

The Effects of Attending a Prestigious University on UK Graduate Earnings

Aditi Devyani Anand

Professional Economist BSc and Apprenticeship Level 6

School of Economics

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The UK is facing a growing student debt crisis, where despite homogenous tuition fees, graduate earnings differ vastly. Limited literature is available on the magnitude and relative significance of factors that affect earnings, meaning an information gap exists for prospective students. This study focuses specifically on how institutional prestige and subject studied affect UK graduate earnings. Universities are classified into five mutually exclusive prestige categories and a pooled OLS model with cluster-robust standard errors is employed. The results show that prestige effects are strongest at the top of the prestige hierarchy, and at the top of the income distribution. Subject findings show that LEM (Law, Economics and Management) graduates are the highest earners 5 years after graduation, followed closely by STEM (Science, Technology, Engineering, Maths), and then HM (Health & Medicine); all groups benefit from a significant earnings premium as compared to graduates of AHHS (Arts, Humanities and Social Sciences). Results also show that attending a prestigious university increases earnings more in some fields than others; this suggests students should consider choice of subject in conjunction with choice of university when trying to access higher earnings. Prior attainment aged 18 is consistently a strong predictor of earnings, and the highest attainment provides protection from the lowest earnings. This study's results support reforms to rebalance the burden of funding higher education between government and students to more effectively direct the long-term taxpayer subsidy. Future research should focus on the distributional impacts of studying at a prestigious university.

I confirm that generative AI was not used during the research or drafting of this paper.

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1. Introduction and Rationale

For the first time since 2017, the cap on English tuition fees was increased from £9,250 to £9,535 for the 2025/26 academic year¹ (DfE,2025). Further inflation-based increases are planned, increasing annual tuition fees to £10,050 by the 2028/29 academic year (Twitchett,2025). The growing cost of a degree is currently uniform regardless of the institution attended² or the subject studied, but there is a growing body of evidence that shows that the returns are not homogeneous.

This poses several policy implications. Firstly, from the consumer's perspective: the prospective students. Currently, £21bn is loaned annually to 1.5m students (Bolton, 2025). Around 56% of students who started their courses in 2024-25 are anticipated to repay their loans in full, more than double the forecast for those who started in 2022/23. This is due to two key reforms to student loan repayments: the lowering and freezing of the repayment threshold to £25k until 2026/27, and the extension of the repayment period from 30 to 40 years. As students take on more of the burden of repayment, it becomes increasingly important that the information gap that exists for students on which courses may offer them the best returns is closed to enable informed decision-making (Britton, 2016).

In parallel, the English university sector is in financial crisis. 40% of universities were expected to be in financial deficit in 2025/26, and they collectively announced 12,000+ job cuts last year as part of cost-saving measures (Clarke, 2025). Findings on how institutional prestige affects graduate earnings could lend itself to reform of the higher education industry. For example, teaching practices from prestigious universities could be adopted by less prestigious institutions, which may potentially increase their graduates' earnings too (Belfield, 2018). The government could facilitate such reform by targeting funding at less prestigious universities, which are in worse financial positions on average (Conlon,2025). This would be under the assumption that the teaching practices at prestigious institutions are better at improving a student's human capital, as suggested by Becker (1962). This is caveated by the fact that a course can be high quality but not produce skills that are highly rewarded by the labour market, or vice versa.

¹ For domestic students

² Whilst it is technically a fee cap, nearly all UK universities revert to charging the maximum level of tuition fees.

Thirdly, the importance and relevance of this topic is analysed through the lens of government and therefore the taxpayer. The value of outstanding student loans is currently £270bn in the UK, which is forecasted to reach £500bn in the mid 2040s (Bolton, 2025). Even as students pay a greater proportion of the loans, this is still a large subsidy for government to offer, with a large opportunity cost. Whilst education is a merit good with positive externalities that make it valuable for society to invest in, the government has a responsibility to ensure it is offering subsidies that provide good value for money. The current funding model for universities unintentionally prevents this (Augar, 2019). Given the cost-pressures universities are under, and that tuition fees are identical and unrelated to the cost of actually providing a course, universities are incentivised to cross-subsidise across subjects. Some courses (particularly lab-based ones like Engineering, Medicine) cost universities more to run than others (classroom-based ones like Creative Arts). To be cost-effective, universities are incentivized to offer more places for Creative Arts than Engineering. However, the average lifetime earnings³ of a Creative Arts graduate is significantly worse than that of an Engineering graduate, resulting in the Creative Arts graduate being much more expensive to the taxpayer. Augar (2019) found that estimated long run government spending by subject in 2018⁴ was £1.1bn for Creative Arts, but only £480m for Engineering. As mentioned, earnings are not the only measure of the value of a job; there are many socially valuable jobs such as teaching or nursing that attract relatively low salaries. However, the differences in cost of provision mean that universities are currently penalised for offering increased places on courses like Engineering and Medicine which create jobs that are central to the government's industrial strategy and growth mission. In a similar vein, if graduates from less prestigious universities systematically have lower earnings, there is an implicit cross-subsidisation within the student finance system. Britton (2016) found that for the exchequer, there is a clear prestige hierarchy between the average total lifetime returns for male graduates of Russell Group universities at £480k, and for the same group but from the least selective universities at just above zero. Such findings could further support the reform of student finance.

Finally, much of the current focus in social mobility policy remains on encouraging attendance at the most prestigious universities for those from lower socioeconomic backgrounds. For example, the Sutton Trust (the UK's leading social mobility charity) focuses on increasing access to the Sutton Trust 13, a group of leading UK universities as

³ And crucially, the earnings during the loan repayment period

⁴ Calculated as loan write-offs*graduate numbers

calculated by the average ratings of notable newspaper league tables. However, if university prestige does not have a significant impact on graduate earnings, “promoting access to the most lucrative fields of study may have more potential to widen access to the economic elite” (Sullivan, 2018).

The rest of this paper is structured as follows. Section 2 covers the economic theory behind this topic. Section 3 contains a literature review, grouped by the key themes of defining prestige; comparing datasets; and finally comparing methodologies, limitations, and results. Section 4 describes the dataset used in this study. Section 5 details the methodology and empirical approach employed. Section 6 presents the results, Section 7 recommends policies and finally Section 8 draws some brief conclusions.

2. Economic Theory

A modern, commonly used definition of human capital theory is an individual’s “capabilities, knowledge, skills and experience...and their capacity to add to this reservoir through learning” (Picken, 1999). Becker (1962) suggested that higher education improves worker productivity by “providing knowledge, skills and a way of analysing problems”, and this is what causes the relatively higher wages they are paid. The empirical work of Mincer (1974) and Schultz (1961) were also notable in establishing the importance of human capital theory and its comparable value with other factors of production (land, capital, and enterprise) in neoclassical microeconomics.

The biggest limitation of Becker’s work is that it ignores the role of experience (Oliveira, 2014), and non-cognitive skills such as motivation and resilience (West, 2016). Later research has shown that both factors contribute significantly to increasing an individual’s earnings. Additionally, whilst Becker adjusted for IQ and high attainment at school, due to selection on unobservable characteristics, it is likely that at least some of the claimed effect of education on earnings reflected ability rather than the causal, productivity-enhancing effects of education on earnings.

Spence (1973) offers an alternative explanation in the form of signalling theory. He suggested that the effects of education on earnings stem from the signal that education sends to employers regarding the quality of the individual. He argued there is an information asymmetry about the productive capabilities of an individual that exists between employers and job-seekers. Prospective employees therefore try to overcome this information gap by

investing in costly education which signals their relatively higher productivity. Spence's theory hinges on several key assumptions: that individuals have differing intrinsic levels of abilities that are not affected by their education; that additional education has lower costs for higher productivity workers than low productivity workers, and that these costs vary because of internal cognitive abilities, rather than external factors like family contributions towards tuition (McCracken, 2017).

If Becker's theory is correct, then prestigious universities increase graduate earnings because they are better able to improve an individual's productivity as compared to less prestigious universities. This might be through improved teaching practices from professors who are themselves more productive individuals; smaller class sizes or increased contact hours due to being better-funded institutions; or a more challenging curriculum. However, if Spence's theory is correct, then prestigious universities don't improve productivity but simply reveal and signal the underlying higher productivity of the individual. Attending a prestigious university and pursuing further education is cheaper for certain individuals, in terms of intellectual effort and mental load. From a behavioural economics perspective, both theories ignore that individuals are not always rational actors and likely consider (and may even prioritise) other factors when choosing a university such as living costs or proximity to family.

The economic debate is difficult to resolve with empirical evidence because both theories predict that earnings rise with education (Hamalainen, 2008). Weiss (1995) stresses that the two theories are not necessarily mutually exclusive and there is likely a combination of both effects at play. Instead, signalling is likely an extension of Becker's human capital theory.

3. Literature Review

The literature review is split into key sections that were reviewed across papers. Firstly, a scope is defined; next how prestige is defined in this paper; then the various data sources that were considered, and finally the methodologies, results and limitations of the key papers in this field.

3.1 Scope

There is limited literature about the impacts of institutional prestige on graduate earnings in the UK, largely due to the low quality of available data (Belfield, 2018). Despite the data limitations, the UK higher education landscape provides an effective environment to study

this topic, due to “its relatively homogeneous nature, low levels of non-completion, and the highly specialized nature of UK bachelor's degree courses” (Walker and Zhu, 2018). Whilst the US higher education landscape differs in some respects, there is a larger base of US evidence available. The consensus from the US evidence base is that attending a prestigious university does, to a significant degree, increase graduate earnings (Monks, 2000; Dale and Kreuger, 2002, 2011). However, the results of studies on this topic “are likely to be country specific because the degree of subject specialisation and institutional hierarchy varies across countries” (Britton, 2016). Therefore, this paper restricts itself to UK literature, referring only to American papers in regards to their methodological influences on UK literature.

3.2 Measuring institutional prestige

The UK houses the Russell Group, a self-selected association of 24 research intensive public universities. It was originally formed as a lobbying group in 1994, but today is commonly considered a shorthand for university prestige (McCabe, 2025). Most literature goes beyond just distinguishing between Russell Group and non-Russell Group universities, and instead splits UK universities into three main categories: Russell Group, Pre-1992, Post-1992. The 1992 Higher Education Act granted university status and degree awarding power to all higher education institutions, including those that used to be mostly vocational. Chevalier (2003) found that mean statistics on A-level scores of intake students, pupil-staff ratio, research assessment and destinations of graduates are statistically different for these three types of institutions. Therefore, grouping them in this manner “captures some unobservable characteristics such as reputation or network effect and therefore limits bias due to selection on unobservable characteristics”, which is one of the major concerns for research in this area (Kim, 2015).

However, many studies note that a large degree of heterogeneity remains within these groupings (Chevalier, 2003; Britton, 2016; Belfield, 2018). Papers like Britton (2022) and de Vries (2014) identified different groupings to understand the extent of heterogeneity within the above grouping, with both finding that specific elite institutions inflate the Russell Group premia. This paper adds to this evidence base by differentiating two additional groups: the Sutton Trust 13 (the 13 most elite UK universities based on average rankings from various

newspaper league tables as identified by the charity), and Oxbridge (The University of Cambridge and The University of Oxford)⁵.

3.3 Data

Various datasets are used by the UK literature mentioned in this paper, each with their own strengths and weakness that are described in Table 1.

Table 1: Commonly used datasets in UK university prestige literature

Dataset	Papers	Strengths	Weaknesses
1970 British Cohort Study (BCS70)	Sullivan, 2018 Klein, 2021	Rich background variables that could help control for selection bias	Single cohort of students, with results that are likely to be outdated in the modern HE system
1995 Graduate Cohort Survey	Chevalier, 2003 Hussain, 2009	Nationally representative	Small sample size
Destination of Leavers from Higher Education Survey (DLHE)	De Vries, 2014	Detailed information about university/subject	Only looks at outcomes 6 months after; Self-reported wages
Labour Force Survey (LFS)	Walker and Zhu, 2011, 2013, 2018 Britton, 2020	Large, nationally representative dataset with a long time series	Self-reported wages; Weak identification of subject studied and university attended
Longitudinal Education Outcomes (LEO)	Britton, 2016, 2020, 2022 Belfield, 2018	Accurate earnings data; Can control for prior attainment; Large sample with clear identification of university and subject	Limited variables for controls; Excludes graduates working abroad

⁵ Groups are mutually exclusive. English universities only as fee/funding structures vary elsewhere in UK.

Most UK literature notes data availability and quality as a significant limitation in this field. The LEO was specifically developed to address this evidence gap by combining various data sources held in government, and it's high accuracy is the main reason it was chosen. Whilst the full dataset is not publicly available, a provider-level dataset is published which includes the key variables of interest. More details on the LEO are included in Section 4.

3.4 Methodologies, results and limitations

Many UK papers use OLS (Ordinary Least Squares) as a base model, as inspired by American literature, notably Monks (2000) who's landmark paper found some evidence of institutional prestige increasing earnings. Dale and Kreuger (2002) additionally identified that correcting for selection bias through the inclusion of prior attainment scores caused much of the supposed prestige effects to fall away for US colleges. Hussain (2009) improved on such American studies that often only used one measure of institutional quality (leading to downward bias in earnings) by establishing additional measures including the staff-student ratio, average entry requirements and expenditure per pupil. However, they identified high multicollinearity among variables through this approach. They resolved these issues by combining the various measures into a composite variable, and using OLS found that a one standard deviation increase in university quality increased average earnings by ~6%. Prestige was then redesigned in quartile terms, and they found that prestige premia are highly non-linear, with the most prestigious group being associated with 10-16% higher earnings as compared to the least prestigious group. This falls to 5-7% for the second most prestigious quartile and is insignificant when comparing the bottom two quartiles.

These findings are very similar to Britton (2022) who also used an OLS regression with rich background controls and found that institutional prestige returns are much more significant at the top end of the prestige spectrum. They compare earnings increases against a mid-tier university (Sheffield Hallam) and find their most prestigious group has earnings 25-35% higher, whereas the second most prestigious group has earnings 5-20% higher. Despite finding their results are broadly robust to alternative specifications, their methodology is limited by the strong assumption that all relevant selection is captured by their controls.

Earlier work by Chevalier (2003) used propensity score matching (PSM) to tackle this issue, and found that attending a Russell Group university on average increased earnings by 6% for male students. They establish the earnings differential between Russell Group and Post-92 universities and estimate the Average Treatment Effect on the treated. Assuming the

conditional independence assumption and the common support assumption, graduates who are the most similar in terms of observable characteristics are given the highest weights. Whilst this approach is also unable to tackle selection bias from unobservable characteristics, and has thin common support, it does not rely on the linear functional form assumption that OLS does. However, Black (2004) and Long (2008) found that whether using OLS or PSM, the magnitude of the effect of college quality remains similar. Only with PSM, the standard errors were so large the effects of institutional prestige were not statistically significant.

Belfield (2018) built on their OLS model by tackling the strong assumption that the student characteristics controlled for in their OLS model has a linear relationship with earnings. They instead use IPWRA (Inverse Probability Weighting Regression Adjustment, proposed by Woolridge (2007)) which allows them to create a final weighted sample that places less weight on this functional form assumption. They found the most selective institutions provided a 40% premium compared to the average degree, whereas the least selective institutions reduced returns by 30% compared to the average degree, 5 years after graduation. They caveat that their approach still does not tackle the issue of unobservable student characteristics. Whilst PSM and IPWRA are sophisticated methodologies that offer more robust results by better addressing selection bias, many studies caution that their results still should not be interpreted as definitively causal.

This study is severely limited by its use of aggregate provider-level data, which prevents use of more sophisticated methods than OLS because the dataset lacks individual level controls that can further control for selection bias. Instead, it aligns closely to pooled OLS methodology in literature, particularly Belfield (2018)'s base model which is the most recent, comprehensive piece of literature in this field.

Variation between subject returns is well recognised in the field (Sloane, 2005; Walker and Zhu, 2013; De Vries, 2014) and is examined alongside as an important regressor in most of the literature. Law, Economics and Management courses (commonly grouped together as LEM) are often found to provide the highest returns, followed closely by STEM subjects, with Medicine particularly offering returns often as high as LEM courses, though later in a graduate's career due to longer training periods (Britton, 2020). Arts and Humanities subjects provide the lowest returns, with Creative Arts often being at the lowest extreme.

Fields of study and institutional prestige are interlinked yet few studies consider them in conjunction (Dilnot, 2016). Whilst there is a robust evidence base that shows heterogeneity

between subject returns, most studies do not control for institutional differences which is problematic because it likely distorts subject premia. However, the few that are able to control for institutional effects find a similar hierarchy of subject returns as above. Furthermore, they find some evidence to suggest that subject choices may matter more than institutional prestige in increasing a graduate's earnings (Britton, 2016; Belfield, 2018; Sullivan, 2018). Hastings (2013) and Britton (2022) additionally find that prestige matters much more for subjects with higher average returns, with LEM fields benefitting from the biggest prestige premia. Finally, many studies are forced to use very broad subject groupings due to dataset limitations (Walker and Zhu, 2011; Sullivan, 2018). This paper uses more distinct categories of 'AHSS' (Arts, Humanities, Social Sciences); 'HM' (Health and Medicine); 'LEM' (Law, Economics and Management) and finally 'STEM' (Science, Technology, Engineering, Maths).

In summary, this paper adds to the literature by creating more distinct prestige and subject categories; further exploring the link between prestige and subject; investigating how the prestige premia changes between 1-5 YAG, and finally exploring how outcomes differ across the income distribution for the latest publicly available LEO data.

4. Data

4.1 Dataset Creation

This study uses a publicly available, provider-level version of the Longitudinal Education Outcomes (LEO) created by the Department for Education (DfE, 2025b). It links records from four databases:

- The National Pupil Database (NPD)
- Higher Education Statistics Agency (HESA)
- His Majesty's Revenue and Customs (HMRC) earnings and employment data
- Work and Pensions Longitudinal Study (WPLS) benefits data.

Unlike the privately held LEO sample used by Belfield (2018), this public data source is aggregated and does not provide individual level data.

Initially, a cross-sectional approach using OLS was considered on one cohort of graduates. However, lacking a temporal dimension meant results were unlikely to be robust, because they could be easily biased due to the particular economic factors a cohort may graduate into.

Subsequently, two further cohorts were included which “increases the efficiency of the estimates by reducing the randomness...of earnings” (Belfield, 2018).

Therefore, a pooled cross-sectional dataset is created which tracks annualised earnings for the 2014/15, 2015/16 and 2016/17 cohorts at 1,3 and 5 years after graduation⁶, spanning the tax years 2016/17 - 2022/23. All earnings were rounded to the nearest 100, and were adjusted to the 2024/25 level using the latest available CPIH figures. Those who progressed onto further study are excluded as they would be more likely to report part-time earnings, however the LEO does not explicitly distinguish between part and full time earnings which may affect some demographics more than others.

This paper only includes ‘Higher Education Institutions’ that have degree awarding powers, and focuses specifically on English universities due to different funding structures elsewhere in the UK. This paper focuses on UK-domiciled students, meaning the findings are unlikely to be representative for universities with a significant percentage of international students. Graduates from more prestigious universities may be more likely to live abroad, and this is acknowledged as a limitation.

An advantage of using the LEO is that it samples most pupils in England so is very representative of the overall population. Additionally, the linking process which joins datasets to create the LEO is reported by Anderson (2021) to be of very high quality with match rates of 99% for these 3 cohorts. The LEO data already suppresses outcomes for less than 10 FPE (full person equivalence), but following literature, the smallest group used is 15 FPE.

Table 2 below provides descriptions of the variables in the dataset.

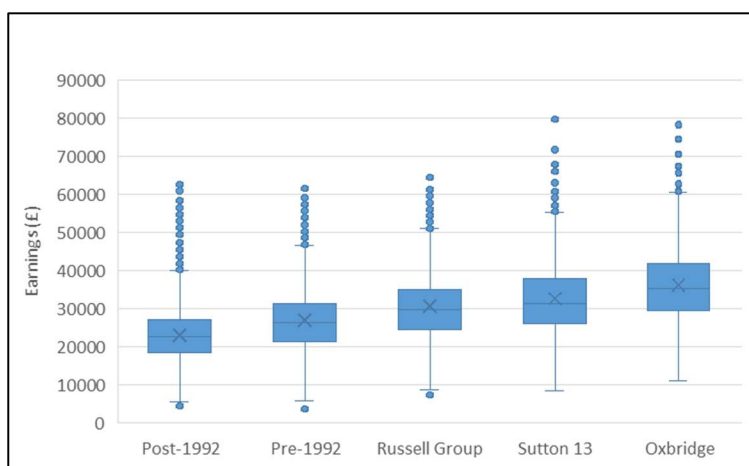
⁶ Full tax years after to avoid high volatility immediately after graduation, as students typically graduate in the summer so are unable to report a full year of earnings until the next tax year

Table 2: Regression variable descriptions

Variable Name	Number of Categories	Category Options
Providers/Prestige	5	126 universities sorted into 5 tiers of prestige: Post-1992; Pre-1992; Russell Group; Sutton 13; Oxbridge
University Region	9	East Midlands; East of England; London; North East; North West; South East; South West; West Midlands; Yorkshire and the Humber
Subject Group	4	26 CAH2 subject codes sorted into 4 groups: Arts, Humanities and Social Sciences; Law, Economics and Management; Health and Medicine; STEM
Years after Graduation	3	1;3;5
Cohort	3	2014/15;2015/16;2016/17
Prior Attainment	9	Attainment aged 18 grouped using prior-attainment codes based on A-levels or equivalent

Three cohorts of students are included to ensure robustness of results across cohorts. Prestige is the main explanatory variable, with categories being created as explained in section 3.2. Subject group is included as it is a significant explainer of the variation in graduate earnings. University region is included as many English universities draw the majority of their students from their own regions, and therefore institutions based in regions with weaker local labour markets may struggle to produce graduates whose earnings match those of higher paying regions (Britton, 2016). Prior attainment is included to address selection bias. Years after graduation is included to measure the relationship prestige premia have over time.

4.2 Descriptive Statistics

**Figure 1: Real lower quartile earnings by prestige groups**

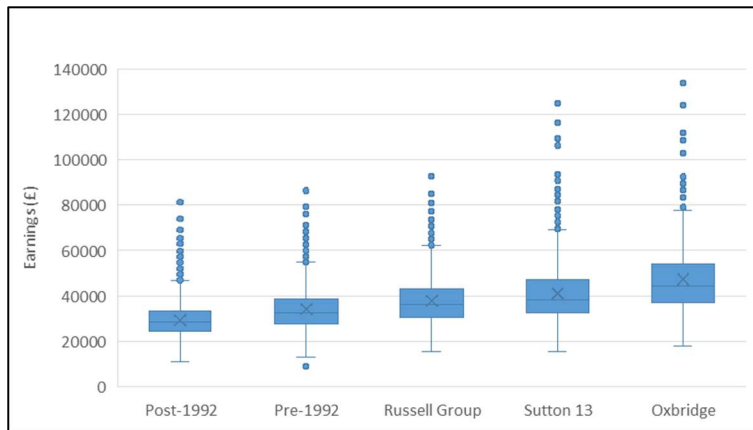


Figure 2: Real median earnings by prestige groups

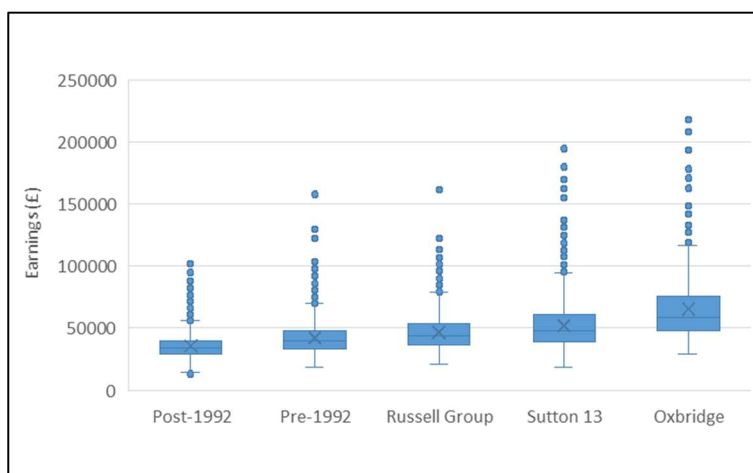


Figure 3: Real upper quartile earnings by prestige groups

In Figure 1, the data appears to include some part-time earners as some wages are below the annualised minimum wages of the time. The models were re-run excluding these figures and the results did not significantly change, but as mentioned, this is acknowledged as a limitation.

The above figures show that the prestige gap is widest at the upper quartile when looking at raw earnings. Within prestige groups, earnings are also more widely dispersed at the top end of the prestige scale. This suggests that prestige is likely more important for access to the best-paying professional industries such as corporate law, investment banking and consulting. Reports from one market survey found that 90% of UK graduate hires for MBB (McKinsey, Bain, Boston Consulting Group, the most elite consulting firms) came from only 10 universities. 58% were alumni of just 3 universities: The University of Cambridge, the University of Oxford, and the London School of Economics (Consultancy UK, 2023). This high level of exclusivity may suggest some support for Spence's signalling theory.

5. Methodology

5.1 Hypothesis

The hypotheses are:

- H0: Institutional prestige does not impact UK graduate earnings.
- H1: Institutional prestige does impact UK graduate earnings.

5.2 Empirical Approach

The choice of estimator was guided by both econometric testing and what best fit the dataset and research question. The dataset is a pooled cross-section, for which the natural estimator is pooled OLS. However, it could be treated as a pseudo-panel using cohorts as pioneered by Deaton (1985), which would make a Fixed Effects (FE) or Random Effects (RE) estimator plausible. The BP Lagrange Multiplier test confirmed the dataset did have panel-level variation, preferring RE over pooled OLS but a subsequent Hausman test rejected the null hypothesis that the Generalised Least Square estimators of RE are consistent, instead supporting FE.

However, FE was considered inappropriate in this context for two main reasons. Firstly, this study focuses on between-provider variation in graduate earnings, rather than within-provider variation. Secondly, FE would eliminate the time-invariant variable of prestige, which is the main variable of interest⁷. Therefore, the dataset was treated as pooled cross-sectional instead of a pseudo panel, and a pooled OLS estimator was adopted as the preferred baseline model. This approach is consistent with the methodology of leading literature (Belfield, 2018; Britton, 2020) and therefore has the added benefit of ease of comparison across results.

The pooled OLS model performed similarly against the chosen diagnostic tests (such as the RESET test for misspecification) as the FE model, but the limitations imposed by its reliance on the OLS estimator are acknowledged. To ensure valid inference of results, cluster-robust standard errors are employed, to correct for heteroskedasticity (identified through the Breusch-Pagan test) and serial correlation within clusters (identified through the Breusch-

⁷ Whilst universities' rankings (so to some degree, prestige) do change, they are often negligible, particularly over the short time period of 7 years used here. Additionally, the prestige categories for this paper have been deliberately designed taking into account wider regulatory and organizational factors, so are largely immune from minor changes in league table rankings.

Godfrey test). To check for potential bias arising from unobserved time-invariant heterogeneity, a FE model was estimated as a robustness check, as discussed in section 6.3.

An iterative model selection process was undertaken to arrive at the preferred specification. It began with simple specifications and functional forms and was systematically expanded to include additional variables and categorical fixed effects. Ultimately, a log-linear form was chosen. Since the model used the log of annual earnings, it excluded those who reported 0 earnings. Earnings were regressed against an institution prestige dummy variable, and a vector 'X' of different control variables. The baseline specification is:

$$\ln(\text{Real Earnings})_i = a + \beta_1(\text{Prestige Grouping}) + \beta_2 X_i + e_i$$

Following Belfield (2018), the final model also allowed for treatment specific time effects through the inclusion of interaction terms between institutional prestige and years after graduation. Motivated by Britton (2022)'s findings that university prestige does not generate uniform earnings across different subjects, an interaction term for institutional prestige and subject was also included.

The final chosen model is:

$$Y_i = X_i' \gamma + \text{Prestige}_i \delta_1 + (\text{Prestige}_i \times \text{YAG}_i) \delta_2 + \text{Subject}_i' \beta_1 + (\text{Prestige}_i \times \text{Subject}_i)' \beta_2 + \varepsilon_i$$

Where X includes: University Region; Years after graduation; Cohort; Prior Attainment at A-level; ε_i is the error term.

$$\text{Prestige returns} = \delta_1 + \delta_2 \text{YAG}$$

$$\text{Subject returns} = \beta_2 + \beta_2 \text{Subject}$$

Quantile regression is typically used to examine effects across the income distribution. However, the aggregated structure of the dataset used prevents this, so instead an identical model was run with real Lower Quartile/Median/Upper Quartile earnings to examine whether the relationship between institutional prestige and earnings differs across the income distribution.

6. Results

6.1 Results Tables

	Variable	Model 1 (LQ Earnings)	Model 2 (Median Earnings)	Model 3 (UQ Earnings)
Cohort	Cohort 2015/16	0.023*** (0.003)	0.013*** (0.002)	0.011*** (0.002)
	Cohort 2016/17	0.019*** (0.004)	0.010** (0.003)	0.010** (0.003)
Years after Grad	3 years	0.197*** (0.005)	0.183*** (0.003)	0.189*** (0.003)
	5 years	0.317*** (0.006)	0.311*** (0.004)	0.339*** (0.005)
Prestige	Pre-1992	-0.007 (0.031)	0.013 (0.023)	0.036 (0.022)
	Russell Group	0.024 (0.019)	0.030* (0.015)	0.049** (0.016)
	Sutton 13	0.083*** (0.022)	0.077*** (0.019)	0.098*** (0.020)
	Oxbridge	0.075** (0.025)	0.088*** (0.026)	0.130*** (0.030)
University Region	East of England	-0.000 (0.029)	0.013 (0.030)	0.019 (0.032)
	London	-0.004 (0.024)	0.052* (0.021)	0.076*** (0.022)
	North East	-0.031 (0.032)	-0.026 (0.027)	-0.025 (0.029)
	North West	-0.067** (0.022)	-0.061** (0.020)	-0.066** (0.021)
	South East	0.020 (0.024)	0.033 (0.022)	0.037 (0.023)
	South West	0.009 (0.030)	0.029 (0.026)	0.037 (0.028)
	West Midlands	-0.044 (0.026)	-0.028 (0.024)	-0.029 (0.027)
	Yorkshire and The Humber	-0.051 (0.026)	-0.044* (0.021)	-0.052* (0.024)

Table 3: Pooled OLS models

Cont	Variable	Model 1 (LQ Earnings)	Model 2 (Median Earnings)	Model 3 (UQ Earnings)
Prior Attainment	BTEC	-0.075*** (0.012)	-0.084*** (0.011)	-0.082*** (0.011)
	1 or 2 A-levels	-0.015 (0.012)	-0.028** (0.010)	-0.035** (0.011)
	Less than 3 Ds	0.028 (0.027)	0.006 (0.020)	-0.013 (0.023)
	More than 3 Ds	0.035** (0.014)	-0.000 (0.011)	-0.022* (0.011)
	More than 3 Cs	0.081*** (0.013)	0.034** (0.012)	0.005 (0.012)
	More than 3 Bs	0.140*** (0.016)	0.085*** (0.014)	0.051*** (0.014)
	3 As	0.238*** (0.021)	0.177*** (0.019)	0.149*** (0.020)
	More than 3 As	0.335*** (0.029)	0.273*** (0.024)	0.259*** (0.026)
Subject	Health & Medicine (HM)	0.178*** (0.009)	0.129*** (0.008)	0.151*** (0.009)
	Science, Technology, Engineering and Maths (STEM)	0.243*** (0.017)	0.196*** (0.014)	0.171*** (0.013)
	Law Economics & Management (LEM)	0.255*** (0.015)	0.222*** (0.014)	0.239*** (0.014)
Prestige*YAG	Pre-92*3 YAG	0.018 (0.012)	0.018* (0.009)	0.022* (0.009)
	Pre-92*5 YAG	0.028 (0.019)	0.032* (0.015)	0.049** (0.017)
	RG*3 YAG	0.072*** (0.013)	0.050*** (0.009)	0.066*** (0.009)
	RG*5 YAG	0.093*** (0.017)	0.087*** (0.014)	0.124*** (0.015)
	S13*3 YAG	0.052*** (0.012)	0.045*** (0.009)	0.069*** (0.011)
	S13*5 YAG	0.082*** (0.016)	0.102*** (0.016)	0.155*** (0.024)
	Oxbridge*3 YAG	0.080*** (0.015)	0.090*** (0.006)	0.128*** (0.005)
	Oxbridge*5 YAG	0.102*** (0.016)	0.161*** (0.011)	0.261*** (0.014)

Cont	Variable	Model 1 (LQ Earnings)	Model 2 (Median Earnings)	Model 3 (UQ Earnings)
Prestige*Subject	Pre-92*LEM	0.091*** (0.025)	0.101*** (0.020)	0.093*** (0.022)
	Pre-92*HM	0.076 (0.059)	0.064 (0.039)	0.036 (0.033)
	Pre-92*STEM	0.010 (0.032)	-0.004 (0.025)	-0.026 (0.025)
	RG*LEM	0.051* (0.021)	0.101*** (0.019)	0.116*** (0.020)
	RG*HM	0.166*** (0.024)	0.127*** (0.021)	0.071** (0.022)
	RG*STEM	-0.055* (0.022)	-0.045* (0.020)	-0.071** (0.022)
	S13*LEM	0.102*** (0.021)	0.168*** (0.022)	0.208*** (0.032)
	S13*HM	0.107* (0.042)	0.070* (0.034)	-0.013 (0.032)
	S13*STEM	-0.060* (0.030)	-0.046 (0.028)	-0.062* (0.031)
	Oxbridge*LEM	0.168*** (0.030)	0.286*** (0.039)	0.401*** (0.057)
	Oxbridge*HM	0.093*** (0.028)	0.022 (0.019)	-0.081*** (0.020)
	Oxbridge*STEM	-0.072 (0.042)	-0.064 (0.033)	-0.061 (0.037)
	Constant	9.692* (0.024)	9.991* (0.021)	10.184* (0.022)
	Adjusted R²	0.561	0.648	0.682
	F-stat	823.499, p<0.001	1188.931, p<0.001	1386.289, p<0.001

Notes: Robust standard errors in parentheses, clustered at the provider-level

Number of observations: 30,303 (1,032,205 individuals)

Coefficients, with significance indicated as follows: *** p<0.01, **p<0.05, *p<0.1

Omitted levels for Table 3

Category	Omitted Level
Cohort	2014/15
Years after graduation	1 year
Prestige	Post 92
University Region	East Midlands
Prior Attainment	Other
Subject	Arts Humanities Social Science (AHHS)
Prestige*YAG	Post-92*1year
Prestige*Subject	Post-92*AHHS

6.2 Results Discussion

Through the use of eq(1), the coefficient estimates are transformed into percentages.

$$\text{eq(1): } (e^{\text{coefficient}} - 1) * 100$$

The results discussion focuses on outcomes 5 years after graduation as the headline results because literature finds that earlier earnings are typically noisy and uninformative. However, the years after graduation (YAG) variable is still useful through its interaction terms with prestige, which show that prestige affects earning trajectories. Attending a more prestigious university does not simply create a one-off flat increase in earnings, but faster earnings growth throughout the first 5 years of a graduate's career. Consistent with wider results, these effects are strongest at the upper quartile of the income distribution.

Table 4: Prestige effects at 5 YAG

Prestige	LQ	Median	UQ
Pre-92	2.1%**	4.6%***	8.9%***
Russell Group	12.4%***	12.4%***	18.9%***
Sutton 13	17.9%***	19.6%***	28.8%***
Oxbridge	19.4%***	28.3%***	47.8%***

Prestige effects at 5 YAG are calculated by adding the coefficients for the main prestige effect and for the interaction term Prestige*5YAG as mentioned. For the pre-92 group, there are relatively small differences in earnings at 5 YAG, compared to the post-92 group which is used as the baseline, ranging from 2-9% across the income distribution. It is statistically significant at the 5% level for the LQ, and at 1% for the Median and UQ. All other results are significant at the 1% level. Russell Group also has a 7% within group dispersion, but earnings increase to range from 12% to 19%. Sutton 13 earnings range from 18% to 29%, and Oxbridge earnings have the widest dispersion of 29%, from 19% to 48%, as compared to the baseline group of a Post-92 university.

Returns by subject show LEM earnings are the highest, followed closely by STEM, then HM, and finally AHSS. Heterogeneity between groups still remains, for example Medicine earnings are significantly higher compared to other subjects in the HM group. Prestige

matters overwhelmingly more in LEM fields, particularly at the median and upper quartiles. The interaction terms show increases of 113% and 180% respectively for Oxbridge LEM graduates compared to Post-92 AHHS graduates 5 years after graduation. Prestige effects are more moderate at H&M, with reverse trends where it's most important at the LQ, and decreasingly so for median and UQ. For STEM fields, the effects were extremely mixed and diluted throughout the income distribution.

As expected, prior attainment explained a large share of earnings variation. Graduates with the top grades at A-level significantly out-earned their peers who received worse grades or pursued vocational qualifications. Higher attainment provides protection against the lowest earnings outcomes, which is more visible in the LQ and median models. However in the UQ model, more of the variation in earnings is explained by the subject studied and the prestige of the institution attended. University region results are as expected: there is a clear North-South divide in earnings, with London earnings reflecting a significant premium at the Median and UQ models. This reflects the high concentration of elite corporate careers in London. All results are consistent across cohorts.

All findings are broadly in line with literature. The results seemingly support Weiss (1995)'s theory that signalling is an extension of human capital theory. Overall, there is sufficient evidence to reject the null hypothesis that institutional prestige does not impact UK graduate earnings.

6.3 Robustness

As mentioned above, the validity of a pooled OLS model relies on the OLS estimator being BLUE. In this case, the biggest threat to that is potential endogeneity, meaning the regressors are correlated with the error term, and the model is no longer unbiased. To assess the magnitude of this potential bias, a FE model was estimated as a robustness check. By introducing unit-specific intercepts, the FE model removed all time-invariant institutional heterogeneity, and relaxed the assumption that unobserved institutional characteristics were uncorrelated with the regressors. The FE results however proved to be substantially similar to the preferred pooled OLS model, in both coefficient magnitude and statistical significance. This suggests that the prestige premia are not primarily driven by unobserved, time-invariant institutional characteristics. This does not mean that all sources of endogeneity have necessarily been addressed, particularly selection on unobservable characteristics such as motivation or ambition.

A Weighted Least Squares model was used as a secondary robustness check to assess whether the pooled OLS results were strongly influenced by small cells representing fewer graduates. The magnitude of Oxbridge premia dropped slightly, but overall results remained similar.

6.4 Limitations

Limitations have been mentioned throughout this paper, but below are the most important caveats when using the above results to make policy recommendations.

Several of the key limitations originate from the dataset used. Firstly, it is aggregated at the provider level, meaning this study can only report average outcomes for groups of graduates, not individuals. This makes the results prone to ecological fallacy as aggregation also prevents controlling for individual level characteristics, which precludes the use of more sophisticated methodologies like PSM or IPWRA which other papers in the field have been able to employ. This means more stringent functional form assumptions are made, which can lead to biased results with invalid inferences.

Additionally, despite the best attempt to capture observables, it is recognised that this publicly available dataset only reports on a minimal level of control variables, as compared to what is held privately or in other data sources used in literature. This prevents the inclusion of richer controls, making it likely that the preferred model suffers from omitted variable bias and therefore the prestige coefficients are likely upwardly biased.

The results are limited to early careers data and excludes those who pursued a post-graduate degree during this period. Britton (2020) found that students with higher attainment at school and university are more likely to continue to post-graduate education, which suggests the sample used in this study disproportionately excludes high-ability graduates, likely biasing prestige premia downwards. Britton (2020) also finds that 70% of master's and 95% of PhDs are undertaken at Russell Group and Pre-1992 universities, compared to only 50% of undergraduate degrees. The earnings premia for attending elite universities may differ for those with a postgraduate degree, as well as for graduates later in their careers.

Finally, due to selection on unobservable characteristics such as motivation, confidence and attitude, this paper is unable to claim causality, but instead calculates the conditional associations of institutional prestige on graduate earnings.

7. Policy Recommendations

The issue at hand is multi-faceted and poses significant implications to the various stakeholders involved: namely the government, taxpayers, students, and universities. As such, the needs of all stakeholders need to be adequately balanced in any policy proposals.

One contentious idea is differential tuition fees, at both a subject and an institutional level. The US differentiates at the institution level: prestigious universities like the Ivy League, MIT and Stanford charge significantly higher fees than most public universities (IvyWise,2018). On the other hand, Australia differentiates on the subject level, based on the cost of provision as well as the expected value to society (Clarke, 2025). They categorise subjects into clusters and set cluster specific caps on the amount of tuition fees and government funding. Similar systems are also common elsewhere globally.

However, such systems can be considered elitist because they can deter students from studying the highest earning subjects or at the most prestigious institutions, particularly those from socioeconomically disadvantaged backgrounds (Augar, 2019). Allowing the most prestigious institutions to charge higher fees could create downward spirals where less prestigious institutions would be crippled by lower tuition fees that would make it impossible for them to adequately improve and compete with the rest of the market. This could create a tiered system: lower fees would push socioeconomically disadvantaged students who are more debt-averse to less prestigious institutions which over time will offer lower quality provision due to lower funding.

Instead, Augar (2019) suggested annual tuition fees could be capped at a lower level (from £9250 to £7500 at that time, to rise with inflation) with governments supplementing the rest of the required funding through subject-specific grants. The exact level of the additional grants would be decided by the Office for Students, where they would consider the economic but also the social value of a subject. This study supports these recommendations as it would “rebalance funding towards high-cost, but strategically important subjects that support the Government’s industrial strategy” and reduce the perverse incentive that forces universities to cross-subsidise between courses (Augar, 2019). Additionally, it would allow the long term taxpayer subsidy to higher education to be more effectively directed, whilst reducing the financial burden on students. This would also send a valuable information signal to prospective students on which factors are most important to access higher earnings, which aligns with this study’s results that emphasise the importance of subject choice alongside

university choice. Social mobility programs should also expand their focus to reflect the above as suggested by Sullivan (2018).

It is possible that more prestigious universities are actually better at improving the human capital of graduates. This could be through low staff student ratios or certain teaching practices; Oxbridge is famous for its tutorial/supervision system where students meet weekly in groups of 1-3 to discuss a topic with an academic. Such programs could also be implemented at less prestigious universities. However, this highly tailored teaching represents higher costs: the University of Cambridge state they “spend significantly more than the government regulated tuition fee rate on each student every year” (Nunn,2019). In 2016, they stated that the average cost of educating an undergraduate was £18k, £25k in 2026 prices (Times Higher Education,2016). The University of Cambridge’s net assets total some £8.3bn, with many of their colleges also being independently wealthy and richer alone than most UK universities (University of Cambridge, 2025). This allows them the resources to cover the shortfall left by tuition fees and maintain their high quality provision, which less prestigious universities don’t have access to. Therefore, there is an argument for government to target grants at less prestigious universities to support a higher quality of teaching.

However, using graduate earnings as a measure of the quality of university should be done with heavy caution, and more research is needed to understand the incentives this would create for universities. It is equally likely that top employers simply rely on the signal that attending a prestigious university sends, and this could be tackled through implementing university-blind recruitment policies. Any policy decisions should take into account that graduate earnings are not the only important metric of a successful degree. Graduates enjoy many non-pecuniary benefits privately, and the value of a graduate’s education to society is not necessarily reflected in their income.

8. Conclusions

Using provider-level LEO data, this study has shown that UK graduate earnings are impacted by the institutional prestige of the university attended. Institutional prestige effects are strongest for the most prestigious universities, and these effects are also strongest at the upper quartile of the income distribution. Prestige premia also appear to have a non-linear relationship with time. Prestige effects are highly nuanced depending on the subject studied, and prospective students should consider both factors in conjunction when choosing a university course. These results are caveated by several limitations, most importantly that due

to limited background controls and selection on unobservable characteristics, this paper cannot claim causality. However, this is a common issue in this field, and given that results were tested for robustness and in line with literature findings, it is considered appropriate to utilise them to suggest policy recommendations. This paper supports the reforms to how higher education is funded as proposed by Augar (2019), in particular the implementation of subject-specific grants directly to universities to ensure the long-term taxpayer subsidy is more effectively directed. It also suggests it could go further by implementing similar grants to less prestigious institutions. Future research should aim to establish causality through use of richer data and more sophisticated methodologies like IPWRA. Consideration of distributional impacts across gender, ethnicity and socio-economic background is also critical in informing policymakers.

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