciences, and social studies are the most common subject areas.

120.   Table 38 shows the rate of PhD completion for students who started full-time PhD programmes in 1996-97, by their initial subject area of study. It shows that the highest PhD completion rates exist in biological sciences; 85 per cent of these students achieve a PhD within 10 years. The lowest rate of completion is in architecture where 62 per cent of the 180 students completed their PhD within 10 years.

Table 37 Subject area of study for PhD programmes

Subject area	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Agriculture	266	2%	46	1%	**312**	**2%**
Allied to medicine	592	4%	254	5%	**846**	**5%**
Architecture	180	1%	109	2%	**289**	**2%**
Biological sciences	1,954	14%	403	8%	**2,357**	**13%**
Business	452	3%	346	7%	**798**	**4%**
Combined	209	2%	165	3%	**374**	**2%**
Computing	422	3%	113	2%	**535**	**3%**
Creative arts	174	1%	148	3%	**322**	**2%**
Education	315	2%	662	14%	**977**	**5%**
Engineering	2,213	16%	436	9%	**2,649**	**14%**
Humanities	814	6%	332	7%	**1,146**	**6%**
Languages	856	6%	330	7%	**1,186**	**6%**
Law/librarianship	304	2%	120	2%	**424**	**2%**
Mathematics	437	3%	51	1%	**488**	**3%**
Medicine/veterinary sciences	903	7%	568	12%	**1,471**	**8%**
Physical sciences	2,316	17%	219	5%	**2,535**	**14%**
Social studies	1,225	9%	535	11%	**1,760**	**10%**
Total	**13,632**	**100%**	**4,837**	**100%**	**18,469**	**100%**

Table 38 PhD completion by subject area for full-time students

Subject area	No. of students	Actual		Model results
		% PhD completion	% PhD completion or active	Relative % PhD completion
Agriculture	266	82%	83%	8%
Allied to medicine	592	82%	84%	8%
Architecture	180	62%	68%	-10%
Biological sciences	1,954	85%	86%	10%
Business	452	68%	71%	3%
Combined	209	71%	75%	4%
Computing	422	66%	70%	-7%
Creative arts	174	63%	71%	-2%
Education	315	73%	77%	0%
Engineering	2,213	75%	77%	REF
Humanities	814	70%	77%	-3%
Languages	856	73%	78%	-1%
Law/librarianship	304	63%	74%	3%
Mathematics	437	78%	80%	4%
Medicine/veterinary sciences	903	79%	81%	-8%
Physical sciences	2,316	83%	84%	6%
Social studies	1,225	69%	76%	-3%
Total	**13,632**	**76%**	**80%**	**N/A**

121.   The model for full-time students shows that PhD rates vary significantly by subject area of study. The size and significance of these differences depends on the student's age, domicile, ethnicity, source of funding, and previous qualifications. The relative PhD award rates suggest that, in general, other factors cannot explain the differences in

subject area completion rates. The low completion rates for architecture, creative arts, computing and social studies seem to be due in part to other factors, but not entirely.

122.   Table 39 shows the equivalent information to that shown in Table 38 for part-time students. The highest rates of PhD completion are among law/librarianship students. The lowest completion rates are among architecture, computing or combined subjects students.

Table 39 PhD completion by subject area for part-time students

| Subject area | No. of students | Actual results | | Model results |
		% PhD completion	% PhD completion or active	Relative % PhD completion
Agriculture	*	*	*	*
Allied to medicine	254	48%	61%	2%
Architecture	109	39%	50%	-8%
Biological sciences	403	51%	57%	3%
Business	346	41%	52%	6%
Combined/unknown	165	39%	48%	-7%
Computing	113	39%	49%	-7%
Creative arts	148	48%	61%	1%
Education	662	42%	58%	-4%
Engineering	436	52%	60%	REF
Humanities	332	45%	60%	-4%
Languages	330	48%	61%	-5%
Mathematics	120	44%	62%	6%
Medicine/veterinary sciences	51	53%	65%	13%
Law/librarianship	568	64%	68%	-2%
Physical sciences	219	51%	62%	1%
Social studies	535	45%	59%	-3%
Total	**4,837**	**48%**	**59%**	**N/A**

Note: * Not included as less than 50 students.

123.   The part-time model shows that there are significant differences across subject area, which vary depending on the student's age, sex, ethnicity, and previous qualifications. The relative PhD completion rates suggest that other factors play a substantial role as the raw differences between some subjects are significantly reduced once these factors are accounted for.

124.   In terms of relative PhD completion rates by subject for the three comparator groups, the overall picture is one of stability. However, some relative rates vary for particular subject areas, depending whether the student is full-time or part- time.

Institutions and subject areas within institutions

125.   Figure 5 shows the variation across institutions for the average proportion of students achieving a PhD within 10 years, having started a full-time course in 1996-97 (76 per cent). Some institutions have rates that are nearly 50 percentage points lower than the overall average.

126. Note that Figures 5 to 8 exclude institutions with less than 10 PhD students.

Figure 5 Institutional variations in rates of PhD completions within 10 years for full-time starters compared to the overall average
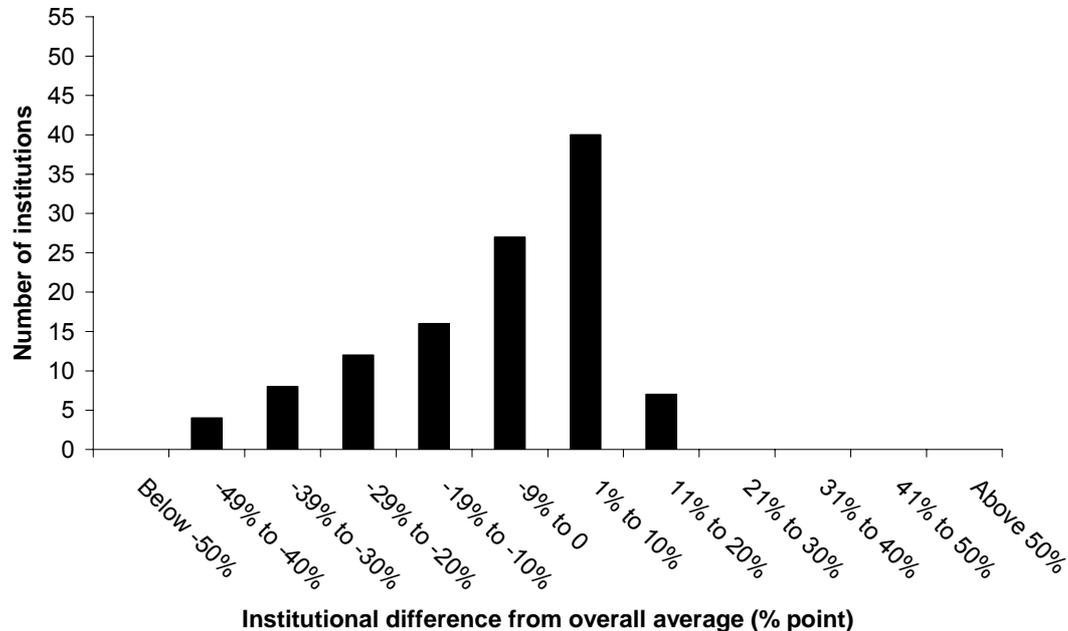
127. Some of the variation in Figure 5 can be explained through the characteristics of the students attending each HEI. For example, an HEI may have a particularly high rate of PhD completion in comparison to the sector-wide average because that institution has a higher than normal proportion of Research Council students. Some variation is due to the expected random variation that will occur from year to year and also because of relatively small numbers at some institutions. However, the modelling shows that not all the variation in institutional rates can be explained through student characteristics or random variations: it shows that there are significant differences both between institutions, and between subject areas within institutions.
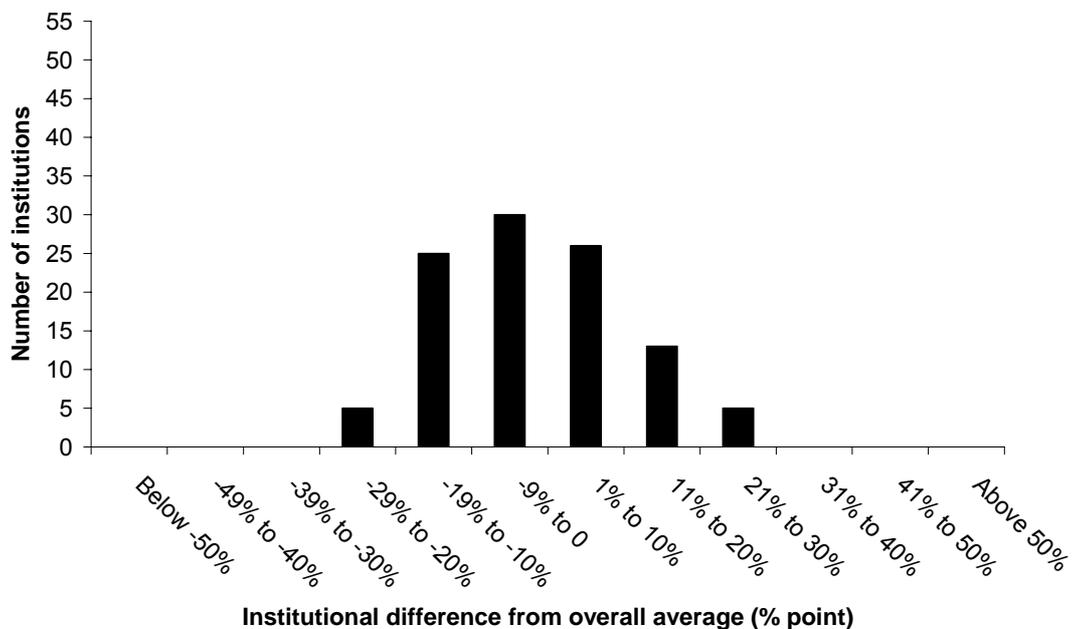
128. Figure 6 shows the actual variation in institutional rates after adjusting for the characteristics of full-time students at each institution. For comparison, we have simulated the variation we would expect to find if each institution had the same underlying completion rates, given the characteristics of its students and programmes. Figure 6 shows that the actual institutional variation is greater than the simulated figures suggest, as demonstrated through the modelling. This suggests that there are other factors differentiating institutions which are associated with completion that we have not examined.

Figure 6 Variation in institutional rates after adjusting for other factors for actual and simulated data for full-time starters
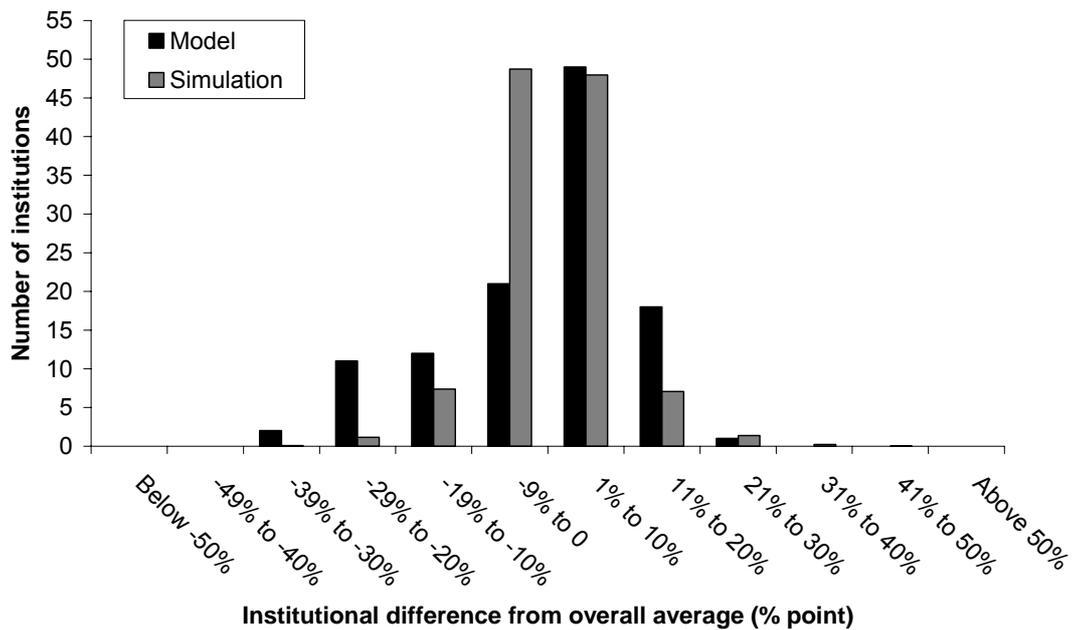
129.   Figure 7 shows the same data as Figure 5 but for students who started a part-time course in 1996-97; the average institutional proportion of part-time students achieving a PhD within 10 years is 48 per cent.

Figure 7 Institutional variations in rates of PhD completions within 10 years for part-time starters

130.   As with the students who began their PhD studies on full-time courses, some institutional variation can be explained by differing characteristics of students at the

institution, and some is due to random variation. Though the modelling shows some unexplained variation between institutions, and variation between subjects within institutions, Figure 8 suggests that this remaining variation in institutional completion rates (after adjusting for the characteristics of part-time students at each institution) is not materially different from what we would expect by chance.

Figure 8 Variations in institutional rates after adjusting for other factors for actual and simulated data
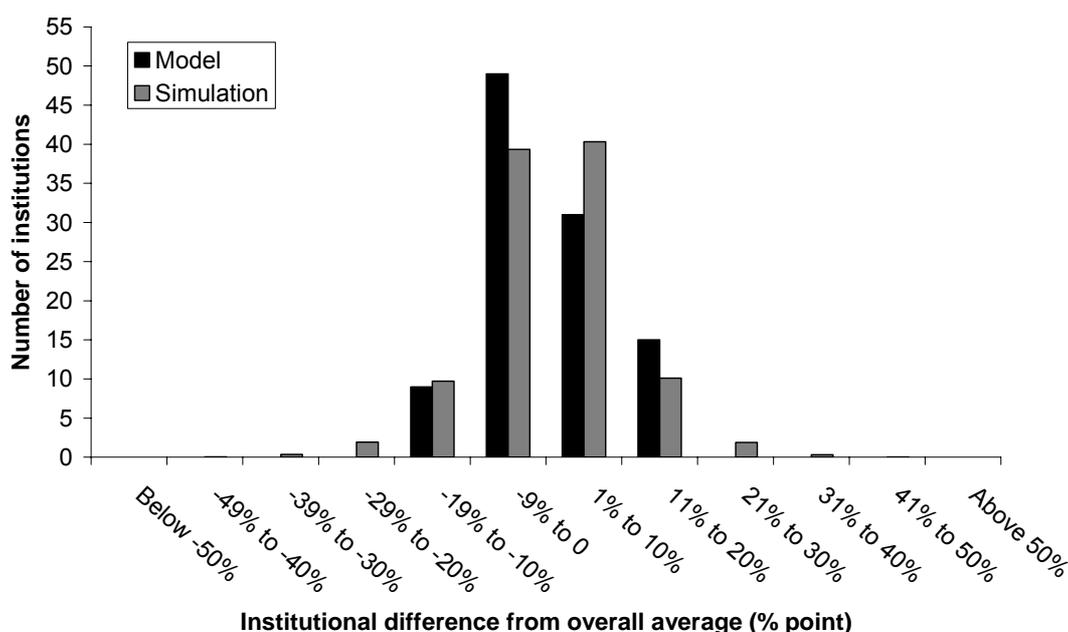
Comparison of the seven-year analyses of the 1996-97 and 1999-2000 cohorts

131.   In the following section we compare our analyses of the two cohorts that we have been able to follow for seven years; those commencing on PhD programmes in 1996-97 and 1999-2000.

132.   Before we make further comparisons, we should note the similarities in size and proportion of the two cohorts of starters that we have examined. Table 40 shows that the 1996-97 cohort contained 18,317 PhD students, of which 74 per cent were full-time (13,568 students) [17]. The 1999-2000 cohort contained 18,855 PhD students of which 76 per cent were full-time (14,324 students).

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[17] Note that the numbers in the starting cohort in 1996-97 for this section vary slightly from those reported in the previous section. Our analysis methods involve a number of criteria for inclusion in the cohort (described in paragraphs 20 to 25 of HEFCE 2005/02 and Annex B of that report). In this section we consider seven academic years and so the period in which a student has an opportunity to meet these criteria is less than that for the previous section (where 10 years were considered). As such the cohort here is slightly smaller.

Table 40 1996-97 and 1999-2000 PhD student cohorts by starting mode of study

Start mode	1996-97 cohort		1999-2000 cohort	
	No. of students	%	No. of students	%
Full-time	13,568	74%	14,324	76%
Part-time	4,749	26%	4,531	24%
Total	**18,317**	**100%**	**18,855**	**100%**

133.   Indeed the students in each cohort are similar in terms of all of the attributes examined in these analyses. For each attribute the proportion of students in each categorisation is largely the same; for example, in each cohort 8 per cent of full-time students entered a PhD programme having gained a first class degree from the same HEI in the previous year. Annex B provides comparison of these cohorts in respect of the various attributes analysed in the previous section. It shows that where the proportions do differ it is by a maximum of four percentage points.

134.   There are two exceptions to this generalisation. The first is in terms of the ethnicity profiles and is discussed in paragraphs 154 to 155. The second exception is in consideration of part-time students who are recorded as being active and inactive on a PhD programme having failed to gain either a PhD or an MPhil qualification. Table 41 shows that in this instance the proportions differ by eight and nine percentage points respectively, with a larger proportion of the 1999-2000 cohort remaining active on a PhD programme.

Table 41 1996-97 and 1999-2000 PhD student cohorts by PhD or MPhil award for part-time students

Outcome	1996-97 cohort		1999-2000 cohort	
	No. of students	%	No. of students	%
PhD or MPhil award	1,793	38%	1,690	37%
Active	1,382	29%	1,596	35%
Not active	1,574	33%	1,245	27%
Total	**4,749**	**100%**	**4,531**	**100%**

135.   The overall similarities ensure that any differences in completion rates between the 1996-97 and 1999-2000 cohorts are unlikely to be due to these attributes; neither cohort stands out as being particularly 'unusual' in a way that could adversely affect any conclusions drawn from the comparisons made in this section of the report. We tested this assumption through further statistical modelling[18].

136.   We examined a number of attributes in our analyses of the 1996-97 and 1999-2000 cohorts of PhD students. In the comparisons that follow it should be noted that only

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[18] Our model uses the same structure as the single year models reported in Annex E but allows for a variable effect for the 1996-97 and 1999-2000 cohorts. We have not reported the formal results of the model.

significant findings are reported here and as such not all attributes will be discussed. Minor differences, such as a proportion changing by a small amount, are generally not commented on[19]. For the purpose of readability and ease of interpretation, in making the following comparisons we have grouped the attributes of interest as follows:

- a.   Learning attributes: Mode of study, Time taken to complete PhD, Breaks in PhD programmes.

- b.   Student attributes: Sex, Ethnicity, Previous qualifications and route to PhD programme.

- c.   Course attributes: Source of student sponsorship and Subject area of study.

137.   We also use the further statistical modelling to test whether the differences in PhD completion rates between the two cohorts for different attributes are explained by changes in other accounted for attributes. Where appropriate the conclusions from this further analysis are given in the discussion.

138.   Note that we have made no attempt to compare rates of PhD completion by disability status. Changes to the collection of disability information were introduced to the 1998-99 HESA student record. These changes make direct comparison of the 1996-97 and 1999-2000 cohort in respect to this information difficult and unreliable. The issue is discussed further in the data definitions provided at Annex D.

139.   Where appropriate, tables are referenced to the associated table from HEFCE 2005/02 for the 1996-97 cohort, and to an Annex C table for fuller details for the 1999-2000 cohort.

Learning attributes

PhD completion rates by mode of study

140.   Table 42 shows the PhD completion rates after seven academic years for the two cohorts, by the starting mode of the student's programme. It shows that the PhD completion rate for full-time students is three percentage points higher for the 1999-2000 cohort; 75 per cent completed their PhD programme within seven years, compared to 72 per cent for the 1996-97 cohort. Our statistical modelling indicates that this increase in PhD completion rates for the later cohort cannot be explained by a change in the profile of the student cohort.

141.   In terms of part-time students the rate of PhD completion for the 1996-97 cohort is 35 per cent, with a further 30 per cent remaining active on PhD programmes at the end of seven years. For the 1999-2000 cohort the PhD completion rate is the same. However, a

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[19] Should further detail be of interest, HEFCE 2005/02 provides full analysis of the 1996-97 cohort over seven academic years, whilst Annex C contains documentation of the 1999-2000 cohort.

further 36 per cent of this cohort remains active after seven years; this is six percentage points higher than the earlier cohort.

Table 42 PhD completion by starting mode of PhD programme

Start mode	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Full-time	72%	83%	75%	86%
Part-time	35%	65%	35%	71%

Note: See Table 14 of HEFCE 2005/02 and Table C12 of Annex C for related information.

142.   Table 42 causes us to question how much of the difference identified in PhD completion rates can be attributed to improvements made in the reporting of PhD activity in the HESA student records. In an attempt to answer this question we calculated the completion rates of the two interim cohorts; those of students starting a PhD in 1997-98 and in 1998-99. We anticipated that this would enable us to gauge whether or not differences between results for the two cohorts are specific to the particular groups of students.

143.   Table 43 shows that the 1996-97 cohort of full-time students seems slightly anomalous in terms of the '% PhD completion' rate; in the later three cohorts this figure fluctuates between 75 per cent and 77 per cent, while the 1996-97 value is lower at 72 per cent. The '% PhD completion or active' rate grows steadily each year from around 82 per cent to 86 per cent. These rates suggest that improvements in the reporting of PhD study contribute to the differences seen alongside the contribution made by the varying characteristics and attitudes of individuals within the different cohorts.

Table 43 PhD completion of full-time students, cohorts 1996-97 through to 1999-2000

Cohort	% PhD completion	% PhD completion or active
1996-97	72%	83%
1997-98	76%	82%
1998-99	77%	84%
1999-2000	75%	86%

144.   Table 44 shows the equivalent information to Table 43 for part-time starters in the same four cohorts. It shows that, as with full-time students, the '% PhD completion or active' rates increase steadily from year to year. This provides further evidence in support of improved reporting of PhD study in HESA student records. However, the '% PhD completion rates' are more variable, and it is unclear how much of this variation can be attributed to characteristics of students within the cohorts.

**Table 44 PhD completion of part-time students, cohorts 1996-97 through to 1999-2000**

Cohort	% PhD completion	% PhD completion or active
1996-97	35%	65%
1997-98	47%	64%
1998-99	42%	66%
1999-2000	35%	71%

Time taken to complete PhD

145. The differences between PhD completion rates are illustrated in Figures 9 to 11. They show that despite slightly higher rates of completion for the 1999-2000 cohort, the distribution of the time it takes students to complete their PhD remains very similar to that seen for the 1996-97 cohort. This is particularly evident up to the fourth year after commencing on the PhD course, and in the case of part-time starters.

146. Figures 9, 10 and 11 also show the proportions of students becoming inactive on PhD programmes over the seven-year periods. We see that these proportions are higher for students included in the 1996-97 cohort than for the 1999-2000 cohort. For those starting on full-time PhD programmes we provide separate figures for Research Council and non-Research Council students[20].

Figure 9 Time to PhD completion or last PhD activity for full-time Research Council students who began their studies in 1996-97 and 1999-2000

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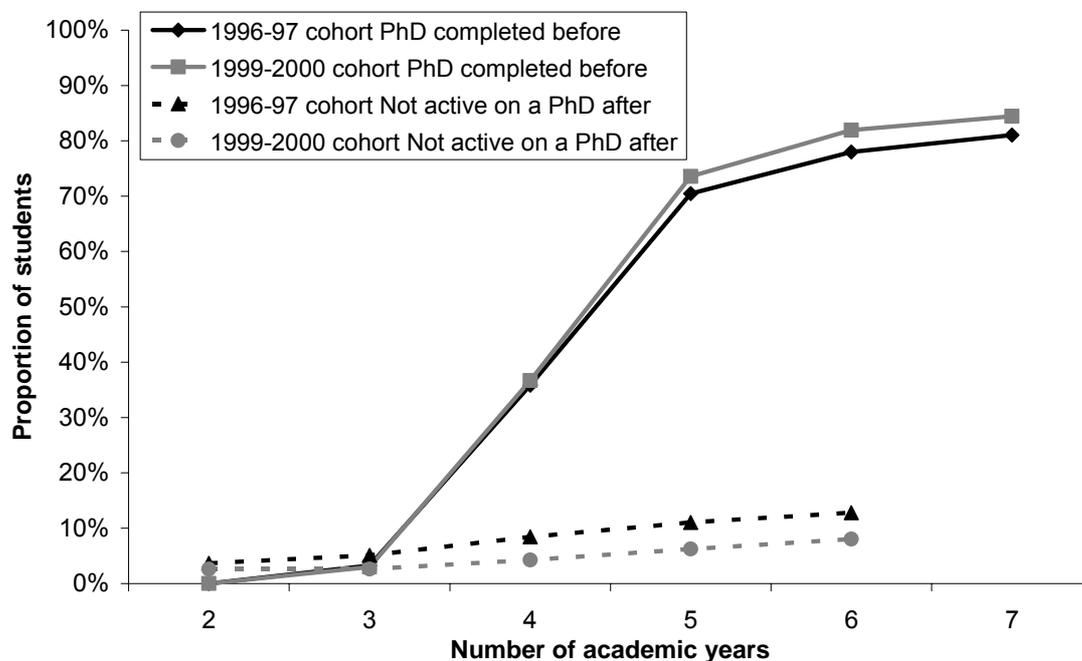
[20] To ensure consistency with HEFCE 2005/02.

Figure 10 Time to PhD completion or last PhD activity for full-time non-Research Council students who began their studies in 1996-97 and 1999-2000
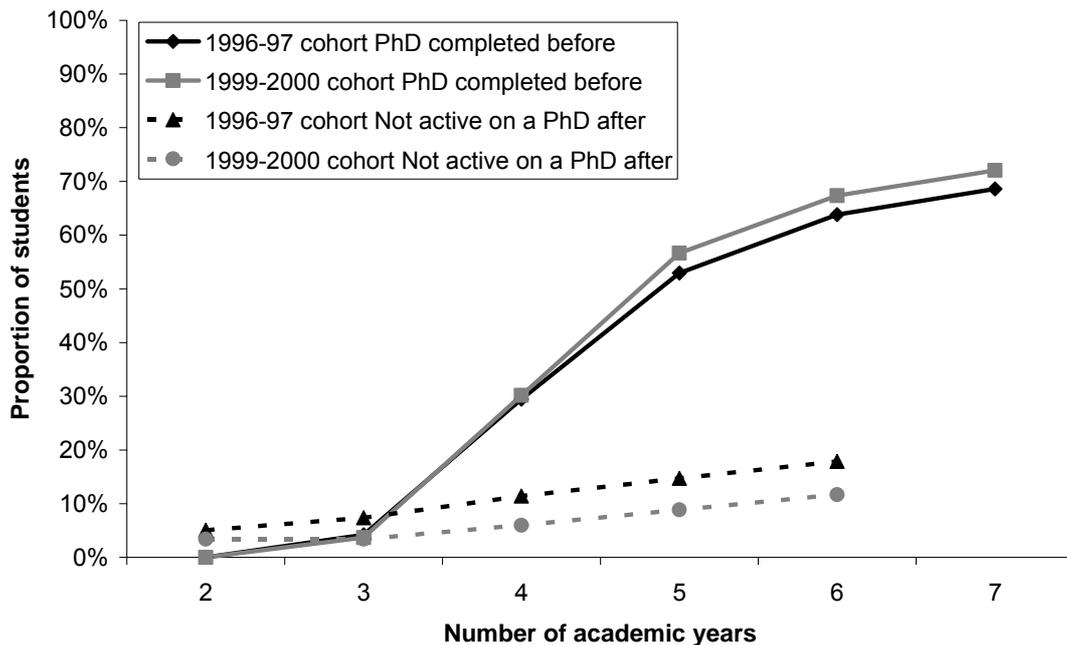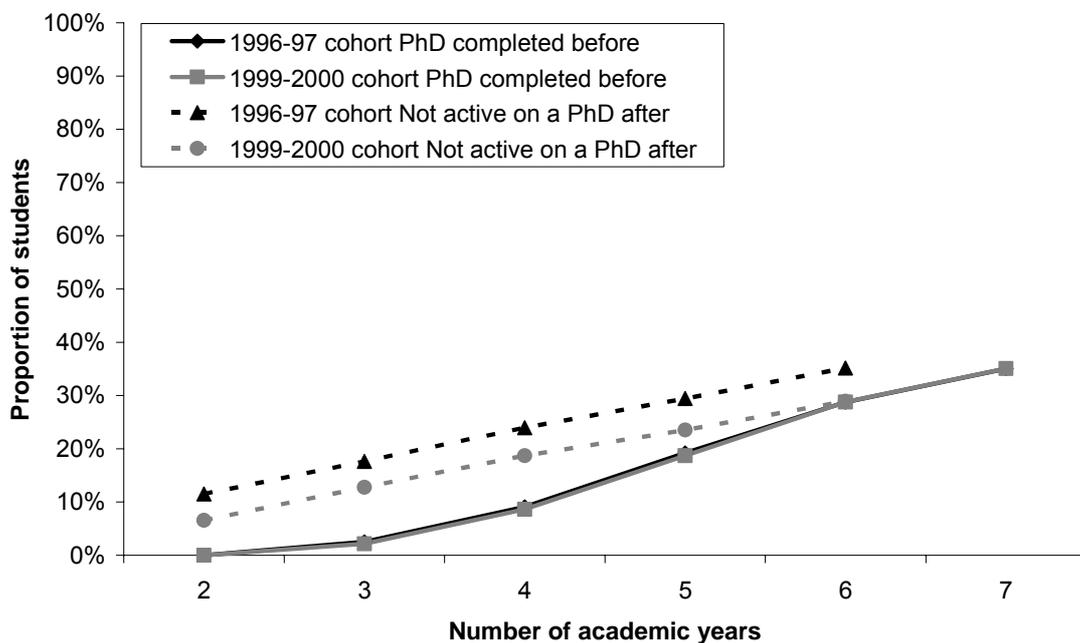

Figure 11 Time to PhD completion or last PhD activity for all part-time students who began their studies in 1996-97 and 1999-2000

Breaks in PhD programmes

147. Table 45 shows the proportions of students in each cohort that have taken a break in their PhD at some point over the seven-year period. These students will have been inactive for at least one academic year before resuming their studies. It shows that it was more common for students in the 1996-97 cohort to take a break.

148. For both full-time and part-time students the percentage of students that took a break is higher for the earlier cohort. At the end of seven years, seven per cent of part-time students in the 1999-2000 cohort were inactive for one or more academic years. The equivalent figure for the 1996-97 cohort is three percentage points higher, at 10 per cent.

Table 45 Percentage of students inactive for one or more academic years and have resumed their course

Start mode	1996-97 cohort	1999-2000 cohort
Full-time	4%	3%
Part-time	10%	7%
Total	**6%**	**4%**

Note: See Table 13 of HEFCE 2005/02 and Table C11 of Annex C for related information.

Student attributes

149. In the following paragraphs we compare students who started a PhD programme in 1996-97 and 1999-2000 in relation to the attributes of sex, ethnicity and previous entry qualifications. It should be noted that numbers of students, when split by a particular attribute, are in some cases relatively small. This is predominantly an issue in terms of the ethnicity profiles and caution should be exercised in interpretation of these findings. The issue is highlighted when it arises elsewhere.

PhD completion by sex

150. The proportions of students by sex are broadly similar for the 1996-97 and 1999-2000 cohorts, as shown at Annex B, Tables B16 and B17.

151. When we consider full-time students, analysis has shown no distinction between male and female students in the 1999-2000 cohort. Table 46 shows that the actual PhD completion rates are the same for both sexes. However, in the 1996-97 cohort of full-time students we observe a lower actual rate of PhD completion for women; 70 per cent compared to men at 72 per cent.

152. Table 46 indicates that whilst PhD completion rates have improved for both men and women in terms of the later cohort, the improvement observed amongst female students is greater than that seen amongst males. The increase in completion rates of three percentage points for men compared to five percentage points for women means that male students are no longer achieving a higher rate of PhD completion than their female counterparts when we consider the 1999-2000 cohort. However, the statistical modelling indicates that there has been no change in the relativity between males and females in the two cohorts.

Table 46 Actual PhD completion by sex for full-time students

Sex	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Female	70%	84%	75%	87%
Male	72%	83%	75%	86%
Total	**72%**	**83%**	**75%**	**86%**

Note: Table 24 of HEFCE 2005/02 and Table C30 of Annex C for related information.

153. In terms of part-time students, there are negligible differences between the 1996-97 and 1999-2000 cohorts by sex.

PhD completion by ethnicity

154. As commented on earlier, differences exist between the 1996-97 and 1999-2000 cohorts of PhD students in terms of their ethnicity profiles. These differences are shown in Tables 47 and 48 for full-time and part-time students respectively.

Table 47 1996-97 and 1999-2000 PhD student cohorts by ethnicity for full-time students

Ethnicity	1996-97 cohort		1999-2000 cohort	
	No. of students	%	No. of students	%
Asian/Asian British	751	6%	929	6%
Black/Black British	174	1%	239	2%
Chinese	336	2%	489	3%
Not known/not given	5,724	42%	4,690	33%
Other	357	3%	613	4%
White	6,226	46%	7,364	51%
Total	**13,568**	**100%**	**14,324**	**100%**

Table 48 1996-97 and 1999-2000 PhD student cohorts by ethnicity for part-time students

Ethnicity	1996-97 cohort		1999-2000 cohort	
	No. of students	%	No. of students	%
Asian/Asian British	123	3%	170	4%
Black/Black British	77	2%	86	2%
Chinese	83	2%	79	2%
Not known/not given	1,741	37%	1,439	32%
Other	119	3%	207	5%
White	2,606	55%	2,550	56%
Total	**4,749**	**100%**	**4,531**	**100%**

155. Firstly, it is important to note that the number of students returned with unknown ethnicity is lower in the later cohort for both full-time and part-time students. Thirty-three per cent of the 1999-2000 cohort of full-time students were returned as 'not known/not given' compared to 42 per cent of the 1996-97 cohort. In terms of part-time students

these figures are 32 per cent and 37 per cent respectively. Conversely the proportions of White students are higher in the later cohort (51 per cent compared to 46 per cent in the 1996-97 cohort of full-time students, and 56 per cent compared to 55 per cent in terms of part-time students). Proportions of students returned with 'Other' ethnic backgrounds are relatively consistent.

156.   Table 49 shows that the 1996-97 cohort has lower rates of PhD completion than the 1999-2000 cohort when we consider full-time students. The greatest difference of nine percentage points is observed for Chinese students; 68 per cent of full-time Chinese students in the 1996-97 cohort have completed their PhD after seven years, while the 1999-2000 cohort has an equivalent figure of 77 per cent.

157.   In terms of the change in the position of particular ethnic groups relative to White across the two cohorts, the statistical modelling indicates that the completion rates for Chinese students and those students whose ethnic group is not known have improved. There is an indication of this when examining the relative position of Chinese students' completion rates relative to White students in each cohort: in 1996-97, the Chinese rate was four percentage points below the White rate (68 per cent against 72 per cent) compared to 1999-2000, when it was two percentage points above (77 per cent against 75 per cent).

Table 49 Actual PhD completion by ethnicity for full-time students

Ethnicity	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Asian/Asian British	68%	83%	70%	85%
Black/Black British	59%	78%	63%	81%
Chinese	68%	82%	77%	87%
Not known/not given	73%	84%	78%	88%
Other	65%	80%	71%	84%
White	72%	83%	75%	86%
Total	**72%**	**83%**	**75%**	**86%**

Note: See Table A7 of Annex A, and Table C25 of Annex C for related information.

158.   In Table 50 we see that there is greater stability in part-time students' actual PhD completion rates in the 1999-2000 cohort than is evident for 1996-97 students; only the rate for Black/Black British students proves to be an outlier when we consider the later cohort. Indeed, Tables 49 and 50 show that Black/Black British students have particularly low completion rates when we look at full-time and part-time starters in both the 1996-97 and 1999-2000 cohorts. Our statistical modelling indicates that there has been no significant change in the relative PhD completion rates for the various ethnic categories compared to White students.

Table 50 Actual PhD completion by ethnicity for part-time students

Ethnicity	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Asian/Asian British	27%	54%	40%	76%
Black/Black British	17%	48%	19%	63%
Chinese	34%	71%	38%	70%
Not known/not given	41%	69%	39%	74%
Other	32%	68%	35%	65%
White	32%	63%	33%	70%
Total	**35%**	**65%**	**35%**	**71%**

Note: See Table A8 of Annex A, and Table C26 of Annex C for related information.

PhD completion by previous qualifications and route to the PhD programme

159.   In terms of previous qualifications and routes to PhD programmes Annex B shows very little difference between the profiles of the students commencing PhD programmes in 1999-2000 compared to those starting in 1996-97. Comparison of PhD completion rates by the students' previous study shows several differences between the 1996-97 and 1999-2000 cohorts of PhD students.

160.   The PhD completion rates for full-time students are shown in Figure 12 split by the qualifications achieved in the academic year prior to PhD entry. We see that full-time students who start a PhD at the same institution in 1999-2000, or who gain no masters or degree award in the previous year have higher completion rates than the equivalent students in the 1996-97 cohort. Analysis has shown that, for these groups of students, the proportions remaining active after seven years are also higher in the 1999-2000 cohort.

161.   It should be noted that differences between part-time students in the 1996-97 and 1999-2000 cohorts, when we consider actual PhD completion rates by previous study, are in several cases based on relatively small numbers.

162.   Figure 13 shows that PhD completion rates for students in the 1999-2000 cohort previously gaining an other class of degree from the same institution as their PhD, or who gain no qualification in the previous year, are greater than or equal to those of the 1996-97 cohort. However, the PhD completion rates of part-time students in the 1999-2000 cohort are lower than the rates of equivalent students starting in 1996-97 when we consider those gaining a first class or masters degree from the same HEI or any other class of degree from a different HEI.

Figure 12 PhD completion rates by previous study for full-time students in the 1996-97 and 1999-2000 cohorts
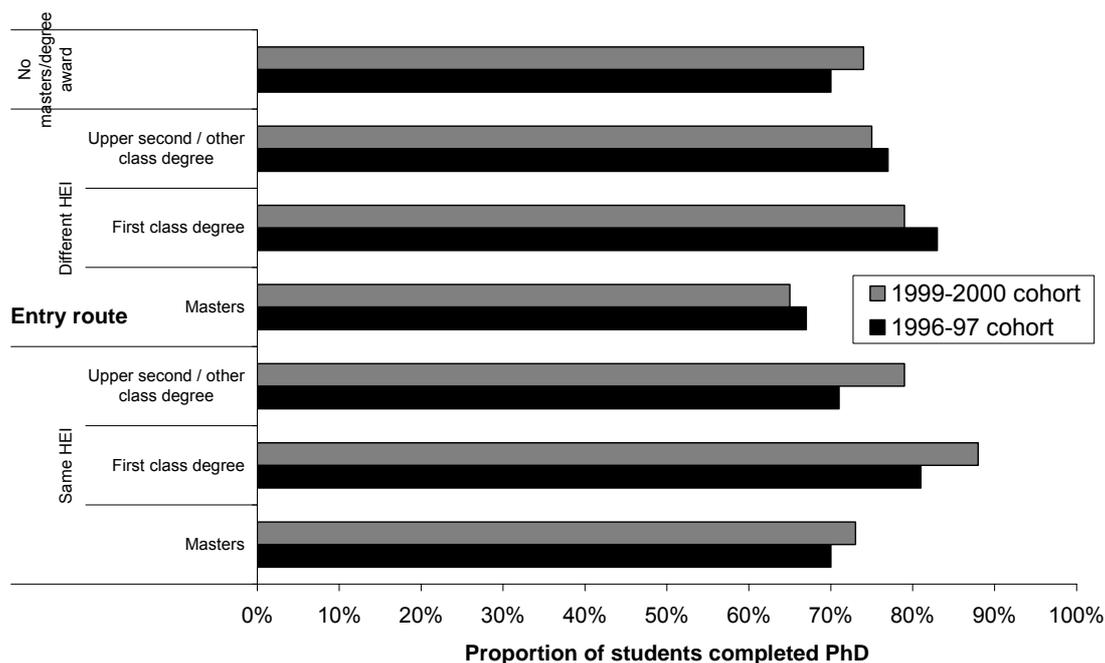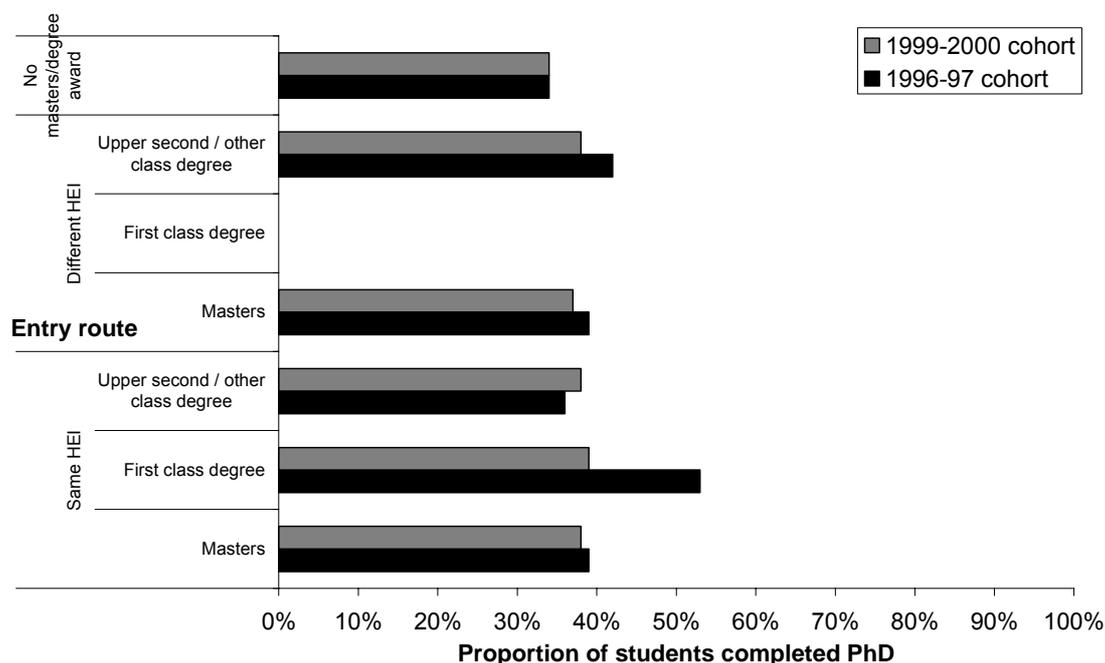

Figure 13 PhD completion rates by previous study for part-time students in the 1996-97 and 1999-2000 cohorts

163.   In addition, for both those starting on full-time and part-time PhD programmes, the statistical modelling indicates that there is no strong evidence that the relative position of the different entry routes has changed between cohorts.

Course attributes

PhD completion by source of student sponsorship

164.   The proportions of students split by source of funding are largely similar when we consider both cohorts; Annex B shows that in the 1999-2000 cohort slightly more students received funding from the HEI while fewer received support from overseas.

165.   Table 51 shows that full-time PhD students in the 1999-2000 cohort who received support from either a charity or the British Academy had a reduced rate of PhD completion compared to the 1996-97 cohort. The actual PhD completion rate for full-time students receiving this sponsorship and starting a PhD programme in 1996-97 was 81 per cent. The rate for equivalent students commencing on a PhD in 1999-2000 was five percentage points lower, at 76 per cent. For all other categories PhD completion rates improved in the 1999-2000 cohort compared to the 1996-97 cohort.

Table 51 Actual PhD completion by source of funding for full-time students

Source of sponsorship	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Charity / British Academy	81%	90%	76%	88%
Government	75%	83%	77%	85%
Institution	72%	83%	76%	86%
No financial backing	60%	80%	61%	82%
Other	59%	73%	78%	87%
Overseas	76%	86%	79%	90%
Research Council	81%	87%	84%	90%
UK industry	68%	79%	70%	81%
Total	**72%**	**83%**	**75%**	**86%**

Note: See Table 18 of HEFCE 2005/02, and Table C33 of Annex C for related information.

166.   Table 52 shows the differences between the actual PhD completion rates for part-time students in the two cohorts. The greatest disparity is found amongst students receiving funding from 'Other' sources, where PhD completion rates are 11 percentage points higher for the 1999-2000 cohort.

167.   In the case of part-time students, Table 52 shows improved rates of PhD completion in the 1999-2000 cohort compared to the earlier cohort, for three of the six different sources of funding detailed.

168.   For those starting full-time and part-time PhD programmes, the modelling indicates that some sources of sponsorship have moved their relative position between the two cohorts, with those from Other sources of sponsorship moving by the most significant amount.

Table 52 Actual PhD completion by source of funding for part-time students

Source of sponsorship	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Charity / British Academy	*	*	*	*
Government	39%	64%	31%	65%
Institution	39%	63%	45%	80%
No financial backing	35%	68%	32%	70%
Other	28%	59%	39%	75%
Overseas	61%	88%	54%	86%
Research Council	*	*	*	*
UK industry	28%	55%	31%	62%
Total	**35%**	**65%**	**35%**	**71%**

Note: See Table 19 of HEFCE 2005/02, and Table C34 of Annex C for related information. * Less than 50 students in the category.

PhD completion by subject area of study

169.   The profile of the 1996-97 cohort by subject area of study is broadly similar to that of the 1999-2000 cohort, as shown in Tables B20 and B21 at Annex B. In terms of full-time students, Table 53 shows that there are only two instances in which the actual PhD completion rates observed amongst the 1999-2000 cohort are not higher than those of the 1996-97 cohort. The completion rate for the 1999-2000 cohort is two percentage point lower than that of the 1996-97 cohort in the creative arts, while in languages the rate is one percentage point higher.

170.   The modelling indicates that the completion rates in business and social studies have had the largest relative movements (both negative) between the 1996-97 and 1999-2000 cohorts.

171.   The actual rates of PhD completion by subject area of study for part-time starters are shown in Table 54. It shows that the completion rates of students commencing PhD programmes in 1999-2000 are higher than those for students starting in 1996-97 for 10 of the 17 subject areas. As with full-time students, completion rates are lower when we consider the later cohort in the subject area of creative arts. However, those studying subjects allied to medicine, business, education, engineering, humanities and law/librarianship are also observed to have lower completion rates than their equivalents in the 1996-97 cohort when we consider those commencing PhD programmes in 1999-2000.

172.   The modelling indicates that the completion rates in architecture and computing have had the largest relative movements (both positive) between the 1996-97 and 1999-2000 cohorts.

Table 53 Actual PhD completion rates by subject area for full-time students

Subject area	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Agriculture	78%	87%	81%	88%
Allied to medicine	76%	88%	82%	90%
Architecture	54%	79%	58%	83%
Biological sciences	82%	88%	83%	89%
Business	59%	73%	59%	77%
Combined	64%	79%	68%	80%
Computing	60%	75%	64%	79%
Creative arts	56%	77%	54%	77%
Education	66%	83%	71%	85%
Engineering	70%	81%	77%	86%
Humanities	62%	83%	66%	86%
Languages	65%	84%	64%	83%
Law/librarianship	56%	80%	58%	79%
Mathematics	75%	83%	84%	90%
Medicine/veterinary sciences	76%	82%	81%	88%
Physical sciences	82%	87%	86%	90%
Social studies	62%	82%	63%	86%
Total	**72%**	**83%**	**75%**	**86%**

Note: See Table 32 of HEFCE 2005/02, and Table C36 of Annex C for related information.

Table 54 Actual PhD completion rates by subject area for part-time students

Subject area	1996-97 cohort		1999-2000 cohort	
	% PhD completion	% PhD completion or active	% PhD completion	% PhD completion or active
Agriculture	49%	78%	53%	84%
Allied to medicine	36%	65%	33%	69%
Architecture	22%	53%	34%	65%
Biological sciences	42%	63%	48%	77%
Business	29%	59%	26%	60%
Combined	27%	55%	31%	59%
Computing	24%	52%	38%	66%
Creative arts	34%	64%	25%	66%
Education	29%	65%	24%	64%
Engineering	42%	65%	38%	71%
Humanities	28%	68%	24%	75%
Languages	31%	69%	36%	77%
Law/librarianship	29%	67%	23%	65%
Mathematics	32%	72%	43%	71%
Medicine/veterinary sciences	53%	71%	55%	85%
Physical sciences	38%	64%	43%	74%
Social studies	31%	66%	32%	70%
Total	**35%**	**65%**	**35%**	**71%**

Note: See Table 33 of HEFCE 2005/02, and Table C37 of Annex C for related information.