EC331: Research in Applied Economics

The Effects of Degree Class on Graduate Employment within the UK Financial Industry: an empirical analysis

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ABSTRACT

In the UK, the financial industry remains a popular career choice amongst university graduates, as firms constantly look to retain and attract new talent into the workforce. This paper contributes to the literature by examining the effects of degree class on the likelihood of being employed in the financial industry upon graduation. Using national data on 2016 UK university graduates with occupational information at the most detailed level, this paper finds that there are no significant effects from obtaining a higher degree class. This reflects the increasing reliance of employers on more detailed methods of assessment over degree class. Further, the results show that those who attend a target university in London are more likely to be employed in the financial industry upon graduation, and suggests a potential positive effect from networking.

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Introduction

In 2016, the UK financial industry contributed £124.2bn or a share of 7.2% in gross value added ("GVA") to the UK economy (Tyler, 2017), and £71.4bn or a share of 11.5% in total UK government tax receipts (PricewaterhouseCoopers, 2016). When considering the financial industry with its related and supporting industries, the share of national GVA totals to approximately 40%[2] (Rhodes, 2016). With such significance to the UK economy, the financial industry remains a popular choice amongst fresh university graduates looking for a lucrative career path. Being a highly competitive industry, researching the effects of degree class on recruitment into this industry is a particularly relevant investigation, as firms are very selective and apply the most rigorous standards to selecting applicants.

As providers of higher education, universities play a central role in shaping the graduate labour market. Though as former UK Prime Minister and then Chancellor of the Exchequer, Gordon Brown, said in 1999, "it is particularly important that [students] are employable upon graduation" (PISG/HEFCE, 1999). Almost twenty years on, this remains a point of great importance, echoed by many in the policymaking community as well as the general public. While determinants of entry into graduate employment particularly into the financial industry is undoubtedly a complex issue, previous research has suggested that there may be significant effects from the degree class obtained by a graduate on the likelihood of successfully securing a job upon graduation. Two main approaches have been considered to explain this: first, that degree class acts to employers as a signal of their potential productivity (Spence, 1973); second, that suggested degree class is reflecting the graduate's level of human capital attainment (Becker, 1964).

This paper examines the following question: does obtaining a first class honours degree ("First") increase the likelihood of an undergraduate student being employed in the financial industry upon graduation? Focusing on the UK, an empirical approach is undertaken to answer this question. According to both theories of signalling and human capital, one would expect degree class to have a significant positive effect. Although extensive research has been done on the effects of degree class on graduate prospects in the UK, namely the probability of being in employment or enrolled in further study (see Woodley and Brennan (2000), Bratti et al. (2004) and Di Pietro (2010)), few have looked at this in the context of the UK financial industry. Feng and Graetz (2017) specifically grouped graduates employed in the financial industry in their analysis; however, they only utilise data on graduates from the London School of Economics ("LSE").

The context of this research can be underpinned to three key pillars: universities, university students, and the economy. If we consider the role of universities as to provide the economy with skilled graduates who are ready and able to enter the labour market, then it is important for universities to understand what components are most significant in determining a student's success in graduate recruitment, so that more focus can be devoted to these areas. From a student's perspective, one can pose a question as to what their objectives should

[2] 2015 figures (latest available). Industries included: Finance & Insurance, Info & Communication, Real Estate, Professional & Support and Other Services

be whilst at university. With increasing importance placed on extra-curricular activities and work experience, it is important to consider whether achieving a First brings significant benefits relative to an upper-second class honours degree ("Upper-Second"). Economically, the financial industry is significant to the UK. Given this, issues surrounding recruitment into the financial industry can therefore be considered an important one as firms constantly look to retain and attract new talent into the workforce.

With a research focus on graduate employment in the UK financial industry, outlined below is some context on the recruitment process. Being a highly-competitive sector, a lengthy recruitment process is adopted industry-wide. Students wanting to enter the UK financial industry would usually begin the application process as soon as they arrive at university – with a large focus placed on networking, recruitment dinners and drinks receptions are widely attended by students as they try to get to know each firm and network with its incumbent employees. Most firms in the financial industry offer internships of various lengths targeted to students in different years of study; 'Spring Week' insight programmes during the Easter holiday for first years, summer internships aimed at penultimate year students, as well as off-cycle internships for students who either have already graduated or is undertaking a placement year. The application process for these internships is a lengthy one, usually comprising of initial CV and cover letter screenings, psychometric tests, multiple rounds of telephone and in-person interviews, as well as assessment centres and some exclusive networking events. Moreover, it is also common practice that, contingent on performance, students are able to automatically secure a place in a summer internship following a 'Spring Week', as well as secure a full-time offer following a summer internship.

Using data from the UK Higher Education Statistics Agency ("HESA") on 2015/16 graduates, this paper shows that once controlled for endogeneity, obtaining a First is not statistically significant on the probability of being employed in the UK financial industry upon graduation relative to obtaining an Upper-Second; similarly, the effects from other degree classes are also not statistically significant. An explanation for this is that, while degree classification has traditionally been used by employers as a proxy for a candidate's level of ability, knowledge and productivity, the requirement for candidates to submit detailed CVs and cover letters, as well as attend networking events, multiple interviews and assessment centres has significantly improved the employer's 'information discovery mechanism' – this is the mechanism in which the employer is able to discover the candidate's true ability. Further, as has been suggested in the literature, if an academic degree is mainly used for its signal value, then employers may want to adopt alternative assessment methods that are better at screening for true ability. Additionally, a move towards more detailed assessment methods could ensure that only 'high-ability' candidates are selected in the recruitment process. As a result, employers may have decreased their strong reliance on degree class in favour of such methods.

Literature Review

There has been extensive research into the relationship between education and graduate outcomes. When investigating educational returns, most of the existing literature have looked at either the number of years in

education or level of qualification. However, as explained by Ireland et al. (2009), employers usually recruit candidates from the same educational level; such levels in the UK are GCSE-level (16 years old), A-Levels (18 years old) and Undergraduate Degree level (21 years old). As a result, the employer has to distinguish between candidates of the same level. Therefore, it may make more sense to analyse educational attainment in terms of degree class, as it is possible to distinguish a graduate from another by academic performance.

In a theoretical framework, Naylor, Smith and McKnight (2007) showed that the varying of graduates' earnings with academic performance can be broken down into two approaches: the signalling approach and the human capital approach. This was echoed in later research by Naylor, Smith and Telhaj (2015). It was presented by Spence (1973) that employers treat academic performance as a signal of potential productivity – in essence reflecting the employer's lack of information about the graduate's productivity when recruiting. In other words, the employer will distinguish between different individuals "on the basis of known or perceived statistical regularities", (Ireland et al., 2009. p. 2). This signalling theory has been further researched by Farber and Gibbons (1996) and Lange (2007), as well as Altonji and Pierret (2001) who extended this approach in their 'Employer Learning and Statistical Discrimination' model. On the other hand, Becker (1964) suggested that a higher degree class can be interpreted as reflecting a larger amount of human capital attainment by the graduate.

Although Ireland et al. (2009) did view the acquisition of a degree as "likely to combine features both of human capital enhancement and of signalling" (Ireland et al., 2009, p. 3), they viewed degree class as containing a pure signalling effect. This is because the relationship between ability and schooling can be argued from a signalling perspective, where ability bias may be explained by the fact that employers cannot observe ability, whereas the source of this bias in the human capital model is only the econometrician's failure to observe ability (Lang, 1994).

Earlier research on degree class and graduate employment also agreed with the above. Bratti et al. (2004) found that graduates with a First were more likely to be in employment or enrolled in further study than a graduate with a lower degree class, ceteris paribus. This agrees with Smith, McKnight and Naylor (2000), who showed that graduates with a First were less likely to be unemployed or inactive by approximately 7.48pp (males) and 3.59pp (females). Additionally, it was shown that of those who were either employed or enrolled in further study, graduates with a First were more likely to be employed in a graduate occupation by 4.17pp (males) and 4.90pp (females) relative to those holding an Upper-Second.

Although Woodley and Brennan (2000) acknowledged that there has been a difference in early career patterns between different degree classes, they claimed that this difference has appeared to be narrowing over time. Indeed, Di Pietro (2010) more recently suggested that degree class no longer has a significant effect on the probability of being in employment or further study six months after graduation. This may be reflecting improved 'information discovery mechanisms' in recruitment, where employers distinguish candidates through more detailed ability indicators, such as information attained through the candidates' curriculum vitae

("CV") and performances in interviews, psychometric tests and assessment centres. Daley and Green (2014) showed that once these methods become sufficiently informative, high ability candidates would begin to rely less on education as a signal and place greater focus on such methods over degree class, as performance in these assessments are more directly related to ability, implying that higher ability candidates will perform better and are able to separate themselves out from lower ability candidates more easily. This supports anecdotes presented in Feng and Graetz (2017) that students are now undertaking work experience and summer internships prior to graduation, which in a lot of cases results in the student securing employment offers before graduation[3]. In this case, a candidate's ability can therefore be easily observed by the employer through the student's performance on the job. Alós-Ferrer and Prat (2012) showed that this would reduce the signal value of education and hence the importance of degree class, as although a bad candidate can imitate a good candidate through obtaining a good education, the candidate's performance on the job and thus their true ability will eventually be revealed.

Similar research by Feng and Graetz (2017) on graduates from the LSE showed that although sizeable and significant effects from degree class were observed on individuals' wages, no significant effects were observed on the extensive margin. With the concern that high wage levels in the financial sector may be driving their results, the authors specifically looked at wage data for a sub-sample of students not employed in the financial sector, controlling through a dummy variable. This paper is therefore able to exploit their results and see the effects of degree class on labour market outcomes in the financial industry.

As with the general graduate labour market, obtaining a First does not appear to have a significant effect on labour market outcomes in the financial industry. However, obtaining an Upper-Second does exhibit significant effects. This supports the rationale in Naylor, Smith and McKnight (2007) that graduate employers usually make job offers conditional on academic performance, in most cases an Upper-Second. These results also support claims made by some financial sector recruiters on the importance of degree class in their recruitment process. In response to a question in a recruitment webinar in July 2017, Citigroup representative Emma Britton claimed that "we [Citigroup] only require a 2:1[4] and would not select a candidate over another based on final grades".

While Feng and Graetz used data only on LSE graduates, this paper approaches this question using data obtained at a nationwide level to investigate more general implications to UK university graduates as a whole. By solely focusing on the LSE, a top university targeted by employers, the results obtained by Feng and Graetz may be affected be selection bias, namely in a downwards direction as being at a top university may render the degree class award less relevant to employers.

[3] Note that should this be the case, then the degree class award may no longer make a difference. As most employers condition the offer on an Upper-Second, the student would still get the job even if they did not obtain a First. There may be a bias associated with this, given changing incentive structures to the student; however, data on employment offers prior to a student's graduation is limited.
[4] This is short-form for an Upper-Second.

Data and Econometric Modelling

In the UK, all universities keep detailed administrative records on their students, which include personal data on ethnicity, disability, sex, date of birth, academic grades on entry (A-Levels or equivalent) and degree classification, as well as parental socio-economic classification (if the student is over 21, the student's socio-economic classification would be reported instead). These are then collected and deposited at the Higher Education Statistics Agency ("HESA"). In addition to this, all UK university graduates are sent a Destination of Leavers from Higher Education ("DLHE") survey to ask what their main activity is approximately six months following graduation; this includes full-time work, part-time work and further study, amongst others. The DLHE survey is a national statutory survey, designed and distributed by HESA, and conducted by universities. Results from this survey are then processed by HESA – those in employment are then sorted by the Standard Occupational Classification ("SOC") 2010, where employment industry is reported at 1-digit, 2-digit, 3-digit and 5-digit levels of detail, with 5-digit being the highest level of detail. By combining data from the HESA student record collection with the DLHE survey, a suitable dataset can be used to empirically investigate our hypothesis.

For this investigation, individual level data on 2016 full-time first degree (undergraduate) graduates (DLHE surveyed in 2017) from UK universities domiciled in the UK or EU in employment[5] is used. Although this data is not publicly accessible, it can be directly purchased from HESA. As a result, this paper is able to utilise very detailed data on UK graduates, which includes occupational data at the 5-digit level and full breakdown by university of study. To the author's knowledge, this is the first time such data is used to investigate the hypothesis of degree class and graduate recruitment in the financial industry. Those who study medicine and dentistry are excluded, as medical degrees in the UK are not classified using the same system as with all other undergraduate degrees in the UK[6]. Other unclassified degrees are also excluded for the purposes of this investigation. The total number of observations is 162,480. Of these, 5.4% works in a financial industry occupation[7]. The degree class breakdown is as follows: 26.1% obtained a First, 52.6% an Upper-Second, 18.6% a Lower-Second, and 2.8% a third class honours degree or pass ("Third"). The full list of variables, summary statistics and graphical distributions of the data are provided in the Appendix.

Econometric Modelling

This paper extends the basic model presented in Di Pietro (2010) for the investigation. To estimate the effect of degree class on the likelihood of being employed in the financial industry upon graduation, the following equation is estimated using a logistic regression

$$y_i = \alpha + \beta' d_i + \varphi_1 L_i + \varphi_2 R_i + \varphi_3 L \times R_i + \eta' X_i + \varepsilon_i \qquad (1)$$

[5] Includes those in full-time employment, part-time employment, primarily employed but also studying, and primarily studying but also employed.
[6] Undergraduate degrees in the UK are classified according to credit-weighted mean scores out of 100; 70-100 is a First, 60-70 an Upper-Second, 50-60 a Lower-Second and 40-50 a Third.
[7] See Table 5 in the Appendix for SOC codes included as a financial industry occupation.

where y_i is a binary choice variable with the value of 1 if the graduate works in the financial industry and 0 otherwise, d is a categorical variable for degree class L is a dummy for whether or not the graduate studied at a London university, R is a dummy for whether or not the graduate studied at a Russell Group university, X is a vector of observable graduate characteristics[8] and ε represents unobserved determinants of being employed in the financial industry upon graduation.

Graduates who attended university in London are controlled for as the results may be driven by a 'networking effect', whereby those who attended a London university are able to network more easily with professionals in the industry given their close geographic proximity to the employers' head offices. Graduates who attended a Russell Group university are also controlled for, as these universities are commonly 'targeted' by employers. Thus, an interaction of these two will control for the effect of attending a 'target' university in London[9], and could be considered a proxy for networking.

Selection Bias and Endogeneity

Given that data from the DLHE collection comprises of survey responses, an apparent issue is sample selection – unobservable factors that cause an individual to respond to the DLHE survey may also drive their graduate employment outcomes. Di Pietro (2010), who also used DLHE data, addressed this potential selectivity using a two-step Heckman model with type of university accommodation as an instrument for responding to the DLHE survey. This follows the proposition in Bratti et al. (2004) that while this is unlikely to have an effect on the graduate's activity after graduation, it may impact the probability of responding to the DLHE survey. By first estimating an equation for the probability of responding to the DLHE survey and then the post-university outcome of graduates who did respond to the DLHE survey, Di Pietro showed that the estimated errors of these equations are independent of each other. This therefore indicates that they can be estimated separately, and that coefficients will not be affected by selectivity from the survey response.

However, as similar studies e.g. Naylor, Smith and McKnight (2002) have indicated, university attendance may be determined in a non-random fashion, in essence introducing a selection bias on individuals who choose to attend university. Given the unavailability of data on individuals who do not attend university, this selection cannot be accurately modelled. Hence, as was outlined in their paper, results from this investigation should therefore be interpreted as conditional on university attendance.

Another apparent issue is endogeneity. As Di Pietro (2010) explained, the error term in (1) may capture unobservables that affect degree class and therefore be correlated with the d's, causing the β estimates to be biased upwards due to omitted variables. While addressing this endogeneity is challenging, previous researchers (see Di Pietro (2010) and Feng and Graetz (2017)) have exploited data on graduates' credit-

[8] These include age, age-squared, female, disability, ethnicity, number of A* obtained at A-Level, whether at least two A or above obtained at A-Level, whether maths was taken at A-Level, subject of study, nationality, location of employment and current activity.
[9] Note that Russell Group universities in London are mostly based in Central London, where the majority of financial companies' offices in the UK are located.

weighted mean scores and adopted a fuzzy regression discontinuity (RD) design (Hahn, Todd and Van der Klaauw, 2001) approach. Specifically, they look at the group of students on either side of the classification cut-off point where a discontinuity exists. Due to the lack of individual-level data on credit-weighted mean scores, this paper is not able to adopt a fuzzy RD approach to address this bias. However, when Feng and Graetz compared their fuzzy RD output with an OLS estimation controlled for covariates, they obtained very similar results, both in magnitude and significance levels. This paper extends their approach to use a logistic estimation controlled for covariates, as an OLS model does not bound the response variable between 0 and 1. Thus, with a binary choice variable as the response variable, a logistic estimation should therefore obtain more sensible results.

Additionally, this paper further address this endogeneity through an instrumental-variables ("IV") estimation[10] using parental socio-economic classification as an instrument for degree class. Crawford (2014) showed that students from higher socio-economic backgrounds are more likely to obtain a higher degree class, conditional on graduating. The explanation is that students from differing socio-economic backgrounds begin their university studies "with very different levels of human capital" (Crawford, 2014, p. 24). Nevertheless, with a recruitment process where firms commit themselves as an equal opportunities employer[11,] and with the increasing prevalence of organisations such as Sponsors for Educational Opportunity (SEO) and Bright Network who support those from disadvantaged backgrounds in securing employment in professional occupations, a graduate's socio-economic background may be considered exogenous to the probability of being employed in the financial industry upon graduation. Given this, parental socio-economic classification can therefore be seen as relevant to degree class while also satisfying the exclusion restriction that is required from a valid instrument.

A just-identified approach is used for this IV estimation, where a graduate's parental socio-economic classification is re-grouped into three categories to instrument the three degree classes[12]. F-Statistics for instrument relevance indicate that parental socio-economic classification is a strong instrument for all degree classes apart from Upper-Second, which has a much lower F-Statistic of 9.36. This could potentially lead to some inaccuracies in estimations around the Upper-Second degree class, and hence the IV coefficients should be treated with caution. Nevertheless, this analysis should give an indication as to the direction and significance of the degree class effect corrected for endogeneity bias.

Results

Results from the logistic estimation indicate that obtaining a First is significant on the probability of a graduate working in the financial industry upon graduation (see Table 1), and that more generally this probability is

[10] A linear instrumental-variables ("IV") estimation is used for this analysis. Note that due to the non-concavity of equation (1), a probit IV cannot be used as a maximum-likelihood estimation cannot be performed.
[11] An equal opportunities employer is one who ensures that all employees and job applicants have an equal chance and does not suffer from any unfair discrimination, such as from race, religion, sex and physical or mental disabilities.
[12] Note that although there are four degree classifications, one is always the default parameter, leaving three as regressors.

higher the higher the degree class. However, results from the IV estimation[13] that controls for endogeneity indicate that obtaining a higher degree class is not statistically significant (see Table 2). Although the logistic results agree with the standard theory of signalling as well as the human capital approach, the marginal effects are nevertheless very small and close to zero, thus supporting the claim by Woodley and Brennan (2000) that the difference between different degree classes has appeared to be narrowing over time. Both sets of results however confirm the suggestion that employers are placing a greater importance on more detailed methods of assessment, and less so on degree class. The following can be considered potential explanations: first, this may be reflecting the improved 'information discovery mechanism' obtainable by the employer through more detailed assessment methods, which is potentially more efficient in revealing a candidate's true ability. Second, if an academic degree is merely used for its signalling value, then knowing this, it may be expected that employers would wish to adopt alternative assessment that selects candidates more effectively, based directly on their actual ability rather than a signalling measure. Further, placing less importance on degree class could ensure that 'low-ability' graduates would be less likely to mimic 'high-ability' graduates; with the degree class award, it is difficult to distinguish between students within the same degree class, and when possible this would be through comparison of credit-weighted mean scores, which may not reflect true ability. Conversely, more detailed assessment methods may be designed such that low-ability graduates are less likely to perform as well as their high-ability counterparts due to their inherently lower ability level.

Although these results differ slightly from the similar study by Feng and Graetz (2017) in the financial industry case, this may be attributed to the difference in research context, as Feng and Graetz only used data from the

Table 1: The effects of degree class on the probability of being employed in the financial industry upon graduation (Selected Results – Marginal Effects; Upper-Second as default parameter)

	Logistic	**Probit**
Number of Observations	162,480	162,480
First	0.0032415***	0.0042849***
	(0.0004113)	(0.0005896)
Lower-Second	-0.0023554***	-0.0030409***
	(0.0004116)	(0.0005512)
Third/Pass	-0.0040308***	-0.0050253***
	(0.0008472)	(0.0010998)
londonuni	-0.0042035***	-0.0057538***
	(0.0004352)	(0.0005715)
russelluni	0.0075868***	0.0108702***
	(0.0006088)	(0.0008622)
Controls	✓	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level. Marginal Effects calculated at means.

[13] See Table 9 in the Appendix for First-stage regressions.

Table 2: The effects of degree class on the probability of being employed in the financial industry upon graduation (Selected Results – Coefficients; Upper-Second as default parameter)

	Logistic	Probit	IV
Pseudo R-squared	0.2934	0.2884	-
Number of Observations	162,480	162,480	162,480
First	0.2387671***	0.1126711***	0.5122357
	(0.0281082)	(0.0145480)	(0.4477172)
Lower-Second	-0.2167305***	-0.1014579***	0.3837061
	(0.0391771)	(0.0191978)	(0.4043633)
Third/Pass	-0.4048056***	-0.1834216***	-0.0358012
	(0.1009483)	(0.0485147)	(0.9052728)
londonuni	-0.4583461***	-0.2301284***	-0.0313304***
	(0.0526018)	(0.0259406)	(0.0065498)
russelluni	0.4966988***	0.2508573***	0.0703158*
	(0.0341443)	(0.0174043)	(0.0401463)
londonuni x russelluni	0.2816677***	0.1409553***	0.0198032**
	(0.0781268)	(0.0402476)	(0.0092351)
Controls	✓	✓	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level.

LSE and may have applied a different occupational grouping for a financial industry occupation. The results do however share similarities with their general case, where no significant effects from degree class were observed on the extensive margin of employment. These results also share similarities with Di Pietro (2010), who found that degree class does not affect the probability of being in employment (in all industries and occupations) or further study six months after graduation.

An interesting observation is the coefficient on the London and Russell Group university interaction (see Table 2), which captures the networking effect from attending a target university in London. These include Imperial College London, King's College London, the LSE, Queen Mary University of London and University College London. In all variants of the model, attending these universities increases the likelihood of being employed in the financial industry upon graduation. With a statistically significant result, this suggests the existence of a networking effect outlined in the previous section. Although this is unlikely to be a key mechanism in determining the probability of being employed in the financial industry upon graduation, it does however strengthen the suggestion that there are factors other than degree class that are more important determinants. Networking can be seen as an opportunity for the employer to get to know the graduate better, and through this the employer can extract information on the graduate's true ability. Likewise for the graduate, networking can be seen as an opportunity to reveal their true ability to the employer. Additionally, a graduate personally reaching out to network with industry professionals may also be demonstrating certain personal qualities that are desirable to firms in the financial industry, especially given the nature of the business that involves a lot of

personal relationships, sales and business pitches. Note, however, that these results should not be interpreted as being that students at a Russell Group university in London are better at networking; rather, they merely indicate that due to the close geographic proximity to the employers' offices and 'target' status of these universities, one could expect to observe more networking activity from this cohort, ceteris paribus.

Conclusion and Discussion

This paper estimates the effects of degree class on the likelihood of being employed in the financial industry upon graduation in the UK using a logistic regression controlled for covariates and an instrumental-variables (IV) regression. Regression results indicate that there are no significant effects from obtaining a higher degree class on the probability of an undergraduate student being employed in the UK financial industry upon graduation. This reinforces the suggestion that employers are placing a greater importance on more detailed methods of assessment over degree classification. In addition, those who attend a Russell Group university in London are more likely to be employed in the financial industry upon graduation. This could be attributed to a positive networking effect from attending a target university in London, where students attending these universities may find it easier to network with industry professionals due to their close geographic proximity to the employers' offices as well as their university's 'target' status. Although networking alone is unlikely to be a key mechanism, it does however reinforce the suggestion that there may be factors other than degree class that are more important determinants.

The results provide key takeaways from various perspectives. For a student, they illustrate the role of degree class in the recruitment process. Additionally, they also provide a framework to better inform students with choosing their goals and objectives at university. From a university and economic perspective, the results introduce a number of areas for future research as well as policy implications, namely relating to the current education system. Further research could explore what universities as providers of higher education should focus on to ensure that graduates are able to succeed in the graduate labour market. An extension to this could involve examining more effective methods to foster the development of skills and qualities that employers look for in graduates. Lastly, research could also be conducted on the flexibility of degree programmes, from scheduling and time commitments to compulsory components and availability of self-learning resources. This is important as it relates to the extent to which students are able to take on extra-curricular activities and roles outside of the university that may improve their chances in the graduate recruitment process without falling behind on their university studies.

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Appendix

Table 3: List of Variables

Variable	Label	Description	Category Value	Number of Observations	Percent
finance	Works in Financial Industry Occupation	Yes	1	8,689	5.35%
		No	0	153,791	94.65%
degclass	Degree Class Awarded	First class honours	1	42,361	26.07%
		Upper second class honours	2	85,436	52.58%
		Lower second class honours	3	30,135	18.55%
		Third class honours/Pass	4	4,548	2.80%
londonuni	Studied at a London University	Yes	1	21,183	13.04%
		No	0	141,297	86.96%
russelluni	Studied at a Russell Group University	Yes	1	36,261	22.32%
		No	0	126,219	77.68%
age	Age	Age of individual	N/A	162,480	100.00%
female	Female	Yes	1	96,482	59.38%
		No	0	65,998	40.62%
disable	Disability	Yes	1	22,300	13.72%
		No	0	140,180	86.28%
ethnic	Ethnicity	White	1	129,668	79.81%
		Asian	2	15,918	9.80%
		Black	3	9,514	5.86%
		Other (including mixed)	4	7,380	4.54%
astar	Number of A* obtained at A-Level	0	0	143,973	88.61%
		1	1	12,465	7.67%
		2	2	3,953	2.43%
		3	3	1,499	0.92%
		4	4	590	0.36%
twoa	Obtained at least two A at A-Level	Yes	1	29,097	17.91%
		No	0	133,383	82.09%
maths	Taken Maths as an A-Level	Yes	1	32,298	19.88%
		No	0	130,182	80.12%
subject2	Subject of Study	Subjects allied to medicine	2	20,690	12.73%
		Biological Sciences	3	16,543	10.18%
		Veterinary Science	4	26	0.02%
		Agriculture & Related Subjects	5	1,378	0.85%
		Physical Sciences	6	6,688	4.12%
		Mathematical Sciences	7	2,700	1.66%
		Computer Science	8	6,075	3.74%
		Engineering & Technology	9	7,885	4.85%
		Architecture, Building & Planning	10	2,942	1.81%
		Social Studies	11	14,486	8.92%
		Law	12	4,806	2.96%
		Business & Administrative Studies	13	18,865	11.61%
		Mass Communications & Documentation	14	4,530	2.79%
		Languages	15	7,381	4.54%
		Historical & Philosophical Studies	16	5,780	3.56%
		Creative Arts & Design	17	19,083	11.74%

Table 3 (cont.):

		Education	18	8,337	5.13%
		Social Studies / Business & Administrative Studies	19	873	0.54%
		Social Studies / Biological Sciences	20	845	0.52%
		Social Studies / Historical & Philosophical Studies	21	1,323	0.81%
		Creative Arts & Design / Languages	22	800	0.49%
		Historical & Philosophical Studies / Languages	23	978	0.60%
		Other Joint Subjects	24	9,466	5.83%
		Non-EU National	1	5,047	3.11%
nation	Nationality	UK National	2	152,426	93.81%
		Other EU National	3	5,007	3.08%
location	Location of	North East	1	5,320	3.27%
	Employment	North West	2	17,181	10.57%
		Yorkshire and The Humber	3	11,736	7.22%
		East Midlands	4	8,873	5.46%
		West Midlands	5	12,330	7.59%
		East of England	6	10,931	6.73%
		London	7	34,898	21.48%
		South East	8	18,470	11.37%
		South West	9	11,107	6.84%
		England (county/unitary authority unknown)	10	1,219	0.75%
		Northern Ireland (district council area unknown)	11	594	0.37%
		Scotland (council area unknown)	12	9,142	5.63%
		Wales (unitary authority unknown)	13	6,806	4.19%
		United Kingdom, not otherwise specified	14	440	0.27%
		Guernsey, Jersey and the Isle of Man	15	0	0.00%
		Outside the UK	16	4,516	2.78%
		Not in Work	17	8,917	5.49%
activity	Activity of Graduate	Full-time work	1	114,739	70.62%
		Part-time work	2	26,980	16.61%
		Primarily in work and also studying	3	4,370	2.69%
		Primarily studying and also in work	4	6,787	4.18%
		Other	9	9,604	5.91%
socio	Socio-Economic	Higher managerial & professional occupations	1	30,270	18.63%
	Classification	Lower managerial & professional occupations	2	38,285	23.56%
		Intermediate occupations	3	17,391	10.70%
		Small employers & own account workers	4	9,794	6.03%
		Lower supervisory & technical occupations	5	6,198	3.81%
		Semi-routine occupations	6	19,206	11.82%
		Routine occupations	7	8,744	5.38%
		Never worked & long-term unemployed	8	534	0.33%
		Not classified	9	28,581	17.59%
		Unknown	10	3,477	2.14%

Table 4: Summary Statistics

Variable	Number of observations	Mean	Standard Deviation	Min	Max
finance	162,480	0.0534774	0.2249841	0	1
degclass	162,480	1.980736	0.7468474	1	4
londonuni	162,480	0.130373	0.3367144	0	1
russelluni	162,480	0.2231721	0.4163741	0	1
age	162,480	23.3042	5.006182	18	75
female	162,480	0.5938085	0.4911226	0	1
ethnic	162,480	1.351342	0.7858372	1	4
disable	162,480	0.1372477	0.3441097	0	1
astar	162,480	0.1675775	0.5358026	0	4
twoa	162,480	0.1790805	0.3834209	0	1
maths	162,480	0.1987814	0.3990844	0	1
subject2	162,480	11.31166	6.393888	2	24
nation	162,480	1.999754	0.2487543	1	3
location	162,480	7.241125	4.133046	1	17
activity*	162,480	1.818027	1.939947	1	9
socio	162,480	4.319879	2.973193	1	10

*Note: 'activity' contains five categories as in table 3; however, the category labels are 1, 2, 3, 4 and 9.

Table 5: 5-digit SOC codes considered as a financial industry occupation

SOC Code	Description
11311	Finance managers and directors
11312	Investment/ merchant bankers
11313	Chartered company secretaries, treasurers, company registrars
11319	Financial managers and directors n.e.c.
11500	Financial institution managers and directors
24210	Chartered and certified accountants
24240	Business and financial project management professionals
24251	Actuaries
35310	Estimators, valuers and assessors
35320	Brokers
35330	Insurance underwriters
35340	Finance and investment analysts and advisers
35350	Taxation experts
35370	Financial and accounting technicians
35380	Financial accounts managers

Table 6: The effects of degree class on the probability of being employed in the financial industry upon graduation (Marginal Effects; Upper-Second as default parameter)

	Logistic	**Logistic**	**Probit**	**Probit**
Number of Observations	162,480	162,480	162,480	162,480
First	0.0198241***	0.0032415***	0.0209185***	0.0042849***
	(0.0013665)	(0.0004113)	(0.0014104)	(0.0005896)
Lower-Second	-0.0123988***	-0.0023554***	-0.0124366***	-0.0030409***
	(0.0012897)	(0.0004116)	(0.0013086)	(0.0005512)
Third/Pass	-0.0185278***	-0.0040308***	-0.0185995***	-0.0050253***
	(0.0026531)	(0.0008472)	(0.0026744)	(0.0010998)
londonuni	-0.0029952*	-0.0042035***	-0.0028758*	-0.0057538***
	(0.0015862)	(0.0004352)	(0.0015945)	(0.0005715)
russelluni	0.0555693***	0.0075868***	0.0566099***	0.0108702***
	(0.0016314)	(0.0006088)	(0.0016468)	(0.0008622)
Controls	×	✓	×	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level. Marginal Effects calculated at means.

Table 7: The effects of degree class on the probability of being employed in the financial industry upon graduation (Marginal Effects; Third/Pass as default parameter)

	Logistic	**Logistic**	**Probit**	**Probit**
Number of Observations	162,480	162,480	162,480	162,480
First	0.0383518***	0.0072723***	0.0395180***	0.0093103***
	(0.0028219)	(0.0009147)	(0.0028490)	(0.0011960)
Upper-Second	0.0185278***	0.0040308***	0.0185995***	0.0050253***
	(0.0026531)	(0.0008472)	(0.0026744)	(0.0010998)
Lower-Second	0.0061290**	0.0016754*	0.0061629**	0.0019844*
	(0.0027673)	(0.0008724)	(0.0027889)	(0.0011341)
londonuni	-0.0029952*	-0.0042035***	-0.0028758*	-0.0057538***
	(0.0015862)	(0.0004352)	(0.0015945)	(0.0005715)
russelluni	0.0555693***	0.0075868***	0.0566099***	0.0108702***
	(0.0016314)	(0.0006088)	(0.0016468)	(0.0008622)
Controls	×	✓	×	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level. Marginal Effects calculated at means.

Table 8: Re-grouping of the parental socio-economic classification variable

Original Classification		**Reclassification**	
Category	Count	Category	Count
Higher managerial & professional occupations	30,270		
Lower managerial & professional occupations	38,285	High	85,946
Intermediate occupations	17,391		
Small employers & own account workers	9,794	Medium	15,992
Lower supervisory & technical occupations	6,198		
Semi-routine occupations	19,206	Low	27,950
Routine occupations	8,744		
TOTAL	129,888*	TOTAL	129,888*

*Note: this excludes all individuals who are not classified, has never worked, is unemployed, or has no known information.

Table 9: Relevance test of parental socio-economic classification as an instrument for degree class

Third/Pass as default parameter	
Degree Class	**F (3 , 162417)**
First	21.44
Upper-Second	9.36
Lower-Second	48.17

Upper-Second as default parameter	
Degree Class	**F (3 , 162417)**
First	21.44
Lower-Second	48.17
Third/Pass	18.02

Table 10: First-stage IV regressions

	First	**Upper-Second**	**Lower-Second**	**Third/Pass**
Number of Observations	162,480	162,480	162,480	162,480
highsec	0.0153136***	0.0161279***	-0.0242915***	-0.0071501***
	(0.0028296)	(0.0033007)	(0.0025940)	(0.0011623)
midsec	0.0066181	0.0070666	-0.0083319**	-0.0053528***
	(0.0040868)	(0.0048129)	(0.0038208)	(0.0016544)
lowsec	-0.0063421*	0.0047581	0.0023271	-0.0007432
	(0.0033887)	(0.0040484)	(0.0033284)	(0.0015510)
londonuni	0.0057689	-0.0112637**	0.0072222**	-0.0017274
	(0.0038946)	(0.0046130)	(0.0036716)	(0.0016582)
russelluni	-0.0760731***	0.0981880***	-0.0185403***	-0.0035746***
	(0.0032121)	(0.0037005)	(0.0026261)	(0.0010046)
londonuni x russelluni	-0.0134482*	0.0157882*	-0.0011370	-0.0012030
	(0.0080760)	(0.0090432)	(0.0062223)	(0.0024297)
Controls	✓	✓	✓	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level.

Table 11: The effects of degree class on the probability of being employed in the financial industry upon graduation (Coefficients; Upper-Second as default parameter)

	Logistic	**Logistic**	**Probit**	**Probit**	**IV**
Pseudo R-squared	0.0327	0.2934	0.0329	0.2884	-
Number of Observations	162,480	162,480	162,480	162,480	162,480
First	0.3724153***	0.2387671***	0.1823058***	0.1126711***	0.5122357
	(0.0243853)	(0.0281082)	(0.0117421)	(0.0145480)	(0.4477172)
Lower-Second	-0.3185535***	-0.2167305***	-0.1419308***	-0.1014579***	0.3837061
	(0.0357489)	(0.0391771)	(0.0158944)	(0.0191978)	(0.4043633)
Third/Pass	-0.5193278***	-0.4048056***	-0.2283878***	-0.1834216***	-0.0358012
	(0.0933943)	(0.1009483)	(0.0398480)	(0.0485147)	(0.9052728)
londonuni	-0.1208909***	-0.4583461***	-0.0555168***	-0.2301284***	-0.0313304***
	(0.0440068)	(0.0526018)	(0.0194540)	(0.0259406)	(0.0065498)
russelluni	0.9077838***	0.4966988***	0.4373861***	0.2508573***	0.0703158*
	(0.0243500)	(0.0341443)	(0.0118691)	(0.0174043)	(0.0401463)
londonuni x russelluni	0.2422730***	0.2816677***	0.1191570***	0.1409553***	0.0198032**
	(0.0691446)	(0.0781268)	(0.0338507)	(0.0402476)	(0.0092351)
Controls	×	✓	×	✓	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level.

Table 12: The effects of degree class on the probability of being employed in the financial industry upon graduation (Coefficients; Third/Pass as default parameter)

	Logistic	**Logistic**	**Probit**	**Probit**	**IV**
Pseudo R-squared	0.0327	0.2934	0.0329	0.2884	-
Number of Observations	162,480	162,480	162,480	162,480	162,480
First	0.8917431***	0.6435727***	0.4106937***	0.2960927***	0.5480369
	(0.0939818)	(0.1019984)	(0.0402359)	(0.0491695)	(1.0121440)
Upper-Second	0.5193278***	0.4048056***	0.2283878***	0.1834216***	0.0358012
	(0.0933943)	(0.1009483)	(0.0398480)	(0.0485147)	(0.9052728)
Lower-Second	0.2007743**	0.1880751*	0.0864570**	0.0819637	0.4195072
	(0.0973842)	(0.1048123)	(0.0415771)	(0.0503498)	(1.1861000)
londonuni	-0.1208909***	-0.4583461***	-0.0555168***	-0.2301284***	-0.0313304***
	(0.0440068)	(0.0526018)	(0.0194540)	(0.0259406)	(0.0065498)
russelluni	0.9077838***	0.4966988***	0.4373861***	0.2508573***	0.0703158*
	(0.0243500)	(0.0341443)	(0.0118691)	(0.0174043)	(0.0401463)
londonuni x russelluni	0.2422730***	0.2816677***	0.1191570***	0.1409553***	0.0198032**
	(0.0691446)	(0.0781268)	(0.0338507)	(0.0402476)	(0.0092351)
Controls	×	✓	×	✓	✓

Note: ***, ** and * denotes significance at the 1%, 5% and 10% level.

Figure 1a: Distribution of observations by degree class awarded

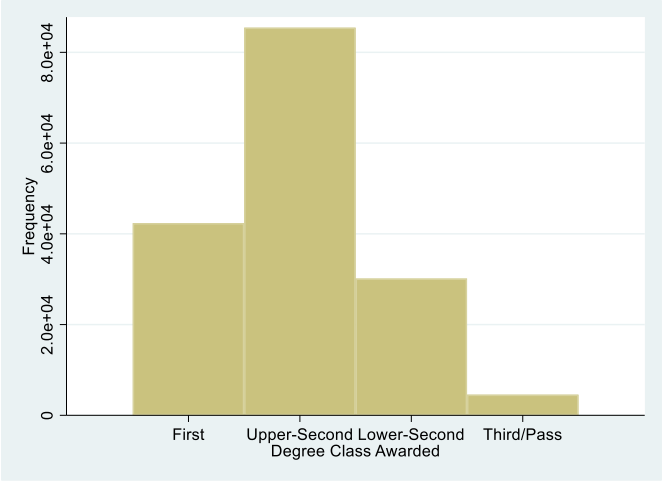

Figure 1b: Distribution of observations by ethnicity

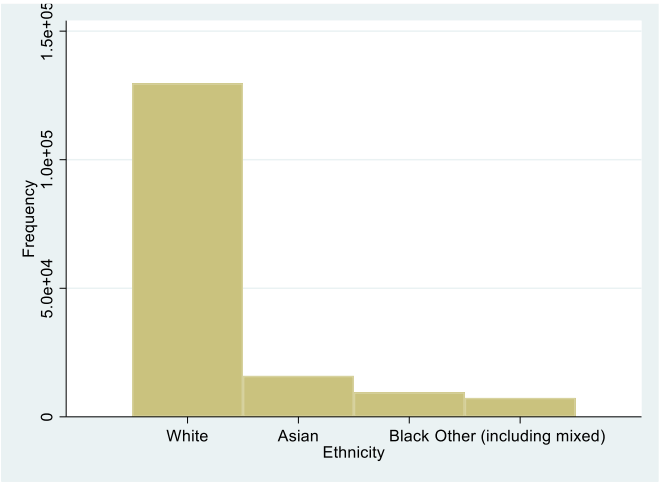

Figure 1c: Distribution of observations by number of A* obtained at A-Level

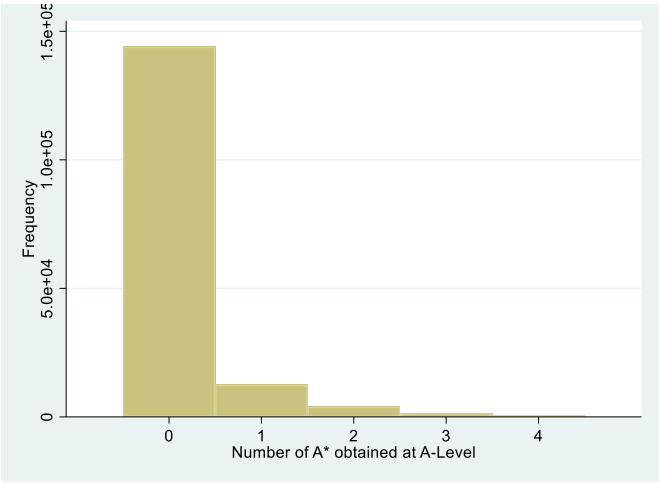

Figure 1d: Distribution of observations by number of A* obtained at A-Level (0 A* omitted)

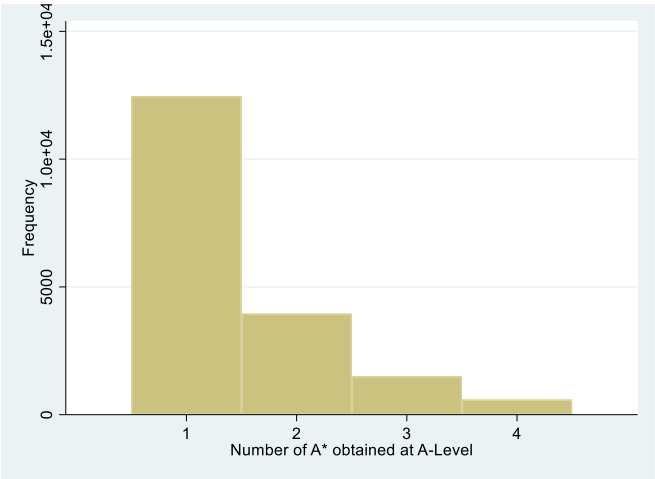

Figure 1e: Distribution of observations by nationality