

Annex C

PhD entry and completion: 1999-2000 cohort

Introduction

1. 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 started on a doctorate degree, mainly by research in academic year 1996-97. Their progress was followed for seven academic years, from their start in 1996-97 through to 2002-03; the most recent data collection at the time.

2. In this report we have provided information on rates of PhD completion for a cohort of students beginning their PhD studies in academic year 1999-2000. We followed the progress of this cohort for seven academic years, from their start in 1999-2000 through to 2005-06. This is the most recent cohort that will allow us to analyse progress over seven academic years, thus enabling comparability with the original 1996-97 cohort and the associated findings.

Starting cohort

3. This analysis uses the same methods to link HESA student records as were used in HEFCE 2005/02. These methods are described in Annex A of HEFCE 2005/02. Further, the data definitions within this report remain the same as described in Annex B of HEFCE 2005/02. Additional definitions regarding ethnicity and disability data used within this report are detailed at Annex D of this report.

4. The definition of the starting cohort and the associated difficulties are discussed in HEFCE 2005/02, paragraphs 23 to 25. The same practices and procedures have been implemented in the definition of the 1999-2000 cohort of starters to PhD programmes, and Tables C1, C2 and C3 provide a breakdown of the numbers of students falling in and out of our cohort definition.

Table C1 Initial starters to PhD programmes

Qualification aim		PhD awarded?	No. of students included or excluded in initial starter count	
Initial	Highest up to 2005-06		Included	Excluded
PhD	MPhil	Yes	130	0
PhD	MPhil	No	496	4
PhD	PhD	Yes	7,793	96
PhD	PhD	No	4,971	34
MPhil	PhD	Yes	4,392	3
MPhil	PhD	No	1,841	3
MPhil	MPhil	Yes	41	1
MPhil	MPhil	No	0	3,930
Initial PhD programme starters			19,664	4,071

5. The 19,664 initial PhD programme starters are split into 14,830 starters on full-time programmes, and 4,834 starters on part-time programmes. Table C2 shows how many of the full-time initial PhD programme starters do not continue beyond their first year. The corresponding part-time numbers are shown in Table C3.

Table C2 Initial full-time programme starters

Initial PhD full-time programme starters	14,830
Initial full-time starters who do not continue beyond first year	506
Starting cohort used for analysis	14,324

Table C3 Initial part-time programme starters

Initial PhD full-time programme starters	4,834
Initial full-time starters who do not continue beyond first year	303
Starting cohort used for analysis	4,531

6. References to a 'PhD programme' in this report refer to those students starting a PhD or MPhil that meet the criteria in the 'starting cohort used for analysis' in Tables C2 and C3. Note also that the same starting cohort is used for all the analysis in this section of the report.

Entry to PhD programmes

7. Linking back to the previous year's HESA student record allows us to identify which students progressed to their PhD directly from a first degree or MSc. The qualifications achieved in 1998-99 prior to PhD programme entry are shown in Table C4 for full-time home students within our starting cohort. It shows that 38 per cent of these students did not study for and gain a masters or degree award in 1998-99.

Table C4 Qualifications in previous year for full-time home students

HEI attended	Qualification in previous year	No. of students	% of students	
Same HEI	Masters	828	10%	
	Degree	First	966	12%
		Upper second	1,009	12%
		Other	143	2%
	Total from same HEI		2,946	36%
Different HEI	Masters	595	7%	
	Degree	First	605	7%
		Upper second	809	10%
		Other	55	1%
Total from different HEI		2,064	25%	
No masters/degree award		3,088	38%	
All		8,098	100%	

8. Table C5 shows the qualifications achieved in 1998-99 for students commencing on part-time PhD programmes in 1999-2000. Over three-quarters of these students did not study for and gain a masters or degree award in the previous year.

Table C5 Qualifications in previous year for part-time home students

HEI attended	Qualification in previous year		No. of students	% of students
Same HEI	Masters		262	7%
	Degree	First	84	2%
		Upper second	88	3%
		Other	17	0%
		Total from same HEI		451
Different HEI	Masters		165	5%
	Degree	First	20	1%
		Upper second	47	1%
		Other	13	0%
		Total from different HEI		245
No masters/degree award			2,801	80%
All			3,497	100%

Progression paths through PhD programmes

Changing mode

9. Tables C6 and C7 show the proportions and outcomes of students by whether or not they change their active mode of study during the course of their PhD studies.

Table C6 Mode changes for PhD programme cohort

Mode switch?	Start mode				All students	
	Full-time		Part-time		No. of students	%
	No. of students	%	No. of students	%		
No	11,983	84%	4,009	88%	15,992	85%
Yes	2,341	16%	522	12%	2,863	15%
Total	14,324	100%	4,531	100%	18,855	100%

Table C7 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	11,983	78%	87%
	FT to PT	2,341	62%	84%
All FT		14,324	75%	86%
PT	PT only	4,009	32%	69%
	PT to FT	522	56%	88%
All PT		4,531	35%	71%
Total		18,855	65%	83%

10. The tables above show that almost one-fifth of students who started a full-time PhD course change mode to part-time at some point during their studies. The rate of completion is 16 percentage points lower for these students than for those remaining full-time for the whole of their studies (62 per cent compared to 78 per cent).

11. A smaller proportion of students starting part-time programmes change to full-time study. However, the 12 per cent that do take this path increase their chance of completing a PhD; the completion rate for these students is 24 percentage points higher than the rate for students who remain part-time.

Moving between institutions

12. Table C8 details the number of students who move HEI during their PhD studies. It shows that 5 per cent of full-time PhD starters move institution during their studies. The corresponding figure for students entering part-time programmes is slightly higher at 7 per cent.

Table C8 Institutional movement during PhD programme

HEI attended	Full-time		Part-time		All students	
	No. of students	%	No. of students	%	No. of students	%
Single HEI	13,715	96%	4,258	94%	17,973	95%
Moves HEI	609	4%	273	6%	882	5%
Total	14,324	100%	4,531	100%	18,855	100%

13. The PhD completion rate for starters on full-time programmes is shown in Table C9, split by whether or not they moved HEI during their studies. It shows that those who remain at the same HEI have a higher chance of completing a PhD within seven years; 76 per cent of full-time students who do so completed their PhD within seven years. For those that do move HEI, the figure is 14 percentage points lower.

Table C9 PhD completion by institutional movement for full-time starters

HEI attended	No. of students	% PhD completion	% PhD completion or active
Single HEI	13,715	76%	86%
Moves HEI	609	62%	88%
Total	14,324	75%	86%

14. The equivalent figures for starters on part-time PhD programmes are shown in Table C10. As with full-time starters, those part-time students who move institution have a lower rate of PhD completion.

Table C10 PhD completion by institutional movement for part-time starters

HEI attended	No. of students	% PhD completion	% PhD completion or active
Single HEI	4,258	36%	70%
Moves HEI	273	27%	85%
Total	4,531	35%	71%

Breaks in PhD programmes

15. The final variation on the 'standard' pathway through a PhD programme we consider is that of a break in the PhD programme.

16. The percentages of students completing their PhDs that have been detailed above relate to seven years. However, not all students will have pursued their PhD programmes for the whole of this period. Students who take a significant break from their studies and are inactive for an entire academic year (from 1 August until 31 July in the following year) have been identified through the linking of consecutive HESA student records.

17. Table C11 shows the proportions of students who have been inactive for at least one academic year and then resumed their PhD programme. The percentages are shown for each of the three outcomes at the end of the seven years (PhD completed and award gained, remains active, or not active on a PhD programme). The table shows, for example, that of the 10,743 full-time students who completed a PhD within seven years, 1 per cent took a break during the course of their studies.

Table C11 Percentage of students inactive for one or more academic years, and have resumed their PhD programme

Start mode	PhD award	Active	Not active	All
Full-time	1%	13%	3%	3%
Part-time	4%	11%	5%	7%
Total	2%	12%	4%	4%

Outcomes of PhD programmes

18. As in the earlier report we classify the outcomes in relation to gaining a PhD award into three groups:

- a. Completed a PhD within seven years.
- b. Not completed a PhD but still active on a PhD course at the end of the period.
- c. Not completed a PhD and not active on a PhD course at the end of the period.

PhD award outcomes by mode of study

19. The achievement of students is shown in Table C12 split by the mode of study at the start of their programme. It shows that 75 per cent of students who began a full-time PhD programme complete a PhD within seven years. A further 11 per cent of these starters are still active on a PhD programme at the end of the period, having yet to complete a PhD.

20. Those who start part-time programmes are less likely to complete a PhD within the seven years; Table C12 shows a PhD completion rate of 35 per cent amongst part-time students. In this case a further 36 per cent were still active on a PhD programme without completing a PhD within seven years.

Table C12 PhD completion by starting mode of PhD programme

Start mode	PhD completion	Active	Not active	All students	% PhD completion	% PhD completion or active
Full-time	10,759	1,616	1,949	14,324	75%	86%
Part-time	1,589	1,631	1,311	4,531	35%	71%
Total	12,348	3,247	3,260	18,855	65%	83%

Gaining an MPhil award

21. Although we have defined the cohort of students as being on PhD programmes, some of these students qualify with an MPhil award, either on the way to a PhD or as the final qualification. The percentages of such students are shown in Table C13.

22. We see from Table C13 that 4 per cent of full-time students who complete a PhD also gain an MPhil during their PhD studies. Among part-time students this falls to 1 per cent. It also shows that 13 per cent of the full-time PhD students who have not completed a PhD and are not still active in 2005-06, have gained an MPhil at some point during their non-successful PhD studies.

Table C13 MPhil award rates for students starting on a PhD course in 1999-2000

Start mode	PhD award	Active	Not active	All
Full-time	4%	10%	13%	6%
Part-time	1%	2%	5%	3%
Total	3%	6%	10%	5%

23. The distribution of MPhil awards leads to the percentage of students with 'at least' an MPhil award, as shown in Table C14 at 68 per cent.

Table C14 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	11,173	1,460	1,691	14,324	78%	88%
Part-time	1,690	1,596	1,245	4,531	37%	73%
Total	12,863	3,056	2,936	18,855	68%	84%

Time taken to complete PhD

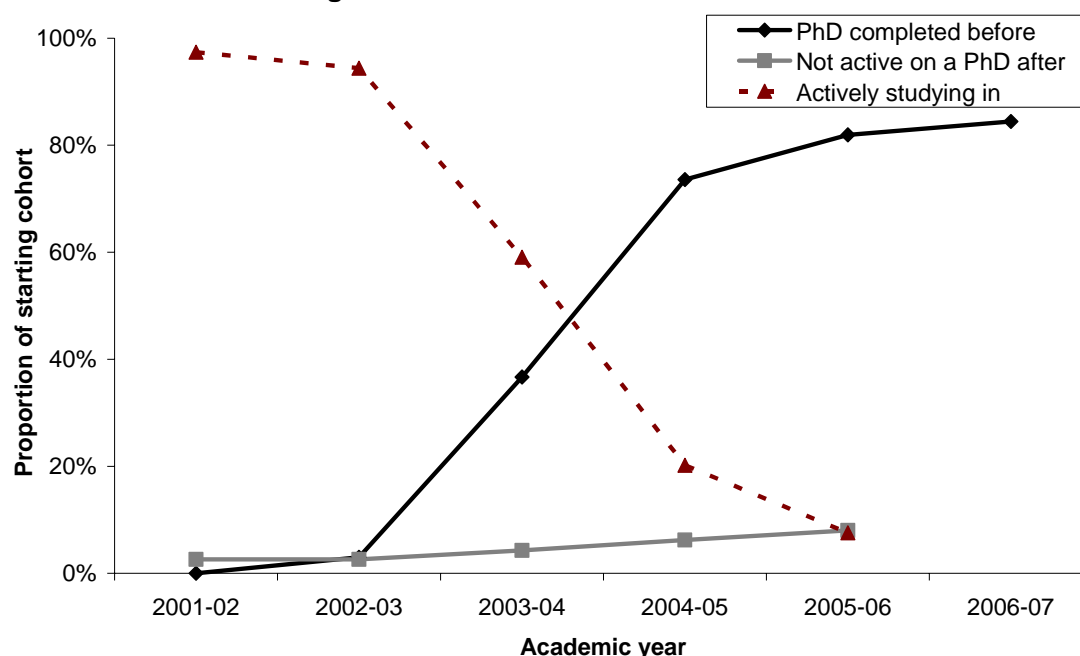
24. A full-time Research Council PhD student who started their course in 1999-2000 and followed the 'standard' pathway through their PhD programme, can be expected to be recorded as completing their PhD within four years by January/April 2003. Such students would normally have three years of funding to complete their PhD studies and, assuming no significant delay in their studies, would be expected to submit their thesis for PhD assessment early in the 2002-03 academic year. The PhD viva would then take place, usually around two months later, with another month or so if the viva was successful. The student would have been awarded their PhD by a Board of Studies (or

equivalent) between January and April 2003. This is usually the completion date recorded in the HESA records.

25. The distribution of the time taken to complete their PhD for full-time Research Council funded students who began their studies in 1999-2000 is shown in Figure C1. It shows that 37 per cent of these students completed their PhD programmes before 1 August 2003, or within four years. By the end of seven years this figure had risen by 47 percentage points; 84 per cent had completed by 1 August 2006.

26. Figure C1 also shows that 3 per cent of full-time Research Council students were not active on a PhD programme after 1 August 2001. This figure rises to 8 per cent by 1 August 2005. At 31 July 2006 8 per cent of full-time students with Research Council funding remained active on a PhD programme having not yet completed a PhD.

Figure C1 Time to PhD completion or last PhD activity for full-time Research Council students who began their studies in 1999-2000

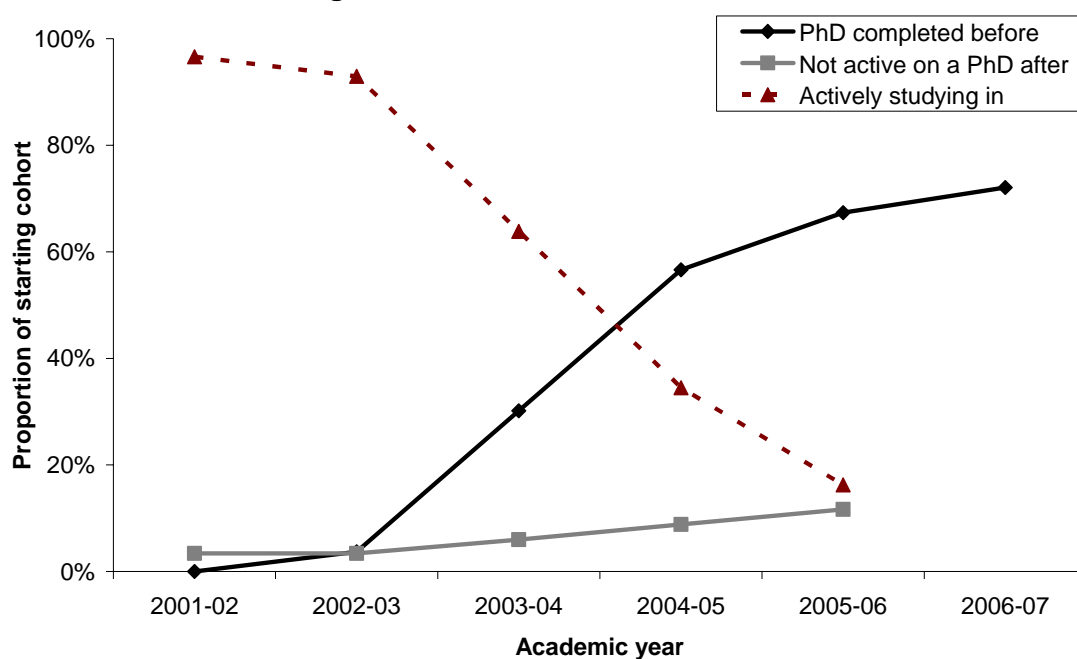


Note: The value for 'not active on a PhD after' and 'actively studying in' for 2006-07 is not given because no information is currently available on student activity after 31 July 2006.

27. The equivalent information for full-time students who do not receive Research Council funding is shown in Figure C2. The pattern is broadly similar to Figure C1; 30 per cent of these students completed their PhD by 1 August 2003, rising to 72 per cent by 1 August 2006. However, the proportion of inactive students is larger, particularly towards the end of the period where it rises to around 12 per cent.

28. In terms of non-Research Council students, 16 per cent of full-time students remained active after seven years, having yet to complete their PhD.

Figure C2 Time to PhD completion or last PhD activity for full-time non-Research Council students who began their studies in 1999-2000

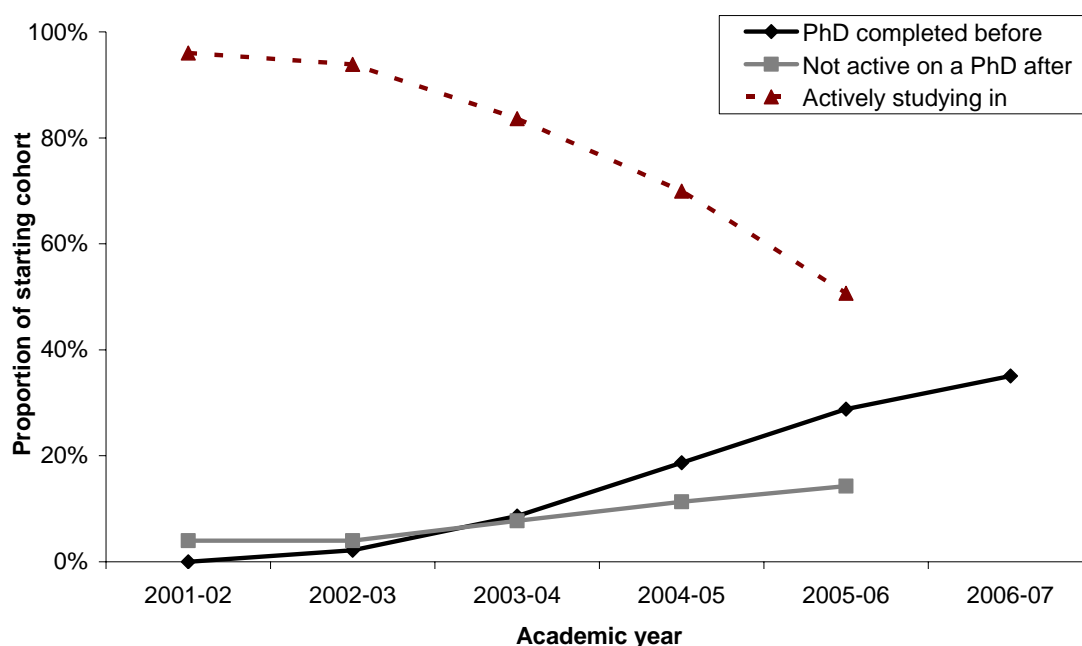


Note: The value for 'not active on a PhD after' and 'actively studying in' for 2006-07 is not given because no information is currently available on student activity after 31 July 2006.

29. Figure C3 shows the time take to complete their PhD for those studying a part-time PhD programme. It shows that around 7 per cent of the cohort became inactive by 1 August 2001. After seven years this figure had risen steadily to around 29 per cent.

30. This group of students has the largest proportion of students remaining active on a PhD programme at the end of seven years; 51 per cent of part-time students have yet to complete their PhD.

Figure C3 Time to PhD completion or last PhD activity for part-time starters who began their studies in 1999-2000



Note: The value for 'not active on a PhD after' and 'actively studying in' for 2006-07 is not given because no information is currently available on student activity after 31 July 2006.

PhD completion by programme and student attributes

31. We now focus on whether a student has completed their PhD programme after seven years. We have examined the differences in completion rates for students with the following attributes :

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

32. We present simple summaries for attributes 'a' to 'h' in paragraphs 35 to 79. The summaries are shown by mode because part-time students cannot be expected to finish in the same time as full-time students.

33. In addition to the simple summaries provided, we have modelled the propensity to complete a PhD. This process is explained in further detail in HEFCE 2005/02, paragraphs 53 to 58 and 62 to 64. Full specifications for both the full-time and part-time models generated for the 1999-2000 cohort are given at Annex E. The reference category for each attribute is marked in the appropriate tables as 'REF'.

34. 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 the 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 (*).

Age on entry

35. The age profiles of PhD students are shown in Table C15. We see that part-time study has a much higher proportion of older students; around three-quarters are aged over 30.

Table C15 Age on entry of PhD students

Age on entry	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Under 25	6,117	43%	363	8%	6,480	34%
25 to 29	4,223	29%	751	17%	4,974	26%
Over 30	3,984	28%	3,417	75%	7,401	39%
Total	14,324	100%	4,531	100%	18,855	100%

36. Tables C16 and C17 show the PhD completion rates for the three age bands for full-time and part-time students respectively. In both cases the lowest PhD completion rates are experienced by older students.

37. Note that the 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 C16 PhD completion by age on entry for full-time students

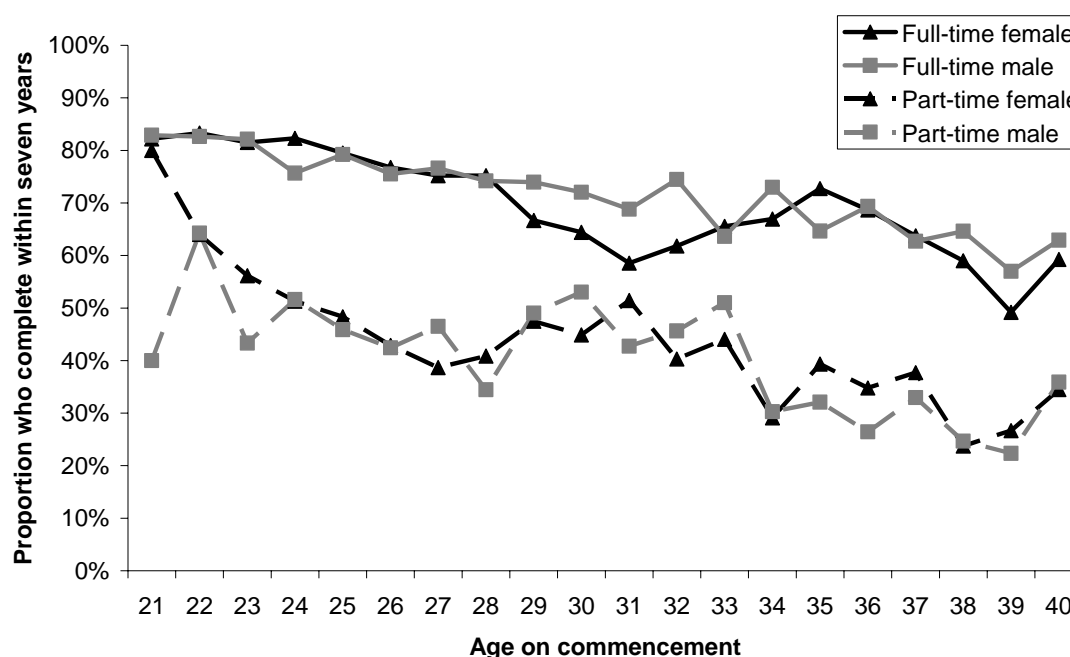
Age group	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Under 25	6,117	89%	81%	0%	24%
25 to 29	4,223	87%	76%	-3%	90%
Over 30	3,984	82%	65%	-10%	93%
Total	14,324	86%	75%	N/A	N/A

Table C17 PhD completion by age on entry for part-time students

Age group	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Under 25	363	75%	52%	0%	37%
25 to 29	751	76%	44%	-5%	92%
Over 30	3,417	70%	31%	-14%	94%
Total	4,531	71%	35%	N/A	N/A

38. The modelling for both full-time and part-time students shows a consistent negative association between the age on entry and rates of PhD completion; younger students have higher rates of completion in both cases. This association is further demonstrated by Figure C4, which shows the variation in seven-year PhD completion rates by age and sex.

Figure C4 PhD completion rates by age and sex



Disability status

39. The distribution of PhD students' disability status is shown in Table C18¹. It shows that only 1 per cent of students are returned as having a disability; 254 students. When the students are split by mode of study, numbers are particularly small and consequently the following results should be treated with caution.

Table C18 PhD students by disability status

Disability status	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
None	13,955	97%	4,424	98%	18,379	97%
Not known/not given	169	1%	53	1%	222	1%
Disability – receives DSA	5	0%	0	0%	5	0%
Disability – no DSA	195	1%	54	1%	249	1%
Total	14,324	100%	4,531	100%	18,855	100%

Note: DSA = Disabled Students' Allowance

¹ 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. Therefore the categorisations in these tables differ from those reported for the 1996-97 cohort.

40. Table C19 shows the completion rates for starters to full-time PhD programmes, split by disability status. It shows that the highest rates of PhD completion are found amongst full-time students returned as having no disability.

Table C19 PhD completion by disability status for full-time students

Disability status	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
None	13,955	87%	75%	REF	REF
Not known/not given	169	81%	67%	-6%	100%
Disability – receives DSA	*	*	*	*	*
Disability – no DSA	195	82%	68%	-2%	100%
Total	14,324	86%	75%	N/A	N/A

Note: * Less than 50 students

41. The modelling for full-time students indicates that, when other factors are taken into account, students returned with a disability status other than 'None' have lower relative completion rates. This is consistent with the actual PhD completion rate and for all such students.

42. Table C20 shows the equivalent to Table C19 for starters to part-time PhD programmes. It shows that the PhD completion rate of students returned as having a disability but not receiving Disabled Students' Allowance (DSA) is far lower than the rates for students whose disability status is none, or not known or not given.

Table C20 PhD completion by disability status for part-time students

Disability status	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
None	4,424	71%	35%	REF	REF
Not known/not given	52	63%	37%	6%	0%
Disability – receives DSA	*	*	*	*	*
Disability – no DSA	54	61%	17%	0%	0%
Total	4,531	71%	35%	N/A	N/A

Note: * Less than 50 students

43. When other factors are accounted for by the part-time modelling we see that students returned as 'Disability – no DSA' have a relative PhD completion rate of 0 per cent. This suggests that there is no distinction between those returned in this categorisation and those returned as having no disability. Although this conflicts with the low actual PhD rate of completion experienced by this group of students it is important to note that the number of students involved are relatively small (54 students).

Domicile of students

44. Table C21 shows the geographical distribution of the PhD students in our cohort. It shows that 61 per cent of students studying PhD programmes in the UK were home-domiciled. However, there are significant numbers coming from both the European Union (EU) and non-EU countries.

Table C21 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
EU	2,061	14%	330	7%	2,391	13%
Home	8,098	57%	3,497	77%	11,595	61%
Non-EU	4,165	29%	704	16%	4,869	26%
Total	14,324	100%	4,531	100%	18,855	100%

45. Table C22 details the rates of PhD completion for full-time starters to PhD programmes split by the student's domicile. We see that full-time students whose domicile is returned as the EU have the highest completion rates (79 per cent).

46. The model for full-time students shows that PhD rates vary significantly depending on the domicile of the student. The size and significance of these differences varies depending on the source of funding, subject area of study, and previous qualifications of the student.

47. According to the modelling for full-time students the actual completion rate for non-EU students is one percentage point lower than that for home students (74 per cent compared to 75 per cent). However, when we take into account the other factors we have included into our modelling, non-EU students and, to a lesser extent, EU students have a higher relative completion rate than home students.

Table C22 PhD completion by domicile for full-time students

Domicile	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
EU	2,061	88%	77%	7%	3%
Home	8,098	86%	75%	REF	REF
Non-EU	4,165	87%	74%	8%	1%
Total	14,324	86%	75%	N/A	N/A

48. Table C23 is the equivalent to Table C22 for starters to part-time PhD programmes. It shows that, as with full-time students, EU students have the highest rates of PhD completion. Home-domiciled students have the lowest PhD completion rates.

49. The part-time modelling shows that non-EU and EU students again have higher relative rates of completion after other factors are taken into account.

Table C23 PhD completion by domicile for part-time students

Domicile	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
EU	330	72%	40%	5%	0%
Home	3,497	70%	34%	REF	REF
Non-EU	704	76%	39%	10%	0%
Total	4,531	71%	35%	N/A	N/A

Ethnicity

50. The ethnicity profile of the cohort of PhD students is shown in Table C24. It is important to note that the ethnicity of a large number of PhD students is not known or not given. Table C24 shows that the majority of students describe their ethnicity as White (53 per cent) and numbers of students from other ethnic backgrounds are relatively small, particularly when we split by mode of study. Consequently the results that follow should be treated with some caution.

Table C24 Ethnicity profile of PhD students

Ethnicity	Full-time		Part-time		All students	
	No. of students	% of students	No. of students	% of students	No. of students	% of students
Asian/Asian British	929	6%	170	4%	1,099	6%
Black/Black British	239	2%	86	2%	325	2%
Chinese	489	3%	79	2%	568	3%
Not known/not given	4,690	33%	1,439	32%	6,129	33%
Other	613	4%	207	5%	820	4%
White	7,364	51%	2,550	56%	9,914	53%
Total	14,324	100%	4,531	100%	18,855	100%

51. Table C25 shows the rates of PhD completion for full-time PhD students split by the student's ethnicity. The ethnic groups of Asian/Asian British, Black/Black British and Other all have PhD completion rates that are lower than that of the reference category.

52. The size and significance of the difference in PhD completion rates varies depending on the age, source of funding, previous qualifications, and subject area of the student. The modelling shows that the lower PhD completion rates of students returned as Asian/Asian British or Black/Black British are partly explained by the other factors taken account of in the modelling. This is consistent for all students returned with Black/Black British ethnicity.

Table C25 PhD completion by ethnicity for full-time students

Ethnicity	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Asian/Asian British	929	85%	70%	-1%	12%
Black/Black British	239	81%	63%	-3%	100%
Chinese	489	87%	77%	5%	0%
Not known/not given	4,690	88%	78%	2%	24%
Other	613	84%	71%	1%	0%
White	7,364	86%	75%	REF	REF
Total	14,324	86%	75%	N/A	N/A

53. Table C26 shows the information given in Table C25 but for starters to part-time PhD programmes. It shows that Black/Black British students have significantly lower PhD completion rates. The part-time modelling reveals that where ethnicity information is not known, or is returned as Chinese or Other, students have higher relative completion rates than White students. This is consistent in terms of the actual PhD completion rates for these groups.

Table C26 PhD completion by ethnicity for part-time students

Ethnicity	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Asian/Asian British	170	76%	40%	-1%	100%
Black/Black British	86	63%	19%	-13%	100%
Chinese	79	70%	38%	2%	41%
Not known/not given	1,439	74%	39%	1%	0%
Other	207	65%	35%	1%	39%
White	2,550	70%	33%	REF	REF
Total	4,531	71%	35%	N/A	N/A

Previous qualifications and route to the PhD programme

54. Tables C27 and C28 show the numbers and completion rates of students taking different entry routes to PhD study. If the student qualified in the previous year, the nature of that qualification is detailed. First degrees are divided into first class honours and 'other' and are distinguished from masters degrees. Table C27 shows this information for starters to full-time PhD programmes.

55. The pattern of actual completion rates across these categories is complex. Students qualifying with a first degree in 1998-99 have the highest PhD completion rates. Whether the students remain at the same or different HEI, the completion rates for those qualifying with a masters are lower than for those with other classes of degree. Those who did not gain a qualification in 1998-99 have a PhD completion rate of 74 per cent.

Table C27 PhD completion by previous study for full-time students

HEI attended	Qualification in previous year	No. of students	Actual		Model		
			% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)	
Same HEI	Masters	1,439	91%	73%	-2%	13%	
	Degree	First	1,108	95%	88%	3%	13%
		Upper second / other	1,259	90%	79%	-3%	100%
	Total from same HEI		3,806	92%	79%	N/A	N/A
Different HEI	Masters	1,060	78%	65%	-1%	60%	
	Degree	First	746	84%	79%	2%	0%
		Upper second / other	1024	83%	75%	-4%	92%
	Total from different HEI		2,830	82%	72%	N/A	N/A
No masters/degree award		7,688	86%	74%	REF	REF	
Total		14,324	86%	75%	N/A	N/A	

56. The modelling for full-time students shows that PhD completion rates vary significantly by previous study of the student. The size and significance of the difference varies by the age, domicile, disability status, ethnicity, subject area of study, and source of funding of the student. 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. It is hard to differentiate those with masters from those without an award in the previous year, because of both the varying relative PhD award rates, and the consistency values.

57. Table C28 shows PhD completion rates for part-time students split by their previous qualifications. Since 85 per cent of these students did not graduate in the previous year, numbers of students with different qualifications from the same and different HEIs are relatively small. As with full-time students, the highest actual completion rates are found amongst those with a first class degree, whilst the other categories form no simple pattern.

58. The results of the modelling for part-time students suggest that, after allowing for other factors, having a first class degree is associated with the highest completion rates.

Table C28 PhD completion by previous study for part-time students

HEI attended	Qualification in previous year	No. of students	Actual		Model		
			% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)	
Same HEI	Masters	334	76%	38%	7%	9%	
	Degree	First Upper second / other	87	72%	39%	1%	0%
			115	68%	38%	-4%	100%
	Total from same HEI		536	74%	38%	N/A	N/A
Different HEI	Masters	200	73%	37%	-3%	100%	
	Degree	First Upper second / other	*	*	*	*	
			63	75%	38%	-2%	100%
	Total from different HEI		286	73%	38%	N/A	N/A
No masters/degree award		3,709	71%	34%	REF	REF	
Total		4,531	71%	35%	N/A	N/A	

Note: * Less than 50 students.

Sex

59. Table C29 shows the sex profile of PhD students. It shows that male students are in the majority for both full-time and part-time programmes.

Table C29 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	6,058	42%	2,058	45%	8,116	43%
Male	8,266	58%	2,473	55%	10,739	57%
Total	14,324	100%	4,531	100%	18,855	100%

60. The PhD completion rates for starters on full-time PhD programmes are shown in Table C30. The completion rate for male starters is the same as that for female starters; 75 per cent of both men and women have completed their PhD studies and gained an award after seven years.

Table C30 PhD completion by sex for full-time students

Sex	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Female	6,058	87%	75%	0%	16%
Male	8,266	86%	75%	REF	REF
Total	14,324	86%	75%	N/A	N/A

61. Table C31 shows the equivalent information for part-time starters on PhD programmes. In this case the completion rate for women is higher than the equivalent rate for men (36 per cent compared to 35 per cent).

62. The part-time modelling shows that the differences in the rates of completion according to sex vary significantly depending on the student's subject area of study. The model results show that the higher completion rate for part-time female students is partly explained by other factors.

Table C31 PhD completion by sex for part-time students

Sex	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Female	2,058	73%	36%	2%	15%
Male	2,473	70%	35%	REF	REF
Total	4,531	71%	35%	N/A	N/A

Source of student sponsorship

63. Table C32 shows the sources of sponsorship for students starting on PhD programmes in 1999-2000. It shows that 30 per cent of PhD students have no financial backing.

Table C32 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	587	4%	34	1%	621	3%
Government	570	4%	200	4%	770	4%
Institution	2,859	20%	688	15%	3,547	19%
No financial backing	3,031	21%	2,676	59%	5,707	30%
Other	1,414	10%	336	7%	1,750	9%
Overseas	1,596	11%	94	2%	1,690	9%
Research Councils	3,528	25%	27	1%	3,555	19%
UK industry	739	5%	476	11%	1,215	6%
Total	14,324	100%	4,531	100%	18,855	100%

64. The rates of PhD completion for those students starting on a full-time PhD programme are shown in Table C33 for each of the sources of student sponsorship. Table C32 has already shown that the Research Councils are the most common source of sponsorship for full-time students, and we now see that these students also have the highest PhD completion rates (84 per cent). Those with no financial backing have the lowest rates of completion with 61 per cent of these students completing a PhD in seven years.

65. 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 sex, domicile, ethnicity, previous qualifications, and student's study. The directions of the differences are consistent for all sources of funding and, once other factors have been

allowed for, students funded by the Research Councils have the highest relative PhD completion rates.

Table C33 PhD completion by source of funding for full-time students

Source of sponsorship	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Charity / British Academy	587	88%	76%	11%	0%
Government	570	85%	77%	13%	0%
Institution	2,859	86%	76%	9%	3%
No financial backing	3,031	82%	61%	REF	REF
Other	1,414	87%	78%	10%	5%
Overseas	1,596	90%	79%	11%	0%
Research Councils	3,528	90%	84%	14%	0%
UK industry	739	81%	70%	6%	0%
Total	14,324	86%	75%	N/A	N/A

66. Table C34 is the equivalent to Table C33 for those starting part-time PhD programmes. It shows that students with overseas sponsorship have the highest PhD completion rate, at 54 per cent. The part-time modelling reveals that these students also have a considerably higher relative PhD completion rate; at 12 per cent this figure is at least twice that seen elsewhere in the table.

Table C34 PhD completion by source of funding for part-time students

Source of sponsorship	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Charity / British Academy	*	*	*	*	*
Government	200	65%	31%	-1%	46%
Institution	688	80%	45%	6%	0%
No financial backing	2,676	70%	32%	REF	REF
Other	336	75%	39%	2%	0%
Overseas	94	86%	54%	12%	0%
Research Councils	*	*	*	*	*
UK industry	476	62%	31%	1%	5%
Total	4,531	71%	35%	N/A	N/A

Note: * Less than 50 students.

Subject area of study

67. Table C35 shows the number of PhD students in each subject area, split by mode of study. Physical sciences, biological sciences and engineering have the highest concentration of full-time PhD students. The largest numbers of part-time PhD students can be found in education, medicine and veterinary sciences, and social studies.

Table C35 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	249	2%	38	1%	287	2%
Allied to medicine	706	5%	292	6%	998	5%
Architecture	200	1%	68	2%	268	1%
Biological sciences	2,050	14%	318	7%	2,368	13%
Business	545	4%	348	8%	893	5%
Combined	200	1%	85	2%	285	2%
Computing	504	4%	106	2%	610	3%
Creative arts	262	2%	151	3%	413	2%
Education	316	2%	845	19%	1,161	6%
Engineering	2,303	16%	318	7%	2,621	14%
Humanities	853	6%	362	8%	1,215	6%
Languages	872	6%	253	6%	1,125	6%
Law/librarianship	275	2%	84	2%	359	2%
Mathematics	423	3%	42	1%	465	2%
Medicine/veterinary sciences	1,007	7%	633	14%	1,640	9%
Physical sciences	2,313	16%	168	4%	2,481	13%
Social studies	1,246	9%	420	9%	1,666	9%
Total	14,324	100%	4,531	100%	18,855	100%

68. The rates of PhD completion for students who started on full-time PhD programmes in 1999-2000 are shown in Table C36 by their initial subject area of study. We see that those studying a PhD programme in the physical sciences had the highest completion rates where 86 per cent of full-time students have been awarded a PhD within seven years. The lowest rate of completion was in creative arts (54 per cent).

69. The model for full-time students shows that PhD rates are significantly affected by subject area of study. The size and significance of these differences varies depending on the age, sex, domicile, ethnicity, source of funding, and the student's previous qualifications. The relative PhD award rates suggest that, in general, other factors cannot explain the differences in subject area completion rates. The low rates for architecture and creative arts seem to be due in part to other factors, but not entirely.

Table C36 PhD completion by subject area for full-time students

Subject area	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Agriculture	249	88%	81%	5%	51%
Allied to medicine	706	90%	82%	9%	0%
Architecture	200	83%	58%	-10%	100%
Biological sciences	2,050	89%	83%	9%	0%
Business	545	77%	59%	-7%	89%
Combined	200	80%	68%	3%	23%
Computing	504	79%	64%	-7%	87%
Creative arts	262	77%	54%	-9%	100%

Education	316	85%	71%	2%	7%
Engineering	2,303	86%	77%	REF	REF
Humanities	853	86%	66%	-3%	64%
Languages	872	83%	64%	-5%	100%
Law/librarianship	275	79%	58%	-9%	100%
Mathematics	423	90%	84%	4%	2%
Medicine/veterinary sciences	1,007	88%	81%	6%	6%
Physical sciences	2,313	90%	86%	7%	4%
Social studies	1,246	86%	63%	-6%	100%
Total	14,324	86%	75%	N/A	N/A

70. The equivalent information to Table C36 is shown in Table C37 for part-time students. The highest rates of completion are among those studying a PhD in medicine and veterinary sciences. The lowest PhD completion rates are for part-time students of law/librarianship.

Table C37 PhD completion by subject area for part-time students

Subject area	No. of students	Actual		Model	
		% PhD award or active	% PhD award	Relative % PhD award	Consistency (% higher)
Agriculture	*	*	*	*	*
Allied to medicine	292	69%	33%	0%	100%
Architecture	68	65%	34%	-2%	100%
Biological sciences	318	77%	48%	10%	3%
Business	348	60%	26%	-6%	100%
Combined	85	59%	31%	0%	100%
Computing	106	66%	38%	2%	0%
Creative arts	151	66%	25%	-8%	100%
Education	845	64%	24%	-7%	100%
Engineering	318	71%	38%	REF	REF
Humanities	362	75%	24%	-9%	100%
Languages	253	77%	36%	-1%	58%
Law/librarianship	84	65%	23%	-11%	100%
Mathematics	*	*	*	*	*
Medicine/veterinary sciences	633	85%	55%	18%	4%
Physical sciences	168	74%	43%	7%	0%
Social studies	420	70%	32%	-2%	100%
Total	4,531	71%	35%	N/A	N/A

Note: * Less than 50 students.

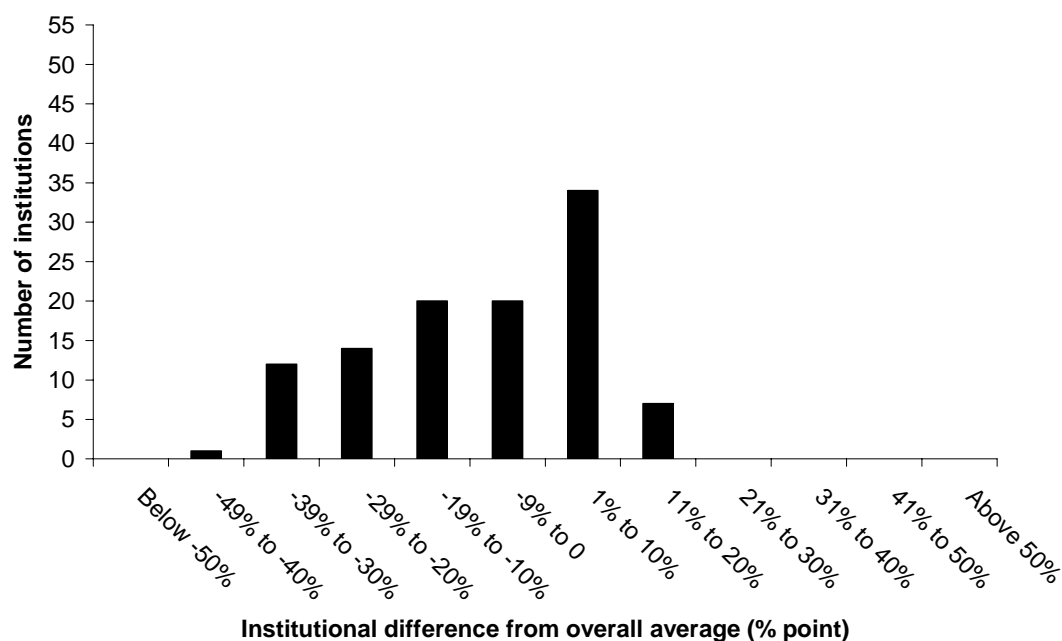
71. The part-time model shows that there are significant differences across subject areas, which vary in size and significance depending on the age, sex, domicile, and student's previous qualifications. As with full-time students, the relative PhD completion rates suggest that other factors play a substantial role but do not entirely explain the differences in completion rates by subject area.

Institutions and subject areas within institutions

72. Figure C5 shows the institutional variation from the average proportion of students achieving a PhD within seven years, having started on a full-time course in 1999-2000 (75 per cent).

73. Note that Figures C5 to C8 exclude institutions with less than 10 students.

Figure C5 Institutional variations in rates of PhD completions within seven years for full-time starters

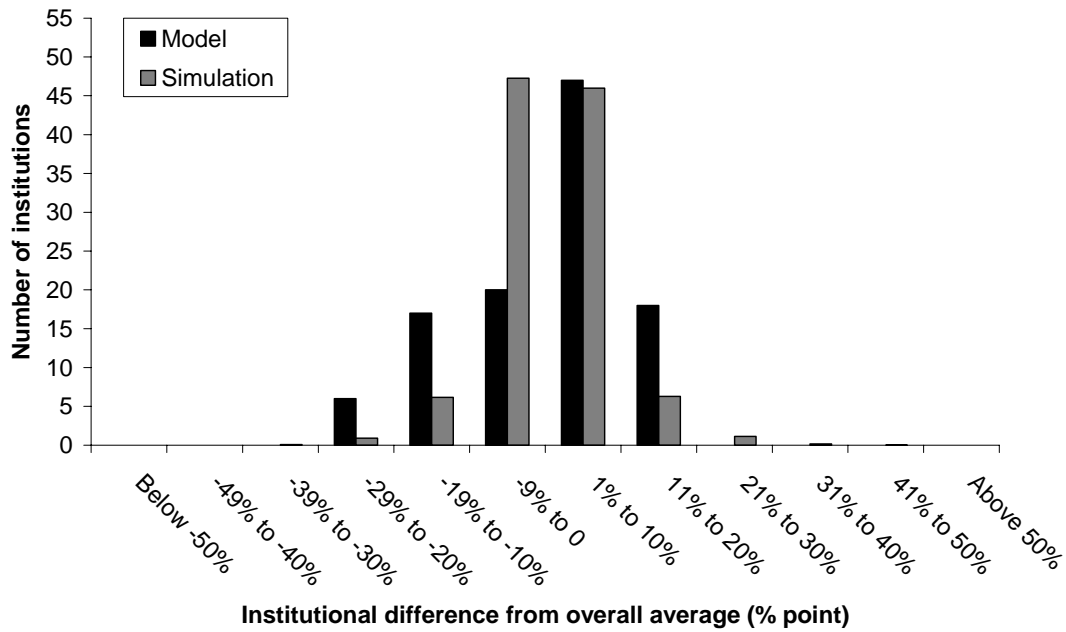


74. Some of the variation in seen Figure C5 can be explained through the characteristics of the students attending each institution, whilst some is due to the expected random variation that will occur from year to year. However, the modelling shows that not all of the variation in institutional rates can be explained in this manner: there are significant differences both between institutions, and between subject areas within institutions.

75. Figure C6 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 were each institution to have the same underlying completion rates given the characteristics of its students and programmes.

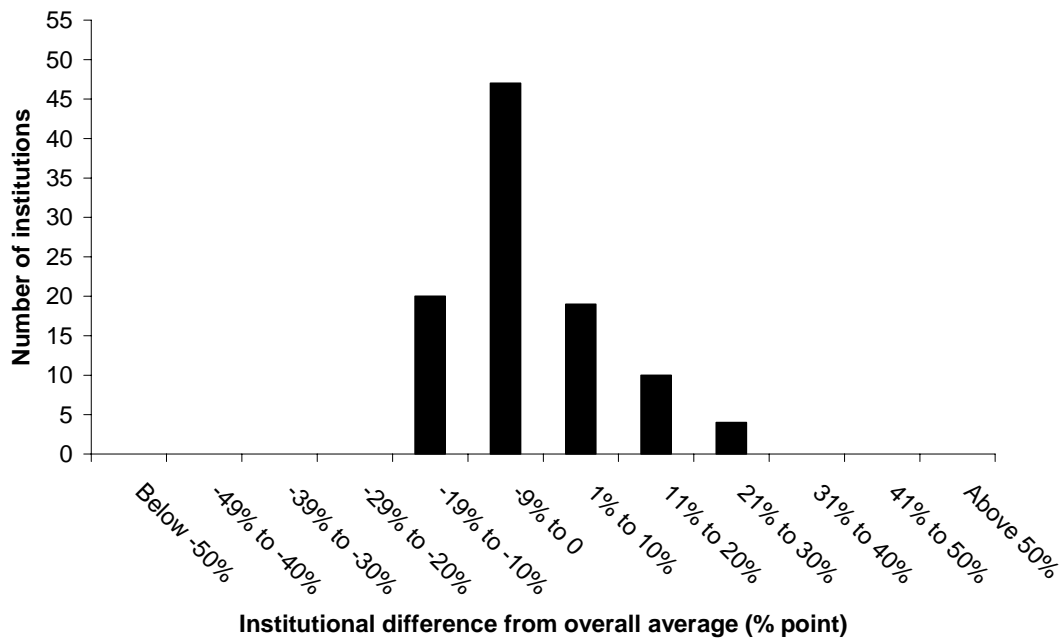
76. Figure C6 shows that the actual institutional variation is somewhat greater than that identified by the simulation, as was demonstrated through the modelling. This suggests that there are other factors associated with completion which differentiate institutions that we have not examined.

Figure C6 Variation in institutional rates after adjusting for other factors for actual and simulated data



77. Figure C7 shows the same data as Figure C5 but for students who started on a part-time course in 1999-2000; the average institutional proportion of such students achieving a PhD within seven years is 35 per cent.

Figure C7 Institutional variations in rates of PhD completions within seven years for part-time starters



78. As with full-time PhD students some institutional variation can be explained through the characteristics of students at the institution, and some is due to random variation.

79. Though the modelling shows some unexplained variation between institutions, and variation between subjects within institutions, Figure C8 suggests that this remaining variation in institutional 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 C8 Variations in institutional rates after adjusting for other factors for actual and simulated data

