

Family Background and access to 'high status' universities

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Executive Summary

Economic inequality is high and rising in a number of developed countries, including in the United Kingdom and the United States. There are growing concerns that this may have negative implications for equality of opportunity, and the extent to which social (dis)advantage is transmitted across generations. It is widely believed that providing greater educational opportunities to disadvantaged children may help limit the impact of this. For instance Professor Alan Krueger, Chairman of the Council of Economic Advisors, recently stated that *“children of wealthy parents already have much more access to opportunities to succeed than children of poor families, and this is likely to be increasingly the case in the future unless we take steps to ensure that all children have access to quality education”*.

Being able to access high quality college education is thought to be a particularly important determinant of later economic success. Yet young people from disadvantaged backgrounds remain significantly underrepresented in the undergraduate population, particularly within high-status institutions. Such institutions offer high labour market rewards due to the social networks young people make, the additional skills and cultural capital they develop and the ‘quality’ signal that a high-status college degree sends to employers. Improving access to prestigious colleges is thus vital to increasing social fluidity and ensuring disadvantaged children have equal opportunity to succeed.

This research briefing considers a number of factors related to the socioeconomic gap in access to ‘high status’ institutions in the United Kingdom and the United States. It begins by placing these countries in a broad cross-national context in terms of social mobility, socio-economic disparities in educational attainment, the link between family background and access to higher education, university dropout rates and the financial rewards of completing a tertiary qualification. The paper then considers the chances of young people from disadvantaged backgrounds entering a ‘high status’ institution and the extent to which differences between socio-economic groups can be explained by measured academic ability up to age 18. The cost of going to an elite university is then compared across England and United States for children from families with differing levels of household income. To conclude, a series of case studies describes a number of university access schemes running in countries around the world.

Key Findings

- Children from disadvantaged backgrounds are much less likely to develop the advanced cognitive skills required to enter a high status university. Less than three per cent of children from disadvantaged backgrounds in England and the US reached a 'high' standard (Level 5) on the PISA 2009 reading assessment. This compares to 15 per cent of children from the most advantaged backgrounds.
- The United States has a particularly pronounced problem with young people dropping out of higher education. Almost half of those who enter university do not complete their degree. This compares to a non-completion rate of around 20 per cent in the UK.
- Children with professional parents are approximately three times more likely to enter a high status university (rather than a non-high status university) than those with working class parents. This holds true for Australia, England and public sector elite colleges in the United States.
- Although academic achievement up to age 18 can explain a great deal of the socio-economic gap in elite university access, it does not completely remove it. At least a quarter of the difference in England, the US and Australia is not explained by academic ability. This suggests that (cost-effective) interventions between the ages 14 and 18 may play an important role in reducing socio-economic inequalities in elite university access in the future.
- The 'sticker price' of elite private US colleges (e.g. Harvard) is high compared to their counterparts in the UK (e.g. Oxford). However, the generous aid packages available mean that the actual price young people from low income backgrounds pay to attend elite private colleges in the United States is significantly lower.
- However, the UK's system of income contingent loans makes it harder to compare the 'actual' price of attending an elite university across the two countries.

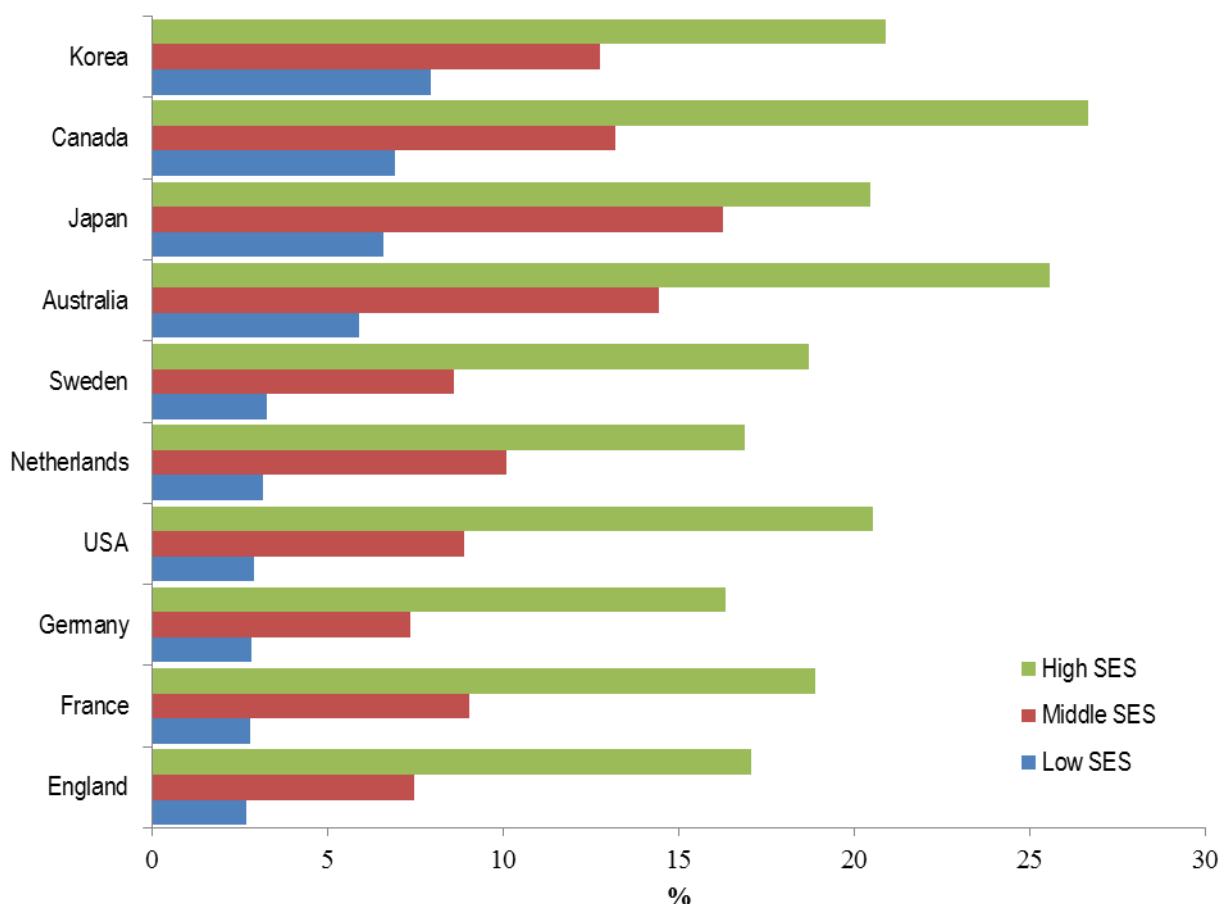
Table 1. Key economic and demographic statistics by country							
	GDP per capita 2011 (US\$)	Inequality P90/P10	GDP per hour worked	Unemployment % 2011	Population 2011 (thousands)	Average hours worked per year	Innovation (patents per million population)
Australia	40,790	4.5	48.6	5.1	22,618	1,692	12.6
Canada	42,132	4.2	46.2	7.5	34,108	1,702	18.7
Finland	37,642	3.2	49.1	7.8	5,388	1,684	65.5
France	35,133	3.4	57.7	9.7	63,293	1,476	38.7
Germany	39,187	3.5	55.3	5.9	81,777	1,413	69.5
Japan	33,785	5.0	39.8	4.6	127,799	1,728	117.9
Korea	30,253	4.8	28.3	3.4	49,779	-	43.8
Netherlands	42,847	3.3	59.8	4.5	16,615	1,379	49.8
Sweden	41,348	3.2	51.6	7.5	9,378	1,644	94.0
United Kingdom	35,441	4.6	46.9	8.0	61,761	1,625	25.9
United States	46,588	5.9	60.3	9.0	311,591	1,787	44.4

Source: OECD database (<http://stats.oecd.org/>)

The P90/P10 ratio is the ratio of the upper bound value of the ninth decile (i.e. the 10% of people with highest income) to that of the first decile (the 10% with the lowest income).

- High status universities require young people to have developed strong academic skills by the time they enter. Figure 1 illustrates the proportion of young people with advanced reading skills across a selection of OECD countries. Estimates are stratified by family background.
- England does not fare well in this respect. A smaller proportion of children reach this top skill level than in any of the other countries considered.
- There is a socio-economic gap in reaching this high skill level in all the countries considered.
- Less than three per cent of disadvantaged children reach this skill level in England (compared to more than 17 per cent from the most affluent homes).
- In comparison, six per cent of disadvantaged children reach this high threshold in Australia (compared to approximately 25 per cent from the most advantaged backgrounds).

Figure 1. The percentage of high achieving children by family background (PISA 2009) for selected countries



Notes: 'High achieving' refers to reaching level five on the PISA 2009 reading assessment. See page 8 of <http://www.oecd.org/pisa/46660259.pdf> for further details. Family background measured by approximate quintiles of the ISEI index of occupational prestige.

Source: Author's calculations using PISA 2009 dataset. SES refers to socio-economic status

- Table 2 provides information from the OECD on (i) factors that are generally considered in the university entry process and (ii) the average annual tuition fee.
- By necessity, the information in Table 2 takes a broad perspective, and does not reveal the likely variation across different institutions. For instance, although the OECD indicates that ethnicity and family income are not generally considered in the university entrance process in the United States, this is likely to differ across institutions.
- Nevertheless, Table 2 illustrates that annual tuition costs are high in the United Kingdom and United States by international standards (note that figures for the UK refer to pre-September 2012 when tuition fees rose significantly in England). England now has average fees that are twice the level of those in the US.

Table 2. Key details about tertiary education across selected countries

	Factors considered for entry				Average annual tuition fee (US\$ PPP)	
	Grades	Ethnicity	Family income	Applicant letter	Public	Private
Australia	Yes	Yes	Yes	Yes	4,222	9,112
Austria	-	-	-	-	859	235–11,735
Canada	-	-	-	-	3,774	-
Czech Republic	Yes	No	No	No	0	-
Denmark	Yes	No	No	Yes	0	-
Finland	Yes	No	No	Yes	0	-
France	Yes	No	Yes	Yes	1,127–8,339	1,127–8,339
Germany	Yes	Yes	No	Yes	-	-
Hungary	Yes	No	Yes	No	-	-
Iceland	-	No	No	No	0	8,433–12,650
Ireland	No	No	Yes	No	2,800–10,000	-
Italy	Yes	Yes	No	No	1,289	4,741
Netherlands	Yes	No	No	No	1,861	-
New Zealand	-	-	-	-	3,031	-
Norway	Yes	Yes	No	No	0	5,503
Poland	Yes	No	No	No	-	1,889–2,537
Portugal	Yes	No	No	No	1,259	-
Slovakia	-	-	-	-	2,707	-
Spain	Yes	No	No	No	1,052	-
Sweden	Yes	No	No	Yes	0	-
Switzerland	-	-	-	-	889	7,342
United Kingdom	Yes	No	No	Yes	4,731	-
United States	Yes	No	No	Yes	6,312	22,852

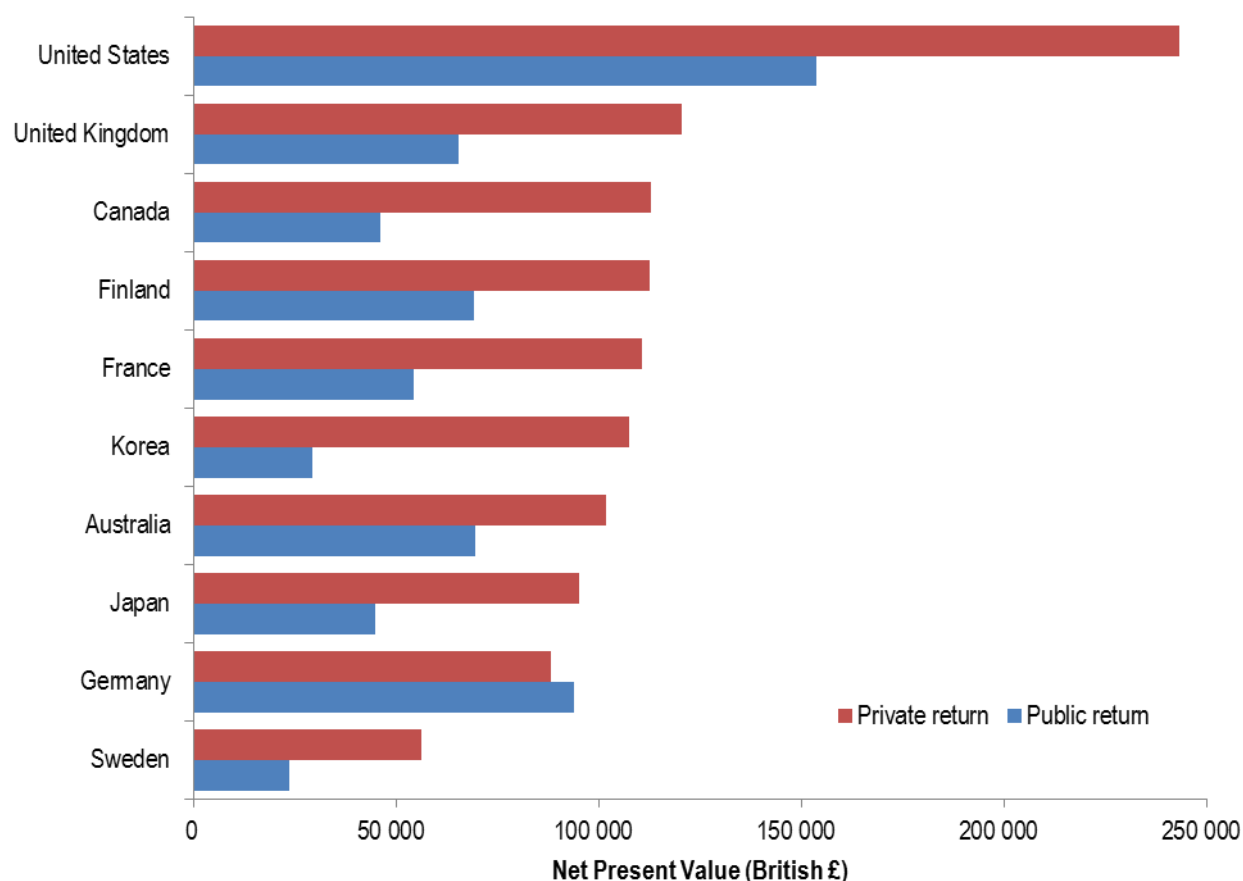
Notes: The figure of 4,731 for the United Kingdom refers to pre-September 2012. After this date, fees rose significantly, and now average £8,400 (\$12,500) per year.

Source: OECD 2012 (<http://www.oecd.org/edu/eag2012.htm>).

<http://www.oecd.org/edu/educationataglance2013-indicatorsandannexes.htm#ChapterC>

- Higher education offers substantial financial rewards. Figure 2 illustrates the ‘net present value’ of obtaining a degree to (i) the individual and (ii) the state. This takes into account a wide range of benefits (e.g. higher pay, greater tax revenue) and costs (e.g. tuition fees, foregone income). There are significant variations between universities and courses.
- In most countries, with the exception of Germany, private returns to higher education are greater than public returns – individuals benefit more financially from completing higher education than does the state.
- Private returns to education are particularly high in the US. Otherwise, the United Kingdom is broadly similar to most of the other countries considered. The public and private benefit of higher education is notably smaller in Sweden.
- Research from the United Kingdom and the United States has suggested that there are additional economic rewards for graduating from a ‘high status’ institution. For instance, Chevalier and Conlon (2003) suggest that graduates from Russell Group universities earn approximately six percent more than graduates at other UK higher education institutions with similar characteristics.

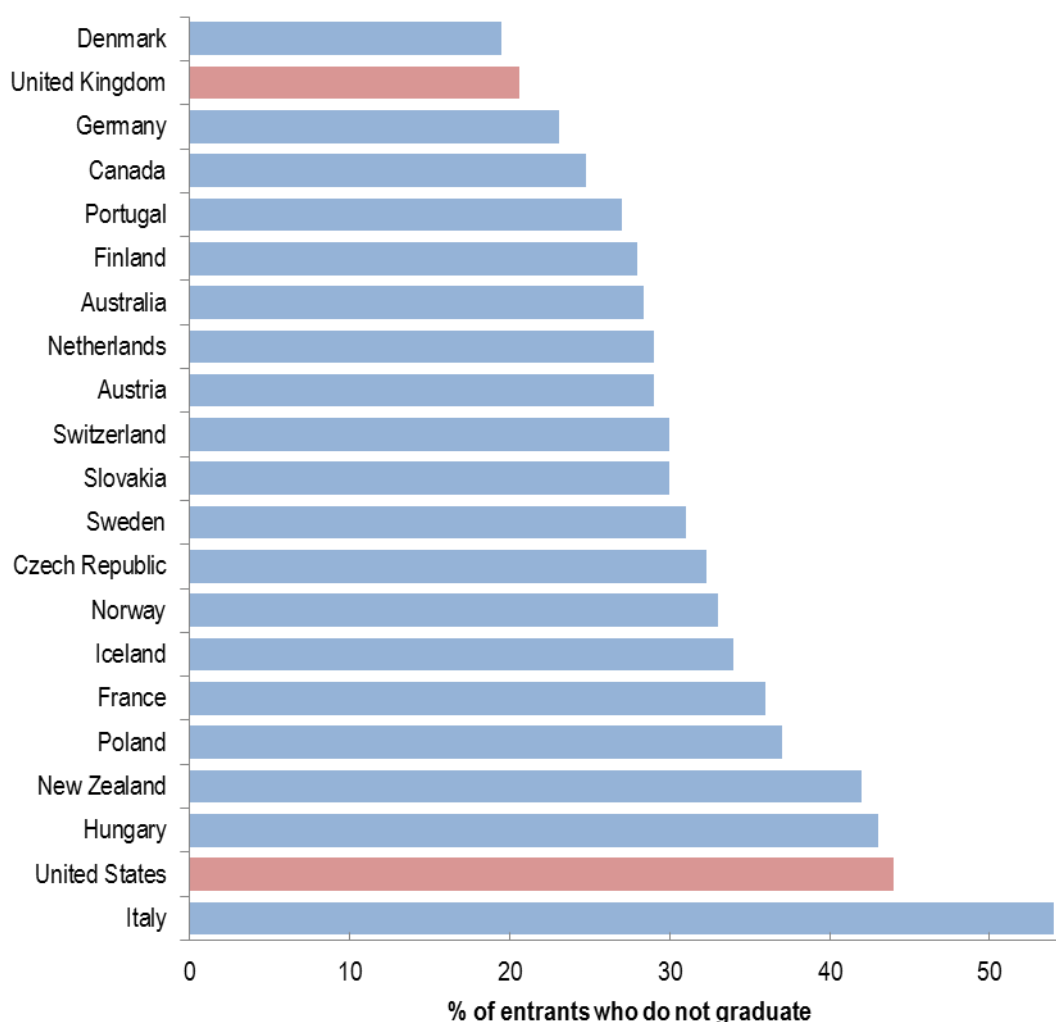
Figure 2. The economic value of higher education across selected countries (Net Present Value)



Notes: Estimates are for men. Returns as compared to a man with upper secondary or post-secondary non-tertiary qualification. Source = OECD Education at a Glance 2013 Tables T_A7.3a and T_A7.4a (<http://www.oecd.org/edu/educationataglance2013-indicatorsandannexes.htm#ChapterC>).

- It is not only access to higher education that should concern policymakers – it is also eventual graduation rates. For instance, young people need to graduate from university in order to receive the full economic rewards of higher education.
- According to OECD research, approximately one in five undergraduate students leaves tertiary education without gaining a bachelor degree in the UK (see Figure 3).
- Previous research has shown that students from lower socio-economic backgrounds and attending lower status universities are disproportionately likely to drop out (Powdthavee and Vignoles 2009).
- This is one reason why focusing on high status universities is important – young people who attend such institutions are much more likely to complete their studies and gain a valuable labour market qualification.
- However, non-completion does not stand out as a particular issue in the United Kingdom from an international perspective. In other countries, particularly the United States, this is a much more serious issue – where almost half of those who start an undergraduate degree do not complete it.

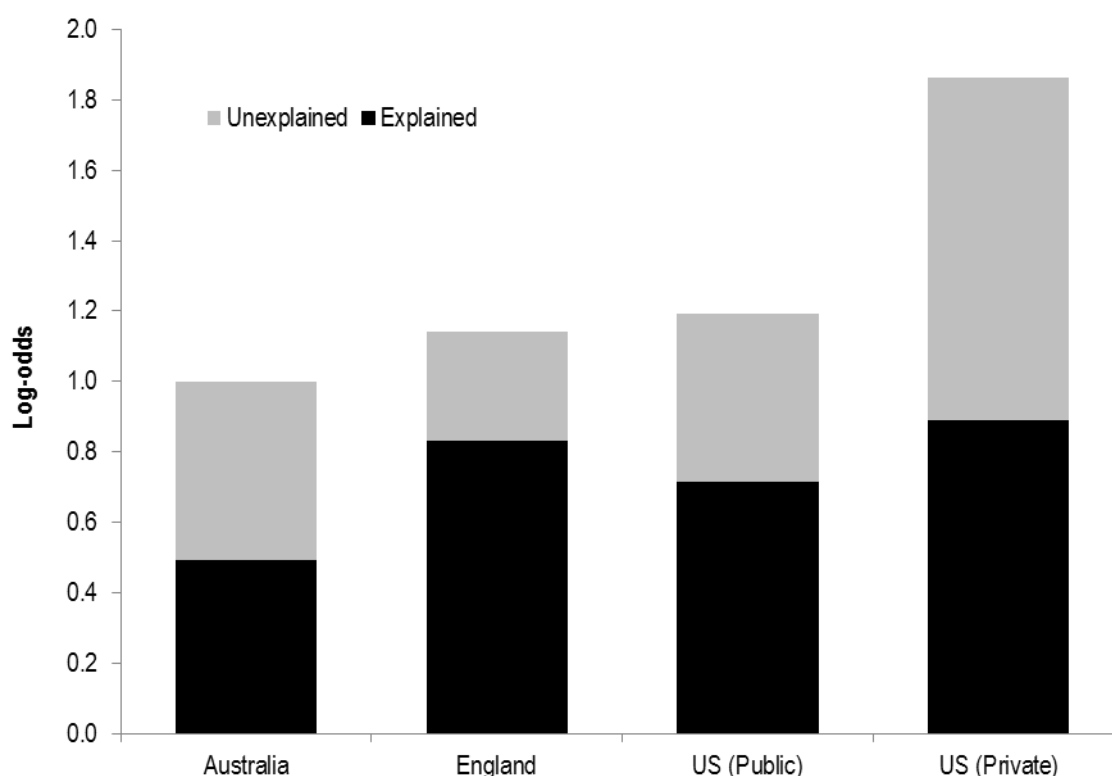
Figure 3. The percentage of undergraduate students who leave without a qualification



Source: Author's calculations using data drawn from OECD (2008: Table A4.1).

- Forthcoming research has investigated the link between a child’s social class and their chances of attending a high status university across three countries (Australia, England and the United States).
- Children with professional / managerial parents are approximately three times more likely to enter a high status university (than a non-high status university) in England than those with working class parents. This is similar to public colleges in Australia and the United States.
- Socio-economic disparities for elite private universities in the United States are much greater – where children from professional backgrounds are six times more likely to attend than those with working class parents.
- An important question for public policy is whether these socio-economic differences in elite university access are being purely driven by differences in children’s academic ability. The black portion of the bars in Figure 4 thus illustrates how much of the professional – working class gap in elite university access can be explained by prior academic achievement.
- Although academic achievement is an important factor, a substantial proportion of the elite university access gap in each country remains unexplained. In England, 73 per cent of the social class gap in elite college access can be explained by prior academic achievement. This compares to 50 per cent in Australia, 60 per cent at elite *public* sector colleges in the United States and 48 per cent in elite *private* sector colleges.
- This suggests that there are significant numbers of working class children who, even though they have the academic ability to attend, choose to enter a non-selective institution instead.

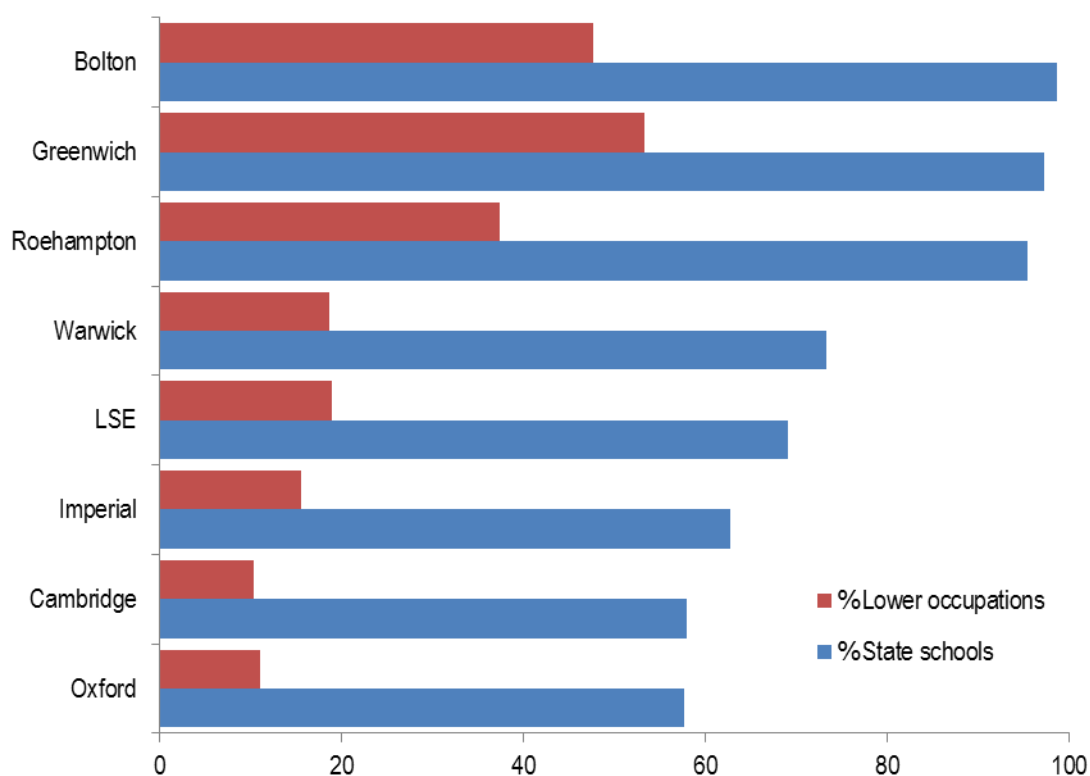
Figure 4. Social class differences in access to ‘high status’ universities across selected countries



Notes: Source = Jerrim, Chmielewski and Parker (forthcoming). Definitions of ‘high status’. England = Russell Group. Australia = Group of Eight. United States = ‘Highly selective’ (Carnegie classification)

- Figure 5 compares the proportion of young people from different backgrounds in a selection of English universities.
- Two measures of social stratification are considered: (i) state school pupils and (ii) lower occupational groups.
- At the top English institutions only one in eight young undergraduates comes from 'lower' occupational backgrounds. This compares to more than half at some modern universities (e.g. Greenwich).
- Similarly, more than 40 per cent of Oxbridge students attended a private school. At some modern institutions, the figure is just two or three per cent.

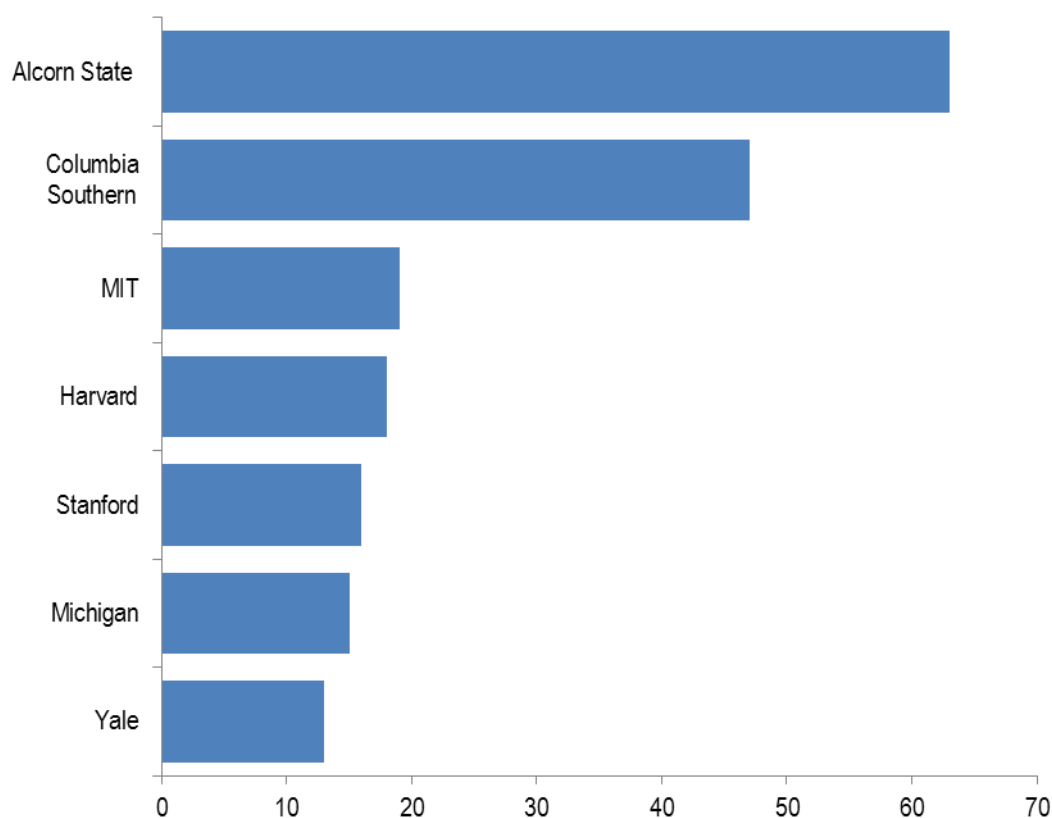
Figure 5. Percentage of disadvantaged students enrolled in selected English universities



Note: Data drawn from Table 1a http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=2060&Itemid=141. 'Lower occupations' refers to NS-SEC groups 4,5,6 and 7.

- Figure 6 compares the proportion of Pell grant recipients in a selection of American institutions. This is a well-known marker of low household income for College students in the United States.
- Roughly 13 per cent of Yale undergraduates received the Pell Grant. The figure is slightly higher at Harvard and MIT, standing at just below one in five of the undergraduate intake.
- However, in less selective institutions such as Columbia Southern and Alcorn State University, it is common for more than half of the undergraduate intake to be in receipt of a Pell grant.

Figure 6. Percentage of Pell Grant students enrolled in selected high status American institutions

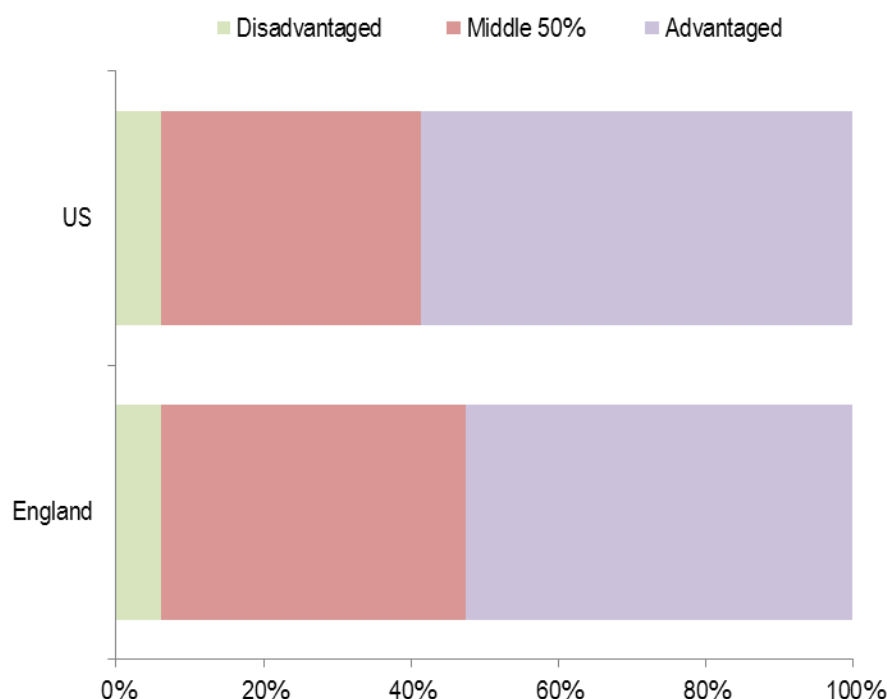


Note: Disadvantaged defined in the US as in receipt of the Pell grant (data drawn from <http://nces.ed.gov/ipeds/>). The Pell grant is a specific type of financial aid in the United States, which is based upon financial needs (defined using parents gross household income adjusted for the number of children). In 2008, the average adjusted gross household income of Pell Grant recipients was approximately \$20,000 – see <http://www.finaid.org/educators/ProfileofPellGrantRecipients.pdf>¹.

¹ Also see http://www.stratagee.com/resources/efc_quick_reference/1213_efc_quick_reference.html

- Figure 7 illustrates the social composition of the most selective universities in England and the United States. ‘Selective’ is defined as the Sutton Trust 13 universities in England. Institutions that are defined as ‘most’ or ‘highly’ selective according to the Barron index form a comparable group in the United States (see <http://www.barronspac.com/>). In both countries, just five per cent of young people have entered one of these ‘selective’ universities by age 20.
- In England and the United States, children from disadvantaged backgrounds account for just one in twenty enrolments into these selective institutions. On the other hand, children from advantaged backgrounds account for more than half of all enrolments in the two countries.
- Overall, these figures suggest that the link between household income and elite university entry is very similar in England and the United States.

Figure 7. The social composition of elite universities in England and the United States



Note: An ‘elite’ institution in England is defined as the ‘Sutton Trust 13’ universities. Universities defined as ‘most’ or ‘highly’ selective according to the Barron index is the definition used for the United States. Disadvantaged children are those in (approximately) the bottom quartile of the household income distribution at age 16. Advantaged children are defined as those in the top quartile. Source – authors calculations using LSYPE and ELS datasets (further details available upon request).

- Table 3 compares ‘sticker’ and ‘net’ annual prices at various elite higher education institutions in England, the United States and Australia.
- The ‘sticker’ price refers to the headline cost of university – it is the cost of tuition, accommodation, food and other direct costs before any non-repayable financial support is taken into account. In contrast, the ‘net price’ is the annual cost of university after (non-repayable) grants, scholarships and bursaries are deducted from total costs.
- Attending a ‘high status’ university is expensive in England, Australia and the United States. The cost of one year of study at the London School of Economics is £18,500 and £16,600 at the University of Oxford². Total costs at a leading public US institution (Ann Arbor, Michigan) are of a similar level for ‘in-state’ students (£16,800). The highest sticker price out of the universities considered is Harvard at approximately £37,000.
- However, Table 3 and Figure 8 illustrate that these ‘sticker’ prices mask the true cost of higher education. A range of subsidies and bursaries are available for young people, particularly those from low income backgrounds. For instance, although the headline cost of for the first year of study at the University of Oxford is £16,600, this is reduced to £11,000 for those with a household income of approximately £27,500 and £3,550 for those with a household income of approximately £10,000. In England, fees do not have to be paid upfront, but must be repaid with interest on graduation on an income-related basis.
- Notice that the subsidies at high status US institutions are particularly generous. For instance, the net price of Harvard for a young person who receives a Pell Grant and comes from a household with income of £26,000 is just £2,000 – less than 10 per cent of the sticker price.

² This does not take into account interest on loans and assumes that after graduation the student earns enough to pay back their tuition fee in full.

Table 3. Estimated 'sticker' and 'net' prices at selected high status universities around the world

	Elite UK	Elite UK (London)	Elite US (Private)	Elite US (Public)	Elite Australia
	Oxford	LSE	Harvard*	Ann-Arbor	Melbourne (Band 2)
Tuition Fee	9000	8500	24200	8800	5000
Accommodation	3900	4800	13133	8000	15000
Food	1800	2400			3000
Other costs	1900	2800			4300
Annual sticker price	16600	18500	37333	16800 (in-state)	27300
Annual net price (Household Income £10,000)	3550	11750	865	3185	-
Annual net price Household Income £27,500)	11300	13200	2019	4703	-
Annual net price (Household Income £41,000)	15300	17700	3155	8757	-
Annual net price (Household Income £65,000)	16600	18500	8243	12111	-

Notes: All figures have been converted into British pounds using exchange rates as of July 2013. Source: Oxford data drawn from

www.ox.ac.uk/feesandfunding/fees/livingcosts/undergraduates/ and www.ox.ac.uk/feesandfunding/search/launch/

Data for Harvard and Ann-Arbor drawn from <http://nces.ed.gov/ipeds/>. Estimates refer to an 'in-state' student in receipt of Title IV financial assistance.

* Students at Harvard are able to graduate debt-free thanks to a structured work-study programme. Full waivers are paid to some students at Harvard. Figures in table refer to the total average net cost within each household income band.

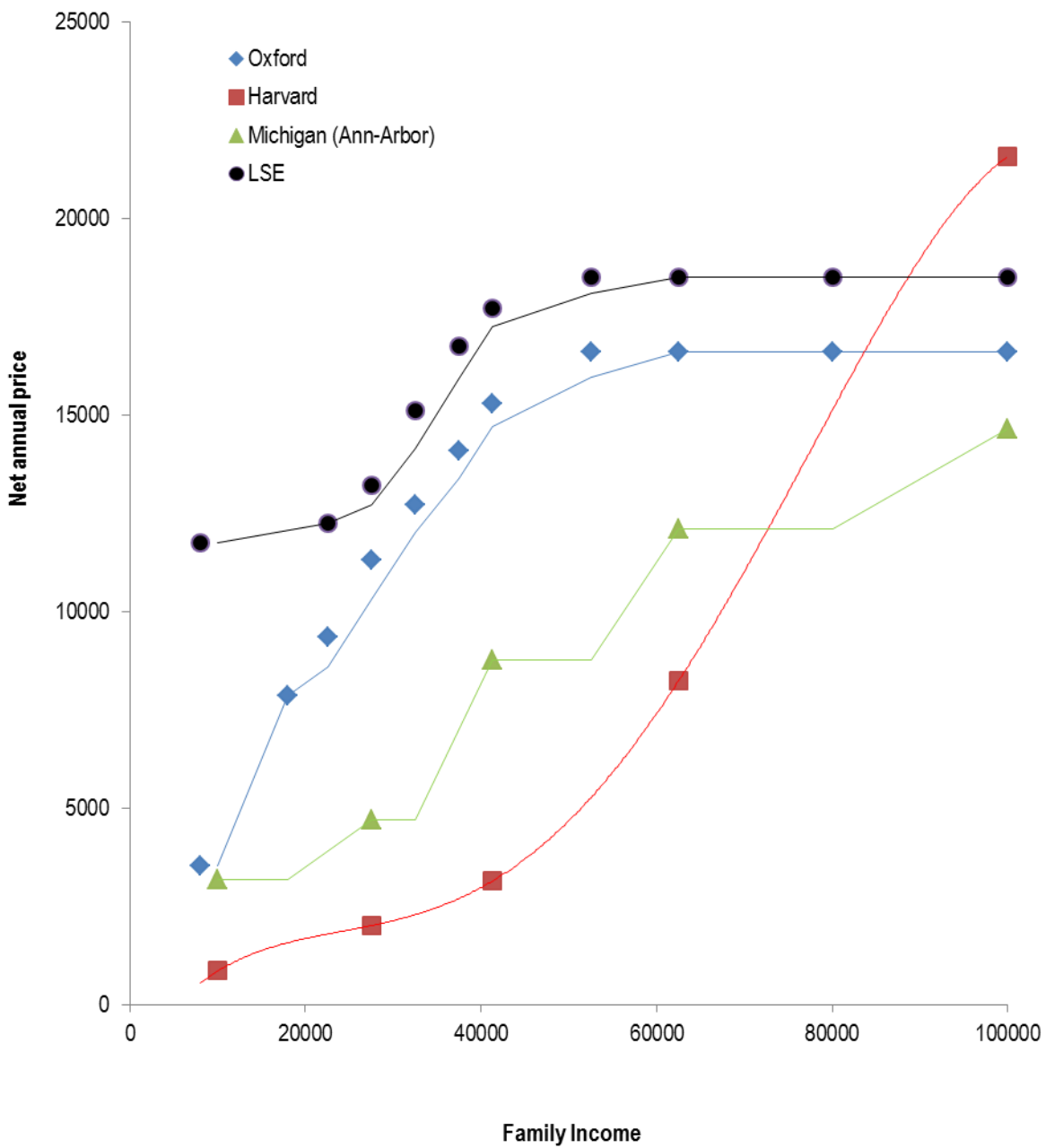
Data for Melbourne drawn from http://services.unimelb.edu.au/finaid/planning/cost_of_living/summary and <http://futurestudents.unimelb.edu.au/admissions/fees/ug-dom/subject-fees>. Estimates refer to students studying a band 2 subject.

Data for LSE drawn from <http://www.lse.ac.uk/study/generalCourse/prospectiveStudents/howMuchWillItCost.aspx>,

<http://www.lse.ac.uk/intranet/students/moneyMatters/financialSupport/ScholarshipsLSE/UGApp/UgAppHome/LSEBursarySchemes.aspx> and

<http://www.offa.org.uk/agreements/London%20School%20of%20Economics%20and%20Political%20Science%20137%20access%20agreement%202013-14.pdf>

Figure 8. Estimated 'net' cost at selected English and American universities by household income



Notes: Data for Michigan refer to costs for an 'in-state' student who lives on-campus. Estimates for LSE based upon authors calculations using the published access agreement (<http://www.offa.org.uk/agreements/London%20School%20of%20Economics%20and%20Political%20Science%20137%20access%20agreement%202013-14.pdf>). US estimate for students who are eligible for Pell grants. Interest charged on loans not included in the figures. Estimates for LSE / Oxford assume that student pays back all their tuition fee loan.

Case Studies: University access schemes around the world

Sutton Trust Summer Schools – UK and US

The Sutton Trust Summer Schools are free, subject-specific residential courses for Year 12 students from UK state-maintained schools. The summer schools allow bright students from non-privileged homes a taste of life at a leading university and to gain an insight into what it is like to live and study as a first-year undergraduate student. The summer schools balance busy academic days with enjoyable social activities, as well as provide attendees with the opportunity to meet current staff and students.

The aim is to demystify elite universities and to equip students – most of whom will be the first in their families to go on to higher education – with the knowledge and insight to make high quality applications to top universities. In 2013, the Sutton Trust significantly expanded the number of summer school places available with over 1700 students taking part at the following universities:

Bristol, Cambridge, Durham, Edinburgh, Imperial, King's College, Nottingham, St Andrews, and UCL.

An independent evaluation of the programme, by Dr Tony Hoare and Rosanna Mann at the University of Bristol in 2012 found that over three quarters (76%) of the Sutton Trust summer school attendees went on to a leading university (either a member of the Russell or 1994 Groups) compared to just over half (55%) of students with similar academic and social profiles who did not apply to the scheme.

Nearly a quarter (23%) of the Sutton Trust students progressed to one of the host universities, compared to 13% of those who applied for a place on the summer school but were unsuccessful and 7% or less in the other control groups.

In 2012, the Sutton Trust also piloted a US summer school programme. This was expanded in 2013 and will continue in 2014. The programme is centred on a one week summer school in the US (based at either MIT or Yale University) with introductory events and application support in the UK before and after. The programme provides participants with a wide range of activities to help them make the right decisions about American higher education. In the first year, 21 out of 64 summer school participants gained places at leading US universities, including Harvard, Yale, Stanford, MIT and Columbia.

Harvard – 'Explorations'

Running since 2000, Explorations is a one-day program for selected state schools in Boston and Cambridge that takes place in the autumn of every year. Approximately 250 11 – 14 year olds are hosted by Harvard faculty for a day of presentations, panel discussions about educational paths, and the pairing of individual students with researchers for laboratory activities. Site visits take place in the teaching hospitals and professional schools of the Longwood Medical Area, and HMS labs in Cambridge. The primary objective of the program is to provide students with additional experience outside the classroom to enhance their science and maths skills.

RMIT (Australia) – ‘The Koori Express’

For selected Indigenous communities, Koori Express provides intensive exposure to the programs offered by RMIT. Quite literally, the Koori Express is a bus trip, with free accommodation, to attend RMIT open days. The program, which began in 2007, involves: (i) educational experiences for under-represented Indigenous students and their parents; (ii) working with selected Indigenous communities to enhance aspirations for university; (iii) free transport to Melbourne for RMIT open days on a 4–5 star coach; (iv) accommodation at a hotel in Melbourne; (v) other activities, including attending an AFL football match; (vi) provision of all meals. For further information see page 35/36 of

www.innovation.gov.au/HigherEducation/ResourcesAndPublications/Documents/ComponentC.pdf

United Kingdom – ‘The Brilliant Club’

The Brilliant Club, part-funded and supported by the Sutton Trust, is an award winning non-profit organisation that exists to widen access to top universities for outstanding pupils from low-participation backgrounds. Their primary activity is to recruit, train and place PhD students in non-selective state schools and sixth form colleges serving low participation communities to deliver programmes of university-style tutorials to small groups of outstanding pupils. These tutorials develop the knowledge, skills and ambition to help those pupils to secure places at top universities. Working together with schools, colleges and universities, The Brilliant Club is building a national movement that mobilises PhD students to engage with challenging schools and to address educational disadvantage more broadly. Their PhD students are placed in schools to deliver programmes from Key Stage 2 (ages 8-11) through to Key Stage 5 (ages 16-18). They are currently working with over 100 schools and colleges in London, the South East and the Midlands, placing over 150 PhD students to work with more than 3500 pupils.

The UK education system currently faces a range of inter-related challenges: students from low and middle income backgrounds are under-represented at top universities; schools are increasingly accountable for progression to higher education; there is a shortage of high quality development opportunities for PhD students; and universities are committed to recruiting more pupils from low-participation backgrounds. The Brilliant Club facilitates sustained contact between outstanding pupils and PhD students from top universities. In doing so, they offer a simple and scalable solution that addresses the inter-related problems mentioned above and at the same time benefits each of the key stakeholders. Pupils develop the skills, confidence and ambition that help them to secure places at top universities; schools develop a culture that champions excellence, hard work and progression to higher education; PhD students are paid for taking part in high quality development opportunities; and universities are given access to target schools and target students.

Netherlands – Lotteries to Dutch medical schools

A lottery system is an integral part of the allocation of places in Dutch medical schools. Up until 2000, medical school admissions in The Netherlands occurred solely on the basis of a lottery with chances improving for candidates with higher average score on the national secondary school examination. The minimum requirement to enter the lottery is a specific secondary school degree of the applicant, with 3 times as high a chance of admission for someone with a high average score compared to someone with low average, but still sufficient score. Top scoring students have unconditional admission.

From 2000, after a public outcry over the plight of a 'bright' student who failed to gain admittance to medical school three years in a row, universities can select up to 50% of their intake. Five out of nine medical schools used this opportunity to select on the basis of personal statement, extensive tests, and interviews. Recently, the government has decided to abandon the national lottery system, most likely in 2016, forcing local selection systems for all places at each school, with local criteria. Local lottery however will be prohibited.

Two universities also specifically used the selection procedure to allocate places to under-represented groups (e.g. ethnic minorities and mature students). In recent evaluations some have found that selected students did not achieve better outcomes (academic achievement) than students allocated places through the lottery systems, but others did find slight advantages.

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