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HOW DOES THE RETURN TO A DEGREE VARY BY CLASS OF AWARD?

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1. INTRODUCTION

The aim of this briefing paper is to extend the analysis conducted in Boero *et al.* (2019) by exploring how the financial return to a first degree¹ varies by classification awarded, based on earnings around age 26. We examine how returns have changed over a period of time in which both higher education participation and the proportion of graduates achieving at least an upper second class degree has risen. Initially, we distinguish between graduates with a first or upper second class degree and those who attained a lower second class degree or below.² This reflects a traditional tendency among employers to condition recruitment on graduates being awarded a minimum of an upper second class degree.³ While the percentage of upper second class degrees awarded has remained relatively constant in the last few decades, there has been continued growth in the proportion of graduates qualifying with first class degrees and an offsetting fall in the proportion attaining lower second class degrees or below. Consequently, we additionally differentiate between those with a first class degree and individuals holding an upper second class award, which enables us to explore how the return by separate degree classification has changed over time.

To date, publications in this field have tended to focus on how the return to a first degree varies by subject studied and institution attended (see, for example, Belfield *et al.* (2018)). There is, however, a relative paucity of evidence around how academic performance in higher education impacts earnings. An exception to this is Naylor *et al.* (2016), which examines the return by degree classification, based on earnings around the age of 30 for cohorts born between 1970 and 1982. Using more recent birth cohorts, the aim of the current paper is to update the literature at a time when there is increasing concern over the potential consequences that a

greater proportion of graduates holding a first or upper second class degree may have on the perceived value of higher education qualifications.⁴

Beginning with the British Cohort Study (BCS) (which follows a sample of individuals born in 1970) and Next Steps (which surveys those born around 1990), we investigate the change in the return to a degree by classification awarded over a two-decade period that has seen an increase in both higher education participation and the proportion of graduates achieving at least an upper second class award. As the most recent sweep of the Next Steps survey took place when cohort members were 26, we focus on exploring the return around this age, though we appreciate that both graduates and non-graduates will be at a relatively early stage in their careers. Ireland *et al.* (2009) demonstrate how a higher proportion of young people graduating from university might be expected to increase the private return to a first or upper second class degree, as employers reward more highly those who 'stand out from the growing crowd'. However, offsetting this tendency, if a greater proportion of graduates attain a first or upper second class degree, the relative labour market advantage associated with such awards will tend to diminish. *A priori* therefore, the trajectory for the return to a degree by classification awarded is ambiguous. To further examine the change in the return by separate degree classification, we exploit the Longitudinal Destinations of Leavers from Higher Education (LDLHE) survey and the Labour Force Survey (LFS), which allow us to analyse a sample of graduates born between 1980-1993.

¹ Our definition of the return to a degree differs slightly from Boero *et al.* (2019), who exploited measures of hourly pay. Here, it is defined as the percentage by which the annual pay of graduates exceeds that of non-graduates, looking at those in full-time employment only. This enables us to use a consistent measure of earnings that is available across all the datasets we utilise in this study.

Graduates are still considered to be those holding a first degree only (hence those with other undergraduate or postgraduate qualifications are excluded). Our rationale for excluding postgraduates is that they will have spent little time in the labour market by age 25-26 and consequently their earnings data are likely to be noisy. Non-graduates are those who possess A-levels, GCSEs or equivalent qualifications. In contrast to Belfield *et al.* (2018), we are unable to additionally examine how the return varies by subject choice at A-level. Our sample size precludes such an analysis here.

² Those with a lower second class degree or below include those with a third class, pass or ordinary degree. Individuals with an unclassified degree (e.g. in medicine and dentistry) are not included in the analysis.

³ <https://www.bbc.co.uk/news/10506798>

⁴ <https://www.officeforstudents.org.uk/news-blog-and-events/blog/getting-to-grips-with-grade-inflation/>

The key findings from our empirical work are as follows. In the BCS, we observe an average return to a first degree at age 26 of 17%, once we account for other factors that could impact both higher education participation and earnings.⁵ When analysing how this return differs depending on performance at university, we find that for graduates who achieved a first or upper second class award, the return is 20%. For those who attained a lower second class degree or below, we observe a return of 14%. Examination of the Next Steps dataset indicates that the average return to a first degree at age 25-26 is 10%. Among graduates who achieved a first or upper second class degree, the return is 14%, compared to a figure of 3% for those who attained a lower second class degree or below. A comparison of the BCS and Next Steps datasets therefore suggests that the average return to a degree has fallen by 7 percentage points.⁶ However, there has been a sharper decline (of 11 percentage points) in the return for those who attained a lower second class degree or below when compared to the fall (of 6 percentage points) for graduates who achieved a first or upper second class degree. The implication of this is that the return to a first or upper second class degree relative to a lower second class degree or below has increased by approximately 5 percentage points over the two-decade period.

Differentiating those with a first class degree from those with an upper second class award, we find tentative evidence that the return to a first class degree relative to an upper second class degree has fallen by up to 3 percentage points over the two decades that separate those born in 1970 and those born around 1990. This is after accounting for a reduced set of controls common across all four datasets (BCS, Next Steps, LFS and LDLHE).

The return to an upper second class degree relative to a lower second class degree or below has, however, increased by 3 to 8 percentage points. It therefore appears that the growing divergence in the return to at least having an upper second class award compared to having a lower second class degree or below is being driven by an increasing return to an upper second class degree relative to a lower second class degree or below. Both the LFS and LDLHE datasets indicate that there has been no significant change in the return by separate degree classification for cohorts born after 1980, thus suggesting the movement occurred among those born between 1970 and 1980.

The rest of this paper is organised as follows. Section 2 sets out the policy importance of understanding the financial return to a degree by classification awarded. In section 3, we present the findings of our analysis for the two birth cohort studies. For each of these two datasets, we report the average return to a first degree, as well as how this varies by classification awarded (where we separate graduates by whether they achieved at least an upper second class award or not). An assessment is also made with regards to the robustness of the results by utilising other datasets to corroborate the findings from the birth cohort studies. The focus of section 4 concerns the returns by the more finely disaggregated degree classifications. Section 5 closes the paper with conclusions and further remarks.

⁵ See Annex 1 for more details on the controls utilised. We have tried to ensure that the variables used in both the BCS and Next Steps analysis are as similar as possible.

⁶ We conducted a variety of robustness checks when analysing the average return to a degree. This comprised of using hourly pay (including/excluding part-time workers) and/or defining the non-graduate group as those with A-levels only. Across the array of models we generated as part of the process, we found the average return to a degree ranged from approximately 5 to 10 percentage points. When using a control group consisting of those with GCSEs/A-levels and including part-time workers in the analysis, we found that 9% of the BCS sample (11% of non-graduates and 4% of graduates) were in part-time employment, compared to 11% in Next Steps (14% of non-graduates and 6% of graduates).

2. POLICY CONTEXT

Over the last decade, government policy has concentrated on encouraging better information, advice and guidance to be supplied to young people to help them make informed choices about their education, leading to the development of platforms such as Discover Uni.⁷ In England, improved transparency and better data formed an important aspect of the 2016 White Paper *Success as a Knowledge Economy: Teaching Excellence, Social Mobility and Student Choice*. The Office for Students (OfS) has also placed informed choice at the centre of its regulatory framework.⁸ Simultaneously, the private cost of higher education has continued to increase, following the 2012 tuition fee rise and the more recent removal of maintenance grants. As a result, higher education has become a significant investment decision for prospective students and their families, given the higher fees, alongside foregone pay. It is therefore valuable for individuals to be provided with data on the potential impact a degree will have on their earnings, including how performance at university might affect future labour market outcomes.

Figure 1⁹ illustrates how the proportion of graduates attaining a specific degree classification has changed between 1996/97 and 2017/18 using HESA data. Those with an unclassified award are excluded from the population. While the percentage achieving an upper second class degree has increased only marginally, the proportion of first class degrees awarded has risen quite substantially, from 8% in 1996/97 to 28% in 2017/18. This trend has led to questions over potential grade inflation arising within the sector and the subsequent impact this could have on the reliability of higher education qualifications. Indeed, one of the conditions of registration set by the OfS is that providers must ensure that the qualifications they award hold value over time.¹⁰ These concerns have led universities in the sector to commit to working collaboratively to uphold the value of degrees, following a consultation led by the UK Standing Committee for Quality Assessment (UKSCQA).¹¹

⁷ <https://discoveruni.gov.uk/>. This is operated by the UK higher education funding and regulatory bodies.

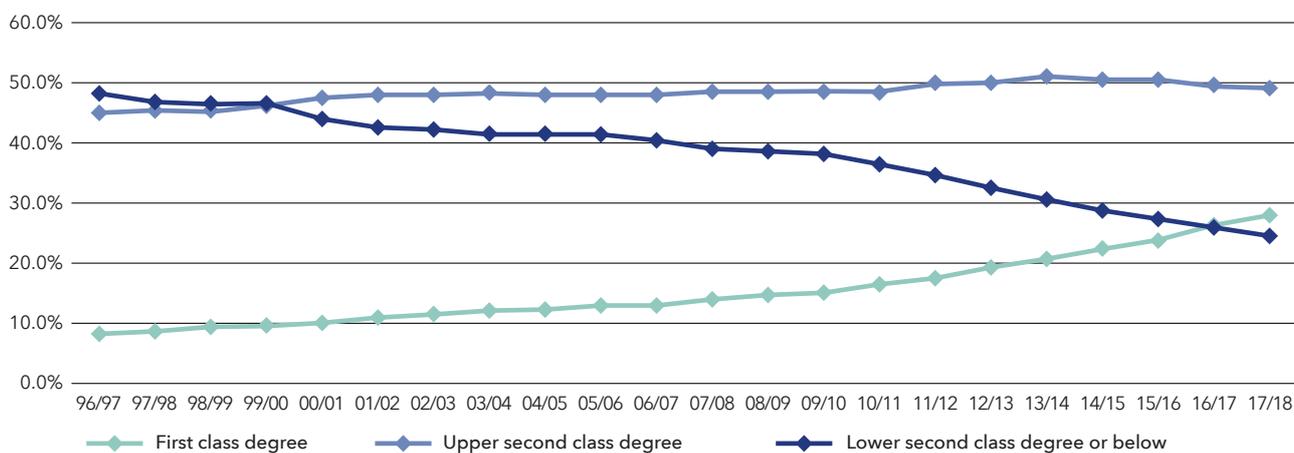
⁸ <https://www.officeforstudents.org.uk/advice-and-guidance/student-information-and-data/providing-information-advice-and-guidance-for-students/>

⁹ Those with a lower second class degree or below include qualifiers with a third or fourth class degree, as well as those who achieved a pass.

¹⁰ <https://www.officeforstudents.org.uk/advice-and-guidance/regulation/quality-and-standards/quality-assessment-and-monitoring/>

¹¹ <https://ukscqa.org.uk/2019/05/20/universities-unveil-joint-commitment-on-degree-classifications/>

Figure 1: The proportion of classified first degree qualifications by class (academic years 1996/97 to 2017/18)



Furthermore, the aforementioned White Paper outlines that higher education should be a key driver of improving social mobility within the country. Previous research by Naylor and Smith (2001), as well as Crawford (2014), has illustrated that students from disadvantaged backgrounds are less likely to achieve a first or upper second

class degree, even after one accounts for factors such as prior attainment and course choice. Large differences in the return to a degree by classification awarded could therefore inhibit the extent to which higher education can boost social mobility.

3. ESTIMATING THE RETURN TO A DEGREE BY CLASSIFICATION AWARDED IN BCS AND NEXT STEPS

BCS

The BCS longitudinal survey aims to track the lives of a sample of approximately 17,000 individuals born in early April 1970. The original questionnaire had a predominantly medical focus, though subsequent sweeps have seen the scope of the study widened. The age 26 survey took place between April and September 1996, covering a vast range of topics, including education and employment outcomes. Although there are no weights available in the dataset to address non-response, work was undertaken by the collectors of the data at age 26 to assess how representative the achieved sample was when compared with the target sample. The two were found to be quite similar, reducing concerns over response bias. While degree classification was not captured during this survey, we obtain this information through linking to responses that were provided at age 30.

Previous research by Blundell *et al.* (2005) and Heckman *et al.* (2006) has shown how personal characteristics, household background, cognitive¹² and non-cognitive ability can impact future earnings. Meanwhile, studies such as that by Contoyannis and Rice (2001) highlight the relationship between wages and health status. With these variables known to play a part in determining higher education choices,¹³ it is important to control for the influence of such factors when producing estimates of the return to a degree. One of the key advantages of using birth cohort studies over most administrative sources in this area is that they typically collect information on a wider range of potentially relevant characteristics.

Following previous literature, we employ an ordinary least squares (OLS) approach to estimate the return to a degree by classification awarded, where the log of annual pay of full-time workers is the dependent variable. Dearden (1999) points out that OLS produces reasonable estimates of the true causal impact of education on wages in the National Child Development Survey (itself a birth cohort study). As we utilise two later birth cohort studies here, this seems an appropriate methodology to use in this instance. We successively add controls to our model and report in Table 1 how the return changes as we account for other determinants such as personal and household background characteristics. Many of the control variables (including cognitive ability tests) that we rely upon in our analysis of the BCS originate in the age 10 survey.

We limit our sample to those defined as being in full-time employment and focus on annual pay. With no minimum wage having been in place in 1996, we trim the top and bottom 1% of earnings. 20% of the final sample (consisting of 3771 observations) have a first degree qualification. Amongst graduates, we find that 7% were awarded a first class degree, 44% an upper second class degree and 49% a lower second class degree or below. The 1991 Universities' Statistical Record (which corresponds with the time that higher education participants born in 1970 are likely to have graduated) indicates that 9% of qualifiers were awarded a first class degree, 44% an upper second class degree and 47% a lower second class degree or below. Consequently, our BCS sample does appear to be representative by degree classification.¹⁵ There is no information within the age 26 survey that can allow one to determine whether there are any individuals in our non-graduate group who had dropped out of university.

¹² Studies on the return to a degree in the UK that utilise administrative data sources tend to proxy for cognitive ability using GCSE attainment. However, this is potentially endogenous, as noted by Crawford *et al.* (2016). We therefore argue that ability tests sat at an early age are less problematic from this perspective and allow us to better control for innate ability.

¹³ See, for example, work by the Department for Innovation, Universities and Skills (2006) and Bowes *et al.* (2015) for more information on how these factors correlate with higher education participation.

¹⁴ As in Boero *et al.* (2019), we do not control for employment characteristics, such as industry, occupation or region of work. This is because we are treating annual pay as the measure of the overall return and not as the net reward after controlling for the effect of education on other outcomes such as entry into particular industries or occupations.

¹⁵ Those with a lower second class degree or below are defined as possessing a lower second, third or pass in their first degree.

Table 1: Return to a first degree by classification awarded based on earnings at age 26 in BCS. The dependent variable is log of annual pay of full-time workers. The reference group of non-graduates includes only those with GCSEs and A-levels as their highest qualification (or equivalent).

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
All graduates	0.189*** (0.0127)	0.184*** (0.0123)	0.179*** (0.0123)	0.151*** (0.0127)	0.150*** (0.0128)	0.163*** (0.0134)	0.161*** (0.0134)	0.154*** (0.0136)
R-squared	0.0550	0.138	0.150	0.199	0.200	0.207	0.209	0.213
First or upper second class degree	0.218*** (0.0170)	0.217*** (0.0164)	0.211*** (0.0163)	0.179*** (0.0166)	0.177*** (0.0166)	0.190*** (0.0171)	0.189*** (0.0171)	0.182*** (0.0173)
Lower second class degree or below	0.158*** (0.0171)	0.151*** (0.0164)	0.146*** (0.0164)	0.124*** (0.0165)	0.123*** (0.0165)	0.136*** (0.0171)	0.134*** (0.0171)	0.127*** (0.0172)
R-squared	0.0568	0.140	0.152	0.200	0.202	0.208	0.211	0.214
Sample size	3771							
Controls								
Cohort member background		X	X	X	X	X	X	X
Cohort member non-cognitive skills			X	X	X	X	X	X
Parental/Household background				X	X	X	X	X
Parental attitude towards education					X	X	X	X
Job tenure						X	X	X
Cohort member health							X	X
Cognitive ability								X

In model 1, we see that the average return to a degree is 21%, based on the reported estimate of 0.189 in the table.¹⁶ A first or upper second class degree leads to a return of 24%, compared to 17% for those with a lower second class degree or below. As we introduce various controls, there tends to be a decrease in the estimated return, with the largest decline associated with adding parental/household background variables. With the full set of controls, the average return to a degree falls to 17% (20% for a first or upper second class degree and 14% for a lower second class degree or below). Hence, the return for a first or upper second class degree relative to a lower second class degree or below is estimated to be about 6 percentage points.

We note that Naylor *et al.* (2016) find the return to a first or upper second class degree relative to a lower second class degree or below to be around 9% in the 1990 Graduate Cohort Study (GCS90)¹⁷ for those aged 26-28, once accounting for age, gender, ethnicity and marital status. If we replicate their model using BCS (excluding age), we estimate the return to a first or upper second class degree relative to a lower second class degree or below¹⁸ to be 5% when using log of hourly pay as the dependent variable. Though this is slightly lower than the estimate in GCS90, that study does consider a wider age range. Naylor *et al.* (2016) present evidence that the return to a first or upper second class degree relative to a lower second class degree or below widens at least until the age of 30. This is therefore a possible explanation for the discrepancy between the two studies.

¹⁶ Regression coefficients in all tables in this paper are in log points. In our commentary, these are converted into percentage points using the formula $\exp(\beta) - 1$, where β represents the regression coefficient. In all tables, *** indicates significance at the 1 percent level, ** indicates significance at the 5 percent level and * indicates significance at the 10 percent level. For categorical variables with more than one dummy (e.g. degree classification), we have illustrated their joint significance. Standard errors are reported in parentheses.

¹⁷ This is a survey of individuals who graduated from university in 1990 and were therefore most likely to have been born around 1970. Having taken place six years after graduates complete their course, it is comparable in timing to the age 26 BCS survey.

¹⁸ Defined as in Naylor *et al.* (2016), where the lower second class degree or below group consists of only those with a lower second or third class degree.

NEXT STEPS

Next Steps was originally known as the Longitudinal Study of Young People in England and was managed by the Department of Education. A representative sample of around 16,000 individuals in year 9 at selected state and independent schools were surveyed during 2004 and every subsequent year until 2010, resulting in a total of seven sweeps.¹⁹ The main objective of this study was to understand the transitions young people born around 1990 were making from secondary school into work or higher education. However, a wide range of topics were covered, including assessing the non-cognitive skills of the cohort member (e.g. attitudes towards schooling). Parents of the selected pupils were also asked to participate in the first four surveys, which allowed detailed information on parental/household background to be gathered, as well as enabling exploration of their attitudes towards education. With this survey having started at age 13-14, early years cognitive ability measures are a notable omission from the Next Steps dataset, when compared with previous birth cohort studies. However, as Next Steps has been linked to National Pupil Database data, we utilise Key Stage 2 attainment as a proxy for cognitive ability (see Crawford *et al.* (2014) and Bourne (2016)).

The Age 25 survey (sweep 8) for Next Steps was administered by the Centre for Longitudinal Studies between August 2015 and September 2016,²⁰ aiming to examine the early adult life outcomes of this cohort. Individuals were asked about the qualifications they had achieved since they were last interviewed. For those who had obtained a first degree, a further question was asked on the classification awarded. We restrict our sample of interest to individuals in full-time employment (i.e. those working 30 hours or more per week). The gross weekly earnings variable available in the dataset was converted into an annual figure, with those reporting a yearly figure below the minimum wage removed

from the analysis, amounting to the bottom 2% of the sample. The top 2% of earners were also subsequently removed. Our final sample comprises of 1733 observations (this is slightly lower than the sample in Boero *et al.* (2019) due to a small number of individuals not providing information on their degree classification and the use of annual pay of full-time workers).

Within this sample, 43% of individuals have a first degree qualification. We find that 17% of graduates were awarded a first class degree, 52% an upper second class degree and 31% a lower second class degree or below. As most graduates from the Next Steps cohort will have graduated around 2011/12, this seems a fairly representative split by degree classification when compared with Figure 1. In Next Steps, respondents are asked whether they were in higher education during sweeps 6 and 7. Additionally, they are again asked at age 25-26 whether they have ever been to university. Consequently, we can assume that those whose highest level of qualification at age 25-26 is A-level, GCSE or equivalent and who report having attended university have dropped out. We exclude these individuals from our non-graduate reference group. We successively add controls to our OLS model and report how the return changes as we account for factors such as personal and household background characteristics in Table 2.

¹⁹ To mitigate the impact of attrition, weights have been created in each survey sweep for use in analysis.

²⁰ Individuals will have therefore been aged 25 or 26 when they took part in the survey.

Table 2: Return to a first degree by classification awarded based on earnings at age 25-26 in Next Steps. The dependent variable is log of annual pay of full-time workers. The reference group of non-graduates includes only those with GCSEs and A-levels as their highest qualification (or equivalent).

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
All graduates	0.146*** (0.0189)	0.136*** (0.0185)	0.136*** (0.0181)	0.104*** (0.0174)	0.104*** (0.0178)	0.136*** (0.0181)	0.133*** (0.0184)	0.0972*** (0.0196)
R-squared	0.0454	0.110	0.159	0.226	0.227	0.248	0.256	0.282
First or upper second class degree	0.188*** (0.0209)	0.178*** (0.0199)	0.178*** (0.0193)	0.143*** (0.0187)	0.142*** (0.0190)	0.174*** (0.0193)	0.169*** (0.0196)	0.130*** (0.0207)
Lower second class degree or below	0.0506*** (0.0282)	0.0435*** (0.0268)	0.0428*** (0.0262)	0.0260*** (0.0251)	0.0252*** (0.0255)	0.0591*** (0.0256)	0.0595*** (0.0256)	0.0344*** (0.0255)
R-squared	0.0605	0.125	0.173	0.236	0.237	0.258	0.265	0.289
Sample size	1733							
Controls								
Cohort member background		X	X	X	X	X	X	X
Cohort member non-cognitive skills			X	X	X	X	X	X
Parental/Household background				X	X	X	X	X
Parental attitude towards education					X	X	X	X
Job tenure						X	X	X
Cohort member health							X	X
Cognitive ability								X

Prior to the inclusion of any controls, the average return to a degree is 16%, with those who achieved a first or upper second class degree obtaining a return of 21% compared to 5% for those with a lower second class degree or below. As we start to introduce various controls into our model, there is a fall in the estimate of the return to a degree (including by classification awarded), with the biggest decline associated with the introduction of parental/household background variables and cognitive ability. Once we include a comprehensive set of controls in model 8, the average return to a degree falls to 10% (14% for those with a first or upper second class degree and 3% for those with a lower second class degree or below). Hence, from the Next Steps data, the return for a first or upper second class degree relative to a lower second class degree or below is estimated to be about 11 percentage points.

Considering those models which include a full set of controls, we find the average return to a degree has fallen from 17% in BCS to 10% in Next Steps – a decline of 7 percentage points. When we bring classification awarded into the analysis, the return to a first or upper second class degree has dropped from 20% in BCS to 14% in Next Steps, which constitutes a 6 percentage point fall. The equivalent figures for a lower second class degree or below are 14% in BCS and 3% in Next Steps, representing a decline of 11 percentage points. Hence, the average return to a degree has diminished across the two decades, with a greater decline evident amongst those with a lower second class degree or below award.

We additionally check the robustness of the findings from Next Steps through analysing the LFS. While the primary purpose of LFS is to assist with the assessment of the UK labour market, since the mid-2000s, survey respondents who possess a first degree have been asked about the classification they were awarded. As in Next Steps, a variable pertaining to gross weekly wages is available, which we convert into an annual measure for full-time workers. Those earning below the minimum wage are removed from the sample, with earnings of the top 1% also trimmed.²¹ To ensure sufficient sample size, we pool all quarters released between 2015 and 2018.²² We use earnings information collected from participants at the first point in which they join the LFS.²³ Consequently, once we restrict the data to those aged 25-26, the sample is composed of those born between 1989-1993. Within our final sample of 1437 observations, 18% of graduates were awarded a first class degree, 56% an upper second class degree and 26% a lower second class degree or below. Hence, there is a slightly higher proportion of individuals with an upper second class degree in this sample when compared to Next Steps (and Figure 1). Replicating model 1 in Next Steps using this LFS sample, we find the average return to a degree is 13%, which is slightly lower than that seen in Next Steps. There is considerable variation by degree classification awarded, with those possessing a first or upper second class degree experiencing a return of 17%, compared to 2% for graduates with a lower second class degree or below. Overall, the results in both Next Steps and LFS are quite similar, so the findings emerging for those born around 1990 appear robust.

²¹ Amongst those aged 25-26, trimming in this manner reduces the sample size available for regression analysis by approximately 3%.

²² Earnings have been converted into real values using the Consumer Prices Index including owner occupiers' housing costs. 2015 was chosen as the base year.

²³ LFS adopts a rotating panel design, whereby individual respondents are sampled for five successive quarters before being replaced.

4. ESTIMATING THE RETURN BY SEPARATE DEGREE CLASSES

The results presented in Tables 1 and 2 are based on a binary separation of, on the one hand, first and upper second class degrees and, on the other, lower second class degrees or below. In this section of the paper, we disaggregate further and estimate the return separately for a first, upper second and a lower second class degree or below. It is at this point that we concentrate solely on graduates and draw upon the LDLHE dataset, which has the key advantage of offering a far larger sample size than the birth cohort studies or the LFS. LDLHE was run every two years from 2002/03 to 2012/13 and hence offers the opportunity to explore how the return has changed over time.

HESA managed the Destinations of Leavers from Higher Education (DLHE) survey from the early 2000s. The survey aimed to capture an insight into graduate destinations six months after they complete their course. Yet, with information being collected so soon after one qualifies, it is likely that many individuals may not have settled into their preferred career paths. As a response to this issue, graduates in the academic year 2002/03 were the first cohort to take part in the LDLHE survey around 2006, which aimed to gather data on graduate outcomes approximately three and a half years after graduation. The final LDLHE cohort qualified in 2012/13 and will have participated in the questionnaire in approximately 2016. Only those who had responded to DLHE were eligible to participate. As well as exploring employment and earnings in detail, there were also questions asking respondents to reflect more widely on their higher education experience. Earnings information was assembled by asking individuals to self-report their annual salary.

To allow for better comparison with LFS and birth cohort studies data, we restrict our LDLHE sample to those who entered higher education at the age of 18 or 19 and qualified within three to four years. Consequently, they will have been around 25-26 years of age when they took part in this survey. In terms of birth cohorts, the LDLHE sample covers those born approximately between 1980 and 1992. With no data on working hours, we concentrate on UK domiciled graduates who were working in full-time paid employment. A small proportion of individuals with unclassified degrees are removed from the sample and we again exclude individuals earning below the minimum wage and trim the more extreme earnings at the top end of the distribution.²⁴

The LFS enables us to corroborate our findings from LDLHE regarding the changing return over time by separate degree classification. We pool all quarters from 2006 to 2018, taking earnings when households first enter the survey. In each year, the gross weekly wage variable is converted into an annual figure, with those earning below the minimum wage excluded. Earnings for the top 1% are also trimmed.²⁵ The sample is then limited to those aged 25-26 and hence corresponds to those born between 1980-1993.

²⁴ This results in around 2-3% of the sample being removed in each LDLHE year.

²⁵ Around 3% of the age 25-26 sample are excluded as a result of this process.

Table 3 reports summary statistics on the split of graduates by degree classification across the various survey years in LDLHE and LFS. Both exhibit very similar trends and while they tend to slightly overrepresent those with an upper second class degree (when compared with Figure 1), the two datasets overall appear reasonably representative by classification awarded.

Table 3: The percentage of the graduate sample in LDLHE and LFS by degree classification

LDLHE Year of survey	LDLHE First class degree (%)	LDLHE Upper second class degree (%)	LDLHE Lower second class degree or below (%)	LDLHE sample size	LFS Year of survey	LFS First class degree (%)	LFS Upper second class degree (%)	LFS Lower second class degree or below (%)	LFS sample size
2006	9	49	41	3830	2006-07	13	48	39	537
2008	9	53	38	6920	2008-09	10	55	35	495
2010	11	54	35	7655	2010-11	14	50	36	423
2012	14	56	30	10760	2012-13	13	53	34	421
2014	15	55	29	13135	2014-15	16	52	32	431
2016	20	55	25	17530	2016-18	18	56	26	690

In Table 4 we present the results of a model estimated by OLS where the dependent variable is log of annual pay, with independent variables including degree classification, sex, ethnicity, disability and job tenure. For the LFS and LDLHE, we investigated whether there was any change in the return by separate degree class, but we were unable to reject the null hypothesis of no change.²⁶

Table 4: The return to a first and an upper second class degree based on earnings at the age of 25-26. The dependent variable is log of annual pay.

Survey	LDLHE	LFS	Next Steps	BCS
Birth cohorts covered	1980-1992	1980-1993	1989-1990	1970
First class degree relative to an upper second class degree	0.108*** (0.00345)	0.0793*** (0.0176)	0.0740*** (0.0310)	0.105*** (0.0427)
Upper second class degree relative to a lower second class degree or below	0.128*** (0.00289)	0.0822*** (0.0131)	0.118*** (0.0304)	0.0556*** (0.0215)
R-squared	0.121	0.0580	0.0920	0.0892
Sample size	59830	2997	926	765

The LDLHE dataset indicates that the return for a first class degree relative to an upper second class degree is 11%, which is the same as the return one finds in the BCS. Both LFS and Next Steps suggest a lower return of 8-9%. Overall however, the results from these four datasets highlight that the return to a first class degree relative to an upper second class degree has declined by up to 3 percentage points. It should be noted that this finding is tentative, given the low sample of graduates with a first class degree in the BCS dataset.

From Table 4, the return for an upper second class degree relative to a lower second class degree or below in LDLHE is 14%. This is similar to that observed in Next Steps (13%), though somewhat higher than that found in LFS (9%). For those born around 1990, these three datasets indicate the return for an upper second class degree relative

to a lower second class degree or below is in the region of 9-14%. In BCS, which relates to those born in 1970, we find a return of 6%. Hence, there is evidence of the return to an upper second class degree relative to a lower second class degree or below having increased by 3 to 8 percentage points over the two-decade period. It therefore appears that the growing divide in the return to a degree based on the more highly aggregated separation - of a first or upper second class degree versus a lower second class degree or below - is being driven by the specific change in the return to an upper second class degree relative to a lower second class degree or below. As we do not observe any change in the return by degree classification for those born after 1980 in LDLHE and LFS, this suggests that the change occurred among those born between 1970 and 1980.

²⁶ Earnings in both LFS and LDLHE in the pooled sample have been converted into real values using the Consumer Prices Index including owner occupiers' housing costs. 2015 was chosen as the base year.

5. CONCLUDING REMARKS

This briefing paper examines the change in the financial return to a degree by broad classification of award, based on distinguishing between those who achieved at least an upper second class award and those with a lower second class degree or below. Subsequently, we differentiate more finely between three separate categories: first, upper second and lower second class degree or below. An important motivation for our study is to detect whether the increase over time in the proportion of first class degrees appears to have any correlation with changes in the return by class of degree awarded.

We find that, after controlling for a wide variety of personal and other characteristics, the average return to a degree has fallen by 7 percentage points (from 17% in BCS to 10% in Next Steps) over the two decades that separate those born in 1970 and those born around 1990. Additionally, the return to a first or upper second class degree has declined by 6 percentage points (20% in BCS to 14% in Next Steps), whereas the return to a lower second class degree or below has declined by 11 percentage points (14% in BCS to 3% in Next Steps) relative to those without a degree qualification. When we separate out graduates with a first class degree from those awarded an upper second class degree, we see that the return to a first class degree relative to an upper second class degree has declined by up to 3 percentage points. In contrast, the evidence suggests that the return to an upper second class degree relative to a lower second class degree or below has increased by around 3 to 8 percentage points. Consequently, the emerging divergence in the return by broad classification of award appears to be the result of the changing return to an upper second class degree relative to a lower second class degree or below.

What may explain these conclusions? In terms of the decline in the average return to a degree, Boero *et al.* (2019) highlight how the decrease primarily affected those born after 1987. Further analysis of the LFS indicates that non-professional occupations have seen stronger growth in pay compared with professional jobs from around 2014 onwards, which resonates with findings reported by the Office for National Statistics based on the Annual Survey of Hours and Earnings (ASHE).²⁷ With non-graduates more likely to be working in the former category, it is the rising pay of non-graduates relative to graduates that appears to explain the result we see. With regards to the falling return to a first class degree relative to an upper second class degree, a labour market signalling approach (see Ireland *et al.* (2009)) would predict that the return to a first class degree would rise with expanding higher education participation as the value of 'standing out from the crowd' grows. However, this effect appears to be dominated by the countervailing impact of an increase in the proportion of first class degrees being awarded, which is likely to reduce the return to a first class degree. In terms of the rise in the return for an upper second class degree relative to a lower second class degree or below, we note that employers have responded to the larger pool of applicants they receive by increasingly using an upper second class degree as the minimum requirement to pass the initial sift for graduate posts. This is evidenced by the Institute of Student Employers (formerly the Association of Graduate Recruiters), who highlighted that a growing proportion of graduate employers were requiring their intake to have at least an upper second class degree (up from 52% in 2004 to 76% in 2012).²⁸ Hence, expansion in higher education participation has resulted in those who do not perform well at university being limited in the range and types of graduate jobs they are able to apply for early on in their careers.

²⁷ <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2019>

²⁸ <https://www.theguardian.com/money/2012/jul/04/graduate-recruiters-look-for-21-degree>

We acknowledge that we are analysing the return by degree classification at an early stage in one's career. As highlighted in Boero *et al.* (2019), graduates tend to enjoy steeper earnings growth than non-graduates. In addition to this, Naylor *et al.* (2016) provide evidence of the return by degree classification (specifically the return to a lower second class degree or below relative to A-levels) changing between ages 30 and 38. We intend to further the work conducted here and explore the return at a later age, once data from the age 31 Next Steps survey has been released. As the Longitudinal Education Outcomes (LEO) dataset has now also been extended to include outcomes ten years after graduation, we will also be investigating the possibility of bringing this dataset into our analysis. Both graduates of the BCS cohort and Next Steps study will have entered the labour market at a time when the economy was weak with the unemployment rate for those aged 18-24 having been 15.1% in 1992 and 19.1% in 2011.²⁹ Additionally, the longer-term impact of entering the labour market in such circumstances could differ between the two cohorts. Exactly how such macroeconomic factors may have influenced the return to a degree has not been considered in this paper. Naylor *et al.* (2016), however, find that unemployment is not a driver of changes in the return by degree classification amongst graduates.

Looking at Figure 1, there has been a particularly steep growth in the proportion of first class degrees being awarded in the last five years - a period not covered by our analysis. Moreover, some of the major graduate employers are moving away from using degree classification during the initial stages of the recruitment process and are now inviting applications from those graduates with a lower second class degree or below.³⁰ Exactly how these changes in higher education and the labour market are impacting the return to a degree by classification awarded is currently unknown. Through our research, we are unable

to confirm what is causing these differences by degree classification. On the one hand, it could be that those with a more prestigious classification award have gained a greater level of skill and knowledge during their time at university, which leads them to being more productive in the workplace. Alternatively, degree classification could simply act as a signal, which employers are using as a mechanism for assessing the (unobserved) skill level of a prospective employee (and hence their remuneration).

Considering the above, alongside carrying out our investigation at a later age, future research in this area may usefully explore how recent developments in higher education and the graduate labour market are impacting on the return by degree classification at age 25-26 amongst graduates born after 1990. This could be done through examination of the LEO dataset around three to five years after graduation. LEO would also offer the opportunity to corroborate our finding in this study of no change in the return by degree classification for those born after 1980, given the first cohort available in this dataset consists of 2003/04 graduates. Furthermore, as LEO covers the vast majority of the graduate population, one could also analyse how the return by degree classification varies by factors such as subject studied and institution attended. Additionally, understanding how the non-financial benefits of a first degree vary by classification awarded would also be helpful for prospective students making higher education choices.

²⁹ <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ybvq/lms>. We do not have any data on the unemployment rates in 1992 and 2011 for graduates and non-graduates separately.

³⁰ <https://www.ft.com/content/8a2ee9b4-bd0f-11e9-b350-db00d509634e>

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ANNEX 1: DESCRIPTION OF THE CONTROL VARIABLES UTILISED IN BCS AND NEXT STEPS

In creating the regression models using the BCS and Next Steps data sources, we have tried to ensure the controls included are as similar as possible. Here, we supply more detail on the nature of the covariates relied upon in conducting our analysis.

COHORT MEMBER BACKGROUND

Sex: In both Next Steps and BCS, this information on the cohort member is taken from the age 25-26 survey. Our reference group is males.

Ethnicity: In Next Steps, we rely upon data collected from the cohort member at age 25-26. For BCS, the ethnicity of the cohort member is gathered from the parent interview that takes place at age 10. The reference group in Next Steps is white, while it is British in BCS.

Special Education Needs (SEN): In Next Steps, the main parent is asked whether the child has been identified as having SEN at age 13-14. In BCS, the teacher interview at age 10 covers whether the child attends a special school. These types of schools cater specifically for those with SEN. In both instances, the reference group is those without SEN.

School type: The Next Steps dataset provides a derived variable indicating whether the cohort member attended an independent school at age 13-14. In BCS, the interview with the Head of the school at age 10 is used to ascertain the type of school the cohort member attended. In both instances, the reference group is those who attended an independent school.

COHORT MEMBER NON-COGNITIVE SKILLS

School attitudes: In Next Steps, the cohort member is asked a series of questions relating to their views on school at age 13-14. We use these responses to form a continuous variable (mean) on their school attitudes that ranges from 1 to 4, with a higher score indicating more positive attitudes. In BCS, we use two (Carolac) questions on schooling asked to the pupil at age 10. These relate to whether they feel sad when it is time to leave school (reference group is those who stated they are not sad at leaving school) and if they believe studying for tests is a waste of time (reference group is those who indicated that studying for tests is a waste of time).³¹

Locus of control: At age 25-26 in Next Steps, the cohort member is asked a series of questions relating to this non-cognitive skill. We take their responses to four questions to form a continuous variable (mean) that ranges from 1 to 4. A larger value indicates higher internal locus of control. At age 26 in BCS, cohort members are asked if they feel they have free choice/control over their life. We use those not feeling in control as the reference group.

Risk-seeking behaviour: At age 25-26 in Next Steps, individuals are asked how willing they are to take risks on a scale of 0-10. We use this information to form a categorical variable containing three groups. The reference group is those who display high risk attitudes. In BCS, as no comparable variable exists, we use smoking behaviour at age 10 to proxy for risky behaviour. Those who have smoked are considered to have risky attitudes and thus form the reference group.

Patience: At age 25-26 in Next Steps, individuals are asked to rate their patience on a scale of 0-10. We use this information to form a categorical variable containing three groups. The reference group is those with high patience. In BCS, the mother is asked when the child is age 10 to rate on a scale of 0-100 the extent to which the child's requests must be met immediately. This is also used to form a categorical variable consisting of three groups. We then utilise high patience cohort members as the reference group.

³¹ While there are differences in the age at which we have been able to capture non-cognitive skills in BCS and Next Steps (as well as there being discrepancies in how we were able to proxy for a particular type of skill), we note that the inclusion of non-cognitive skills has a very small influence on the coefficients of interest.

PARENTAL/HOUSEHOLD BACKGROUND

Parental qualification: When the child is age 13-14 in Next Steps, the main parent³² is asked to supply information on their highest educational qualification. We use individuals having few/no qualifications as the reference group. In BCS, mothers are asked in the parental interview at age 10 to discuss their qualifications. As with Next Steps, we again use individuals having few/no qualifications as the reference group.

Parental occupation: At age 13-14 in Next Steps, the main parent provides detail on their occupation. We rely upon a derived NSSEC indicator in our model. The reference group is those who have never worked or are long-term unemployed. In BCS, we use mother occupation information captured when the cohort member is age 10. Our reference group is those in non-professional occupations.

Family income: At age 13-14 in Next Steps, we utilise a derived variable illustrating the gross household income. We use those with a low household income as the reference group. For BCS, we rely on gross weekly family income at age 10. Family income is sorted into three categories, with those on low income being the reference group.

Household tenure: This is captured from household members when the cohort member is age 13-14 in Next Steps. We use those who own their property or are privately renting as the reference group. In BCS, this information is provided by the parent when the child is age 10. The reference group is those who own a home.

Household type: This information is obtained through the parent in both surveys (age 10 in BCS and age 13-14 in Next Steps). In both instances, we use a single parent household as the reference group.

Age of parent: This data was provided by the parent in both surveys. It was obtained in the birth survey in BCS, whereas it was gathered when the cohort member was age 13-14 in Next Steps. Note that a continuous measure was used in the Next Steps analysis, while a categorical variable is relied upon in BCS, where the reference group is mothers aged 23 or under at the time of the child's birth.

Siblings: A continuous variable indicating the number of siblings to the young person at age 13-14 in the household was used in Next Steps. In BCS, the number of children in the household at age 10 was utilised (as reported by the parent). This was transformed into a categorical variable, where the reference group was where there was 1 child in the house.

Region of residence: In Next Steps, region was collected when the child was age 14-15, whereas in BCS, this information was picked up at age 10. In Next Steps, London forms the reference group. South East is the reference group in BCS.

PARENTAL ATTITUDES TOWARDS EDUCATION

Parental attitudes towards education: In Next Steps, the main parent is asked questions relating to their views on education. We include two variables in our final model. The first one relates to how involved the main parent is in the school life of the child (reference group is those not involved in this aspect). Meanwhile, the second variable assesses the parent's opinion on whether leaving school at 16 limits future career opportunities (reference group is those who believe it does not). In BCS, the teacher is asked when the child is age 10 to provide their view on whether the mother shows an interest in their child's education. The reference group consists of those who do not show an interest.

³² This main parent was defined as being the individual most involved with the education of the cohort member. Analysis of Next Steps indicated that this tends to be the mother.

JOB TENURE

Job tenure: Both Next Steps and BCS contain variables that inform one of the length of time the cohort member has spent in their current job. In Next Steps, we are told when the individual started their current job. As the majority of respondents completed the survey in late 2015 or during 2016, we proxy work tenure by subtracting the year they started their job from 2016. Meanwhile, in BCS, a variable is readily available on length of service. Work tenure is introduced as a continuous variable in Next Steps and as a categorical variable in BCS (where the reference group is those with 0-1 year of service).

COHORT MEMBER HEALTH

Weight/BMI: Both Next Steps and BCS ask individuals during the age 25-26 survey to give their perception on their weight. For both studies, we use those who are underweight or have a healthy weight as the reference group.

Disability: In Next Steps, a derived variable at age 25-26 is available on whether the cohort member is disabled according to the Equality Act 2010 definition. In BCS, individuals at age 26 are asked whether they suffer from a long-term health problem. In both instances, the reference group consists of those without a disability/long-term health condition.

GHQ12/Malaise score: In Next Steps, a derived variable relating to the cohort member's GHQ12 score is available at age 25-26. This is used as a continuous variable in our analysis. In BCS, a grouped malaise score provided at age 26 is used, where the reference group is those with a score of 7 or less.

COGNITIVE ABILITY

Cognitive ability: We rely upon fine graded English and Maths scores at Key Stage 2 from the National Pupil Database in Next Steps. The British Ability Scale assessments are used as the measure of cognitive ability in BCS. In both datasets, we first create a single continuous measure of ability using principal component analysis, as suggested in Bourne (2016). In the regression models we generate, a categorical measure of ability is utilised, which separates individuals into quartiles. Those in the lowest quartile are used as the reference group.

ANNEX 2: REFERENCES OF UK DATA SERVICE SOURCES UTILISED IN THIS BRIEFING

NEXT STEPS

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BRITISH COHORT STUDY

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LABOUR FORCE SURVEY

2006

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2007

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2008

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2009

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2010

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2011

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2012

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