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The Returns to UK Degrees for Foreign-Educated Graduates

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Abstract

Exploiting information on foreign qualifications for the first time, we estimate the returns to obtaining UK Higher Degrees, for foreign graduates who migrated to the UK in their 20s. Accounting for direct measures of foreign and UK qualifications and country-of-origin fixed effects, we find substantial returns to obtaining UK (Higher) Degrees on hourly wages and occupational attainment for both genders, working mainly through occupational attainment. However, there is strong evidence that the effect of the high returns is driven by immigrants from countries where English is not a dominant language. Moreover, returns to UK (Higher) Degrees are more pronounced for graduates from low HDI/GDP countries suggesting an important role for the incompatibility of education and skills between home and destination countries. We further examine the robustness of our results by using a partial identification method and our findings suggest that the extent of selection on unobservables required to eliminate a positive treatment effect is too large to be plausible, especially for men. Our study extends previous research with the first evidence from the UK, by showing large positive effects of post-migration investments in human capital acquisition on labour market outcomes. Obtaining UK Higher Degrees appears to reduce the informational uncertainty associated with foreign credentials, facilitate cultural and economic assimilation, and boost economic opportunities for foreign graduates, especially for those developing/poor country immigrants.

Keywords: foreign-educated graduates, pre- and post-migration schooling, returns to UK degrees

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1. Introduction

This paper is concerned with differences in labour market outcomes among foreign degree holders, who migrated to the UK after completing full-time continuous education in their country of origin in their 20s. In particular, we analyse the effect of obtaining a UK (Higher) Degree on occupational attainment and wages.

The question is of enormous relevance in terms of immigration, education and economic policies as governments strive to expand the pool of well-educated and skilled workers as demanded by the knowledge-based economy (e.g. use of selective point-based immigration systems in Canada, Australia, and New Zealand, and recent UK immigration policy changes).[1]

The empirical literature highlights the fact that immigrants in developed countries face labour market disadvantages (Borjas 1994; Chiswick 1978), with a lower probability of being employed and higher rates of unemployment. Moreover, immigrants experience job mismatch and obtain lower earnings compared to natives as the skills immigrants acquired in their home countries are less valued in the host countries (Borjas 1994).

Well known economic explanations of these inequalities affecting immigrants come from human capital and credential theories. Regarding human capital, foreign educated individuals from less developed countries, are assumed to be less skilled and less productive than natives because of the typically lower educational attainment as well as the lower quality of schooling and the imperfect compatibility of labour market experience from the country of origin (Friedberg 2000). Therefore, employers discount these characteristics in the labour market due to the high degree of uncertainty about immigrants' skills. Besides, other authors argue that initial skills, including language, obtained before immigration are not directly transferable into the labour market of destination countries. In this respect, acquiring host country language skills and qualifications reduces the uncertainty associated with origin country characteristics, thus facilitating assimilation in terms of opportunities in the labour market, and significantly improve their economic position in the destination country (Friedberg 2000; Tong 2010; Zeng and Xie 2004).

On the other hand, credential theory provides insights about the importance of cultural traits and social norms as factors that negatively affect immigrants upon arrival. Employers can more easily recognise and value skills and knowledge obtained in the host country against any foreign schooling and experience. Furthermore, they will assess qualifications differently, depending on how similar the origin countries are to the host country in terms of culture, language, ethnic composition and economic characteristics (Collins 1971; Stewart and Dixon 2010).

However, sociologists have long argued that social contacts also play a key role (Bourdieu 1986; Coleman 1990). The general idea is that having more contacts with the dominant natives would facilitate cultural and economic assimilation and boost economic opportunities for immigrants (Kanas and van Tubergen 2009). In our context, foreign

[1] Economic migration and labour market integration of immigrants are among the key priorities set by the European Commission for 2014-19 to improve growth and competitiveness across the European Union (EU). ({ HYPERLINK "http://www.eesc.europa.eu/resources/docs/jean-claude-juncker---political-guidelines.pdf" }).

graduates who are enrolled in higher education institutions in the UK are more likely to benefit from increases in social capital, through for instance attending careers fairs and employers' *milk rounds*, exchanging information about job opportunities with fellow (native) students and alumni, or simply using university's career services to polish CVs or getting professional advice about the local job markets, compared to foreign graduates who do not have the opportunity to obtain UK degrees.[2]

In this paper, we will make use of the most recent UK data, which contains direct measures of pre- and post-migration qualifications, to investigate the extent to which acquiring a UK (Higher) Degree affects labour market outcomes of foreign degree holders. We focus on quantifying the **overall** returns to obtaining qualifications in destination countries for immigrants, allowing for endogeneity through matching, although we are unable to attribute the wage premium to employment, occupational attainment or pure wage channels due to data limitations.

We contribute to the existing literature in several ways. First, using the largest nationally representative survey in the UK, which collects information regarding foreign qualifications for the first time, we document substantial wage premia of obtaining UK Higher Degree qualifications, allowing for country-of-origin fixed effects. Secondly, we analyse the extent to which the returns to UK Higher degrees vary by the characteristics of immigrants' country of origin. Finally, we probe the robustness of our results following Oster (2016) to account for potential selection on unobservables.

2. Literature review

There is a vast literature on immigrant assimilation and portability of human capital of immigrants in developed countries such as Norway (Barth, Bratsberg and Raaum 2012), the UK (Shields and Price 1998), Canada (Li 2001; Reitz 2001) and the US (Chiswick 1978; Stewart and Hyclack 1984). A general finding is that immigrants are disadvantaged in the labour market outcomes such employment and wages, relative to natives. The leading explanation is that immigrants are perceived as less skilled and less productive than natives, as their education and work experience from developing countries in particular, are regarded as of lower quality or less compatible (Friedberg 2000). Besides, immigrants who acquire the host-country language significantly improve their economic opportunities (Chiswick and Miller 1995, 2002; Miranda and Zhu 2013).

In addition to this literature, there seems to be only a handful of studies focusing on returns to origin as opposed to destination country qualifications, particularly regarding foreign degrees.[3] Arbeit and Warren (2013) compare immigrants holding a foreign degree to immigrants who obtained their college degree in the US using the National Survey of

[2] While the existing literature focus on ethnic-based job search social networks in local labour markets (see e.g. Dustmann *et al.* 2016; Lewin-Epsten and Semynov 1992; Sanders *et al.* 2002), our paper is more consistent with an education-based social network. However, we do control for country-of-origin fixed-effects.

[3] There are other studies looking at the impact of returns to origin vs. destination country educational attainment among immigrants (Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Duvander 2001; Friedberg 2000; Li 2001; Zeng and Xie 2004). The main problem associated with these studies is that they cannot directly measure pre- and post-migration educational attainment and rely on immigrant's age at the time of arrival and total years of education. Such measures may lead to substantial measurement errors.

College Graduates (NSCG), and find higher wage returns in favour of immigrants with US degrees. Even after allowing for selection into employment, both male and female foreign degree holders are still found to be associated with lower earnings, except for degrees earned in Canada, the UK and Ireland. Using the PIACC 2012 data, Lancee and Bol (2017) find that the wage penalty of a foreign degree remains substantial in a sample of European countries, even after controlling for cognitive, non-cognitive and job-specific skills.

Tong (2010) reports an earning disadvantage affecting immigrant scientists and engineers who received their college degrees outside of the US regardless of whether they earned a Higher Degree in America. On the other hand, those who have a US college degree earn as much as their native-born counterparts. Adamuti-Trache (2005, 2016) also report that education received in non-Anglophone countries is largely discounted in Canada as far as earnings are concerned, especially at the undergraduate, liberal arts field, while there are notable positive differences in occupational attainment for highly educated immigrants who have chosen to take further education in Canada, particularly at the university level.

Parasnis, Fausten and Cheo (2008) compare labour market outcomes of migrants, with and without Australian post-school qualifications, with those of native Australians. They do not find evidence in favour of immigrants from non-English speaking countries in possession of Australian qualifications regarding labour market participation and unemployment. Analysing more recent data from Australia, Tani, Heaton and Chan (2013) find evidence that immigrants with Higher Degrees from English speaking countries, other than Australia and New Zealand, attract higher hourly wages than those obtained by immigrants with the same level of qualifications from non-English speaking countries. Moreover, Tani (2017) shows that an official assessment of immigrants' foreign qualifications by the Australian Department of Immigration and Border Security, with the certification of their Australian equivalent, increases foreign graduates' gross weekly earnings by 40%, mainly through reducing the informational uncertainty surrounding foreign qualifications.

Finally, Kanas and Van Tubergen (2009) study differences in employment and occupational status between qualifications acquired in the country of origin and country of destination using large-scale survey data on immigrants in the Netherlands that include direct measures of pre- and post-migration schooling. Correcting for selectivity into employment using a Heckman Selection Model approach, they find higher returns to host-country schooling than to origin-country schooling, especially for occupational status. Besides, returns vary by country of origin, as qualifications acquired in former Dutch colonies are more valuable in the labour market.

3. Data and descriptive evidence

We use the UK Quarterly Labour Force Survey (QLFS) from 2011 to 2016, which collects information for the first time on whether the highest qualification is obtained from abroad, and the level if any. This is merged with immigrants' country of birth economic and social indicators from UNESCO Institute for Statistics (**{** HYPERLINK "http://data.uis.unesco.org/" **}**), to control for quality of source country educational credentials.

We first select all immigrant (non-UK born) employees aged 25-59, who hold a university degree, regardless of whether it is obtained in the UK. Due to the survey design, it is impossible to distinguish between levels of non-UK degrees reported. Moreover, a UK

qualification takes precedence at an equal level. In order to mitigate the selection bias arising from different age-at-arrival in the UK, we further restrict our sample to migrants who migrated to the UK after completing full-time education in the country of origin between ages 21-29, and hence very likely to have obtained their First Degree abroad. Finally, by focusing the analysis on foreign degree holders only, we avoid the potential confusion between the place of education and racial discrimination effects.

Sample means are presented in Appendix Table A1 for men and women separately. Only 72% of male and 61% of female immigrants with foreign degrees hold graduate-level jobs, in managerial, professional and associate professional occupations. This is considerably lower than the 88% and 81% for male and female native graduates respectively. Of all foreign-educated graduates, only about 4% obtain a UK First (undergraduate) Degree whereas around 16% obtain UK Higher (postgraduate) Degrees, whereas a significant proportion are non-white and more than one-third live in London.

In our analyses, we also control for country-of-birth characteristics which include whether English is the dominant language, whether the country is a European Union (EU) member, log per capita real GDP (PPP), log population, adult secondary education attainment and labour force participation rates by gender. Whereas almost half of the sample were born in non-English speaking countries, about one-third are EU citizens.

A vast literature in sociology and economics show that occupational segregation plays a key role in income inequality between men and women or between natives and immigrants (Clark and Lindley 2009; Dustmann and Fabbri 2005; Longhi, Nocoletti and Platt 2013; Manacorda, Manning and Wadsworth 2011). Appendix Table A2 shows the 10 most common occupations for foreign graduates, by gender and whether holding UK Higher Degree. For both genders, holding a UK Higher Degree is associated with a more than 40% probability of being in graduate-level occupations, with all 10 most common occupations for males, and 9 out of 10 for females, classified as graduate jobs. On the other hand, for foreign graduates with no UK Higher Degrees, non-graduate-level jobs account for one and seven out of the 10 most common occupations for men and women respectively. In both cases, the top 10 occupations only represent 30% of all occupations. In our formal analysis, we will also estimate the direct impact of holding UK qualifications on obtaining graduate-level jobs.

4. Estimation, results and discussion

4.1. Ordinary Least Squares (OLS) estimation

We start with an OLS estimation of the effect of obtaining UK First and Higher Degrees on wages and occupational attainment by gender, using the following model:

$$Y_i = \alpha + \beta_1 \mathcal{FD}_i + \beta_2 \mathcal{HD}_i + \gamma \mathcal{X}_i + \varepsilon_i \quad (1)$$

where Y_i represents labour market outcomes (i.e. wages and occupational attainment), $\mathcal{FD}_i$ and $\mathcal{HD}_i$ are binary indicators for obtaining UK First and Higher Degrees respectively, $\mathcal{X}_i$ is a vector of individual and country of birth characteristics and ε_i is the error term. Furthermore, we account for heterogeneous effects by using Quantile Regression (QR) where we estimate the conditional quantiles of our response variable distribution in the linear model.

Columns (1) and (5) of Table 1 show OLS estimates of the gender-specific wage premia for holding UK First and Higher Degrees after controlling for individual and country-of-birth characteristics as well as survey year and month dummies. Whereas having a UK First Degree does not carry a statistically significant wage premium for either gender, due most probably to the fact of small percentage of immigrants holding this qualification (i.e. 4%), obtaining a UK Higher Degree increases hourly wage by 0.186 and 0.206 log points for male and female foreign graduates respectively.[4] As we are analysing migrants alongside controlling for country of origin characteristics, we interpret our results as place of education effects and therefore rule out racial discrimination as a potential source of wages differences.[5]

Moreover, the corresponding QR estimates for men and women respectively in columns (2)-(4) and (6)-(8) confirm the presence of heterogeneity on the effect of obtaining UK Higher Degrees, especially for men, where the impact ranges from 0.315 log points at the bottom, to 0.087 log points at the top the distribution. On the other hand, the variation of effects for women seems to be concentrated at the median of the distribution, being rather similar for higher and lower percentiles, at around 0.17 log points. This heterogeneity might be due to the presence of unobserved ability alongside the distribution of wages. Although our data do not include information that would allow us to control for the selection on unobservables, we do address this issue in section 4.3 by using *proportional selection relationships* to estimate the relative size of the unobservables needed to eliminate the estimated effects.

[TABLE 1 here]

OLS regressions with a linear functional form might be biased because of nonlinearity or the assumption that the effects are homogeneous across individuals. Besides, there might be endogeneity problems due to self-selection into obtaining UK Higher Degrees.[6]

4.2. Heterogeneous effects

Institutional, social and cultural characteristics that vary considerably across countries might affect immigrants' labour market outcomes upon arrival. Therefore, we now consider regressions allowing for country fixed effects (FE), which exploit the variation within the countries to control for all time-invariant differences between the countries. Specifically, we estimate the model:

$$Y_{ict} = \alpha_c + \alpha_t + \beta_1 \mathcal{FD}_{ict} + \beta_2 \mathcal{HD}_{ict} + \gamma \mathcal{X}_{ict} + \varepsilon_{ict} \quad (2)$$

[4] The raw wage premia for UK Higher Degrees are 0.181 and 0.278 log points for men and women respectively.

[5] We have re-estimated the OLS specification using the relevant LFS weights (PIWT) and results indicate that weighting does not matter. See Table A3 and Table A4 in the Appendix for the comparison between unweighted and weighted results.

[6] In order to check the robustness of the OLS estimates, we apply Coarsened Exact Matching (CEM) techniques, which are based on the age and timing of arrival as well as home country characteristics. The results from CEM estimation are mostly consistent with those reported from OLS, and available from the authors upon request.

where α_c are the country FEs that capture unobservable time-invariant country characteristics, and α_t are the year FEs that account for events common to all countries.

We present the results of gender specific estimations in Table 2.[7] It is worth noting that age arriving in the UK is statistically insignificant in all specifications, suggesting that the timing of migration to the UK, e.g. whether as a new graduate or with substantial home country work experience, is unimportant in explaining the wage differences. Columns (1) and (4) of Table 2 show FE estimates of the gender-specific wage premia, whereas in columns (2) and (5) we further control for 1-digit occupations. For men, the size of the UK Higher Degree premia is reduced by more than two thirds after including occupational controls. On the other hand, obtaining a UK Higher Degree becomes insignificant at any conventional level for women, suggesting that occupational attainment is the main channel through which the attainment of UK degrees raises wages. In columns (3) and (6), we estimate a Linear Probability Model (LPM) for obtaining graduate-level jobs.[8] For males, while obtaining a UK Higher Degree increases the probability of getting a graduate-level job by 16 percentage points, there is no effect for obtaining a UK First Degree only. On the other hand, getting a UK degree of any kind increases the female foreign graduate's chance of getting a high status job by 18-23 percentage points. These results suggest that investing on UK qualifications complements the human capital acquired in the country of origin, which in turn reflects well on the local labour market. Furthermore, reducing the information asymmetry associated with foreign credentials by obtaining UK Higher Degrees contributes to improve immigrants' signalling in the UK labour market, leading to higher wages.

Comparing FE results to the corresponding OLS estimates in Table 1, we observe that within country heterogeneity increases the effect of UK Higher Degrees on wages by 8% for men while decreases it for women by 15%, although both changes are statistically insignificant. Obtaining a UK First Degree remains statistically insignificant regardless of gender. In line with previous literature, these findings indicate that immigrant's returns to host country education, in particular UK Higher Degrees, are robust to controls for country of origin characteristics. Hence, we conclude that our more parsimonious specification of country of origin characteristics does a very good job in capturing the determinants of foreign graduates' wages.

[TABLE 2 here]

We now analyse the extent to which this effect varies by heterogeneity in birth country characteristics. Given the fact that only a small percentage of foreign graduates hold UK First Degree (but no Higher Degree) which in turn has no statistically significant effect on wages, we will focus on the effect of UK Higher Degrees in subsequent analysis.

[7] We have also re-estimated the country fixed effects specification using the relevant LFS weights (PIWT) and our findings are robust. See Table A5 in the Appendix.

[8] Angrist & Pischke (2009) show that whilst a non-linear model may fit the conditional expectation function for Limited Dependent Variable (LDV) models more closely than a Linear Probability Model (LPM), this matters little when evaluating marginal effects.

Previous literature has found that good command of the language of the destination country upon immigration yields positive returns for migrants in the labour market (Chiswick 1991; Chiswick and Miller 1999 for the US; Dustmann, 1994; Dustmann and Fabbri, 2003; Miranda and Zhu 2013 for the UK). Therefore, in Table 3 we explore the role of language in explaining the effect of obtaining a UK Higher Degree on wages for both men and women. Columns (1) and (6) show the baseline estimation without allowing for language of home country. Following Ipshording and Otten (2013), we include linguistic distance (LD) measures and their interactions with UK Higher Degrees in columns (2) and (7). The LD indicates the dissimilarity between the host country language, i.e. English, and the corresponding home country language in a multitude of dimensions, such as vocabulary, grammar, pronunciation, scripture, and phonetic inventories. The larger the value of the linguistic distance indicator, the further away is the home country language from English (see Bakker *et al*. (2009) for details). The results show that the high returns on UK Higher Degrees are mostly associated with immigrants whose native languages are not similar to English. Columns (3)-(5) and (8)-(10) show the effect of Higher Degrees for immigrants from countries where English is dominant, or English is official language or non-English speaking. Note that the latter classification follows Bleakley and Chin (2004, 2010) and the groups are mutually exclusive. For both genders, returns are substantially higher for immigrants from countries where English is not the dominant language. Therefore, our results are consistent whether we use the continuous LD measure or the discrete dominant/official language measure: the significant effect of high returns on UK Higher Degrees for foreign graduates is driven by immigrants from countries where the dominant language is not English or where the dominant language is further away from English in terms of LD. Hence, our findings are in line with the human capital view of limited transferability of country of origin skills and show the important role of language mediating the effect of obtaining UK Higher Degrees in labour market returns.

[TABLE 3 here]

The effect of education quality differences on immigrant's labour market returns is another important source of heterogeneity. The literature highlights the fact that immigrants from developed countries earn higher returns. Earnings for developing/poor country immigrants are much lower due to school quality in their home countries before migrating that leads to less human capital formation (Schoellman 2012). We explore the extent to which this heterogeneity affects our results by looking at the effect of obtaining UK Higher Degrees by EU membership status, home country Human Development Index (HDI) and home country per capita GDP. Results are shown in Table 4, for men and women separately. The results for EU membership in columns (1)-(3) show differences between the Old and New EU immigrants, which might reflect distinct sorting mechanisms into occupations and industries. Besides, results are mixed across gender, probably due to different degree subject choice by women (e.g. STEM qualifications). Similarly, Non-EU immigrants could be subject to more discrimination by UK employers related to low compatibility of education systems. On the other hand, estimates in columns (4)-(7) show that the returns to UK Higher Degrees are more pronounced for immigrants from low HDI or low GDP countries, regardless of gender.

Our findings are consistent with the literature showing that graduate immigrants coming from poor/low HDI countries earn lower returns, presumably due to employers' high

uncertainty about these immigrants' quality of education/skills (Hendricks and Schoellman 2016), and the limited transferability of degrees resulting in immigrants' returns disadvantage highlighted by the credentialing theory. On the other hand, those immigrants who obtain UK Higher Degrees experienced gains in human capital that are associated with larger wage returns (Schoellman 2012).

[TABLE 4 here]

4.3. Sensitivity analysis: proportional selection relationships (Oster 2016)

Finally, we test the sensitivity of the results by using the methodology proposed by Oster (2016) that is especially relevant in the presence of potential selection on unobservables (i.e. ability). Basically, it allows us to explore how the estimated results vary depending on the correlation between *unobservables* and the outcome relative to the correlation between *observables* and the outcome. Therefore, it is informative on the potential magnitude and direction of selection along unobserved characteristics.

Altonji, Elder and Taber (2005) suggest the use of an estimator (δ) that measures the extent of selection on unobservables, relative to selection on observables, that would lead to a zero treatment effect (i.e. $\beta=0$). This estimator is consistent under the assumption that the outcome will be fully explained if both observed and unobserved controls were included in the regression. Oster (2016) extends this approach showing that δ is not a global measure but rather depends on the R^2 values of the hypothetical regression described above. She shows that the Altonji, Elder and Taber method is an extreme case assuming a maximum R-squared (R_{max}) equal to 1, thus neglecting any role of measurement error. Oster considers more realistic values of R^2 ($R_{max}<1$) allowing discussions of coefficient stability that help to establish robustness. We apply this partial identification method to evaluate the robustness of the effect of obtaining UK Higher Degrees on wages. In our set-up, δ is defined as the ratio of the correlation between UK Higher Degree and relevant unobservables relative to the correlation between UK Higher Degree and observed control variables. Implicitly we are assuming that both correlations are positive, which is standard in the literature given that the unobservable is driven by ***ability***. A value of $\delta=0$ would imply no selection on unobservables, i.e. OLS results, so it would set the lower bound for the estimator. On the other hand, $\delta=1$ implies equal selection in the sense that observables are just as important as unobservables in determining the outcome. Therefore, it can be thought as the appropriate cutoff that sets the corresponding upper bound.

Table 5 reports for a range of R_{max} values, the estimates of δ conditional on $\beta=0$ or $\delta==1$, using two different model specifications: (1) FE including only pre-treatment covariates; and (2) FE making use of the full set of controls, for men and women respectively. R_{max} bounds on the left hand side of the table are chosen following Oster (2016). Results for men are robust across all proposed R_{max} bounds under both model specifications. The required minimum δ value that would render a zero treatment effect is 1.8, when $R_{max}=1$. This result indicates that the unobservables would need to be almost twice as important as the observables to produce a treatment effect of zero. As for women, robustness of the results vary depending on the assumption of how much of the variance of the outcome is explained. When we allow for high R_{max} bounds, it would be enough for the unobservables to play a small to moderate role, δ values range from 0.35 to 1.03, to eliminate the effect. Note that the corresponding β coefficient estimates are mostly negative, thus including zero

in the set of potential results. Nonetheless, results are robust when using more plausible values of R_{max}, as multiples of the actual R^2. Indeed, the R_{max} values for which women results are no longer robust (if $\delta==1$) are 0.519 and 0.573 for specifications (1) and (2), respectively. Note that even with the richest possible individual level data, an R^2 greater than 0.5 is extremely rare in empirical studies.

[TABLE 5 here]

Oster (2016) suggests that in empirical studies applied researchers should calculate the bias-adjusted treatment effect bound to test the robustness of the results using a value of $R_{max}=1.3R^2$.[9] However, we still need to choose a value for δ so we can set bounds for β. Considering the rich set of observables we include in the regression, we are confident that the relationship between the unobservables and any potentially endogenous treatment will be weaker than the relationship between the observables and the treatment. Still, we use $\delta=1$ that implies equal selection. Given bounding values for both R_{max} and δ we can now calculate an identified set for the treatment effect.

Table 6 reports the results for men and women in Panel A and Panel B respectively. Columns (1) and (4) of each panel show the treatment effect, standard errors and corresponding R^2 values using FE with pre-treatment and the full set of controls respectively. The effect of obtaining a UK Higher Degree on wages ranges 0.176-0.200 and 0.171-0.180 log points for men and women respectively. Most importantly, columns (2) and (5) show the bounding identified set for the β estimates, that includes the bias-adjusted treatment effect using the R_{max} values in the top row of each panel and $\delta=1$. In all cases the identified set does not include zero, meaning that our results are robust by this test. For men, the bounds are particularly tight. Finally, in columns (3) and (6) we calculate the values of δ corresponding to $\beta=0$, which show that the extent of selection on unobservables required to eliminate the treatment effect is way too large to be plausible. So we conclude that the potential selection of attaining UK Higher Degrees on unobservables is small enough to make us reasonably confident that the returns to attaining UK Higher Degrees are, indeed, high.

[TABLE 6 here]

5. Conclusions

Using the largest nationally representative survey in the UK, we find substantial returns to holding UK Higher Degree qualifications on hourly wages for both male and female immigrants with foreign degrees, working mainly through occupational attainment, even after allowing for country-of-origin fixed effects. However, the fact that the returns to UK (Higher) Degrees vary by home country language and EU membership status suggests an important role for English proficiency and compatibility of qualifications. Further sensitivity analysis suggests that any remaining biases arising from the selection on unobservables would have to be implausibly large to render our findings statistically insignificant, especially for men.

[9] Using a sample of randomized papers from top journals, Oster (2016) derives a cutoff value of $R_{max}=1.3$, which would allow at least 90% of randomized results to survive. In the sample of non-randomized results considered, about 45% would survive this standard.

The paper provides first evidence for the case of the UK using direct measures of foreign qualifications, and further contributes to the existent literature, by showing large positive effects of post-migration investments in human capital acquisition on labour market outcomes. By obtaining UK Higher Degrees, migrants improve on country of origin human capital, signal the relevant individual performance, and therefore improve their economic position.

Notwithstanding, the effect is heterogeneous with respect to country of origin characteristics. First, our findings indicate a sizeable effect of obtaining UK Higher Degrees in labour market returns for migrants whose dominant language is further away from English, in line with the literature that underlines the imperfect transferability of human capital. Furthermore, results are more pronounced for immigrants from low HDI or low GDP countries, which proxies for poor schooling quality, quantity and compatibility, reflecting the limited transferability of degrees highlighted by the credentialing theory.

Finally, in line with the corresponding sociological literature, immigrants who are enrolled in higher education institutions might acquire valuable social capital that improves cultural assimilation, and further facilitates their integration in the UK labour market.

Disentangling the human capital, signalling, and indeed education-based social capital channels of the UK degree premium for foreign graduates is beyond the scope of this study, as it would require much richer data than the labour force survey we use here. Nevertheless, our findings of a substantial and significant gross wage premium after accounting for the selectivity of UK degree attainment would make a strong case for the UK government to offer student loans to all legal graduate migrants to pursue further degrees in the UK, to the extent that the costs could be self-financing over their lifecycle. Furthermore, our findings also support targeted policies to validate foreign qualifications to improve the transferability of degrees. Future work on the wider impacts of attaining UK (Higher) Degrees on the foreign graduates themselves, and on the economies of the UK as well the source countries are needed before we have a better understanding of this important issue.

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Tables

Table 1: Determinants of log hourly wages: OLS and Quantile Regression Estimates

	Men				Women			
	OLS	10th	50th	90th	OLS	10th	50th	90th
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
UK First Degree only	-0.016	0.169	-0.053	-0.086	0.085	0.004	0.107	0.044
	(0.067)	(0.120)	(0.079)	(0.103)	(0.056)	(0.081)	(0.065)	(0.108)
UK Higher Degree	0.186***	0.315***	0.160***	0.087	0.206***	0.177***	0.207***	0.166**
	(0.035)	(0.063)	(0.041)	(0.054)	(0.034)	(0.049)	(0.039)	(0.065)
Age arrive in the UK	-0.000	-0.005	-0.004	-0.003	-0.001	0.010**	0.003	0.010
	(0.003)	(0.006)	(0.004)	(0.005)	(0.003)	(0.004)	(0.004)	(0.006)
Arriving in the UK after 2007	0.131***	0.060	0.186***	0.104*	-0.068*	-0.069	0.118***	-0.065
	(0.039)	(0.069)	(0.045)	(0.059)	(0.036)	(0.053)	(0.043)	(0.071)
Born in EU country	4.289***	3.421**	4.932***	4.817***	5.902***	6.848***	7.257***	3.887***
	(0.924)	(1.638)	(1.078)	(1.403)	(0.733)	(1.061)	(0.860)	(1.427)
log real GDP per capita (PPP)	0.231***	0.142***	0.288***	0.290***	0.109***	-0.000	0.085***	0.262***
	(0.029)	(0.052)	(0.034)	(0.045)	(0.025)	(0.036)	(0.029)	(0.048)
log GDP interacted with EU dummy	0.396***	0.330**	0.450***	0.435***	0.564***	0.665***	0.694***	0.355**
	(0.090)	(0.159)	(0.105)	(0.136)	(0.071)	(0.103)	(0.083)	(0.139)
Born in Non-English speaking country	0.106***	0.190***	0.109**	0.017	0.178***	0.238***	0.150***	-0.102
	(0.038)	(0.068)	(0.045)	(0.058)	(0.035)	(0.051)	(0.041)	(0.068)
Non-white	0.199***	-0.157*	0.193***	0.258***	0.086**	-0.031	-0.097*	-0.046
	(0.050)	(0.088)	(0.058)	(0.076)	(0.043)	(0.062)	(0.050)	(0.083)
Age	0.103***	0.061**	0.096***	0.115***	0.081***	0.064***	0.073***	0.113***
	(0.016)	(0.029)	(0.019)	(0.025)	(0.015)	(0.021)	(0.017)	(0.029)
Age squared	0.001***	0.001**	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,984	1,984	1,984	1,984	2,194	2,194	2,194	2,194
R^2 – Pseudo R^2	0.236	0.112	0.162	0.185	0.232	0.112	0.172	0.180

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Sample of immigrants who migrated to the UK after completing full-time education in the country of origin between 21-29 and working as employees. Other controls include log population of home country, adult secondary education attainment and labour force participation rates by gender in country of birth, as well as dummies for region of residence, survey year and survey month.

Table 2: Country Fixed-effects, wage equations without and without occupation controls & Grad Job equation, Men & Women

	Men			Women		
	Log Wages		Managerial /Professional Job (SOC1-3)	Log Wages		Managerial /Professional Job (SOC1-3)
	(1)	(2)	(3)	(4)	(5)	(6)
UK First Degree only	0.004	-0.023	-0.002	0.065	-0.023	0.177***
	(0.067)	(0.061)	(0.053)	(0.067)	(0.060)	(0.047)
UK Higher Degree	0.201***	0.078**	0.159***	0.176***	0.046	0.225***
	(0.036)	(0.032)	(0.023)	(0.033)	(0.030)	(0.026)
Age arrive in the UK	-0.000	0.003	-0.003	-0.002	-0.003	0.003
	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)
Arriving in the UK after 2007	0.109***	0.059	0.071**	-0.093**	-0.039	-0.075**
	(0.042)	(0.036)	(0.029)	(0.038)	(0.033)	(0.032)
Non-white	-0.214***	-0.156***	-0.075	-0.008	-0.018	0.021
	(0.066)	(0.057)	(0.048)	(0.055)	(0.052)	(0.043)
Age	0.100***	0.071***	0.033***	0.079***	0.069***	0.018
	(0.018)	(0.016)	(0.012)	(0.015)	(0.013)	(0.013)
Age squared	-0.001***	-0.001***	-0.000**	-0.001***	-0.001***	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Occupation controls (1-digit)	No	Yes	-	No	Yes	-
Observations	1984	1983	1984	2194	2194	2194
R^2	0.307	0.485	0.285	0.293	0.463	0.226

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Sample of immigrants who migrated to the UK after completing full-time education in the country of origin between 21-29 and working as employees. Other controls include log population of home country, adult secondary education attainment and labour force participation rates by gender in country of birth, as well as dummies for region of residence, survey year and survey month.

Table 3: Heterogeneous effects by home country language with country FE

	Men					Women				
	By linguistic distance		By home country language			By linguistic distance		By home country language		
	No language	Linguistic distance	English dominant	English official	Non-English	No language	Linguistic distance	English dominant	English official	Non-English
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
UK Higher Degree	0.200***	0.002	-0.123*	0.223***	0.307***	0.171***	-0.054	-0.012	0.256***	0.214***
	(0.036)	(0.065)	(0.074)	(0.054)	(0.062)	(0.033)	(0.064)	(0.064)	(0.080)	(0.043)
UK higher degree* linguistic distance	-	0.003***	-	-	-	-	0.003***	-	-	-
	-	(0.001)	-	-	-	-	(0.001)	-	-	-
Age arrive in the UK	-0.000	0.000	0.002	-0.009	0.004	-0.003	-0.003	0.009	-0.012*	-0.002
	(0.004)	(0.004)	(0.008)	(0.008)	(0.007)	(0.004)	(0.004)	(0.012)	(0.006)	(0.004)
Arriving in the UK after 2007	0.108***	0.107**	0.08	0.118*	0.130*	-0.094**	-0.090**	-0.073	0.075	-0.154***
	(0.042)	(0.042)	(0.095)	(0.069)	(0.069)	(0.038)	(0.038)	(0.084)	(0.085)	(0.049)
Non-white	-0.214***	-0.215***	-0.155	-0.049	-0.226***	-0.005	-0.004	0.008	0.091	-0.01
	(0.066)	(0.066)	(0.150)	(0.253)	(0.077)	(0.056)	(0.055)	(0.131)	(0.160)	(0.060)
Observations	1984	1984	355	706	923	2194	2194	411	537	1246
R^2	0.307	0.31	0.269	0.208	0.374	0.293	0.297	0.249	0.096	0.344

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Other controls include age and age squared, dummies for region of residence, survey year and survey month.

Table 4: Heterogeneous effects by home country characteristics with country FE, by gender

	By EU membership			By HDI index		By Per Capita GDP (PPP)	
	Old EU13	New EU15	Non-EU	Very High/ High	Low/ Medium	Rich	Poor
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MEN							
UK Higher Degree	0.267***	0.131	0.185***	0.146***	0.227***	0.104*	0.227***
	(0.098)	(0.183)	(0.039)	(0.049)	(0.049)	(0.053)	(0.046)
Age arrive in the UK	0.022*	-0.022*	-0.004	0.004	-0.006	0.006	-0.007
	(0.012)	(0.013)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
Arriving in the UK after 2007	0.056	0.195*	0.122**	0.136**	0.087	0.107*	0.111*
	(0.122)	(0.102)	(0.050)	(0.058)	(0.061)	(0.061)	(0.057)
Non-white	-0.373***	-0.087	-0.181**	-0.172**	-0.353**	-0.223***	-0.222**
	(0.093)	(0.140)	(0.088)	(0.073)	(0.146)	(0.083)	(0.107)
Observations	297	291	1396	1040	944	884	1100
R^2	0.327	0.303	0.279	0.375	0.257	0.396	0.255
WOMEN							
UK Higher Degree	0.057	0.307***	0.189***	0.106***	0.289***	0.101**	0.258***
	(0.061)	(0.094)	(0.041)	(0.038)	(0.059)	(0.041)	(0.053)
Age arrive in the UK	0.008	-0.021**	-0.001	-0.000	-0.009	0.002	-0.008*
	(0.009)	(0.009)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)
Arriving in the UK after 2007	-0.160	-0.112	-0.051	-0.120***	-0.011	-0.123***	-0.046
	(0.099)	(0.071)	(0.052)	(0.045)	(0.070)	(0.046)	(0.062)
Non-white	-0.127	0.154	-0.002	-0.010	0.007	-0.040	0.023
	(0.108)	(0.111)	(0.075)	(0.067)	(0.098)	(0.082)	(0.070)
Observations	375	505	1314	1429	765	1221	973
R^2	0.268	0.253	0.256	0.363	0.191	0.379	0.200

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Other controls include age and age squared, dummies for region of residence, survey year and survey month.

Table 5: Sensitivity Analysis

	Men				Women			
	FE Pre-treatment controls		FE Full set of controls		FE Pre-treatment controls		FE Full set of controls	
R_{max}	δ|β=0 (1)	β|δ=1 (2)	δ|β=0 (3)	β|δ=1 (4)	δ|β=0 (5)	β|δ=1 (6)	δ|β=0 (7)	β|δ=1 (8)
1	1.8	0.169	8.34	0.312	0.35	-0.485	0.38	-0.4
Min [$2R^2$, 1]	5.4	0.175	18.11	0.236	1.03	0.006	0.92	-0.018
Min [$1.5R^2$, 1]	10.5	0.176	35.75	0.216	1.98	0.098	1.76	0.081
Min [$1.3R^2$, 1]	16.7	0.176	56.32	0.209	3.14	0.131	2.86	0.119
R^2	0.2499		0.3074		0.2493		0.2927	

Notes: Pre-treatment controls are defined in Table A1. Full set of controls also include age, age squared, dummies for region of residence, survey year and survey month.

Table 6: Bounds on the Returns to UK Higher Degrees

Panel A: Bounds on wages. Men

	R_{max} =Min[1.3R^2, 1]=0.325			R_{max} =Min[1.3R^2, 1]=0.400		
	FE Pre-treatment controls	Identified Set	δ|β=0	FE Full set of controls	Identified Set	δ|β=0
Treatment Variable	(1)	(2)	(3)	(4)	(5)	(6)
UK Higher Degree	0.1764***	[0.1761, 0.1764]	16.7	0.2003***	[0.200, 0.209]	56.32
SE	0.0367			0.0358		
R^2	0.2499			0.3074		

Panel B: Bounds on wages. Women

	R_{max} =Min[1.3R^2, 1]=0.325			R_{max} =Min[1.3R^2, 1]=0.381		
	FE Pre-treatment controls	Identified Set	δ|β=0	FE Full set of controls	Identified Set	δ|β=0
Treatment Variable	(1)	(2)	(3)	(4)	(5)	(6)
UK Higher Degree	0.1799***	[0.131, 0.180]	3.14	0.1708***	[0.119, 0.171]	2.865
SE	0.0339			0.0335		
R^2	0.2493			0.2927		

Notes: Pre-treatment controls are defined in Table A1. Full set of controls also include age, age squared, dummies for region of residence, survey year and survey month.

Appendix A

Table A1: Sample mean characteristics

	Men (1)	Women (2)
Outcomes:		
Log hourly wage	2.764	2.532
Graduate-level Jobs (SOC 1-3)	0.724	0.612
Treatment Variables:		
UK First Degree	0.037	0.045
UK Higher Degree	0.160	0.146
Post-treatment covariates		
Age	38.3	37.8
London	0.362	0.356
South East	0.244	0.226
Scotland	0.049	0.057
Wales	0.019	0.017
Northern Ireland	0.014	0.017
Survey year	2013.4	2013.4
Survey month	6.581	6.536
Survey wave	1.339	1.345
Pre-treatment (or time-invariant variables)		
Age-at-arrival	29.9	28.3
Arrival after 2007 (Great Recession)	0.372	0.315
European Union (EU) member state	0.296	0.401
Log per capita real GDP (PPP)	9.278	9.544
log GDP interacted with EU dummy	3.015	4.069
Non-English speaking	0.465	0.568
Log population	18.3	17.9
Secondary education (% female 25+)	56.6	64.6
Secondary education (% male 25+)	66.8	72.1
Labour force part. rate (% female)	44.3	47.4
Labour force part. rate (% male)	73.5	71.3
Non-white	0.503	0.390
Observations	1,984	2,194

Note: UK Quarterly Labour Force Survey (QLFS) from 2011 to 2016.

Table A2: Ten most common occupations of foreign graduates by gender and whether having UK Higher Degrees (in descending order of frequencies)

Occu-pation	With UK Higher Degree (share in %)	Without UK Higher Degree (share in %)
Men		
1	Medical practitioners (14.5)	Programmers and software developers (7.6)
2	Higher Education teaching professionals (6.0)	IT & telecom professionals (3.8)
3	Programmers and software developers (5.4)	Medical practitioners (3.5)
4	Secondary Education teaching professionals (4.7)	IT specialist manager (2.4)
5	Biological scientists and biochemists (2.8)	IT business analysts/architects/sys. designers (2.4)
6	Natural/Soc Science professional (1.9)	Sales accounts & business developers (2.2)
7	IT specialist manager (1.9)	*Chefs (2.1)*
8	IT business analysts/architects/sys. designers (1.9)	Financial managers and directors (2.0)
9	Management consultant and business prof (1.9)	Nurses (1.9)
10	Business and financial project managers (1.9)	Higher Education teaching professionals (1.7)
Total share	42.9	29.7
Women		
1	Secondary Education teaching professionals (8.1)	Nurses (9.0)
2	Medical practitioners (7.2)	*Sales & retail assistants (3.3)*
3	Higher Education teaching professionals (7.2)	*Other administrative occupations (2.8)*
4	Primary/nursery educ. teaching professionals (5.0)	*Care workers & home carers (2.8)*
5	Natural & social science professionals (3.4)	*Sales accounts & business developers (2.5)*
6	Biological scientists and biochemists (2.2)	Primary/nursery educ. teaching professionals (2.1)
7	Business and financial project managers (2.2)	*Teaching Assistants (2.1)*
8	Sales accounts & business developers (2.2)	Secondary Education teaching professionals (1.9)
9	*Other administrative occupations (2.2)*	*Book-keepers, payroll managers and clerks (1.9)*
10	HR managers and directors (1.9)	*Nursing auxiliaries and assistants (1.9)*
Total share	41.4	30.4

Note: Non-graduate occupations (i.e. not in the top 3 SOC major groups) are in italics.

Table A3: OLS wage equations without and without occupation controls & Grad Job equation for Men, Unweighted & Weighted

	Unweighted			Weighted (by sampling weights)		
	Log Wages		Managerial /Professional Job (SOC1-3)	Log Wages		Managerial /Professional Job (SOC1-3)
	(1)	(2)	(3)	(4)	(5)	(6)
UK First Degree only	-0.016	-0.033	-0.013	-0.002	-0.034	-0.029
	(0.060)	(0.054)	(0.050)	(0.066)	(0.058)	(0.058)
UK Higher Degree	0.186***	0.049	0.173***	0.187***	0.053	0.172***
	(0.034)	(0.030)	(0.023)	(0.037)	(0.033)	(0.023)
Age arrive in the UK	-0.000	0.003	-0.003	0.002	0.003	-0.001
	(0.004)	(0.004)	(0.002)	(0.004)	(0.004)	(0.003)
Arriving in the UK after 2007	0.131***	0.058*	0.099***	0.103**	0.034	0.090***
	(0.041)	(0.035)	(0.028)	(0.043)	(0.037)	(0.030)
Born in EU country	-4.289***	-0.894	-5.099***	-4.592***	-1.003	-5.084***
	(0.954)	(0.846)	(0.694)	(1.070)	(0.949)	(0.761)
log real GDP per capita (PPP)	0.231***	0.091***	0.182***	0.223***	0.069**	0.201***
	(0.031)	(0.025)	(0.023)	(0.034)	(0.027)	(0.024)
log GDP interacted with EU dummy	0.396***	0.083	0.474***	0.425***	0.095	0.471***
	(0.093)	(0.083)	(0.067)	(0.104)	(0.093)	(0.074)
Born in Non-English speaking country	-0.106**	-0.071*	-0.052*	-0.109**	-0.071*	-0.061**
	(0.042)	(0.037)	(0.028)	(0.045)	(0.037)	(0.030)
Non-white	-0.199***	-0.161***	-0.041	-0.181***	-0.126***	-0.053
	(0.057)	(0.047)	(0.039)	(0.058)	(0.047)	(0.041)
Age	0.103***	0.066***	0.041***	0.105***	0.068***	0.044***
	(0.017)	(0.015)	(0.012)	(0.018)	(0.016)	(0.013)
Age squared	-0.001***	-0.001***	-0.000***	-0.001***	-0.001***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Occupation controls (1-digit)	No	Yes	-	No	Yes	-
Observations	1984	1983	1984	1916	1915	1916
R^2	0.236	0.448	0.207	0.238	0.467	0.230

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Sample of immigrants who migrated to the UK after completing full-time education in the country of origin between 21-29 and working as employees. Other controls include log population of home country, adult secondary education attainment and labour force participation rates by gender in country of birth, as well as dummies for region of residence, survey year and survey month.

Table A4: OLS wage equations without and without occupation controls & Grad Job equation for Women, Unweighted & Weighted

	Unweighted			Weighted (by sampling weights)		
	Log Wages		Managerial /Professional Job (SOC1-3)	Log Wages		Managerial /Professional Job (SOC1-3)
	(1)	(2)	(3)	(4)	(5)	(6)
UK First Degree only	0.085	-0.013	0.189***	0.086	-0.008	0.177***
	(0.063)	(0.057)	(0.044)	(0.076)	(0.071)	(0.048)
UK Higher Degree	0.206***	0.063**	0.241***	0.189***	0.057*	0.216***
	(0.033)	(0.029)	(0.026)	(0.034)	(0.031)	(0.028)
Age arrive in the UK	-0.001	-0.002	0.003	-0.001	-0.002	0.003
	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)
Arriving in the UK after 2007	-0.068*	-0.032	-0.047	-0.068*	-0.040	-0.034
	(0.036)	(0.031)	(0.031)	(0.038)	(0.033)	(0.033)
Born in EU country	-5.902***	-2.323***	-6.026***	-4.964***	-1.732**	-5.338***
	(0.762)	(0.676)	(0.611)	(0.823)	(0.709)	(0.695)
log real GDP per capita (PPP)	0.109***	0.075***	0.042**	0.120***	0.072***	0.067***
	(0.025)	(0.022)	(0.021)	(0.026)	(0.023)	(0.023)
log GDP interacted with EU dummy	0.564***	0.222***	0.577***	0.468***	0.161**	0.508***
	(0.074)	(0.066)	(0.059)	(0.080)	(0.069)	(0.067)
Born in Non-English speaking country	-0.178***	-0.095***	-0.137***	-0.169***	-0.094***	-0.122***
	(0.037)	(0.033)	(0.029)	(0.038)	(0.034)	(0.030)
Non-white	-0.086**	-0.057	-0.036	-0.068	-0.029	-0.058
	(0.043)	(0.039)	(0.036)	(0.046)	(0.042)	(0.037)
Age	0.081***	0.068***	0.023*	0.092***	0.072***	0.033**
	(0.015)	(0.013)	(0.013)	(0.016)	(0.014)	(0.013)
Age squared	-0.001***	-0.001***	-0.000**	-0.001***	-0.001***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Occupation controls (1-digit)	No	Yes	-	No	Yes	-
Observations	2194	2194	2194	2120	2120	2120
R^2	0.232	0.422	0.167	0.242	0.439	0.172

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Sample of immigrants who migrated to the UK after completing full-time education in the country of origin between 21-29 and working as employees. Other controls include log population of home country, adult secondary education attainment and labour force participation rates by gender in country of birth, as well as dummies for region of residence, survey year and survey month.

Table A5: Weighted Country Fixed-effects, wage equations with and without occupation controls & Grad Job equation, Men & Women

	Men			Women		
	Log Wages		Managerial /Professional Job (SOC1-3)	Log Wages		Managerial /Professional Job (SOC1-3)
	(1)	(2)	(3)	(4)	(5)	(6)
UK First Degree only	0.007	-0.023	-0.028	0.070	-0.011	0.159***
	(0.072)	(0.065)	(0.059)	(0.081)	(0.075)	(0.051)
UK Higher Degree	0.191***	0.076**	0.154***	0.164***	0.044	0.203***
	(0.037)	(0.033)	(0.023)	(0.035)	(0.032)	(0.028)
Age arrive in the UK	0.003	0.004	-0.000	-0.002	-0.003	0.003
	(0.005)	(0.004)	(0.003)	(0.005)	(0.004)	(0.003)
Arriving in the UK after 2007	0.073	0.031	0.059*	-0.104***	-0.054	-0.071**
	(0.044)	(0.038)	(0.031)	(0.040)	(0.035)	(0.033)
Non-white	-0.205***	-0.126**	-0.090*	0.014	0.013	-0.006
	(0.071)	(0.059)	(0.051)	(0.063)	(0.059)	(0.047)
Age	0.104***	0.076***	0.035***	0.087***	0.072***	0.027**
	(0.019)	(0.017)	(0.013)	(0.017)	(0.015)	(0.014)
Age squared	-0.001***	-0.001***	-0.000**	-0.001***	-0.001***	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Occupation controls (1-digit)	No	Yes	-	No	Yes	-
Observations	1916	1915	1916	2120	2120	2120
R^2	0.322	0.511	0.307	0.298	0.473	0.230

Notes: Robust standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Sample of immigrants who migrated to the UK after completing full-time education in the country of origin between 21-29 and working as employees. Other controls include log population of home country, adult secondary education attainment and labour force participation rates by gender in country of birth, as well as dummies for region of residence, survey year and survey month.