

Office for  
Students



# Analysis of degree classifications over time

Changes in graduate attainment from  
2010-11 to 2020-21

Reference OfS 2022.22

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# Summary

1. Graduate attainment rates continue to increase. Between 2010-11 and 2020-21, the proportion of UK-domiciled, full-time first degree graduates attaining a first class honours degree from an English higher education provider has more than doubled, from 15.7 per cent in 2010-11 to 37.9 per cent in 2020-21. Expanding this population shows that in 2020-21 84.4 per cent of students achieved a first or upper second class degree, up from 67.0 per cent in 2010-11. This report uses statistical modelling to determine how much of these changes can be explained by changes in the characteristics of the student population.
2. In November 2020, the Office for Students (OfS) published 'Analysis of degree classifications over time: Changes in graduate attainment from 2010-11 to 2018-19' (OfS 2020.52), which used statistical modelling to investigate changes in the proportions of graduates attaining first or upper second class degrees over the academic years from 2010-11 to 2018-19.<sup>1</sup> This report builds on OfS 2020.52 by expanding the time series to include academic years from 2010-11 to 2020-21.
3. To reflect the ongoing impact of the coronavirus pandemic in the years 2019-20 and 2020-21, the statistical modelling approach has been adapted to account for the sector-level changes in awarding patterns. This has resulted in the provider-level unexplained attainment estimates being recalculated for earlier years (see Annex A). While these changes impact the size of unexplained attainment estimations (see Annex B) they do not affect the overall sector-level conclusions.
4. Assessment practices in 2019-20 were atypical as a response to the pandemic, and many of these changes continued into 2020-21. This is reflected in our model outputs, which show large increases in unexplained attainment in 2019-20.<sup>2</sup> By 2020-21, across the 143 providers considered, 37.9 per cent of students were awarded a first class degree, an increase from 15.7 per cent in 2010-11. However, over half of the 37.9 per cent in 2020-21 (22.4 percentage points) was not explained when compared with 2010-11 attainment and accounting for provider, year, subject, entry qualifications, age, disability, ethnicity, sex and tracking underrepresentation by area based on Middle Super Output Areas (TUNDRA MSOA) quintile.<sup>3</sup>
5. Considering the distribution of provider-level unexplained attainment, provider attainment was compared both with the sector mean in 2010-11 and with the provider's own awarding in 2010-11. This shows that:

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<sup>1</sup> Available at [www.officeforstudents.org.uk/publications/analysis-of-degree-classifications-over-time-changes-in-graduate-attainment-from-2010-11-to-2018-19/](https://www.officeforstudents.org.uk/publications/analysis-of-degree-classifications-over-time-changes-in-graduate-attainment-from-2010-11-to-2018-19/).

<sup>2</sup> For a definition of 'unexplained' in this context, see paragraph 16.

<sup>3</sup> The equivalent finding for first and upper second class degrees was that, across 143 providers, attainment has increased from 67.0 per cent in 2010-11 to 84.4 per cent in 2020-21. In 2020-21, 14.7 percentage points of this attainment were not explained by the characteristics included in our modelling.

- a. By 2020-21, over three-quarters of providers had seen significant increases in the unexplained awarding of first and upper second class degrees when compared with the 2010-11 sector mean.<sup>4</sup>
- b. By 2020-21, almost all providers included in the analysis saw a significant increase in the unexplained awarding of first class degrees when compared with the 2010-11 sector mean.
- c. By 2020-21, all providers in this analysis had experienced significant increases in their unexplained awarding of firsts alone, and most had experienced significant increases in their unexplained awarding of first and upper second classes combined, when compared with their awarding in 2010-11.

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<sup>4</sup> Providers with Z-scores  $\pm 3.58$  are considered statistically significant from the comparator (this includes a Bonferroni correction to create 95 per cent levels for the multiple comparisons made).

# Introduction

6. This report sets out the results of our analysis of changes in the proportion of first and upper second class degrees awarded between 2010-11 and 2020-21, and is an update to our previously published analyses of degree classifications. We report on how graduate attainment has changed over this period, and the extent to which these changes can be statistically accounted for by changes in certain characteristics of the graduate population.<sup>5</sup> This analysis has been undertaken at both the sector level and the provider level. The sector-level analysis and a summary of the provider-level analysis are in the main body of this report, with detailed results of the provider-level analysis available separately in Annex A.<sup>6</sup>
7. The graduate population considered in this report comprises UK-domiciled first degree graduates who studied full-time, were registered at higher education providers in England and graduated in the academic years from 2010-11 to 2020-21.<sup>7</sup>
8. We further limit the graduate population included in this analysis to only include those who qualified from English providers with at least 10 students awarded classified honours degrees in each of the academic years considered. We therefore use data from 143 providers (hereafter collectively referred to as ‘the sector’, for the purposes of this report only) with 266,705 graduates in 2020-21. Summaries of graduates from all English providers (consisting of 277,535 graduates from 288 providers in 2020-21) and providers included our analysis can be found in Annex A Tables 3 and 4, respectively. The providers excluded from the analysis are summarised in Table 5 of Annex A. Definitions of our graduate populations are presented in Annex B.
9. In this report we first consider the context of the analysis and changes in methodology from previous years. The results section then presents a sector-level overview of the changes in the observed proportion of graduates who attained a first or an upper second class degree, and of those who attained a first class degree, in the academic years 2010-11 to 2020-21. We then disaggregate these changes and present the attainment of graduates by qualifications held on entry into higher education.
10. We then present sector-level findings from statistical modelling and the associated analysis that allows us to determine how much of the observed increase in attainment of first and upper second degree classifications over time can be attributed to changes in the characteristics (explanatory variables) of the graduate population, and how much remains statistically unexplained, as defined in paragraph 16.
11. Finally, summaries of the provider-level analysis are presented, where for first and upper second class degrees combined, and for first class degrees alone, we have calculated Z-

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<sup>5</sup> These are student and course characteristics associated with degree outcomes, which are derived and available from administrative data for the whole sector.

<sup>6</sup> Available to download alongside this document at [www.officeforstudents.org.uk/publications/analysis-of-degree-classifications-over-time-changes-in-graduate-attainment-from-2010-11-to-2020-21/](http://www.officeforstudents.org.uk/publications/analysis-of-degree-classifications-over-time-changes-in-graduate-attainment-from-2010-11-to-2020-21/).

<sup>7</sup> Limited to those receiving a classified honours degree.

scores comparing provider attainment with the sector mean in 2010-11 and with the same provider in 2010-11.<sup>8</sup>

## Using statistical modelling to estimate unexplained attainment

12. We have used statistical modelling of individual-level graduate data to estimate expected patterns in degree classification attainment between 2010-11 to 2020-21<sup>9</sup>, accounting for the following graduate characteristics (explanatory variables):

- the provider at which the graduate was registered
- year of graduation
- subject of study
- qualifications on entry into higher education
- age
- declared disability status
- ethnicity
- sex
- tracking underrepresentation by area based on Middle Super Output Areas (TUNDRA MSOA) quintile.<sup>10</sup>

13. In 2010-11 the proportion of students awarded a first class degree was 15.7 per cent, and using these explanatory variables we estimated a 0.2 percentage point decrease in the proportion of students expected to attain a first in 2020-21. However, we observed 37.9 per cent of students attaining a first class degree in 2020-21.

14. Further, in 2010-11 the proportion of students awarded a first or upper second class degree was 67.0 per cent, and using these explanatory variables we estimated a 2.7 percentage point increase in the proportion of students expected to attain a first or upper second in 2020-21. However, we observed 84.4 per cent of students attaining a first or upper second class degree in 2020-21.

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<sup>8</sup> Z-scores measure the distance a provider's attainment is from a comparator mean (the sector or same provider attainment in 2010-11). The distance is measured in standard deviations so that differences are comparable across academic years and providers.

<sup>9</sup> In support of our regulation work related to the principle that 'qualifications granted to students are credible and hold their value', we use 2010-11 as the base year in our modelling, as this approach allows us to observe both historical and recent changes in unexplained attainment. Starting in 2010-11, rates of firsts started to increase by around two percentage points a year, but prior to 2010-11 yearly increases tended to be much smaller.

<sup>10</sup> TUNDRA is an area-based measure that uses tracking of state-funded mainstream school pupils in England to calculate young participation. See [www.officeforstudents.org.uk/data-and-analysis/young-participation-by-area/about-tundra/](http://www.officeforstudents.org.uk/data-and-analysis/young-participation-by-area/about-tundra/).

15. Therefore the observed sector-level increases in rates of firsts and firsts and upper seconds combined over this time period are considered unexplained by these factors alone. The modelling results are discussed in detail in the results section of this report (see paragraph 35).
16. The term 'unexplained' in this context means that changes in attainment over the time period cannot be statistically accounted for by changes in the characteristics of the graduating cohort, in terms of the explanatory variables included in the statistical modelling. It is not possible to deduce from this analysis what factors not included in the modelling (such as improvements in teaching quality or more diligent students) could also be driving the observed changes in degree attainment.
17. Further, as noted below (paragraph 19), increases in awarding as a result of changes made in response to the coronavirus pandemic cannot be specifically accounted for in our modelling so are classified as 'unexplained'.

## Context and background

18. This report follows on from the previous OfS publication 'Analysis of degree classifications over time: Changes in graduate attainment from 2010-11 to 2018-19' (OfS 2020.52), published in November 2020. However, we have had to amend our methodology to accommodate the changes in assessment observed in the data during the coronavirus pandemic.
19. While we have amended our modelling methodology, we have not been able to specifically quantify the pandemic impact by determining a 'COVID-19 effect' for 2019-20 and 2020-21 attainment. This is for several reasons:
  - a. Provider responses to the coronavirus pandemic were not consistently applied across the sector, or declared to the OfS. Therefore, we are unable to include these individual provider approaches in our modelling.
  - b. It is not clear how having a 'safety net' or 'no detriment' policy would have impacted student behaviour in terms of confidence and preparation for assessments.
  - c. Some providers have argued that changes to assessment methods impacted awarding rather than the 'no detriment' policy increasing attainment.<sup>11</sup> This indicates that changes in attainment could be attributable to a number of factors and trying to account for the pandemic in the analysis would likely be more complicated than just adding a 'COVID-19 effect'.
  - d. Fitting a 'COVID-19 effect' into the model would have required us to make an assumption about what the attainment would have been had the pandemic not happened. Since 2018-19 was the first time in the time series that attainment had not increased, it was very difficult to know what 2019-20 or 2020-21 attainment would have been.
20. Though we cannot specifically account for the changes in assessment in response to the pandemic, we have observed that the awarding patterns for different groups of students changed between 2018-19 and 2020-21, including the student characteristics found in our

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<sup>11</sup> University of Exeter degree outcomes statement: Supplemental report, available at <https://www.exeter.ac.uk/about/facts/degree-outcomes-statement/>.

model. An example of this can be seen in our Key Performance Measure 4,<sup>12</sup> which looks at the gap in the rates of firsts and upper second class degrees for black and white students. This indicates that the pandemic response and associated changes in assessment impacted different groups of students in different ways.

21. We have had to account for these sector changes to ensure the validity of our model to the data. We now include additional explanatory variables in our model to account for sector changes in attainment year-on-year for different student characteristics (see Annex B for details).

### Summary of changes to the methodology

In addition to including two additional years of data, we have made the following data changes since the analysis of degree classifications published in November 2020, which may have resulted in changes to published numbers:

- 1. Subject groupings** – We used slightly different subject groupings for this analysis due to changes in data collection.
- 2. Measure of young participation** – TUNDRA MSOA was used instead of Participation of Local Areas (POLAR4) as the measure of young participation in our modelling, because TUNDRA uses more recent cohort data. We have categorised mature students as an ‘unknown’ TUNDRA quintile.
- 3. Providers included** – The methodology used requires provider data for all years considered. A smaller number of providers (143) was included in this analysis than in the previous publication (147), because fewer providers had data available between 2010-11 and 2020-21.
- 4. Changes to modelling approach** – We have amended our statistical model to account for changes in graduate attainment during the coronavirus pandemic (see Annex B for details). This means that unexplained attainment estimates may have changed compared with previous reports, for all years and providers in the analysis.

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<sup>12</sup> See [www.officeforstudents.org.uk/about/measures-of-our-success/participation-performance-measures/gap-in-degree-outcomes-1sts-or-21s-between-white-students-and-black-students/](http://www.officeforstudents.org.uk/about/measures-of-our-success/participation-performance-measures/gap-in-degree-outcomes-1sts-or-21s-between-white-students-and-black-students/).

# Results

## Sector-level analysis

### Sector overview

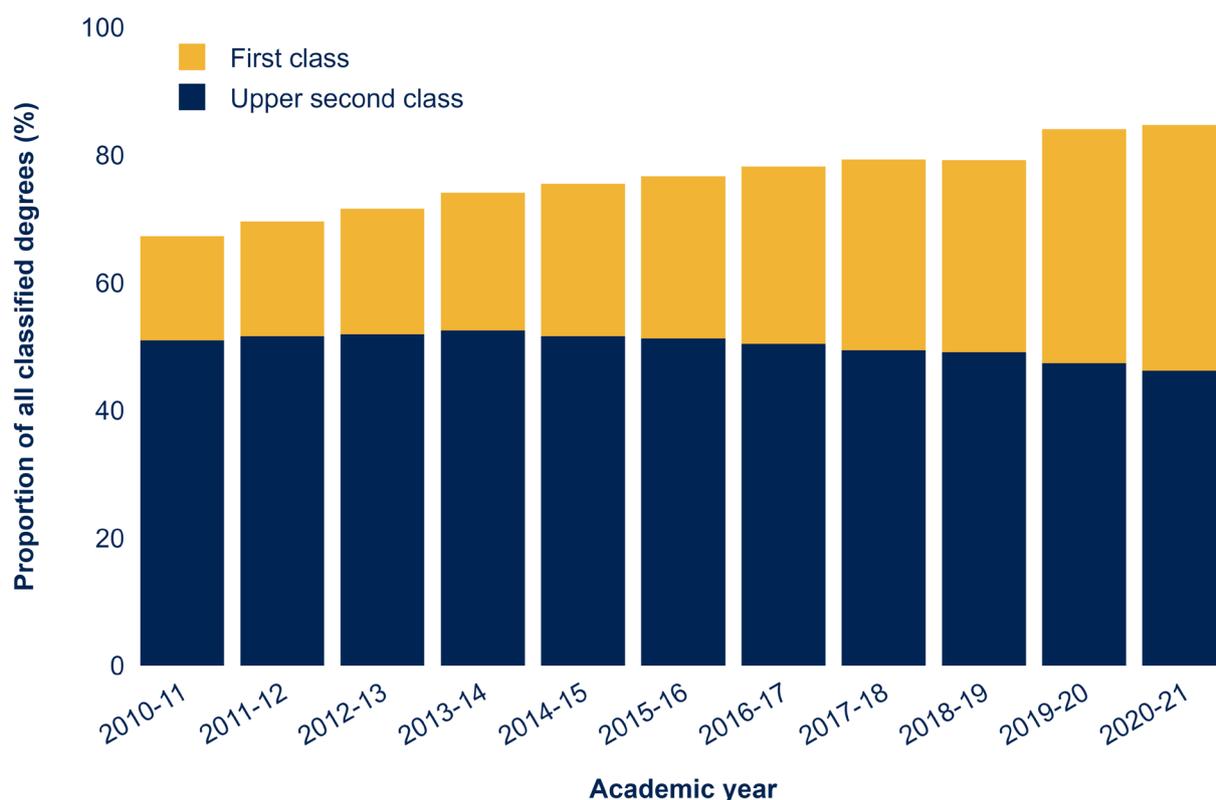
22. Table 1 shows a breakdown of the proportions of graduates attaining different classified degrees in the academic years 2010-11, 2018-19, 2019-20 and 2020-21.

**Table 1: Degree classifications summary for academic years 2010-11 and 2018-19 to 2020-21**

Degree classification	2010-11	2018-19	2019-20	2020-21
<b>Number</b>				
First	34,830	77,075	93,850	101,040
Upper second	113,860	129,070	124,060	123,970
Other classifications	73,260	54,990	42,025	41,695
Total	221,950	261,135	259,935	266,705
<b>Proportions</b>				
First	15.7%	29.5%	36.1%	37.9%
Upper second	51.3%	49.4%	47.7%	46.5%
Other classifications	33.0%	21.1%	16.2%	15.6%

23. Figure 1 shows the changes in the proportions of all classified honours degrees awarded as first and upper second class from 2010-11 to 2020-21, for providers included in this analysis. The proportion of graduates attaining an upper second class degree over the period has decreased by almost five percentage points, from 51.3 per cent in 2010-11 to 46.5 per cent in 2020-21. The proportion of students attaining a first class degree has increased every year since 2010-11, from 15.7 per cent to 37.9 per cent in 2020-21. Between 2010-11 and 2017-18 proportions of firsts increased by around two percentage points each year. After a small increase of 0.2 percentage points between 2017-18 and 2018-19, there was a 6.6 percentage point increase between 2018-19 and 2019-20. Between 2019-20 and 2020-21, the proportion of firsts increased by 1.8 percentage points.

**Figure 1: Changes in proportions of classified degrees awarded as first and upper second class from 2010-11 to 2020-21**

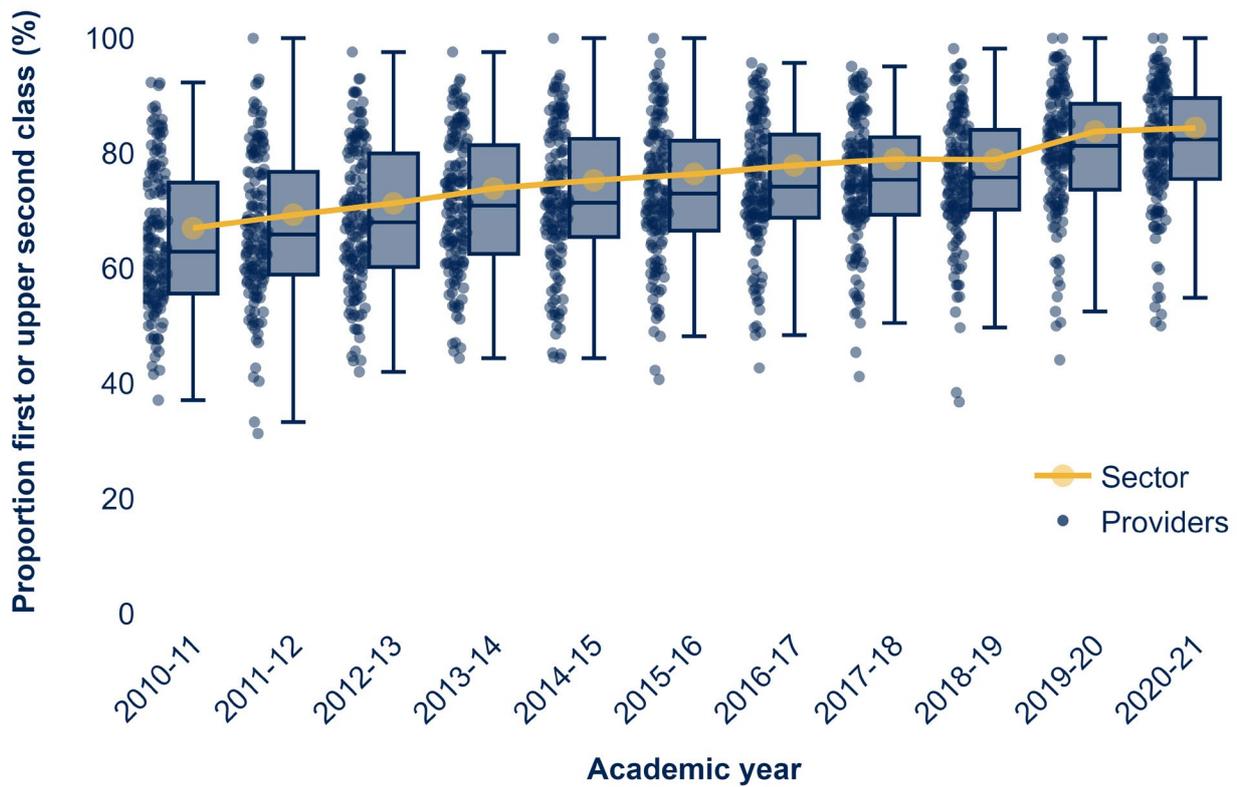


Note: The data used to create this chart can be found in Annex A.

24. Figures 2 to 5 present 'box-and-whisker' summary plots of degree attainment at individual providers and across the sector. In each of these figures the solid horizontal line spanning the interior of the shaded box indicates the median attainment across all the providers, while the lower and upper bounds of the shaded box indicate the first (Q1) and third (Q3) quartiles of attainment across providers, respectively. The shaded region indicates the inter-quartile range (IQR) of attainment across providers, and the caps on the 'whiskers' (vertical lines extending out from the shaded box) indicate the value of the data point nearest to, but lower than,  $Q3+1.5*IQR$  for the upper whisker cap, and nearest to, but greater than,  $Q1-1.5*IQR$  for the lower whisker cap. Data points outside the range between the upper and lower whisker caps are considered 'outliers'.

25. Figure 2 shows a summary of the proportion of classified degrees awarded as first or upper second class for academic years 2010-11 to 2020-21 across the 143 providers included in this analysis. This shows large variation in attainment of upper second and first class degrees across providers. Following a levelling out in attainment levels and provider variation in 2018-19, there is a large increase in sector attainment in 2019-20, followed by a smaller increase in 2020-21. Some outliers can be seen, all exhibiting attainment levels below the lower whisker cap of the respective year.

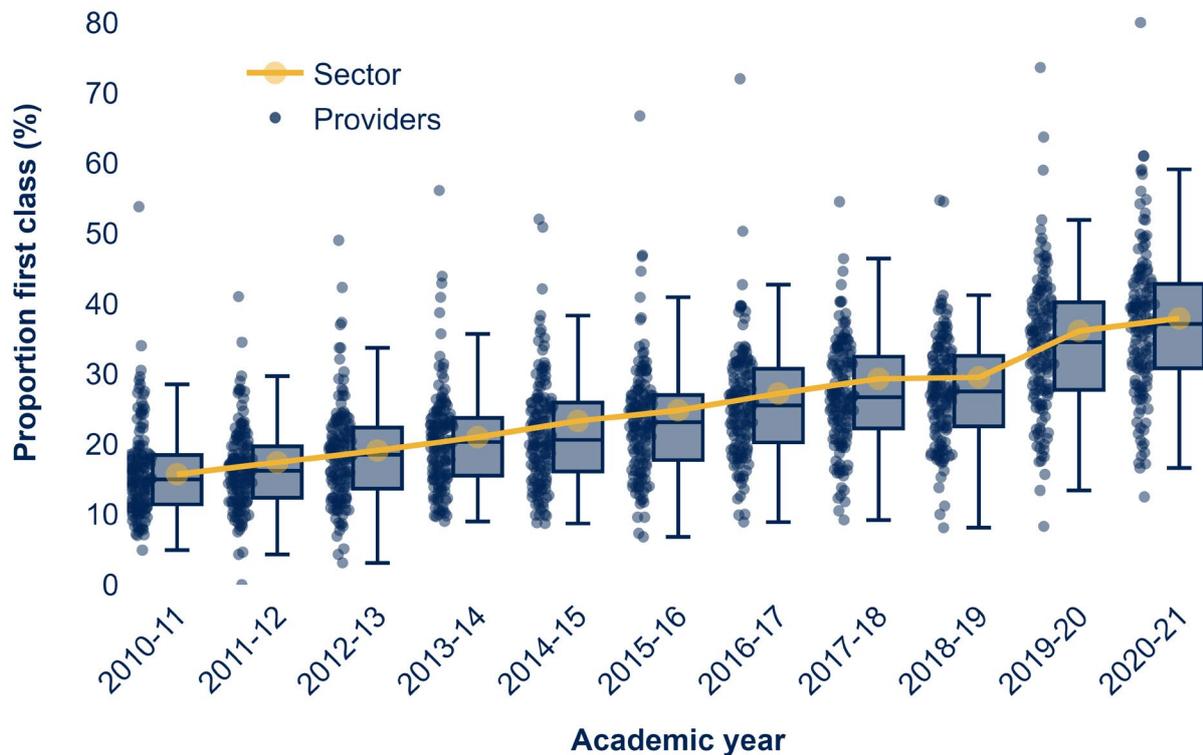
**Figure 2: Provider-level summary distributions for proportions of first or upper second class degrees awarded from 2010-11 to 2020-21**



Note: The data used to create this chart can be found in Annex A.

26. Figure 3 shows the equivalent summary, for first class degrees only, over the same time period. Similar to the trend of the proportion for combined first or upper second class degrees, following a levelling off of the sector attainment in 2018-19, there was a large increase in 2019-20 and a smaller increase again in 2020-21.

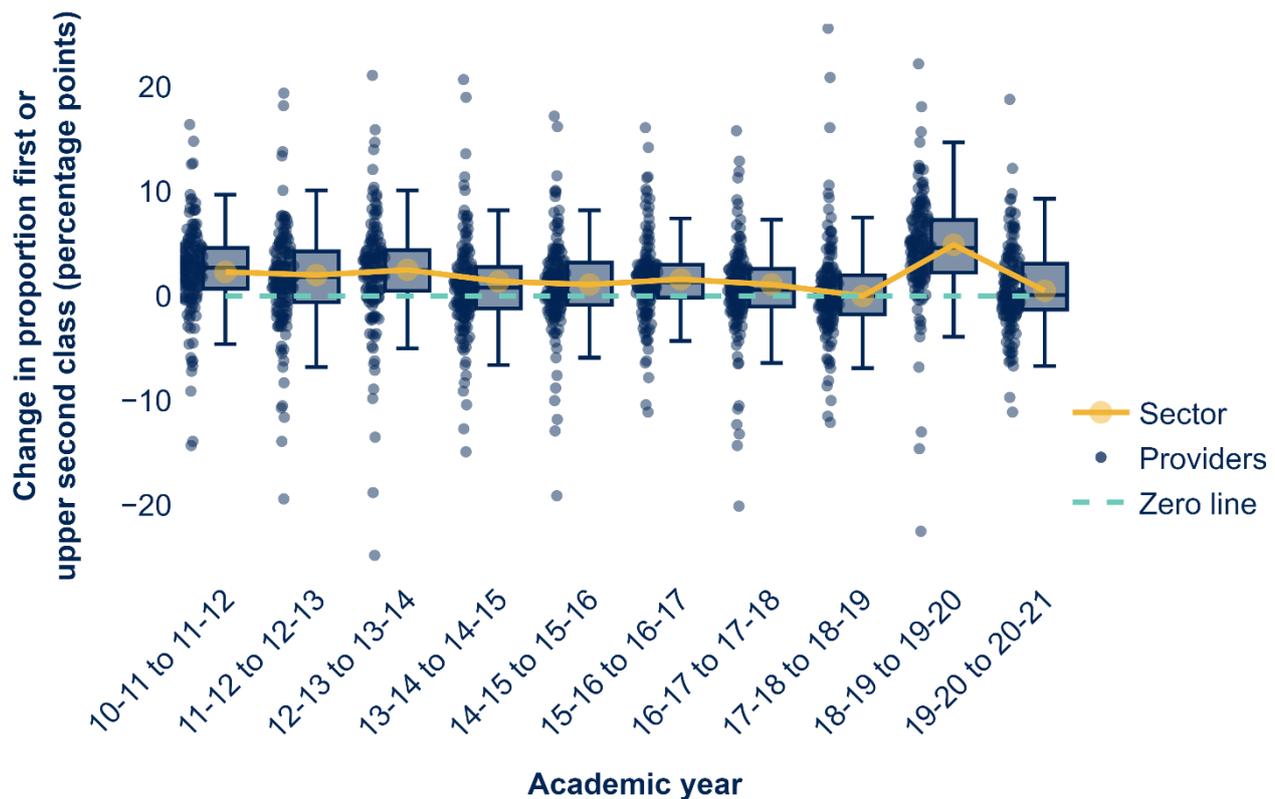
**Figure 3: Provider-level summary distributions for proportions of first class degrees awarded from 2010-11 to 2020-21**



Note: The data used to create this chart can be found in Annex A.

27. Figure 4 shows the year-on-year changes in the attainment of first or upper second class degrees for the 143 providers, and the mean for the sector. The sector year-on-year changes have been variable, especially in more recent years. For many years, proportions consistently increased by over one percentage point each year, but between 2017-18 and 2018-19 there was no sector increase in the proportion of students awarded a first class or upper second class degree. However, between 2018-19 and 2019-20 there was a sector-level increase of 4.9 percentage points. This has been followed by a further increase of 0.5 percentage points between 2019-20 and 2020-21. The greatest fluctuations in year-on-year attainment changes tend to occur in providers with small numbers, where changes in the outcomes for a small number of students can greatly change the proportion attaining a particular degree outcome.

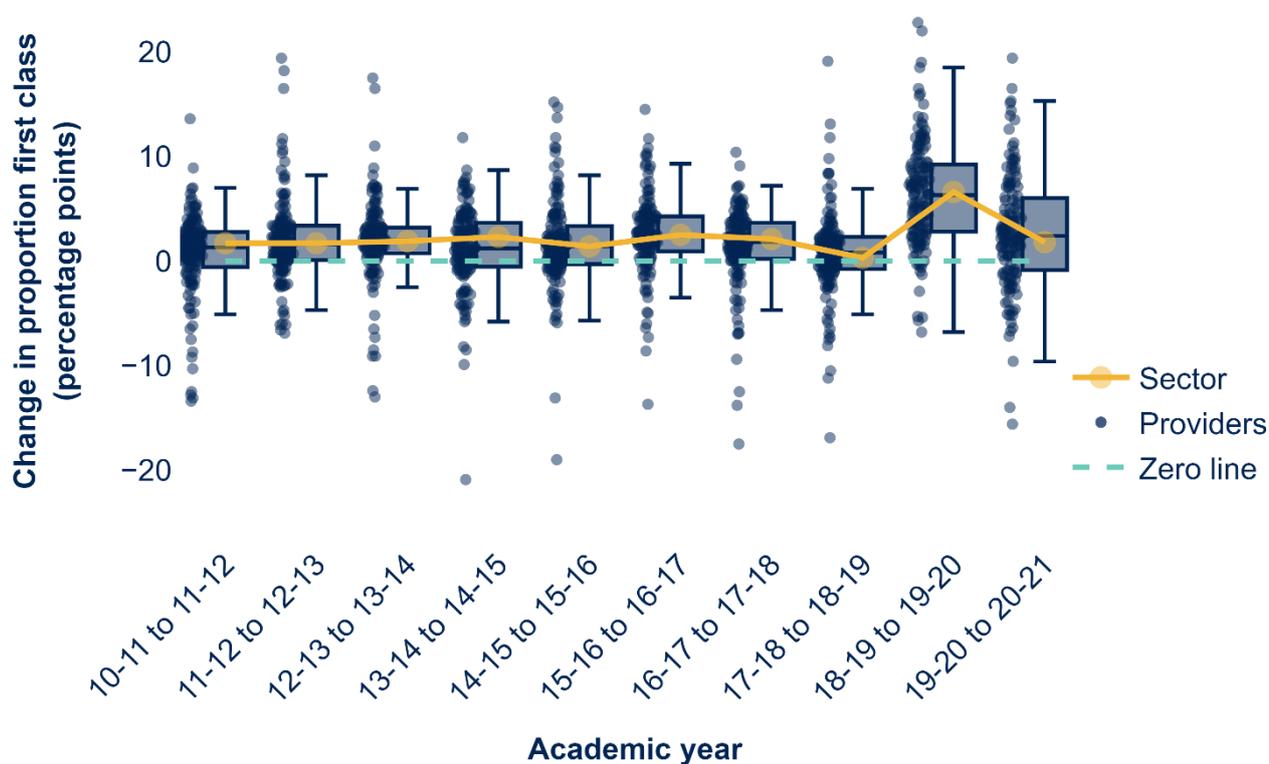
**Figure 4: Provider-level summaries for year-by-year changes in proportions of first or upper second class degrees awarded from 2010-11 to 2020-21**



Note: The data used to create this chart can be found in Annex A. The y-axis range has been selected to focus on the majority of providers. A small number of providers exhibit year-on-year attainment changes outside this range, so do not appear in the figure but the data for all providers included in this analysis can be found in Table 9 of Annex A.

28. Figure 5 shows the same data as Figure 4, but for first class degrees alone. The trends for first or upper second class degrees combined and first class degrees alone are similar, but the yearly increases are larger for firsts alone. This classification has typically seen an increase of around two percentage points a year in earlier years. Between 2017-18 and 2018-19 the sector proportion increased by 0.3 percentage points. Between 2018-19 and 2019-20 there was a sector level increase of 6.6 percentage points. Between 2019-20 and 2020-21 there was a further increase of 1.8 percentage points.

**Figure 5: Provider-level summaries for year-by-year changes in proportions of first class degrees awarded from 2010-11 to 2020-21**

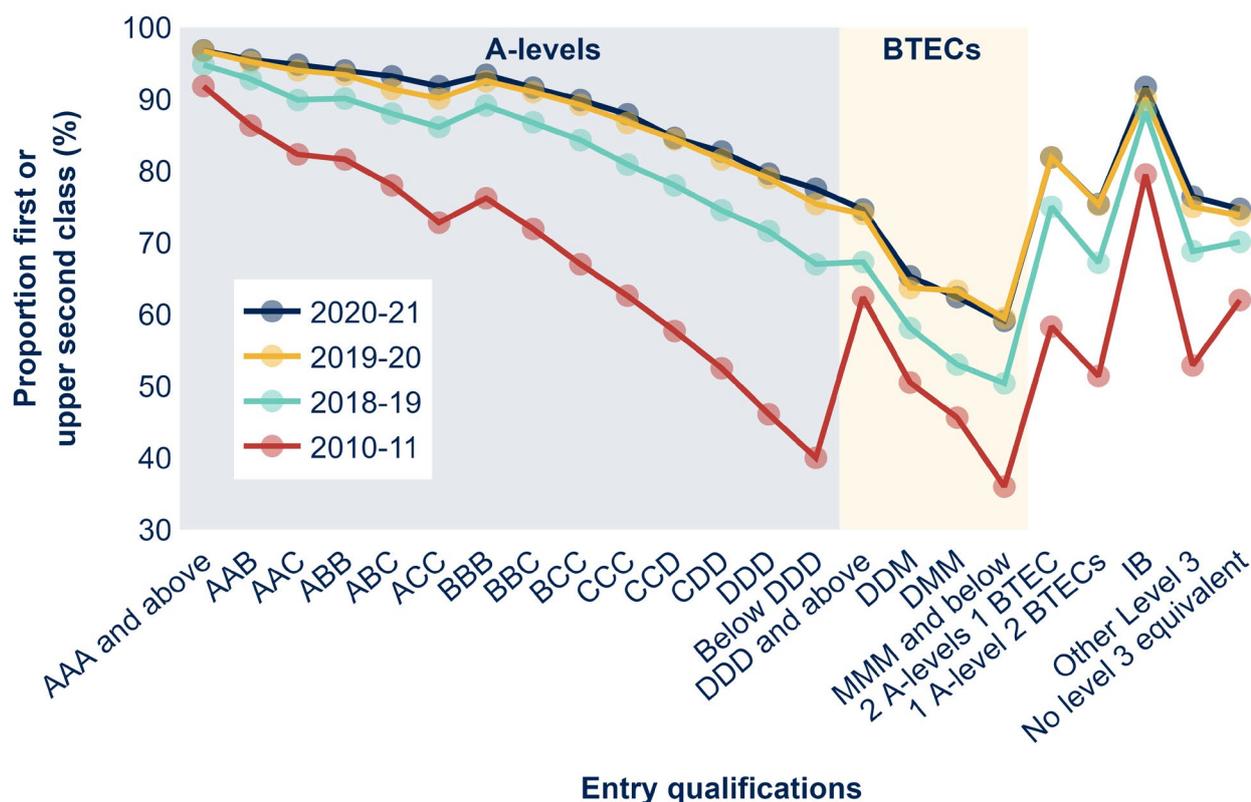


Note: The data used to create this chart can be found in Annex A. The y-axis range has been selected to focus on the majority of providers. A small number of providers exhibit year-on-year attainment changes outside this range, so do not appear in the figure but the data for all providers included in this analysis can be found in Table 9 of Annex A.

### Changes by entry qualifications

29. Figure 6 presents the changes in the attainment of first and upper second class degrees combined, in relation to graduates' entry qualifications. Between 2010-11 and 2020-21 there has been a 17.4 percentage point increase in first or upper second degree attainment rates. However, the size of the average increase has varied considerably between students entering higher education with different qualifications. In general, between 2018-19 and 2019-20 there were large increases across the different groups, and the size of the difference varied markedly. Between 2019-20 and 2020-21 many, but not all, of the entry qualifications groups saw small increases in attainment.
30. Figure 6 shows that for A-level and BTEC qualifications (where there is a clear concept of hierarchy), those with the highest entry qualifications have experienced the smallest increases in attainment rates, while students entering with the lowest A-level qualifications have experienced the largest increases. However, we note that there is a ceiling effect for those with the highest A-level category.
31. The impacts of the sector-level 4.9 percentage point increase in attainment between 2018-19 and 2019-20 varied between the different entry qualification groups. Increases ranged from 1.8 percentage points for students with International Baccalaureate (IB) qualifications through to 10.3 percentage point increase for students entering with BTEC grades DMM.

**Figure 6: First and upper second class degree attainment by entry qualifications for academic years 2010-11 and 2018-19 to 2020-21**



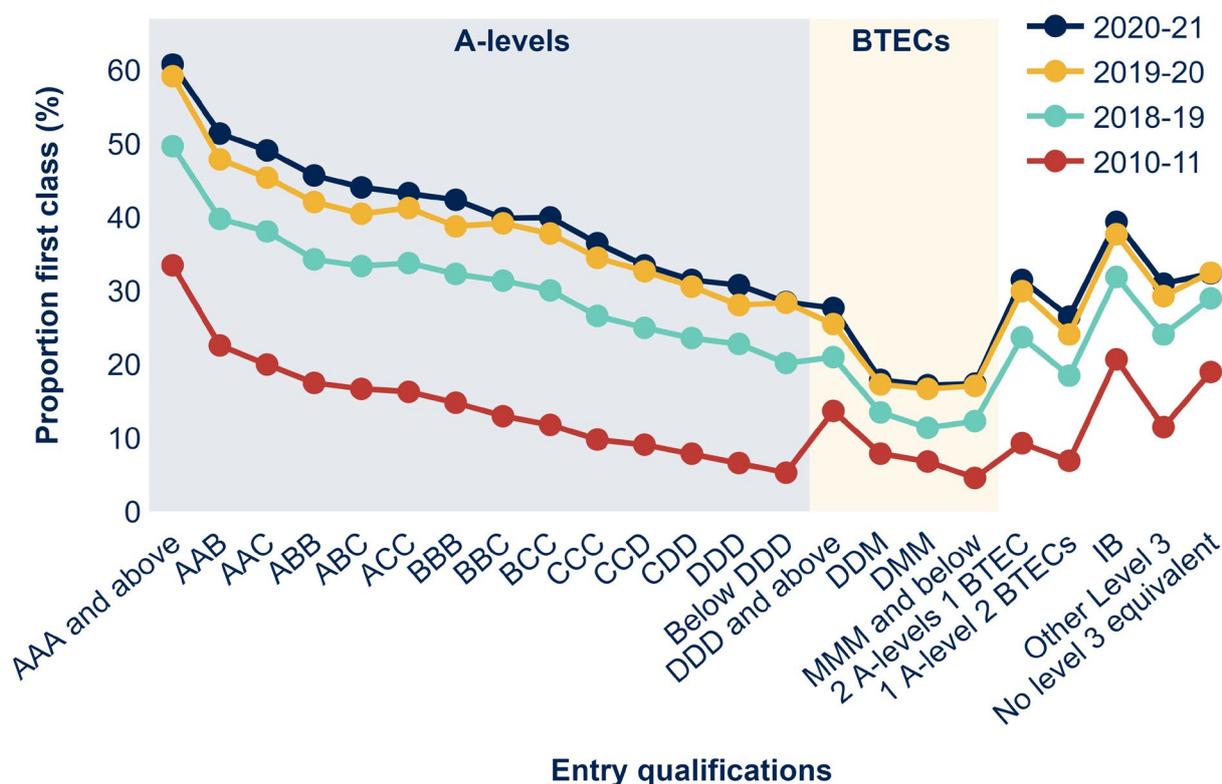
Note: The data used to create this chart can be found in Annex A.

32. Figure 7 shows first class degree attainment only by entry qualifications. Between 2010-11 and 2020-21 there has been a 22.2 percentage point increase in first class degree attainment rates. Again, we saw that between 2018-19 and 2019-20 there were large increases across the different groups, and between 2019-20 and 2020-21 much smaller changes in rates of firsts.

33. Figure 7 shows that there were more consistent increases in first class degree attainment across different entry qualifications for the years presented. For first class degrees, between 2010-11 and 2020-21, students entering with A-level grades of AAC experienced the largest increase; 29.1 percentage points, from 20.0 per cent to 49.1 per cent. Students entering with BTEC grades of DDM experienced the smallest increase, of 10.0 percentage points from 7.9 per cent to 17.9 per cent.

34. However, when considering the change in proportions of graduates obtaining a first between 2010-11 and 2020-21, for those with the highest A-level (AAA and above) and BTEC grades (DDD and above) rates have doubled. For A-levels AAA and above, rates of firsts have increased 1.8 times, from 33.5 per cent to 60.8 per cent, while for BTECs DDD and above they have increased 2.0 times, from 13.7 per cent to 27.7 per cent. Those with lower grades have seen their rates increase by a much greater extent. The average rate of firsts for those entering with A-levels DDD and below have increased 5.4 times, from 5.3 per cent to 28.5 per cent. For BTECs MMM and below, the increase has been 3.8 times, from 4.6 per cent to 17.4 per cent. Note these groups had considerably lower rates of firsts in 2010-11, so proportional increases are much larger.

**Figure 7: First class degree attainment by entry qualifications for academic years 2010-11 and 2018-19 to 2020-21**



Note: The data used to create this chart can be found in Annex A.

### Results from statistical modelling

35. Tables 2 and 3 present sector-level changes in the attainment of first and upper second class degrees combined and of first class degrees alone, respectively, from 2010-11 through to 2020-21. The tables show the observed proportion of graduates attaining the respective degree classifications ('Observed') and the percentage point ('pp') change in the observed attainment relative to 2010-11 ('Change from 2010-11'). The tables also include the amount of attainment 'explained' by the characteristics included in our model when looking at awarding in 2010-11 (see paragraph 12). As we use 2010-11 as our reference year, all attainment in 2010-11 is explained. The table also includes the amount of attainment that is 'unexplained' by the characteristics included in our model. This is the difference between the observed attainment and attainment explained by our modelling. Details of the methodology used to determine unexplained attainment can be found in Annex B.

**Table 2: Summary of observed and unexplained sector-level changes in first and upper second class degree attainment combined**

Academic year	Observed attainment (%)	Change from 2010-11 (pp)	Explained attainment from model (pp)	Unexplained change (pp)
2010-11 (ref)	67.0	0.0	67.0	0.0
2011-12	69.3	2.3	65.6	3.7
2012-13	71.3	4.3	66.5	4.8
2013-14	73.9	6.9	66.5	7.3
2014-15	75.3	8.3	68.1	7.1
2015-16	76.4	9.4	67.7	8.7
2016-17	77.9	10.9	66.8	11.1
2017-18	79.0	12.0	66.7	12.3
2018-19	78.9	11.9	68.4	10.5
2019-20	83.8	16.8	67.5	16.3
2020-21	84.4	17.4	69.7	14.7

**Table 3: Summary of observed and unexplained sector-level changes in first class degree attainment**

Academic year	Observed attainment (%)	Change from 2010-11 (pp)	Explained attainment from model (pp)	Unexplained change (pp)
2010-11 (ref)	15.7	0.0	15.7	0.0
2011-12	17.4	1.7	15.4	1.9
2012-13	19.1	3.4	14.9	4.2
2013-14	21.0	5.3	15.1	5.9
2014-15	23.3	7.6	13.9	9.5
2015-16	24.8	9.1	13.7	11.0
2016-17	27.2	11.5	13.2	14.0
2017-18	29.3	13.6	13.4	15.9
2018-19	29.5	13.8	13.4	16.1
2019-20	36.1	20.4	13.7	22.4
2020-21	37.9	22.2	15.5	22.4

36. Table 2 shows that unexplained attainment for first and upper second class degrees has increased by 14.7 percentage points between 2010-11 and 2020-21. During this time, observed attainment increased 17.4 percentage points. Our modelling suggests that, given the awarding behaviours in 2010-11 and the characteristics of students graduating in 2020-21, we might have expected attainment rates for first and upper second class degrees to have been 69.7 per cent. However, they were 84.4 per cent. In all years after 2010-11 the explained attainment was smaller than the observed attainment, indicating that changes in student and course characteristics do not fully explain the increases observed.

37. Table 3 shows these trends for firsts. In 2020-21, 37.9 per cent of students were awarded a first, a 22.2 percentage point increase compared with 2010-11. Our modelling suggests that this value would have been 15.5 per cent, had awarding behaviours been the same as 2010-11 based on the characteristics included in our model. As noted for firsts and upper second degrees combined, in all years for firsts, observed attainment is greater than the attainment explained by our modelling.
38. Tables 2 and 3 both show a substantial jump in unexplained attainment between 2018-19 and 2019-20. While it is possible that part of this 'unexplained' change is the result of changes employed by providers in response to the coronavirus pandemic, it is not possible from this analysis to confirm the extent to which this is the case. For more discussion around the effects of the pandemic and surrounding policies, please refer to paragraphs 18 to 21 in the 'Context and background' section of this report.
39. Unexplained attainment has decreased for first and upper second class degrees from 16.3 per cent to 14.7 per cent between 2019-20 and 2020-21. This suggests that in the most recent data the explanatory variables used in the model more than explained the observed increases in attainment. For firsts, the unexplained attainment stayed at 22.4 per cent despite an observed increase in attainment of 1.8 percentage points.

### **Additional analysis: Hypothetically closed attainment gaps**

40. As in previous releases of this analysis, we have produced estimates of the effect of closing (reducing to zero) the existing attainment gaps between individuals of differing sex, ethnicity, disability and TUNDRA MSOA quintile (referred to in this section as additional contextual variable groups), on the sector-level unexplained attainment of first and upper second class degrees combined, and on first class degrees alone, for 2020-21 (see Annex B for details).<sup>13</sup>
41. For firsts and first and upper second class degrees combined, at a sector level,<sup>14</sup> the highest attaining graduates in 2020-21 for the additional contextual variable groups were white, non-disabled female students from TUNDRA MSOA quintile 5 areas.
42. In 2020-21, 14.7 percentage points of sector attainment of first and upper second class degrees combined were 'unexplained' (Table 2). However, when we removed attainment gaps for these characteristics and assumed all graduates attained at the highest levels predicted by the model, the estimated 2020-21 sector unexplained attainment reduced to 6.4 percentage points. For firsts in 2020-21, 22.4 percentage points of sector attainment were 'unexplained' (Table 3). However, when we removed attainment gaps for these characteristics and assumed all graduates attained at the highest levels predicted by the model, the estimated 2020-21 sector unexplained attainment reduced to 17.4 percentage points.

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<sup>13</sup> These attainment gaps exist in the sector (see, for example, [www.officeforstudents.org.uk/data-and-analysis/access-and-participation-data-dashboard/](http://www.officeforstudents.org.uk/data-and-analysis/access-and-participation-data-dashboard/)), and are apparent from these groups having significantly different regression coefficients in our statistical modelling. The unexplained attainment estimates produced here are based on a hypothetical sector where we have used our statistical modelling to artificially close the attainment gaps and assume only the highest attainment levels for all additional contextual variable groups.

<sup>14</sup> We recognise that the highest attaining individual characteristics in the additional contextual variable groups for the sector may not be the same as the highest attaining groups at an individual provider. This figure is included as a guide only.

43. For both first and upper second class degrees combined, and first class degrees alone, these hypothetical sector results show that, even if the sector succeeded in closing attainment gaps for the groups specified, there would still be unexplained sector attainment.

## **Provider-level analysis**

44. In addition to our sector-level analysis we have investigated changes in graduate attainment at individual providers, relative both to the mean graduate attainment in the sector in 2010-11 and to the same provider in 2010-11. Provider differences are presented as Z-scores to measure the significance of the change in unexplained attainment.

45. Z-scores measure the distance a provider's attainment is from a comparator mean (the sector or same provider attainment in 2010-11). The distance is measured in standard deviations so that differences are comparable across academic years and providers.

## **Changes in attainment at providers relative to the sector in 2010-11**

46. Figures 8 and 9 present the distribution of Z-scores denoting the changes in unexplained graduate attainment between the sector in 2010-11 and providers for all years between 2010-11 and 2020-21, for first and upper second class degrees combined and first class degrees alone respectively. This demonstrates that in 2010-11 providers were fairly evenly distributed around the 2010-11 sector average (where the Z-score is 0), with a small proportion exhibiting attainment significantly higher or lower than the sector mean.<sup>15</sup> The overall shape of the trend across providers has been fairly consistent over time, however the difference between the sector average in 2010-11 and the provider averages has increased each year, with more and more providers exhibiting unexplained attainment significantly above the 2010-11 sector mean.

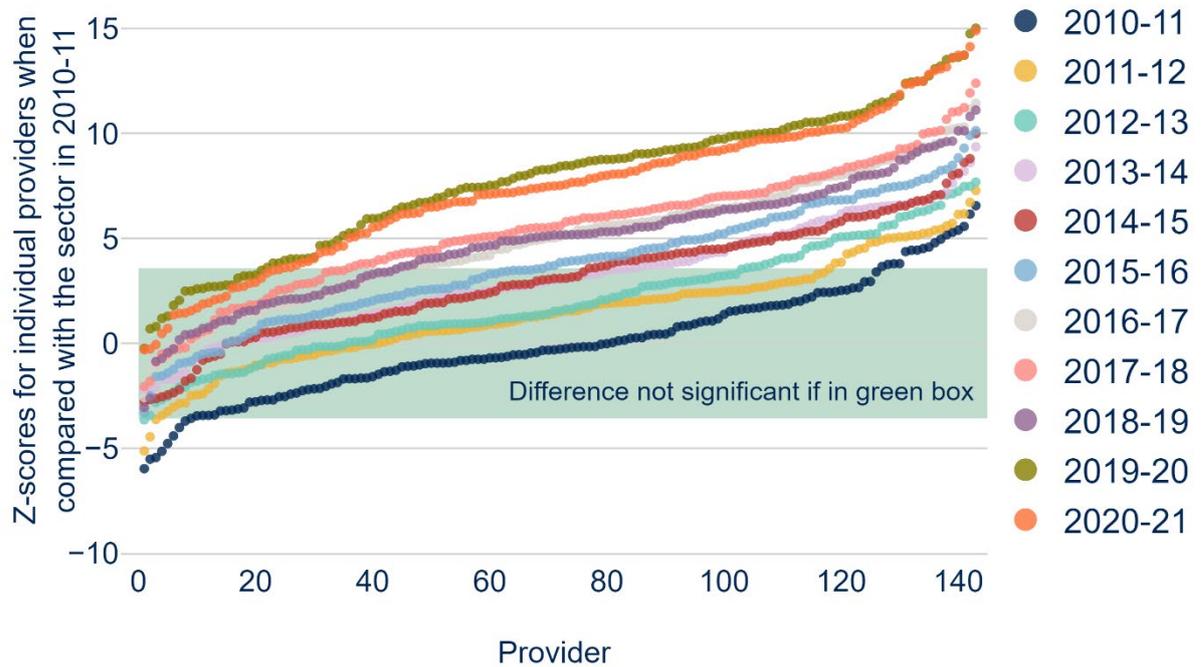
47. Figure 8 shows that between 2010-11 and 2017-18, Z-scores increased with some consistency each year, however in 2018-19 many Z-scores dropped in value. The largest increase to date was in 2019-20. Z-scores in 2020-21, when compared to the 2010-11 sector average, were slightly lower than the Z-scores in 2019-20. Figure 8 highlights that by 2020-21, over three quarters of providers had seen significant increases in unexplained awarding of first and upper second class degrees when compared with the 2010-11 sector mean.

48. Figure 9 shows a similar trend for firsts alone. However, the difference from the 2010-11 sector average is more pronounced for firsts, with larger Z-scores, especially for the more recent years. Figure 9 highlights that by 2020-21, almost all providers included in the analysis saw a significant increase in unexplained awarding of first class degrees when compared with the 2010-11 sector mean.

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<sup>15</sup> Providers with Z-scores +/-3.58 are considered statistically significant from the comparator (this includes a Bonferroni correction to create 95 per cent levels for the multiple comparisons made) and lie outside the green box.

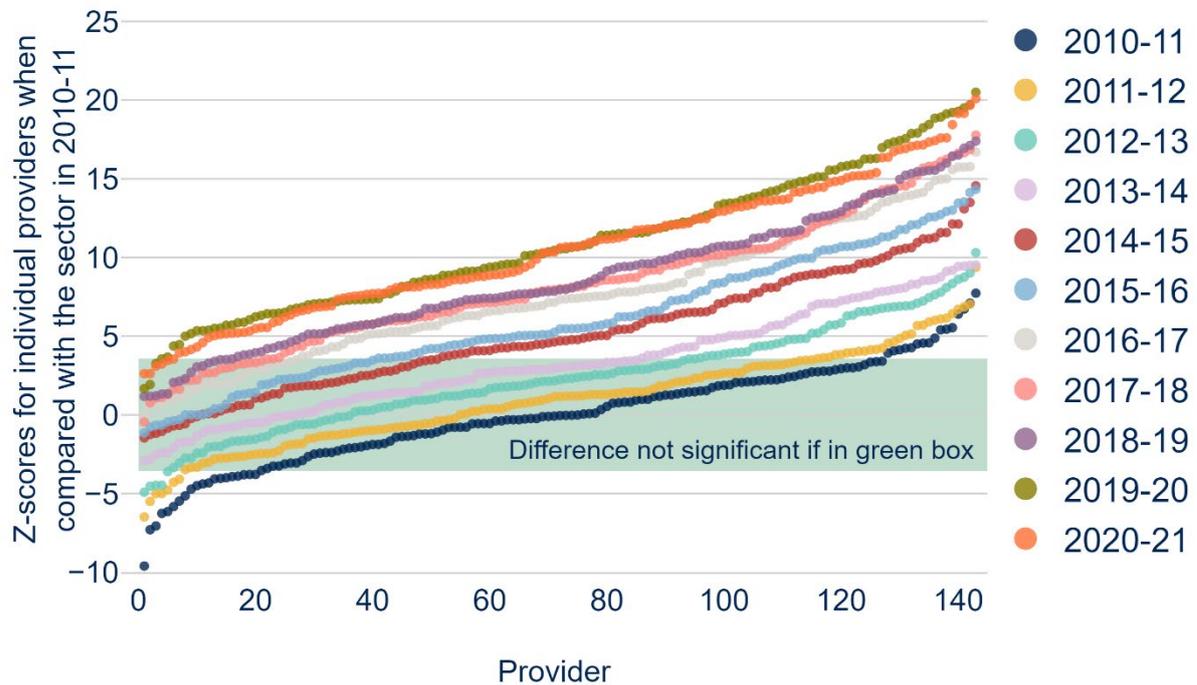
**Figure 8: Distribution of Z-scores denoting the difference between first and upper second class attainment in the sector in 2010-11 and individual providers for academic years 2010-11 to 2020-21**



Note: The data used to create this chart can be found in Annex A.<sup>16</sup>

<sup>16</sup> In Figures 8 to 11, providers are ordered independently each year based on the size of their Z-score, so the provider with the lowest Z-score each year is always first and the provider with the highest Z-score that year is always last. Thus the position of a specific provider will not necessarily be the same from year to year.

**Figure 9: Distribution of Z-scores denoting the difference between first class attainment in the sector in 2010-11 and individual providers for academic years 2010-11 to 2020-21**

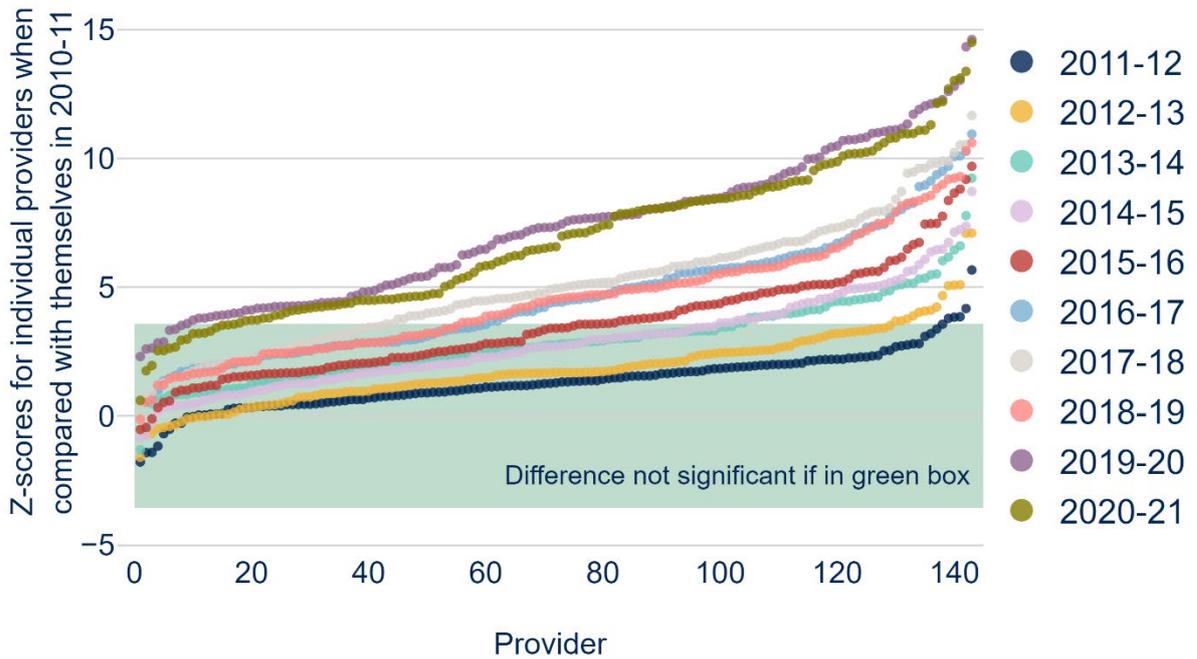


Note: The data used to create this chart can be found in Annex A.

### Changes in attainment at providers relative to the provider in 2010-11

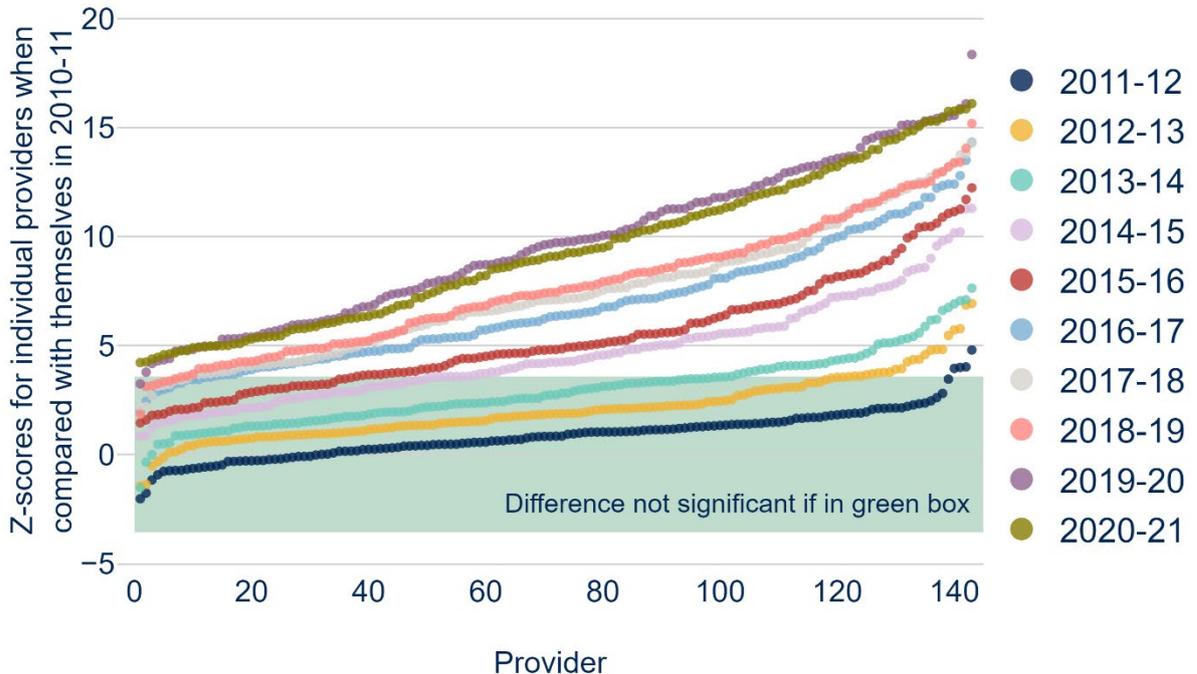
49. Figures 10 and 11 present the distribution of Z-scores for providers when comparing their graduate attainment in 2010-11 with subsequent years, for first and upper second class degrees combined and first class degrees alone respectively. Trends similar to the 2010-11 sector comparison (Figures 8 and 9) have been observed. However, given the trend of attainment increasing in providers and comparing providers with themselves in 2010-11, we see fewer negative Z-scores, unlike the sector comparisons where negative Z-scores were common in earlier years. The trends for firsts alone and first and upper seconds combined are similar, but firsts alone have seen larger increases in Z-scores. By 2020-21, all providers in this analysis had experienced significant increases in their unexplained awarding of firsts alone, and most had experienced significant increases in their unexplained awarding of first and upper second class combined, when compared with their awarding in 2010-11.

**Figure 10: Distribution of Z-scores denoting the difference between first and upper second class attainment at providers in 2010-11 compared with 2011-12 to 2020-21**



Note: The data used to create this chart can be found in Annex A.

**Figure 11: Distribution of Z-scores denoting the difference between first class attainment at providers in 2010-11 compared with 2011-12 to 2020-21**



The data used to create this chart can be found in Annex A.

**Provider-level changes in unexplained attainment since the start of the coronavirus pandemic**

50. As discussed in paragraph 38 and Tables 2 and 3, the academic year 2019-20 saw a large sector-level increase in unexplained attainment when compared with 2018-19. These increases

in unexplained attainment were not uniform across all providers and varied considerably, as can be seen in Tables 1 and 2 of Annex A.

51. For firsts and upper second class degrees combined, at a provider level, between 2017-18 and 2018-19, unexplained attainment fluctuated and the overall sector unexplained attainment dropped 1.8 percentage points. By comparison, between 2018-19 and 2019-20 there was a sector increase in unexplained attainment of 5.8 percentage points, ranging at individual providers from a 23.5 percentage point increase to a 18.6 percentage point decrease. Between 2019-20 and 2020-21, sector unexplained attainment dropped by 1.6 percentage points.
52. For first class degrees, at a provider level, changes in unexplained attainment between 2018-19 and 2019-20 ranged from a 22.2 percentage point increase to a 7.8 percentage point decrease, with a sector increase of 6.3 percentage points. By comparison, between 2017-18 and 2018-19 the average change in unexplained awarding of first class degrees was a 0.2 percentage point increase. There was no sector-level change between 2019-20 and 2020-21 estimates, but at provider level changes ranged from a 31.9 percentage point increase to a 19.3 percentage point decrease.



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