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How fair is access to more prestigious UK universities?
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Abstract

Now that most UK universities have increased their tuition fees to £9,000 a year and are implementing new Access Agreements as required by the Office for Fair Access, it has never been more important to examine the extent of fair access to UK higher education and to more prestigious UK universities in particular. This paper uses Universities and Colleges Admissions Service (UCAS) data for the period 1996 to 2006 to explore the extent of fair access to prestigious Russell Group universities, where 'fair' is taken to mean equal rates of making applications to and receiving offers of admission from these universities on the part of those who are equally qualified to enter them. The empirical findings show that access to Russell Group universities is far from fair in this sense and that little changed following the introduction of tuition fees in 1998 and their initial increase to £3,000 a year in 2006. Throughout this period, UCAS applicants from lower class backgrounds and from state schools remained much less likely to apply to Russell Group universities than their comparably qualified counterparts from higher class backgrounds and private schools, while Russell Group applicants from state schools and from Black and Asian ethnic backgrounds remained much less likely to receive offers of admission from Russell Group universities in comparison with their equivalently qualified peers from private schools and the White ethnic group.

Introduction

Debates about access to higher education have traditionally focused on social group differences in rates of participation in higher education overall, but with the expansion of higher education since the 1960s, and with the increasing privatization and marketization of the higher sector since the 1990s, it has become increasingly important to consider not only who goes to university but also where they go. In the UK, the rate of participation in higher education has increased dramatically from just five per cent in 1960 to around forty per cent today (NCIHE 1997; BIS 2011a). Correspondingly, the number of universities has grown substantially from thirty-one to 134 (Scott 1995; UUK 2012), largely as a result of the upgrading of former polytechnics to university status following the dismantling of the binary divide in 1992. Despite the shift from a binary system to a nominally unitary one, however, prestige differences between 'Old' (pre-1992) and 'New' (post-1992) universities have persisted (NCIHE 1997; Boliver 2005) and further prestige distinctions have emerged between more and less research-intensive 'Old' universities, most notably between the universities that make up the Russell Group and the rest.¹ Importantly, graduates of more prestigious universities have been shown to be more likely to secure professional and managerial jobs and to earn higher salaries (Chevalier and Conlon 2003; Bratti et al. 2004; Power and Whitty 2008; Hussein, McNally and Telhaj 2009). Just as importantly, prestige differences between universities are likely to become reflected in substantially different tuition fee rates as the higher education sector undergoes further marketization. Given the increasingly differentiated nature of the UK higher education sector, it is clear that traditional concerns about access to higher education in general need to be supplemented by questions about access to the UK's more prestigious universities in particular.

Underscoring the need to consider access to more prestigious UK universities in particular is the fact that more prestigious universities tend to be those in which social groups with historically low participation rates are least well represented. People from lower social class backgrounds, besides being chronically under-represented in higher education generally in the UK (Blackburn and Jarman 1993; Blanden and Machin 2004), are known to be particularly poorly represented in Old universities (Robertson and Hillman 1997; DfES 2003; Boliver 2011), and especially so in Russell Group universities (Boliver 2004 & 2006; Zimdars, Sullivan and Heath 2009). Similarly, state school pupils are not only less likely than their peers from private schools to participate in higher education generally (Sutton Trust 2004, 2007, 2009), they are also especially markedly under-represented in more prestigious universities including those that make up the 'Sutton Trust 30' (Sutton Trust 2011).

Likewise, those of Black, Pakistani and Bangladeshi origin are known to be strikingly under-represented in Old universities (Robertson and Hillman 1997; Coffield and Vignoles 1997; Shiner and Modood 2002), and particularly in those that make up the Russell Group (Boliver 2004 & 2006; Zimdars, Sullivan and Heath 2009). This is despite the fact that members of these minority groups are *more likely* than their White counterparts to participate in higher education generally (Modood 1993; Coffield and Vignoles 1997).

While it is well-established that those from lower social class backgrounds, state schools, and certain ethnic minority groups are starkly under-represented in the UK's more prestigious universities, it is less clear to what extent these patterns can be said to be at odds with the notion of fair access. The term fair access first entered the official discourse with the publication of the 2003 White Paper on higher education which proposed an increase in tuition fees to £3,000 per annum and the creation of the Office for Fair Access and the now defunct *AimHigher* outreach programme (DfES 2003). The discussion of fair access in the 2003 White Paper emphasises that "[a]ll those who have the potential to benefit from higher education should have the opportunity to do so" (DfES 2003: 68), echoing the Robbins Report which, four decades earlier, made the case for expanding higher education on the grounds that "all young persons qualified by ability and attainment to pursue a full-time course in higher education should have the opportunity to do so" (NCIHE 1965: 49). The use of the phrase "qualified by ability and attainment" in the Robbins Report reflects the traditional view of fair access as entailing equal access for those who are equally well qualified in terms of prior attainment in formal examinations. The use of the phrase "potential to benefit" in the 2003 White Paper, in contrast, marks the beginning of a growing acceptance of the idea that prior attainment in formal examinations may not be a reliable indicator of prospective ability without some consideration of the socio-economic context in which that attainment came about (DfES 2003; UUK 2003; Schwartz 2004; BIS 2011a); an idea supported by mounting evidence of non-traditional students' superior performance at degree level compared to students from traditional backgrounds with the same A-level grades (Ogg, Zimdars and Heath 2009; Hoare and Johnston 2011). Nowadays contextual information is widely used by universities to inform their outreach work and admissions decision-making (SPA 2011) and the Universities and Colleges Admission Service has recently begun to make available to universities various pieces of contextual data including the average GCSE performance at the applicant's school (UCAS 2011). This is a progressive and welcome development. However, because there is, as yet, no established method of factoring context into the assessment of potential, this paper adopts a more conservative definition of fair access as entailing (at the very least) equal access for those who are equally well qualified.

Of course, as well as depending on how fair is defined, any verdict on the extent of fair access to more prestigious UK universities also depends on how 'access' is operationalized. One approach is simply to define access to prestigious universities as *entry* to these universities (Chowdry et al. 2008; Harris 2010). However, a significant limitation of equating access with entry is that it conflates the choices that prospective students make about which universities to apply to with the decisions that universities make about whom to admit from among those presenting themselves as applicants.² It is noteworthy that official discourses on fair access have favoured an interpretation of this term that emphasises the role of prospective students' application choices and which downplays the role of universities' admissions decisions. This is particularly apparent from the nature of the Access Agreements that universities must submit for approval by the Office for Fair Access (OFFA), which principally concern how universities intend to use outreach work and bursaries to encourage members of under-represented groups to apply in the first place (OFFA 2012). Formal scrutiny and regulation of the admissions decisions made by universities, in contrast, is emphatically beyond the remit of OFFA (DFES 2004; BIS 2011c). However, to properly assess the extent of fair access to more prestigious universities, it is necessary to disaggregate these two different stages of the access process so as to examine, separately, propensities to apply to more prestigious universities on the one hand and the chances of admission to these universities given application on the other.

Despite the obvious importance of evaluating both the 'fairness' of application and the 'fairness' of admission to more prestigious universities, very few studies have done so to date. A rare exception is a study published by the Department for Business, Innovation and Skills which reports evidence of school background differences in patterns of application to highly academically selective universities, after adjustment for prior attainment at A-level, but which finds no evidence of school background inequalities in admissions chances, perhaps because of its reliance on aggregated data (BIS 2009). Besides this study, most others have focused either on application, or on admission, to more

prestigious universities, rather than both in combination. Most of those that have focused on application have been qualitative in nature and have typically found that more prestigious universities are perceived by those from non-traditional backgrounds to be the preserve of the privately educated White upper-middle class (Hutchings and Archer 2001; Reay et al. 2001; Ball et al. 2002. See also a rare quantitative analysis by Mangan et al. 2010). In contrast, almost all of the studies that have focused on admission have been quantitative in nature (see Zimdars 2010 for a rare exception) and have suggested that applicants to more prestigious universities from lower social class origins, from state schools, and from certain ethnic minority backgrounds are less likely to be admitted to Russell Group Universities even after factoring in social group differences in prior attainment (Shiner and Modood 2002; Boliver 2004, 2006; Zimdars, Sullivan and Heath 2009; but cf. Gittoes 2005).

These latter studies all relate to a single time point, either 1996 or 2001, and so they are unable to capture any changes over time, including any changes resulting from the introduction of fees in 1998 or the increase in fees in 2004. One of the present paper, therefore, is to examine not only the extent to which access to more prestigious UK universities can be said to be fair, but also to whether fair access can be said to have increased or declined with the introduction of tuition fees at an initial rate of £1,000 per annum in 1996 and their subsequent increase to £3,000 a year in 2006. At the time these changes to student funding arrangements were widely expected to harm fair access to higher education overall, and yet, other than a temporary dip in the participation rates of those from less advantaged groups, patterns of access to higher education overall have since been found to have been unaffected by the student funding reforms of 1998 (Bolton 2010) and of 2006 (Ramsden and Brown 2009). In contrast, recent research published by the Office for Fair Access suggests that the gap between those from the most and least advantaged neighbourhoods in rates of entry to more prestigious universities in particular may have in fact widened during the late 1990s and early 2000s (Harris 2010). One possible reason for this is that attending a prestigious university is more likely to necessitate living away from home which adds to the expense of participating in higher education (Mangan et al. 2010). Given that tuition fees have made higher education more costly to start with, it may be the case that prospective students from less advantaged backgrounds have become increasingly reluctant to apply to universities away from home, opting instead for more local but not necessarily the most prestigious institutions (Sutton Trust 2004). At the same time, however, because more prestigious universities have been under growing political pressure to demonstrate progress towards admitting a more socially representative student body (DfES 2003; OFFA 2004), it may be that applicants to more prestigious universities from less advantaged backgrounds have seen their comparative chances of *admission* to these universities improve over this period.

To summarise, this paper sets out to answer the following research questions:

- 1) To what extent are social group differences in rates of access to more prestigious universities due to the application choices that prospective students make on the one hand, and to the admissions decisions that universities make on the other?
- 2) To what extent are social group differences in propensities to apply and to receive offers of admission to more prestigious universities due to corresponding social group differences in prior attainment?
- 3) How, if at all, have social group differences in propensities to apply and to receive offers of admission to more prestigious universities changed with the introduction of tuition fees in 1998 and their increase in 2006?

Data and methods

In order to examine the extent of fair access to more prestigious UK universities, the present study draws on individual-level data on applications and admissions to full-time higher education courses in the UK supplied by the Universities and Colleges Admissions Service (UCAS), which is the administrative body responsible for processing almost all applications for full-time study at higher education level nationally.³ The working dataset comprises a 2.5% random sample of applicants who applied to university through UCAS in each even year between 1996 and 2006 and is restricted to 'home' applicants resident in England.⁴ The working sample contains 49,162 applicants who, collectively, made 228,441 applications.

For the purposes of this paper, more prestigious universities are defined as the twenty universities that were members of the Russell Group during the period 1996 to 2006. Other studies have used different criteria to identify more prestigious universities: recent research by the Sutton Trust (2011), for example, focuses on the thirty most selective universities in Britain (including the Russell Group institutions), while Hussein, McNally and Telhaj (2009) utilise a composite indicator of “university quality” based on measures of research assessment exercise (RAE) scores, staff-student ratios, retention rates, degree of selectivity in admissions, lecturer salary levels, and expenditure per pupil (on all of which measures the Russell Group universities tend to score highly). These different methods of operationalization are likely to yield very similar results given their high degree of overlap. However, the Russell Group is the more sociologically meaningful of these different methods, since it refers to an active interest group that has been remarkably successful in its efforts to promote itself as representing the UK’s “elite” and “leading” universities (BBC 2012).⁵

The analysis focuses on exploring social group inequalities of access to Russell Group universities. Access is broken down into its two principal parts: (1) *application* to a Russell Group university, given application for entry to full-time higher education at all; and (2) receipt of an *offer of admission* from a Russell Group university – usually conditional on achieving certain grades at A-level or an equivalent qualification – given that an application to a Russell Group university has been made.⁶

The main independent variables of interest are UCAS candidates’ social class origin, school background, ethnic group, and prior attainment at A-level or in an equivalent qualification. The data for the three social background variables comes from information recorded by applicants on their UCAS application forms.⁷ Social class origin has been coded into five categories: higher professional/managerial, lower professional/managerial, routine non-manual, manual, and class unknown. School background has been coded to distinguish between those educated in private schools, those educated in schools and colleges in the state sector, and those whose school background was unknown.⁸ Information on ethnicity was originally collected using census categories and has been recoded to distinguish between White, Black Caribbean/African, Pakistani/Bangladeshi, Indian, Chinese, Mixed/Other, and ethnic group unknown.⁹ The data on prior attainment refers to actual attainment in upper secondary education as communicated to UCAS by exam boards. A distinction is made between holders of A-levels and holders of other equivalent qualifications and, for A-level holders, information about grades is also included, expressed as a total A-level point score (where A=5, B=4, C=3, D=2 and E=1) and alternatively in terms of the number of A, B, C, D and E grades.¹⁰

Descriptive results are presented first, showing differences in rates of entry to Russell Group, other Old, and New universities by social class origin, school background, and ethnic group followed by a breakdown of entry rates into rates of application to each of these three categories of university and rates at which offers of admission are received conditional on application. Multivariate models are then presented which explore social group differences in rates of application and admission to Russell Group universities in particular. Because most applicants have made multiple applications, the multivariate models are estimated as random effects binary logistic regression models using the *xtlogit* command in Stata version 11. This makes it possible to make use of all of the available information for each applicant whilst correcting statistically for the clustering of application by virtue of their being associated with the same applicant. In this respect the present paper improves upon the statistical methodology used in prior research (see Shiner and Modood 2002; cf. Gittoes 2005).

Descriptive statistics

Table 1 demonstrates the influence of social class origin, school background, and ethnic group on the likelihood of entering a Russell Group university, given entry to full-time higher education at all. Echoing the findings of previous studies, a steep social class gradient is evident in rates of entry to Russell Group universities, with thirty-five per cent of university entrants from higher professional/managerial class backgrounds entering Russell Group universities compared to just thirteen per cent of those from manual class backgrounds. A social class gradient is also apparent in rates of entry to other Old universities although this is much less steep than is the case for Russell Group universities. On the other hand, just forty-two per cent of university entrants from higher

professional/managerial class origins entered New universities compared to some seventy per cent of university entrants from manual class backgrounds.

Table 1. Rates of entry to Russell Group, other Old and New universities (row %)

	Russell Group	other Old	New
Social class origin			
Higher prof/managerial	35	23	42
Lower prof/managerial	25	22	53
Routine non-manual	20	20	60
Manual class	13	17	70
School background			
Private	53	24	23
State	20	20	60
Ethnic group			
White	24	20	56
Black Caribbean/African	6	17	77
Pakistani/Bangladeshi	12	23	66
Indian	18	21	62
Chinese	33	19	49
Mixed/Other	21	21	58
All	22	20	59

Notes

Figures are derived from UCAS data for the years 1996, 1998, 2000, 2002, 2004 and 2006 combined. Total N = 36,629 entrants.

Disparities in entry rates are also evident in relation to school background, with over half of university entrants from private schools entering Russell Group universities in contrast to only a fifth of those from state schools. Rates of entry to other Old universities, in contrast, are fairly similar for privately educated and state educated entrants. Conversely, whereas under a quarter of university entrants from private schools entered New universities, this was the case for some sixty per cent of those from state schools.

Particularly striking ethnic group differences in rates of entry to the different university types are also in evidence. Whereas nearly a quarter of all the university entrants classified as White entered Russell Group universities, this was the case for just six per cent of Black Caribbean/African entrants and only twelve and eighteen per cent of Pakistani/Bangladeshi and Indian entrants respectively. Rates of entry to other Old universities, in contrast, are broadly similar across ethnic groups. Conversely, whereas more than half of all White entrants entered New universities, this was the case for more than three-quarters of entrants of Black Caribbean/African origin and around two-thirds of entrants of Pakistani/Bangladeshi and Indian origin.

Table 2 breaks down entry rates into their two main constituent parts: rates of application and rates of receiving offers of admission to the different categories of university. Here we see that the social class gradient in rates of entry to Russell Group universities is due to social class disparities in both rates of application to these universities *and* rates of admission to these universities given application, although importantly the gradient is steeper in relation to application than in relation to admission. A similar pattern, albeit less pronounced, is also evident for other Old universities. Social class differences in rates of entry to New universities, on the other hand, appear to be due solely to higher rates of application to New universities on the part of those from lower social class backgrounds; rates of admission to New universities appear similar for applicants of all class backgrounds.

Table 2. Rates of application to, and rates of receiving offers of admission from, Russell Group, other Old and New universities, conditional on applying to any university through UCAS

	Application			Offer of admission		
	Russell Group	other Old	New	Russell Group	other Old	New
Social class origin						
Higher prof/managerial	62	60	62	74	76	83
Lower prof/managerial	51	54	71	68	74	81
Routine non-manual	44	49	77	64	72	81
Manual class	36	43	83	56	66	79
School background						
Private	83	72	41	80	79	89
State	45	51	78	65	73	85
Ethnic group						
White	47	49	73	69	74	80
Black Caribbean/African	35	49	87	32	50	73
Pakistani/Bangladeshi	43	55	80	42	58	85
Indian	49	59	77	53	64	87
Chinese	58	56	65	68	72	79
Mixed/Other	46	55	72	58	66	78
All	45	49	74	64	71	78

Note: Figures are derived from UCAS data for the years 1996, 1998, 2000, 2002, 2004 and 2006 combined. Rates of application refer to the percentages of UCAS candidates making at least one application to the category of university concerned. Rates of receiving offers of admission refer to the percentages of applicants receiving at least one offer of admission conditional on application to the category of university concerned.

Table 2 also reveals that school background differences in rates of entry to Russell Group universities are due to disparities in rates of application *and* in rates of admission to these universities, albeit the former more so than the latter. A similar pattern, though less pronounced, is evident for school background differences in rates of application and admission to other Old universities. In contrast, state school applicants disproportionately enter New universities largely because they have higher rates of application to New universities, and not because they also have higher rates of admission to these universities in comparison with their privately educated peers.

Lastly, Table 2 shows that lower rates of entry to Russell Group universities for those from Black Caribbean/African and Pakistani/Bangladeshi ethnic backgrounds as compared to the White group are due only in small part to disparities in rates of application to Russell Group universities and in much larger part to disparities in rates of admission to Russell Group universities, given application to Russell Group universities. Substantial ethnic disparities in rates of admission to other Old universities are also apparent. In contrast, rates of application to New universities are notably higher for Black Caribbean/African, Pakistani/Bangladeshi and Indian applicants than for White applicants, whereas rates of admission to New universities appear broadly similar across ethnic groups.

These descriptive results indicate that prospective students from lower social class backgrounds, state schools, and the Black Caribbean/African and Pakistani/Bangladeshi groups are under-represented among entrants to Russell Group universities partly because they are less likely to apply to these universities given that they apply to any university, but also because they are less likely to be admitted when they do apply. In the case of those from lower social class backgrounds and state schools, the disparities in rates of application are rather larger than the disparities in rates of admission. For those from Black and Asian ethnic origins, in contrast, the disparities are largest in relation to admission rather than application to Russell Group universities. The extent to which these disparities can be said to be fair in the sense of being explicable in terms of corresponding social group differences in prior attainment is explored next.

Multivariate results

Application to more prestigious universities among UCAS candidates

Table 3 reports the results of a series of multivariate statistical models which aim to unpack social class, school type and ethnic differences in the likelihood of application to Russell Group universities. Model 1 includes basic controls for applicant characteristics and its results paint the same general picture as Table 2: namely that, expressed in terms of odds ratios, those from manual class backgrounds are only about half as likely as those from higher professional/managerial class origins to apply to a Russell Group university (0.46 to 1); and those educated in the state sector are less than a third as likely to apply to a Russell Group university as those from private schools (0.29 to 1). Smaller but still statistically significant ethnic differences in the odds of application to a Russell Group university are also evident for Black Caribbean/African (0.66 to 1), Pakistani/Bangladeshi (0.73 to 1) and Indian (0.82 to 1) applicants as compared to their White counterparts.

Model 2 introduces controls for applicants' prior attainment, specifically whether or not applicants held A-level qualifications and, if so, their A-level score and its square. Holders of A-level qualifications are shown to be nearly three times as likely to apply to a Russell Group university compared to holders of other kinds of qualification (2.90 to 1), and higher A-level scores are shown, unsurprisingly, to significantly increase the odds of application to a Russell Group university. Compared to those with A-level scores equivalent to CCC (the mean for all applicants in the dataset), those with scores equivalent to ABB (the mean for Russell Group entrants) are nearly three times as likely to apply to a Russell Group university.¹¹ After controlling for prior attainment, the odds ratios which describe the extent of social class, school background and ethnic group differences in propensities to apply to Russell Group universities can be seen to move substantially closer to equity. In fact, in the case of ethnic group differences in the odds of applying to Russell Group universities, these disparities disappear once prior attainment is taken into account. However, net of prior attainment, substantial social class and school background disparities remain. Comparing prospective students with the same levels of previous educational achievement, those from manual class backgrounds are still only two-thirds as likely as those from higher professional/managerial class backgrounds to apply to Russell Group universities (0.69 to 1), and those schooled in the state sector remain just half as likely to apply to a Russell Group university as those from private schools (0.48 to 1).

Model 3 adds interactions between social class origin, school background, and ethnicity on the one hand with year of application on the other to explore the possibility of changes over time in the comparative odds of application to Russell Group universities. The results for those indicate no change over time with respect to social class disparities in rates of application to Russell Group universities (with no statistically significant annual change in the odds ratio), whereas disparities between those from state and private schools appear to have become, if anything, slightly more unequal over time (with an annual change in the odds ratio of 0.98 to 1).

Finally in this section, Model 4 predicts application to a Russell Group university specifically for those with A-level qualifications and controlling for specific grades at A-level rather than total point score as well as whether or not the candidate has A-levels in any of eight A-level subjects identified in a recent Russell Group publication as "facilitating" access to Russell Group universities (Russell Group 2011). Model 4, therefore, represents a test of fair access that is sympathetic to the preference of Russell Group universities for A-level qualifications over more applied and vocational forms of further education; for information about specific grades at A-level rather than a grade-equivalent point score; and for A-levels in particular subjects. Model 4, it should be noted, is based on data for 2002, 2004 and 2006 only, because information on specific grades and subjects at A-level is not available for the earlier data points.

As model 4 shows, each additional A, B and C grade at A-level increases the likelihood of application to a Russell Group university, and possessing an A-level in a "facilitating subject" has a similarly positive impact on the likelihood of application. Net of these, arguably more stringent, controls for prior attainment, however, the results of Model 4 are much like those of Model 2: even after controlling for specific grades and subjects at A-level, substantial social class and school background disparities in the odds of application to Russell Group universities remain. In short, social class and school

background differences in propensities to apply to Russell Group universities appear to be far from fair. Indeed, being from a private school rather than a state school, for example, increases the likelihood of applying to a Russell Group university by about as much as having an A grade rather than a C grade at A-level.¹²

Table 3. Comparative odds of application to a Russell Group university conditional on having applied to any university through UCAS

	Model 1 Basic controls	Model 2 Controls for A-level qualifications and A-level score	Model 3 Interactions with year	Model 4 Controls for grades and “facilitating subjects” at A-level
<u>Social class (Higher professional/managerial)</u>				
Lower prof/managerial	0.78*	0.89*	0.89*	0.94
Routine non-manual	0.61*	0.77*	0.77*	0.84*
Manual class	0.46*	0.69*	0.69*	0.77*
<u>School background (Private)</u>				
State school	0.29*	0.48*	0.49*	0.58*
<u>Ethnic group (White)</u>				
Black Caribbean/African	0.66*	1.08	1.02	1.14
Pakistani/Bangladeshi	0.73*	1.08	1.06	1.10
Indian	0.82*	1.01*	1.07	1.10
Chinese	1.88*	1.72*	1.62*	1.50*
Mixed/Other	0.93*	1.14*	1.09*	1.12*
<u>Has A-level qualifications</u>		2.90*	2.91*	Yes
<u>A-level score</u>		1.31*	1.31*	
<u>A-level score squared</u>		0.997*	0.997*	
<u>No. of A grades at A-level</u>				1.73*
<u>No. of B grades at A-level</u>				1.53*
<u>No. of C grades at A-level</u>				1.13*
<u>No. of D grades at A-level</u>				0.92*
<u>No. of E grades at A-level</u>				0.82*
<u>Biology at A-level</u>				1.44*
<u>Chemistry at A-level</u>				1.51*
<u>English at A-level</u>				1.17*
<u>Geography at A-level</u>				1.14*
<u>History at A-level</u>				1.38*
<u>Languages at A-level</u>				1.52*
<u>Maths at A-level</u>				1.79*
<u>Physics at A-level</u>				1.38*
<u>Interactions with year</u>				
Lower prof/managerial			1.00	
Routine non-manual			1.00	
Manual class			1.00	
State school			0.98*	
Black Caribbean/African			1.03*	
Pakistani/Bangladeshi			1.01	
Indian			1.02*	
Chinese			1.05	
Mixed/Other			1.03*	
Chi-square	14358	21659	21690	9253
Df	32	35	47	45
Log likelihood	-101909	-97333	-97313	-42160
N applications	228441	228441	228441	87442
N applicants	49162	49162	49162	17007

Note: Figures reported are odds ratios. Asterisks indicate odds ratios that are statistically significant at the p. < 0.05 level. Model 1 includes controls for sex, mature student status, chosen subject area (17 categories), chosen qualification aim (degree or HND), and year of application (centred on 2000). Models 1-3 draw on UCAS data for the years 1996, 1998, 2000, 2002, 2004 and 2006 combined. Model 4 draws on UCAS data for the years 2002, 2004 and 2006 only.

Offers of admission to more prestigious universities given application

The odds ratios reported in Table 4 turn to the question of fair access with respect to offers of admission to Russell Group universities conditional on application. As before, Model 1 includes basic controls for applicant characteristics and shows, as expected, that the odds of receiving an offer of admission from a Russell Group university differ significantly for applicants from different social class origins, school backgrounds and, in particular, ethnic groups. Those from manual class origins and state school backgrounds are only around half as likely as those from higher service class origins and private schools to receive an offer of admission from a Russell Group university (0.46 and 0.47 to 1, respectively), while those of Black Caribbean/African, Pakistani/Bangladeshi and Indian origin are just one-quarter, one-third and two-thirds as likely to receive an offer from a Russell Group university compared to their White counterparts (0.24, 0.33 and 0.59 to 1, respectively).

Model 2 controls for applicants' prior attainment and shows that holders of A-level qualifications are around four and a half times as likely to receive offers from Russell Group universities than are holders of other kinds of qualification. Unsurprisingly, higher A-level grades boost an applicant's odds of an offer from a Russell Group university considerably: compared to those with A-level scores equivalent to CCC, for example, those with scores equivalent to ABB are nearly three times as likely to receive offers.¹³ After controlling for prior attainment, the odds ratios describing social class, school background and ethnic group differences in the likelihood of receiving an admission offer from a Russell Group university improve appreciably, but substantial inequities remain after prior attainment has been taken into account. Applicants from manual class and state school backgrounds continue to be only around two-thirds as likely as their higher professional/managerial and private school counterparts to receive admissions offers from Russell Group universities (0.72 and 0.66 to 1, respectively). On top of this, Black Caribbean/African and Pakistani/Bangladeshi applicants remain less than two-thirds as likely to receive offers from Russell Group universities relative to their comparably qualified White peers (0.53 and 0.57 to 1, respectively).

Model 3 explores whether the inequities in admissions offer chances demonstrated so far appear to have improved or worsened over time. Importantly, the comparative chances of an offer of admission to a Russell Group university for those from manual class as compared to higher professional/managerial class backgrounds seem to have improved slightly over the period 1996 to 2006 (with annual changes in the odds ratio of 1.04 to 1). However, school background differences in the chances of an admissions offer appear to have remained unchanged (0.99 to 1). The results for ethnic group differences in the chances of an offer are slightly more complex, with no change over time for those from Black Caribbean/African backgrounds (0.98 to 1), worsening inequality for those of Pakistani/Bangladeshi origin (0.93 to 1), and increasing equality from those from the Indian group (1.05 to 1). However, taken together, these ethnic differences in the likelihood of an offer from a Russell Group university display no significant trend over the period 1996 to 2006.

Model 4 focuses in on A-level applicants, controls for specific grades achieved at A-level, and adds further controls for whether or not the applicants' A-levels are in "facilitating subjects". As before, it is evident that each additional A, B and C grade at A-level increases the likelihood of receiving an offer of admission to a Russell Group university and that all but one of the eight "facilitating subjects" at A-level do indeed facilitate receiving offers of admission to Russell Group universities. Net of these controls for prior attainment, social class disparities in the likelihood of an offer from a Russell Group university largely disappear.¹⁴ Substantial school background and ethnic group differences remain, however: applicants to Russell Group universities from state schools and from the Black Caribbean/African and Pakistani/Bangladeshi ethnic groups continue to be less than two-thirds as likely as likely to receive offers as privately educated and White applicants (0.59, 0.67 and 0.64 to 1, respectively).¹⁵ These results strongly suggest that school background and ethnic group disparities in rates of admission to Russell Group universities are some way away from being fair. In fact, applying to a Russell Group university from a private school rather than a state school, or from a White ethnic background rather than a Black Caribbean/African or Pakistani/Bangladeshi one, increases the odds of admission to a Russell Group university by about at least as much as having an A grade rather than a B grade at A-level.¹⁶

Table 4. Comparative odds of an offer of admission from a Russell Group university conditional on having applied to a Russell Group university

	Model 1 Basic controls	Model 2 Controls for A-level quals and A-level score	Model 3 Interactions with year	Model 4 Controls for grades and "facilitating subjects" at A-level
<u>Social class (Higher professional/managerial)</u>				
Lower prof/managerial	0.73*	0.84*	0.81*	0.97
Routine non-manual	0.65*	0.82*	0.82	0.87*
Manual class	0.48*	0.72*	0.69*	0.93
<u>School background (Private)</u>				
State school	0.47*	0.66*	0.67*	0.59*
<u>Ethnic group (White)</u>				
Black Caribbean/African	0.24*	0.53*	0.55*	0.67*
Pakistani/Bangladeshi	0.33*	0.57*	0.63*	0.54*
Indian	0.59*	0.87	0.81*	0.91
Chinese	1.35	1.29	1.39*	0.85
Mixed/Other	0.71*	0.93	0.94	0.92
<u>Has A-level qualifications</u>		4.45*	4.55*	Yes
<u>A-level score</u>		1.31*	1.31*	
<u>A-level score squared</u>		0.998*	0.998*	
<u>No. of A grades at A-level</u>				1.92*
<u>No. of B grades at A-level</u>				1.33*
<u>No. of C grades at A-level</u>				1.06
<u>No. of D grades at A-level</u>				0.77*
<u>No. of E grades at A-level</u>				0.60*
<u>Biology at A-level</u>				1.69*
<u>Chemistry at A-level</u>				1.95*
<u>English at A-level</u>				0.85*
<u>Geography at A-level</u>				1.44*
<u>History at A-level</u>				1.18*
<u>Languages at A-level</u>				2.04*
<u>Maths at A-level</u>				1.95*
<u>Physics at A-level</u>				1.52*
<u>Interactions with year</u>				
Lower prof/managerial			1.03*	
Routine non-manual			1.00	
Manual class			1.04*	
State school			0.99	
Black Caribbean/African			0.98	
Pakistani/Bangladeshi			0.93*	
Indian			1.05*	
Chinese			0.97	
Mixed/Other			0.99	
Chi-square	5506	6485	6508	3518
Df	51	54	66	63
Log likelihood	-28336	-26803	-26752	-13022
N applications	53876	53876	53876	27003
N applicants	21499	21499	21499	9809

Note: Figures reported are odds ratios. Asterisks indicate odds ratios that are statistically significant at the $p < 0.05$ level. Model 1 includes controls for sex, mature student status, chosen subject area (17 categories), chosen qualification aim (degree or HND), specific university applied to (in anonymized form), and year of application (centred on 2000). Models 1-3 draw on UCAS data for the years 1996, 1998, 2000, 2002, 2004 and 2006 combined. Model 4 draws on UCAS data for the years 2002, 2004 and 2006 only

Conclusions

This paper has set out to examine the extent of fair access to the UK's more prestigious, Russell Group universities. Fair has been defined conservatively as equal access for those equally qualified by virtue of prior attainment at A-level or in an equivalent qualification, and access has been disaggregated into (1) application to a Russell Group university given application to university at all and (b) receipt of an offer of admission from a Russell Group university given application to a member institution of that group.

The headline conclusion of the analysis is that access to Russell Group universities is far from 'fair'. Importantly, unfair access is shown to take different forms for different social groups. For those from lower social class backgrounds, the unfairness appears to be largely to do with barriers of some kind to application to Russell Group universities given application to university at all. In contrast, for those from Black, Pakistani and Bangladeshi backgrounds, the unfairness seems to stem entirely from some form of differential treatment during the admissions process by Russell Group universities. For those from state schools, however, unfair access to Russell Group universities seems to operate equally in relation to both application and admission. These findings highlight the inadequacy of national policy on 'fair access' which focuses almost exclusively on eliminating barriers to university application (DFES 2003 & 2004; BIS 2011b & 2011c; OFFA 2012) when clearly what is needed is a policy that promotes not only equality of opportunity to apply but also equality of treatment in admissions.

The disparities documented in this paper are not substantively trivial. On the contrary, university applicants from state schools, for example, seem to need to be better qualified than their private school counterparts on average by as much as two A-level grades before they are as likely to apply to Russell Group universities; and when those from state schools do apply to Russell Group universities they seem to need to be better qualified than their private school counterparts on average by as much as one grade at A-level before they are as likely to receive offers of admission. Black and Pakistani/Bangladeshi applicants to Russell Group universities seem to be similarly disadvantaged in comparison with White applicants when it comes to the likelihood of being offered a place at a Russell Group university. The application and admissions disadvantages experienced by those from lower social class backgrounds are less severe, but they are appreciable nevertheless.

Why such disparities occur is not an easy question to answer, but one possibility is that non-traditional applicants are less likely than comparably qualified applicants from more advantaged backgrounds to be predicted to achieve the grades required for entry to Russell Group universities. Unfortunately this possibility cannot be investigated with the UCAS data used in this paper since it contains information on actual but not also predicted attainment. But if this hypothesis is correct, then the findings of this paper lend support to the argument that a post-qualifications application system in which application choices and admissions decisions are made *after* rather than before applicants' qualifications are known would probably be a good deal fairer than the system currently in place (Schwartz 2004; Sutton Trust 2009; Arulampalam, Naylor and Smith 2011). It is a shame, then, that recent proposals for a post-qualifications application system have been opposed by the Russell Group and have been abandoned for the time being (Russell Group 2012b; BBC 2012b).

In any case, it is important to remember that the disparities reported in this paper make no adjustment for the socio-economic context of applicants' prior attainment, nor do they take into account the disproportionately low rates at which those from less advantaged social backgrounds make it to the point of applying to university at all. If these components of the bigger picture were factored in, the disparities reported here would surely be a great deal larger.

The final important finding of this paper is that the introduction of £1,000 per annum tuition fees in 1998 and the subsequent increase in fees to £3,000 a year in 2006 has had little effect on the extent of fair access to more prestigious universities. During that time, tuition fees *per se* do not appear to have deterred those from lower social class and state school backgrounds from applying to Russell Group universities. This may be because those from the poorest families were protected to some extent from the impact of fees, and because fees were charged at the same, relatively low, rate at most institutions throughout this period. Likewise, growing official scrutiny of the socio-economic

profile of entrants to more prestigious universities appears to have had little impact on the equitableness of admissions. This may reflect the fact that the Office for Fair Access has not been granted any power to regulate the admissions practices of universities.

This picture of essentially no change between 1996 and 2006 is, however, likely to look very different in the future context of much higher and ultimately more variable fees. As more prestigious universities become more expensive in absolute terms from 2012 onwards, and subsequently also in relative terms after the present cap on tuition fees is lifted, prospective students from less advantaged socioeconomic backgrounds may increasingly perceive the cost of attending more prestigious universities as prohibitively high. At the same time, however, if official permission to charge higher fees becomes increasingly conditional on demonstrating progress towards a more diverse student body just as non-traditional applicants are becoming scarcer, admissions to more prestigious universities may in fact become more equitable. It remains to be seen exactly what new balance between social group disparities in application and admission will emerge.

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¹ The Russell Group is a high profile organisation which, in its own words, “represents...leading UK universities which are committed to maintaining the very best research, an outstanding teaching and learning experience and unrivalled links with business and the public sector” (Russell Group 2012a).

² The analysis presented by Chowdry et al (2008) not only conflates application choices and admissions decisions but is also limited to those who attended state schools, and, in common with Harris (2010), relies on area-level rather than individual-level indicators of socioeconomic background.

³ UCAS data does not cover part-time applicants. Currently around a third of all UK undergraduates study part-time, and part-time participants are much more likely than full-time participants to be mature students and to be female (UUK 2010). However, part-time students are only slightly more likely than full-time students to come from a low higher education participation neighbourhood (Bolton 2010) or from a minority ethnic group (UUK 2010). Given this, and given that only a very small percentage of undergraduate course places at more prestigious UK universities are offered on a part-time basis, this paper's focus on full-time students is appropriate.

⁴ The analyses focus on those who were resident in England since those resident in Wales, Scotland and Northern Ireland would have been subject to a different student funding regime during part of the period under consideration.

⁵ Ideally the universities of Oxford and Cambridge would be analysed separately given their especially elevated status in the prestige hierarchy of UK universities. Unfortunately this is not possible due to institutional anonymity conditions attached to the UCAS data used here. However, for an analysis of the extent of fair admissions to Oxford University see Boliver 2004 and Zimdars, Sullivan and Heath 2009.

⁶ It should be noted that the analysis does not go on to consider the subsequent steps of (3) *accepting an offer of admission* from a Russell Group university, either firmly or as an ‘insurance’, conditional on having received an offer; (4) receiving a *confirmed offer of admission* from a Russell Group university, having met the conditions of the initial offer; and (5) ultimately *entering* a Russell Group university as a first year undergraduate. These later steps are omitted from the analysis partly for reasons of space, but also because it is not possible to reconstruct them using UCAS data for the years prior to 2002. It should also be noted that the analysis does not take into the fact that those from certain non-traditional backgrounds are less likely to apply to university in the first place, and are less likely to be qualified to do so in any case (Gayle, Berridge and Davies 2002; Galindo-Rueda, Marcenaro-Gutierrez and Vignoles 2004; Gorard et al 2006), although these facts are, of course, an important part of the overall picture.

⁷ Perhaps because this information is supplied by applicants themselves, there is a fair amount of missing data. Among all sample members resident in England and aged 21 or under, 14% have missing data for parental social class data and 11% have missing data for school type. Ethnicity data is also missing for 7% of England-resident sample members of all ages. Applicants with missing data on these variables have similar rates of entry to Russell Group universities to those from the least advantaged social class, school type and ethnicity categories (results available on request). Dummy variables are used to accommodate missing data, but due to space limitations these are not shown in the tables that follow.

⁸ Due to inconsistencies over time in the way schools data was originally coded, it has not been possible to distinguish between those who attended grammar schools and those who attended other types of state schools.

⁹ The ethnicity categories Black Caribbean and Black African have been combined because a preliminary analysis showed that access patterns by category of university were very similar for these two groups, and because combining small categories such as these helps to improve statistical power. The ethnicity categories Pakistani and Bangladeshi have also been combined on the same grounds.

¹⁰ It should be noted that most applicants through UCAS apply on the basis of predicted rather than actual grades at A-level or its equivalent. As such, it would have been desirable to include predicted A-level grades and perhaps also actual grades at A-level and GCSE in the statistical models reported in this paper. Unfortunately UCAS are unable to provide this information in microdata form because of uncertainty about its validity in the case of applicants whose application is not linked to a school or college and who therefore enter their predicted grades themselves (personal communication from UCAS). It would also have been desirable to incorporate ‘soft data’ such as applicants’ personal statements and references into the analysis. For a fascinating analysis of the differences between personal statements submitted by university applicants from different types of school, see Jones (forthcoming).

¹¹ $1.31^4 \times 0.997^{16} = 2.94 \times 0.95 = 2.79$ to 1.

¹² Based on a comparison of the odds ratio in Model 4 of Table 3 for those from private rather than state schools (the reciprocal of 0.58 to 1 = 1.72 to 1) to the odds ratio for those with an additional A grade rather than an additional C grade at A-level (1.73 to 1.13).

¹³ $1.31^4 \times 0.998^{16} = 2.94 \times 0.97 = 2.85$ to 1.

¹⁴ The small and statistically insignificant odds ratio for those from manual class origins in Model 4 holds even when school background is omitted, suggesting that socio-economic disparities in the chances of receiving offers from Russell Group universities revolve around school type rather than social class *per se*.

¹⁵ This model produces very similar results when applied only to applicants for courses in STEM subjects (science, technology, engineering and maths). Results are available on request.

¹⁶ Based on a comparison of the odds ratio in Model 4 of Table 4 for those from private rather than state schools (the reciprocal of 0.59 to 1 = 1.69 to 1), and for those who classified as White rather than Black Caribbean/African (the reciprocal of 0.67 = 1.49) or Pakistani/Bangladeshi (the reciprocal of 0.54 to 1 = 1.85 to 1), to the odds ratio for those with an additional A grade rather than an additional B grade at A-level (1.92 to 1.33 = 1.44 to 1).