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Jerrim, John

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The Link between Family Background and Later Lifetime Income: How Does the UK Compare with Other Countries?*

JOHN JERRIM†

†*Institute of Education*
(j.jerrim@ioe.ac.uk)

Abstract

The link between family background and labour market outcomes is an issue of great academic, social and political concern. It is frequently claimed that such intergenerational associations are stronger in Britain than in other countries. But is this really true? I investigate this issue by estimating the link between parental education and later lifetime income, using three cross-nationally comparable data sets covering more than 30 countries. My results suggest that the UK is broadly in the middle of the cross-country rankings, with intergenerational associations notably stronger than in Scandinavia but weaker than in eastern Europe. Overall, I find limited support for claims that family background is a greater barrier to economic success in Britain than in other parts of the developed world.

Policy points

- Previous work has offered conflicting messages regarding the strength of the association between the socio-economic circumstances of parents and children in the UK compared with other countries. I

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investigate these relationships further using a number of different measures of socio-economic background and a number of different data sets.

- The similarity of my findings across data sets and measures of socio-economic background is striking. My results suggest that the UK sits in the middle of the cross-country rankings, with lower levels of mobility than a number of western countries – including Scandinavia, but also Australia, Canada and Germany – and higher levels of mobility than the United States and much of eastern Europe.
- These results hold for offspring with average earnings. Comparing individuals who end up lower down the earnings distribution shows that the effect of parental socio-economic background is stronger in the UK than in most other countries, suggesting that higher socio-economic-status families in the UK are particularly good at preventing significant downward mobility for their children.

I. Introduction

The link between family background and labour market outcomes is an issue of great academic, social and political concern. In no country has this generated more interest than in the UK, where there remains widespread belief that 'the United Kingdom is a low social mobility society compared to other developed countries'[1] and that 'Britain has some of the lowest social mobility in the developed world'.[2] But is this really true? A number of academics have noted that the UK falls squarely in the middle of cross-country rankings when social mobility is measured in terms of social class.[3] It is only when one focuses upon intergenerational *income* mobility – the link between the income of fathers and the income of their sons – that family background seems to matter more in Britain than in other developed countries.

Estimates of income mobility are usually based upon the following simple linear regression model:

$$(1) \qquad \log(Y_{Offspring}) = \alpha + \beta \log (Y_{Parent}) + \varepsilon,$$

where $Y_{Offspring}$ is the permanent income of offspring (typically sons) and Y_{Parent} is the permanent income of parents (typically fathers).

The parameter of interest from equation (1) is $\hat{\beta}$, known as the intergenerational income elasticity. This is the most-frequently-used measure

[1] Social Mobility and Child Poverty Commission, 2013, p. 126.
[2] *The Guardian*, 2012.
[3] Erikson and Goldthorpe, 1992; Saunders, 2012; Blanden, 2013.

of income mobility within the cross-national comparative literature.[4] To interpret $\hat{\beta}$ is simple: the greater its value, the stronger the association between a person's family background and the income they acquire during adult life.

It is comparisons of $\hat{\beta}$ across countries that have led many to believe that social mobility is low in the UK by international standards. Table 1 presents findings from five widely-cited comparative studies of income mobility, with countries towards the bottom of this ranking being the least 'socially mobile'.[5] Britain's position does seem relatively poor: it is placed 7th out of 8 countries included in Blanden, Gregg and Machin (2005, table 2), 8th out of 11 countries in Björklund and Jäntti (2009, figure 20.1) and 17th out of 21 countries in Corak (2012, figure 1). However, 'there is considerable uncertainty about [the] country rankings' presented in Table 1.[6] This uncertainty stems from the following four issues:

1. *Limited number and selection of countries.* As illustrated in Table 1, a limited number of countries are included in such comparisons. Moreover, the Scandinavian countries, known for their equality and high social welfare spending,[7] are disproportionately represented. In other words, Britain is usually compared against quite a small and specific set of benchmarks. This limits what one can say about how the UK compares with a broad selection of other developed nations.
2. *Lack of statistical significance.* Differences between the UK and most other countries do not typically reach statistical significance at conventional thresholds (a star next to the parameter estimate in Table 1 indicates that a country is significantly different from the UK at the 5 per cent level). This means that one cannot rule out sampling variation as an explanation for the disappointing position of the UK. Indeed, once statistical significance is considered, income mobility only appears to be lower in Britain than in Scandinavia (and perhaps Canada).
3. *Differences in statistical methodology.* Different statistical methods have been used to produce income mobility estimates for different countries – including ordinary least squares (OLS), instrumental variables (IV) and two-sample two-stage least squares (TSTSLS). This is a particular problem in studies including a larger number of countries,[8] where authors have to be

[4]The intergenerational correlation, r, is an alternative measure. This involves rescaling $\hat{\beta}$ to take into account differences in income inequality between the fathers' and sons' generations. Although Björklund and Jäntti (2009) note that this measure has significant advantages, it is less frequently reported than the income elasticity.

[5]There being five studies cited in Table 1 actually overstates the number of different independent studies. For instance, Corak (2012) and Blanden (2013) systematically review the literature to produce their final estimates for each country, and thus they draw upon a number of very similar data sources.

[6]Blanden, 2013, p. 39.

[7]Esping-Andersen, 1990.

[8]For example, Corak (2012).

TABLE 1

International comparisons of intergenerational income mobility: a review

Jäntti et al., 2006		Blanden, Gregg and Machin, 2005		Björklund and Jäntti, 2009		Blanden, 2013		Corak, 2012	
Country	$\hat{\beta}$	*Country*	*r*	*Country*	$\hat{\beta}$	*Country*	$\hat{\beta}$	*Country*	$\hat{\beta}$
Denmark	0.07*	Norway	0.14*	Denmark	0.14*	Denmark	0.14*	Denmark	0.15
Norway	0.16*	Canada	0.14*	Sweden	0.25	Finland	0.20*	Norway	0.17
Finland	0.17*	Denmark	0.14*	Norway	0.26	Canada	0.23*	Finland	0.18
Sweden	0.26	Sweden	0.14*	Germany	0.26	Germany	0.24	Canada	0.19
UK	**0.31**	Finland	0.15*	Australia	0.26	Sweden	0.24*	Australia	0.26
US	0.52	Germany	0.17	Finland	0.28	Norway	0.25*	Sweden	0.27
		UK	**0.27**	Canada	0.28	Australia	0.25	New Zealand	0.29
		US	0.29	**UK**	**0.30**	France	0.32	Germany	0.32
				France	0.45	Italy	0.33	Japan	0.34
				Italy	0.46	**UK**	**0.37**	Spain	0.40
				US	0.47	US	0.41	France	0.41
						Brazil	0.52*	Singapore	0.44
								Pakistan	0.46
								Switzerland	0.46
								US	0.47
								Italy	0.50
								UK	**0.50**
								Chile	0.52
								Brazil	0.58
								China	0.60
								Peru	0.67

Note: Figures refer to the estimated intergenerational income elasticity ($\hat{\beta}$) in all studies except Blanden, Gregg and Machin (2005), where the intergenerational correlation (*r*) is reported instead (see footnote 4). Countries are ranked by the estimated elasticity, with those towards the bottom being the least 'socially mobile'. * indicates statistically different from the UK at the 5 per cent level. Standard errors have not been reported in Corak (2012), and so statistical significance is not considered. Grey shading indicates that estimates have been generated using IV or TSTSLS methodology; absence of shading indicates OLS.

less restrictive on the comparability of methods and the data used. Although this limitation has been fully recognised in the literature,[9] and attempts have been made to correct income mobility estimates for such methodological differences,[10] this nevertheless remains a problem in such cross-national analyses. Indeed, a companion paper[11] illustrates how IV and TSTSLS estimates of equation (1) are usually higher than those based upon OLS, and often by more than 25 percentage points (this figure is often used in attempts to make IV/TSTSLS and OLS estimates more comparable across countries[12]).[13] Consequently, although a great deal of time and effort has been placed in trying to enhance the international comparability of income mobility estimates, there remain limitations in the extent to which this has been achieved.

4. *Lack of comparable data.* The data used in most studies have not been designed for the purpose of cross-national comparison, with many of the estimates included in Table 1 produced by separate research teams.[14] Specific differences include how parental income has been measured (for example: father's earnings only or total household income; labour market earnings versus all income; gross versus net income) and ages when the offspring's income has been recorded. Solon (2002, p. 61) summarises this problem as follows:

> Once one recognizes the importance of such measurement issues, one also realises how tricky it is to compare estimates for different countries from different studies. Do the differences among estimates appear because of actual cross-country differences in intergenerational mobility or because of differences across studies in their earnings measures, age ranges or other sample selection criteria?

This sentiment has recently been echoed by two experts from the income mobility field: Jäntti and Jenkins (2013, p. 188) argue that

> very little is known about how intergenerational income persistence and mobility vary across countries. . . . More research, using comparable data for multiple countries across multiple cohorts of parents and offspring, is required.

Hence, if policymakers really want to know whether the link between family background and labour market success is stronger in Britain than in

[9]For example, see Blanden (2013).

[10]See Corak (2006).

[11]Jerrim, Choi and Rodríguez, 2014.

[12]See Corak (2006) and Blanden (2013).

[13]Note that different instruments have been used in different countries even when IV/TSTSLS has been applied. It is therefore unlikely that even these estimates are comparable to one another.

[14]For example, Björklund and Jäntti (2009), Corak (2012) and Blanden (2013). The paper by Jäntti et al. (2006) is an exception, where a team of researchers have worked together with the data to produce the most comparable estimates possible.

other developed nations, further evidence is needed on this issue. In this paper, I attempt to provide such evidence by:

- comparing the UK with a large number of other countries (more than 30);
- using a comparable statistical methodology across countries;
- using data that have been specifically designed (or harmonised) for the purpose of cross-national comparison;
- conducting a wide range of robustness tests, including different definitions of key variables and measures of social stratification;
- triangulating evidence from multiple sources using meta-analytic techniques;
- presenting evidence on non-linearities; this includes the relationship between family background and *low* earnings and between family background and *high* earnings.

As the data sets analysed do not contain measures of parental income, it is not my intention to produce estimates of intergenerational income mobility per se. Rather, I investigate the link between respondents' income and several alternative measures of their family background in order to complement the income mobility literature. Given the limitations with the existing evidence base described above, I argue that this provides an important contribution to contemporary academic and public policy debate as to whether social origin is really a greater barrier to monetary 'success' in the UK than in other countries.

My results suggest the following:

- The UK is ranked 19th out of 37 countries in terms of the strength of the relationship between family background and later lifetime income. It is broadly similar in this respect to a number of other OECD countries (including France, Ireland, Italy, Japan, Spain and Switzerland).
- Consistent with the intergenerational income mobility literature, family background seems to be a greater barrier to future economic success in Britain than in Scandinavia, Australia, Canada and a handful of central European countries (Austria, Belgium, Germany and the Netherlands).
- On the other hand, intergenerational associations are weaker in the UK than in eastern Europe (Bulgaria, Hungary, Poland and Romania) and the United States.

The paper now proceeds as follows. Section II describes my empirical methodology, while Section III describes the three data sets upon which I draw. Results are presented in Section IV, with conclusions following in Section V.

II. Methodology

Estimates presented are based upon the following regression model:

$$\log\left(y_{ij}\right) = \alpha + \beta F_i + \gamma A_i + \delta B_i + \varphi X_i + \varepsilon_{ij} \; \forall K \tag{2}$$

where $\log(y_{ij})$ is the natural logarithm of respondents' earnings or income, F is a measure of respondents' family background, A is age (and age squared) of respondents at the time of the survey, B is the birth year of respondents' mother and father,[15] X is the immigrant status of respondents' mother and father, ε is an error term, i indexes individuals, j indexes clusters[16] and K indexes countries.

The highest level of education achieved by either parent is the primary measure of family background ('F') used in this paper. Parental education is a measure of social origin widely used by economists[17] and sociologists,[18] and has been shown to influence child development,[19] access to higher education[20] and other aspects of the intergenerational transmission process.[21] It has also been widely used in international comparisons of intergenerational inequalities,[22] including a recent volume edited by leading experts from the income mobility field.[23] Indeed, these editors note how parental education is correlated with the financial resources available to parents for investing in their children's development and is 'the most malleable [indicator of family background] in terms of being made comparable across countries'.[24,25]

Although the link between parental education and offspring's earnings is a relatively uncommon measure of social mobility, previous research has found that 'measures of income and education links across generations tend to be positively correlated'[26] at the cross-country level. Similarly, the finding of Hertz et al. (2007) that educational mobility is low in South America and high in Scandinavian countries is consistent with cross-country patterns of income mobility.[27] To further consider the properties of parental education, I have investigated its association with permanent earnings using the Panel Survey of Income Dynamics (a longitudinal data set from the US) and found a correlation

[15]This information is only available in the EU-SILC data set.

[16]As all three data sources described in Section III use a clustered survey design, Huber–White adjustments are made to the estimated standard errors. See Appendix B (available online) for a discussion of clustering in the European Social Survey.

[17]For example, Ermisch and Del Bono (2012) and Bradbury et al. (2012).

[18]For example, Bukodi and Goldthorpe (2012).

[19]Chevalier et al., 2010; Dickson, Gregg and Robinson, 2013.

[20]Cunha et al., 2006; Jerrim and Vignoles, 2015.

[21]Lampard, 2007.

[22]Ermisch, Jäntti and Smeeding, 2012a; Jackson, 2013.

[23]Ermisch, Jäntti and Smeeding, 2012b.

[24]Ermisch et al., 2012, p. 15.

[25]The correlation between parental education and family income is 0.45 in the UK British Cohort Study.

[26]Blanden, 2013, p. 54.

[27]See Blanden (2013).

of 0.58. Further evidence on how intergenerational mobility estimates differ when using parental education rather than parental income can be found in Jerrim and Macmillan (2015).

Parental education is measured using International Standard Classification of Education (ISCED) levels; ISCED is an international coding schema designed by UNESCO to facilitate cross-national comparisons of educational attainment. Following existing practice in much of the cross-national literature,[28] the following collapsed version of this schema is used:

- 'low' = ISCED below 3A (less than upper secondary schooling);
- 'middle' = ISCED 3A–4 (completed upper secondary but not tertiary education);
- 'high' = ISCED 5A–6 (completed tertiary education).

Yet this measure also has certain limitations. First, although the ISCED schema has been designed to enhance cross-national comparability, one cannot rule out the possibility that some differences across countries do still remain.[29] This may, however, be less of an issue when using the broad ISCED groups outlined above, rather than when attempting to disentangle all the intricacies between various national qualifications.[30] Second, information on mother's and father's education is typically reported by respondents rather than their parents. Although proxy reports may be subject to measurement error, Jerrim and Micklewright (2012) illustrate that this does not necessarily lead to substantial bias in cross-national comparisons of intergenerational inequalities. Indeed, the aforementioned paper indicates that international comparisons of differences in educational test scores between individuals from 'low' and 'high' parental education backgrounds are relatively robust to who reports parental education (i.e. whether it is the parent themselves or their offspring). There is also little reason to believe that any measurement error in the parental education variable is greater in the UK than in other countries, or that this would lead to greater bias in the UK's parameter estimates (in terms of either direction or magnitude). Finally, the distribution of parental education differs across countries – see Table 2.[31] Hence one may question whether parental education

[28] For example, the Luxemburg Income Study – http://www.lisdatacenter.org/.

[29] Schneider, 2008.

[30] For instance, Steedman and McIntosh (2001) note that the ISCED 0–2 category is an appropriate definition of 'low skill' that can be compared across European countries.

[31] There is also variation in the distribution of parental education across the three data sets I analyse. For instance, the General Certificate of Secondary Education (GCSE) does not fit easily into the ISCED framework, and therefore some international surveys (including EU-SILC and ESS) include parents with only GCSEs in the 'low' education group, while others (for example, PIAAC) include such individuals in the 'middle' education group. Therefore, the percentage of individuals in the low parental education category is much higher in EU-SILC (54 per cent) and ESS (62 per cent) than in PIAAC (26 per cent). See Appendix E (available online) for a full breakdown by survey.

TABLE 2

The distribution of parental education across countries

Country	*Code*	*Parental education*		
		Low	Medium	High
Australia	AU	42	27	31
Austria	AT	35	51	14
Belgium	BE	45	31	24
Bulgaria	BG	48	37	15
Canada	CA	24	38	38
Croatia	HR	46	42	12
Cyprus	CY	66	22	12
Czech Republic	CZ	25	63	12
Denmark	DK	23	48	30
Estonia	EE	26	44	30
Finland	FI	45	33	22
France	FR	58	26	16
Germany	DE	10	59	30
Greece	GR	74	16	11
Hungary	HU	47	41	13
Iceland	IS	36	38	25
Ireland	IE	56	25	20
Italy	IT	76	18	6
Japan	JP	22	46	32
Korea	KR	60	26	14
Latvia	LV	34	46	20
Lithuania	LT	45	38	16
Luxemburg	LU	54	35	12
Malta	MT	70	23	7
Netherlands	NL	50	27	22
Norway	NO	27	40	33
Poland	PL	45	47	9
Portugal	PT	69	23	8
Romania	RO	79	16	5
Russia	RU	28	32	40
Slovak Republic	SK	28	60	11
Slovenia	SI	49	38	14
Spain	ES	78	10	12
Sweden	SE	47	26	27
Switzerland	CH	29	52	20
Turkey	TR	94	4	2
United Kingdom	UK	47	26	27
United States	US	15	45	40
Total	–	50	32	18

Note: Figures based upon an average across the ESS, EU-SILC and PIAAC data sets. See Appendix E (available online) for a survey-by-survey breakdown.

is capturing the same extent of socio-economic advantage and disadvantage in each nation (and within each survey). For these reasons, I will demonstrate the sensitivity of my results to various alternative measures of family background – including father's occupation and indices of multiple deprivation – which will be described in Section III.

When estimating equation (2), all data sets will be restricted to male respondents between the ages of 25 and 59. This is consistent with much of the income mobility literature, where individuals who are younger or older are excluded due to their income being subject to non-trivial 'transitory' fluctuations.[32] Similarly, female respondents are not considered here due to the added complexity of labour market selection. Consequently, the analysis focuses upon men born between roughly 1950 and 1985, with estimates essentially being an average for individuals born across this period. I have experimented with alternative age ranges (for example, 30- to 45-year-olds born between roughly 1965 and 1980) and obtained qualitatively similar results (though with inflated standard errors).

A final feature of equation (2) is that the parameter of interest ($\hat{\beta}$) has a simple and widely-understood interpretation. First, note that equation (2) is very similar to the income mobility model economists usually estimate (recall equation (1)), with the only key difference being the use of a different measure of family background. Second, equation (2) has striking similarities to a standard Mincer wage equation, a model widely used by labour economists to estimate the monetary returns to education, with parameter estimates being interpreted in a similar way. Specifically, the calculation $\{\exp(\hat{\beta}) - 1\} \times 100$ provides the estimated returns to *offspring* from their *parents* holding a particular qualification (relative to the reference group). As this paper focuses upon differences between the 'high' and 'low' parental education categories, it will address the question 'How much more do offspring with a university-educated parent earn relative to their peers whose parents never completed upper secondary school?'.[33]

In Section IV, I estimate equation (2) using both ordinary least squares (OLS) and quantile regression (QREG). The intuition behind these techniques is illustrated in Figure 1, where I present hypothetical log income distributions for individuals from the 'low' and 'high' parental education backgrounds.[34] ML and MH refer to the mean log income of these two groups. OLS regression that includes dummy variables for parental education captures the difference between these two points (conditional upon other factors that have been

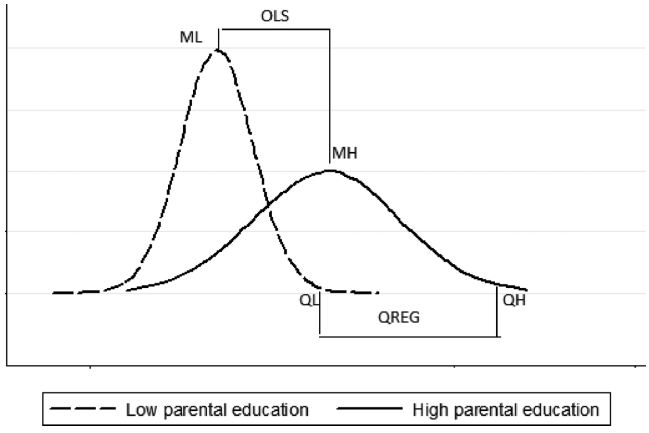
[32] Chadwick and Solon, 2002.

[33] In the UK, the 'low' parental education category broadly corresponds to the minimum school-leaving age. The 'high' category corresponds approximately to holding an undergraduate degree or higher.

[34] This discussion closely follows Jerrim (2012), where I use similar methodologies to investigate the socio-economic gap in children's test scores.

FIGURE 1

Hypothetical income distributions for children with 'low' and 'high' parental education: an illustration of the difference between OLS and QREG estimates



Note: This figure has been produced with simulated data and is designed to illustrate the similarities and differences between QREG and OLS estimation. MH and ML refer to mean income of the high and low parental education distributions. Ordinary least squares regression will calculate the difference between these two points (conditional on the other explanatory terms included in the model). QH and QL, on the other hand, refer to the 90th percentile of the high and low parental education income distributions. Quantile regression will compare the difference between these two quantities (conditional on the other terms included in the model). In this example, I have set the shapes of the high and low parental education income distributions to be different. Under this scenario, the QREG estimate will be greater than the OLS estimate. One can see this because the horizontal 'QREG' line is longer than the horizontal 'OLS' line (MH – ML < QH – QL). For further information, see discussion in Section II.

controlled for in the model). Quantile regression estimates can be thought of in a similar way. For instance, QL is located at the 90th percentile of the low parental education income distribution and QH is located at the 90th percentile of the high parental education income distribution. A quantile regression analysis at the 90th percentile will capture the difference between these two points (again, conditional upon any other factors that have been included in the model). In other words, this will reveal the difference in income between the 'most successful' (highest-earning) individuals from low parental education backgrounds and the 'most successful' (highest-earning) individuals from high parental education backgrounds. Similar interpretations hold when quantile regression estimates are made at other points of the income distribution (for example, the 10th percentile).[35]

[35]For a more technical description of quantile regression, I direct the reader to Koenker and Bassett (1978).

III. Data

In this section, three data sets are described, including details on sample selection, response rates, and measurement of income/earnings and family background. The data sets are the European Union Statistics on Income and Living Conditions (EU-SILC), the European Social Survey (ESS) and the Programme for International Assessment of Adult Competencies (PIAAC). Equation (2) will be estimated using each resource, before results are pooled via a meta-analysis. This approach is designed to illustrate the sensitivity of estimates to varying choices regarding the estimation of equation (2), with a particular focus on the position of the UK relative to other countries.

1. EU-SILC

The EU-SILC is an annual survey of income and living standards across Europe. Countries follow guidelines on the information to collect, with data then harmonised by the study organisers. Thus, while there may be some differences in data collection methods across countries, the information released is broadly comparable.[36] The 2011 wave included a module about the 'intergenerational transmission of disadvantages'. Norway and Sweden are excluded due to low participation rates in this part of the study. Response rates were reassuringly high,[37] with the UK's (73 per cent) broadly in line with the cross-country average (76 per cent). The median age of respondents was 45 within the sample selected, with a median birth year of approximately 1965.

EU-SILC respondents were asked the level of education their mother and father completed using the 'low', 'medium' and 'high' ISCED categories described in Section II. Questions were also asked about maternal and paternal occupation, defined using the nine major ISCO groups,[38] and subjective views on the financial situation of the household in which they grew up (ranging from very good to very poor). Following Goodman, Gregg and Washbrook (2011), I combine these variables into an index of multiple deprivation. Specifically, within each country I estimate the polychoric correlation between these various socio-economic status (SES) measures and use the first principal component to create an index of multiple deprivation (this broadly follows the recommendation of Kolenikov and Angeles (2009) in creating such indices). I use this index both as a continuous linear term and divided into national quartiles to investigate whether using this measure of family background (rather than parental education) leads to markedly different results. The rationale behind developing this alternative SES index is that it can be

[36] Atkinson and Marlier, 2010.
[37] See Appendix A (available online) for details.
[38] See http://laborsta.ilo.org/applv8/data/isco68e.html.

TABLE 3

Measures of earnings or income used for each data set

	Concept	*Level*	*Components*
EU-SILC	Earnings	Individual	Wages/salaries from employer
	Income	Individual	Wages/salaries from employer, other employer benefits (e.g. company car, housing allowance), social security income from employer, unemployment benefit, sickness benefit, education benefits
ESS	Income (banded)	Household	'All sources'
PIAAC	Earnings	Individual	Cash earnings from employment

easily divided into national quartiles, ensuring that the same proportion of the population is defined as 'advantaged' and 'disadvantaged' within each of the countries considered (thus overcoming one of the limitations with the parental education variable). I exploit this useful property in Section IV to test the robustness of my parental education results.

A significant advantage of the EU-SILC is that it has collected detailed information on labour and non-labour income from respondents using multiple questions. The results in Section IV are presented using two different definitions of the dependent variable, y_{ij} – individual cash labour market earnings only and individual income from all sources – to illustrate how this choice influences results. (Table 3 summarises the earnings and income measures used within each data set.)

2. ESS

The ESS is a biannual survey carried out in a selection of EU countries since 2002. The five rounds used in this paper are pooled to maximise the number of observations available. After restricting the sample to 25- to 59-year-old men, 2,911 observations remain for the UK (compared with a cross-country average of approximately 2,200). The median age of respondents was 42, with a median birth year of 1964. The survey response rate in the UK was approximately 55 per cent against a cross-country median of 62 per cent.[39] A limitation is that respondents' total household income, y_{ij}, is recorded using a single banded question, which can lead to reporting errors.[40] Note that as income has been recorded in banded format, equation (2) is estimated using interval

[39]See Appendix A (available online).
[40]Micklewright and Schnepf, 2010.

regression (rather than OLS or quantile regression) for this particular data set.[41]

Despite these limitations, the ESS also has certain advantages. A particular strength is that these data have been specifically designed to facilitate cross-national comparisons, with the same survey instrument used to collect data in each participating country. The survey also includes detailed information on respondents' family background. In addition to the key information on parental education described in Section II, respondents were also asked about the specific job of their father (when the respondent was aged 14).[42] This has been coded using the detailed four-digit ISCO schema, assigning fathers into one of over 300 occupational groups.[43] A number of occupational scales can be generated from this information, including the ISEI index designed by Ganzeboom, De Graaf and Treiman (1992) to aid cross-national comparison. The creators of the ISEI index note how this scale captures the part of occupations that convert education into income, with this now being a standard variable included in many cross-national data sets (such as PISA – the Programme for International Student Assessment). I use this as an alternative measure of family background to test the sensitivity of my results. Specifically, I re-estimate equation (2) using father's occupation, rather than the highest level of parental education, to measure family background (mother's occupation is used when information for the father is not available).[44]

3. PIAAC

PIAAC is a cross-national study conducted by the OECD in 2011. It has been designed and centrally administered for the specific purpose of international comparisons, with the same survey instrument used in each of the participating countries. The response rate was 59 per cent in England and Northern Ireland (Wales and Scotland did not participate), against a cross-country average of 62 per cent.[45]

The PIAAC survey design was complex. Geographic areas were first selected as the primary sampling unit (PSU), with blocks of specific areas then

[41] Interval regression is a generalised censored regression technique which can be applied when one knows the income band in which an observation falls but not the exact value. Parameter estimates using interval regression on banded income data are generally considered comparable to OLS estimates using continuous income data.

[42] This information was missing for approximately 8 per cent of the UK sample and 11 per cent cross-nationally.

[43] See http://www.ilo.org/public/english/bureau/stat/isco/isco88/publ4.htm.

[44] The creators of the ISEI index note that 'scores for characteristically female occupations are estimated from relatively sparse data' and that 'the omission of women is of ... concern to us' (Ganzeboom, De Graaf and Treiman, 1992, pp. 14–15). Given these concerns, preference is given to father's occupation over mother's occupation in the analysis. My experimentations using different occupational scales (for example, the SIOPS scale of Treiman (1977)) have produced qualitatively similar results.

[45] See Appendix A (available online).

usually selected as the secondary sampling unit (SSU). Households were then selected, with one person between the ages of 16 and 65 randomly chosen to participate from within. After restricting the data to male respondents between 25 and 59, sample sizes range from 982 in Cyprus to 7,707 in Canada (compared with 2,011 in the UK).

As part of the PIAAC questionnaire, respondents were asked to provide information on their gross labour market earnings, using a range of response options (for example, hourly, weekly or monthly pay). Separate questions were asked to employees and self-employed workers to ensure the information reported was of the highest possible quality. To minimise item non-response, respondents who were unwilling to provide specific information were asked to indicate a particular earnings category. This information was then used to derive an earnings measure for all individuals who provided information. Further details can be found in OECD (2013, p. 493). Unfortunately, parental education is the only major indicator of socio-economic status available. Consequently, I am unable to test the robustness of results to using an alternative measure of family background in this particular data set.

IV. Results

1. OLS estimates

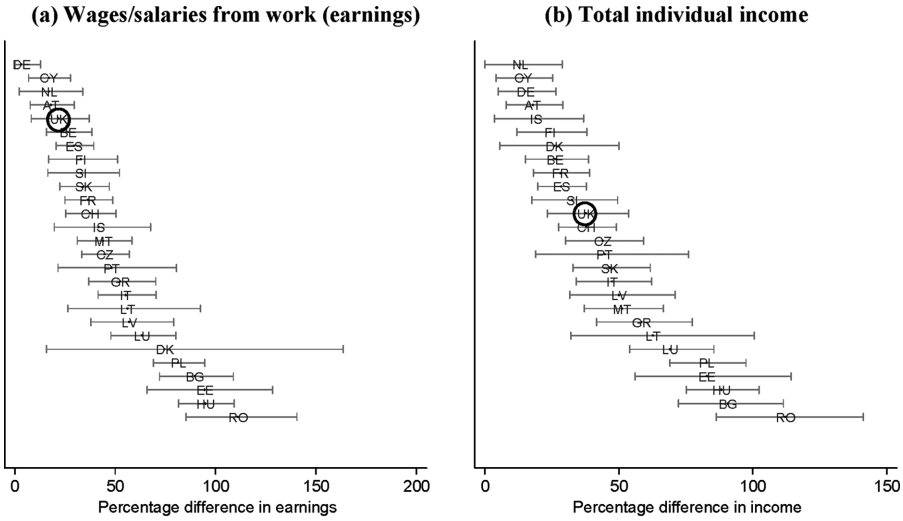
Estimates using EU-SILC can be found in Figure 2. Running along the horizontal axis is the estimated percentage difference in earnings/income between children growing up in 'low'- and 'high'-education households. Official two-letter country codes[46] are located at the point estimate, with the thin grey bars representing the 90 per cent confidence intervals. Panel a refers to estimates when wages/salaries from employment (i.e. *earnings*) is the dependent variable. The dependent variable is changed in panel b to total personal *income* (this includes cash and non-cash earnings from work, social security payments, and interest from savings and investments).

Starting with panel a, there is a strong and statistically significant relationship between parental education and respondents' earnings in almost every country. For instance, in the UK, the estimated return to having at least one highly-educated parent (relative to the 'low' education group) is 22 per cent. However, in contrast to conventional wisdom, there is little evidence to suggest that this difference is significantly bigger in Britain than in other European nations. The UK is placed fifth in the rankings, with one unable to reject the null hypothesis that the parental-education–earnings gap is not significantly bigger than in any other country at conventional thresholds.

[46]http://www.unc.edu/~rowlett/units/codes/country.htm.

FIGURE 2

Percentage difference in earnings/income between individuals from 'low' and 'high' parental education backgrounds: EU-SILC estimates



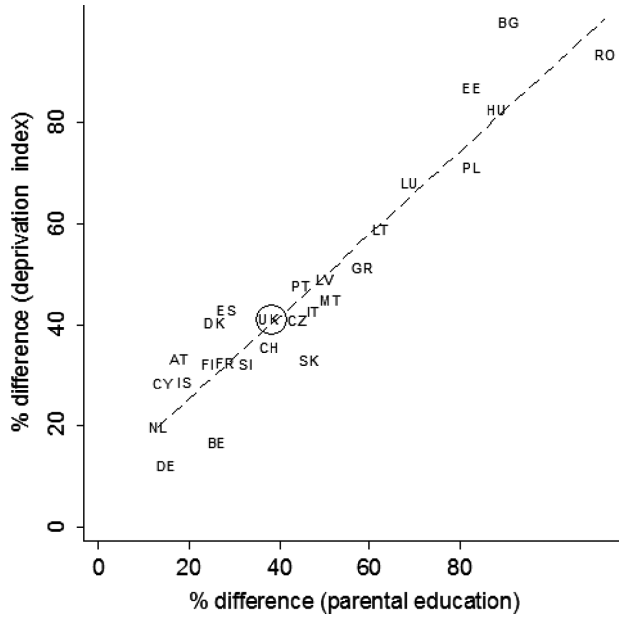
Note: Countries are identified by their two-letter country codes, which are spelt out in Table 2. The thin grey lines refer to estimated 90 per cent confidence intervals.
Source: Author's calculations using the EU-SILC data set.

Does this finding hold if the dependent variable is altered to total individual income? Interestingly, the estimated return to having a highly-educated parent increases in the UK from 22 per cent (panel a) to 38 per cent (panel b). However, in general, cross-national rankings seem quite robust to this change, with the correlation between the two sets of estimates standing at approximately 0.90 (Spearman's rank = 0.85). With regard to the substantive question of interest, the UK is now ranked 12th out of 27 countries, though the estimated confidence intervals are reasonably wide. Indeed, one cannot reject the null hypothesis that the UK is the same as either Iceland (ranked 5th) or Lithuania (ranked 21st) at the 5 per cent level. It is clear that these results do little to support the view that intergenerational inequalities are greater in Britain than in other European countries.

The estimates presented in Figure 2 compare differences between the 'low' and 'high' parental education groups. However, in Section II, I discussed some of the limitations with the parental education variable, including differences in its distribution across countries. Therefore, in Figure 3, I consider how results change when using an alternative measure of family background – national quartiles of the multiple deprivation index described in Section III.1. This alternative measure has the advantage that approximately a quarter of

FIGURE 3

Comparison of EU-SILC results on income using different measures of family background



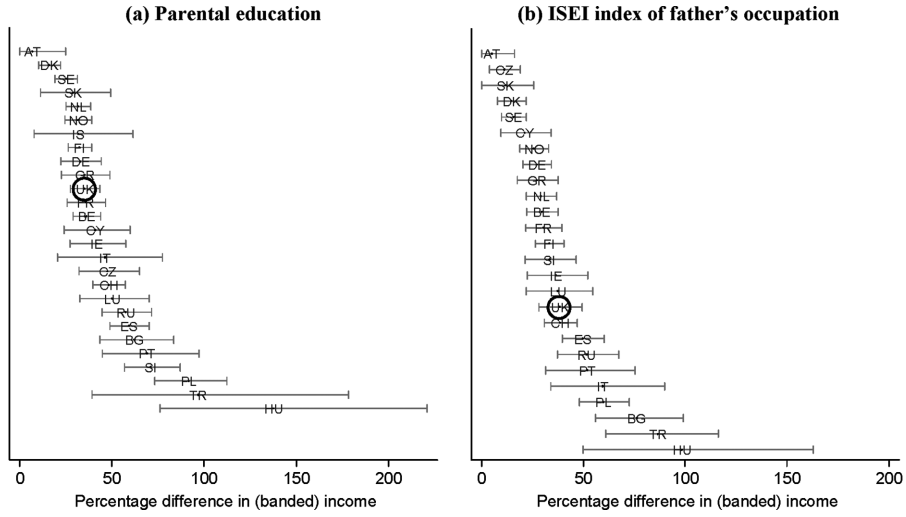
Note: Countries are identified by their two-letter country codes, which are spelt out in Table 2. A dashed fitted regression line has been superimposed. The UK has been highlighted using a circle. Correlation coefficient = 0.95; Spearman's rank = 0.92. Figures on the horizontal axis indicate the percentage difference in total income between the 'low' and 'high' parental education groups. Figures on the vertical axis refer to the percentage difference in total income between individuals in the top and bottom national quartile of the multiple deprivation index described in Section III.1.
Source: Author's calculations using the EU-SILC data set.

the population in each country is contained within the most advantaged and least advantaged groups. Estimates running along the horizontal axis are those previously presented in panel b of Figure 2, while the vertical axis illustrates the percentage difference in income between men from the top and bottom multiple deprivation quartiles. The UK is highlighted using a circle, with a fitted regression line superimposed.

Perhaps the most striking feature of Figure 3 is the strong correlation between the two sets of results. Most countries sit tightly around the fitted regression line, with the Pearson correlation coefficient equalling 0.95 (Spearman's rank = 0.92). In additional estimates, available upon request, I find a similarly strong correlation if parental occupation is used to measure family background instead (the correlation between the parental education and

FIGURE 4

Percentage difference in banded household income between individuals from (a) 'low' and 'high' parental education backgrounds and (b) the top and bottom ISEI quartiles: ESS estimates



Note: Panel a illustrates the estimated difference in income between individuals from 'low' and 'high' parental education backgrounds. Panel b presents analogous estimates for individuals from the top and bottom ISEI (parental occupation) quartile. The thin grey lines illustrate the 90 per cent confidence intervals. Countries are identified by their two-letter country codes, which are spelt out in Table 2.
Source: Author's calculations using the ESS data set.

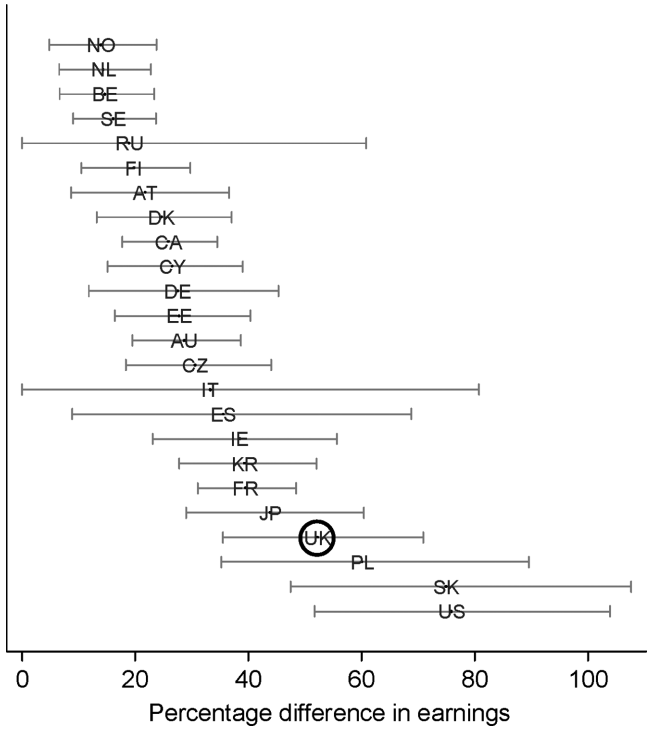
parental occupation results is 0.83).[47] Of particular importance for this paper, the UK is consistently around the middle of the cross-country rankings, with the intergenerational association being broadly similar to most of the other countries considered. Together, Figures 2 and 3 suggest that results are quite robust to using alternative measures of the key dependent and independent variables.

Figure 4 turns to analogous estimates using the ESS. The main results, based upon parental education, can be found in panel a. Respondents who had at least one highly-educated parent have incomes (on average) 35 per cent greater than those from a low parental education background in the UK. This figure is very similar to the estimate obtained using the EU-SILC (38 per cent). The UK is ranked 11th out of 27 countries, though with little discernible difference compared with Sweden (ranked 3rd) or the Czech Republic (ranked 17th).

[47]This is consistent with Marks (2011), who finds that cross-national comparisons of socio-economic differences in children's test scores are generally quite robust to the use of different measures of family background.

FIGURE 5

Percentage difference in earnings between individuals from 'low' and 'high' parental education backgrounds: PIAAC estimates



Note: Countries are identified by their two-letter country codes, which are spelt out in Table 2. The thin grey lines refer to estimated 90 per cent confidence intervals.
Source: Author's calculations using the PIAAC data set.

Indeed, variation across countries is generally modest, with most estimates falling somewhere between 30 and 50 per cent.

In panel b of Figure 4, I investigate the sensitivity of the ESS rankings to the use of an alternative measure of family background – quartiles of the ISEI index of father's occupational status described in Section III.2. The estimates presented refer to differences between the most advantaged (top quartile) and least advantaged (bottom quartile) groups.[48] Interestingly, the UK does now fall below the median (17th out of 26 countries), though cross-national differences are once again modest and usually statistically insignificant at conventional thresholds. Nevertheless, my experimentations with both the ESS

[48]The findings presented are qualitatively similar if one uses the ISEI index as a continuous, linear term instead.

and EU-SILC data suggest that the UK's position is consistently slightly lower when parental occupation rather than parental education is used to measure family background. However, the correlation between the estimates presented in panels a and b of Figure 4 is once again reassuringly high (Pearson correlation = 0.87), confirming the general robustness of cross-country rankings to the measurement of family background.

Finally, estimates using PIAAC are presented in Figure 5. The difference between the low and high parental education groups in the UK equals 52 per cent. This is notably larger than in the EU-SILC and ESS, although one cannot rule out the possibility that this is simply due to sampling variation (one cannot reject the null hypothesis that the EU-SILC, ESS and PIAAC figures for the UK are all equal at conventional thresholds). Nevertheless, the UK is clearly in a much lower position in the PIAAC ranking, sitting in 21st place (out of 24 countries). However, the relatively wide confidence intervals mean there is only limited evidence that the UK is different from Estonia (in 12th position) or the Slovak Republic (23rd). Nevertheless, in contrast to EU-SILC and ESS, PIAAC does lend support to claims that the link between family background and labour market outcomes is stronger in Britain than in most other countries.

2. Meta-analysis of OLS estimates

I have thus far simply considered the position of the UK in a cross-national ranking. I now attempt to identify specific countries, or groups of countries, that are substantially different from the UK. Table 4 presents OLS estimates from each of the three studies, with grey shading highlighting significant differences from the UK at conventional thresholds. The final column is a meta-analysis of the three studies, where each study has been given equal weight (Table 4 is ordered by this variable).[49] These meta-analytic results have the advantage of combining all available evidence into an 'overall' estimate, with the standard error greatly reduced. However, the disadvantage is that not all countries took part in each of the three studies, meaning that comparability across countries may be compromised.[50] Likewise, there are also limitations regarding comparability across the three data sets, as illustrated by the fact that, for some countries, they produce rather different estimates of intergenerational mobility.[51] Nevertheless, I will focus upon these meta-results, as it means the UK can be compared with the greatest number of countries while minimising the chances of a type II error.[52] Evidence of a genuine difference will be

[49]This meta-analysis has been conducted using the STATA 'metan' command.

[50]For example, the meta-results for the UK are based upon EU-SILC, ESS and PIAAC, while those for Japan are based upon PIAAC only.

[51]See Appendix D (available online) for further discussion.

[52]A type II error is the failure to reject a false null hypothesis (a 'false negative').

TABLE 4

Estimated difference in earnings/income between individuals from 'low' and 'high' parental education backgrounds: a meta-analysis

	EU-SILC		ESS		PIAAC		Meta	
	Diff	*SE*	*Diff*	*SE*	*Diff*	*SE*	*Diff*	*SE*
Austria	18.0	5.6	6.8	9.9	21.8	7.2	15.4	4.4
Netherlands	13.2	8.2	31.5	3.2	14.4	4.4	19.4	3.2
Sweden	–	–	25.1	3.0	16.1	3.9	20.5	2.4
Denmark	25.8	11.3	16.0	3.2	24.6	5.9	22.1	4.3
Norway	–	–	31.6	3.4	13.9	5.2	22.4	3.1
Germany	15.2	5.8	32.9	5.1	27.5	8.3	25.0	3.7
Iceland	19.0	8.8	31.9	13.0	–	–	25.3	7.7
Finland	24.3	6.6	32.5	3.0	19.7	5.0	25.4	2.9
Belgium	26.3	5.8	36.2	3.4	14.7	4.5	25.4	2.7
Canada	–	–	–	–	25.8	4.1	25.8	4.1
Cyprus	14.2	5.8	40.8	8.0	26.5	5.9	26.7	3.8
Australia	–	–	–	–	28.7	4.6	28.7	4.6
France	28.2	5.1	35.7	4.7	39.5	3.8	34.4	2.6
Russia	–	–	57.5	5.3	18.9	20.1	36.8	10.0
South Korea	–	–	–	–	39.4	5.4	39.4	5.4
Ireland	–	–	41.6	6.7	38.4	7.4	40.0	4.9
Spain	28.5	4.3	59.2	4.1	35.5	14.2	40.5	5.0
Czech Republic	44.0	6.3	47.6	7.0	30.5	6.1	40.5	3.7
UK	**37.7**	**6.9**	**35.2**	**3.7**	**52.2**	**7.3**	**41.5**	**3.5**
Italy	47.5	6.0	46.2	12.4	33.3	20.3	42.2	7.8
Switzerland	37.8	4.8	48.2	3.7	–	–	43.0	3.0
Japan	–	–	–	–	43.9	6.8	43.9	6.8
Greece	58.5	7.1	35.1	6.1	–	–	46.3	4.6
Slovak Republic	46.5	6.2	28.9	9.3	74.9	10.9	49.0	5.1
Latvia	50.1	8.3	–	–	–	–	50.1	8.3
Slovenia	32.6	7.6	71.2	5.5	–	–	50.7	4.6
Malta	51.1	6.1	–	–	–	–	51.1	6.1
Estonia	82.8	10.1	–	–	27.8	5.8	52.8	5.7
Portugal	44.7	12.6	68.9	9.8	–	–	56.3	7.9
Luxemburg	69.0	5.8	50.2	7.8	–	–	59.3	4.8
Lithuania	62.7	13.5	–	–	–	–	62.7	13.5
US	–	–	–	–	75.8	9.4	75.8	9.4
Bulgaria	90.8	6.4	62.2	7.7	–	–	75.9	5.0
Poland	82.7	4.8	91.8	6.4	60.1	10.8	77.7	4.4
Turkey	–	–	96.8	23.4	–	–	96.8	23.4
Hungary	88.3	4.5	137.6	20.0	–	–	111.5	9.8
Romania	112.1	8.1	–	–	–	–	112.1	8.1

Note: 'Diff' refers to the estimated difference in earnings/income between the low and high parental education groups, with 'SE' the estimated standard error. The final pair of columns ('Meta') provides the meta-analytic results, where estimates are pooled across the data sets (where information is available). Dark grey shading indicates significantly different from the UK at the 5 per cent level, while light grey shading indicates significance at the 10 per cent level. No adjustment has been made for multiple comparisons.
Source: Author's calculations using the EU-SILC, ESS and PIAAC data sets.

strongest when estimates are consistently higher or lower than those in the UK across the various studies, rather than in just the meta-analysis alone.

Out of the 37 countries included in the meta-analysis, the UK is ranked in 19th place. The estimated difference in income between the low and high parental education groups is broadly similar to those in several other major OECD countries, including France, Ireland, Italy, Japan, South Korea, Spain and Switzerland. There are 10 countries where the link between parental education and later lifetime income is significantly weaker than in the UK at the 5 per cent level (and a further one country – Australia – at the 10 per cent level). These include the four Scandinavian countries (Denmark, Finland, Norway and Sweden), where point estimates are consistently lower across all data sets included in Table 4. These countries are known for their equality and high social welfare spending, and have been consistently identified as more meritocratic than Britain in the intergenerational income mobility literature (recall Table 1). Hence, these results are consistent with previous research that has found family background to be a greater barrier to labour market success in Britain than in Scandinavia.[53]

Perhaps more surprisingly, there is another group of four central European countries (Austria, Belgium, Germany and the Netherlands) where intergenerational associations are notably weaker than in the UK.[54] As in the Scandinavian countries, point estimates are consistently lower than those for Britain.[55] One common feature of these countries is that they each have a highly segregated schooling system that 'tracks' children of different academic ability into different types of secondary school at a relatively young age (like the grammar school system that still exists in a small number of counties in England). Of course, this does not mean that it is the cause of the cross-national variation; indeed, previous research has found that such extensive between-school tracking may exacerbate intergenerational inequalities.[56] Nevertheless, differences in schooling systems and school-to-work transitions remain a plausible explanation for the cross-national variation. Establishing whether such differences in institutional structures do indeed influence intergenerational inequalities is beyond the scope of this paper, but remains a key area for future research.

Finally, there are six countries (Bulgaria, Hungary, Luxemburg, Poland, Romania and the United States) where intergenerational associations are significantly stronger than in the UK. This broadly follows a more general

[53] Blanden, Gregg and Machin, 2005; Jäntti et al., 2006; Blanden, 2013.

[54] This is in contrast to some other work on social stratification, which has found intergenerational correlations to be particularly strong in these countries (though in terms of educational attainment – see, for example, Pfeffer (2008)).

[55] The only exception is Belgium in the ESS, where the percentage difference in income is 36.2 against 35.2 in the UK.

[56] Hanushek and Woessmann, 2006.

pattern within the EU-SILC, ESS and PIAAC for eastern European countries to be disproportionately represented at the bottom of these intergenerational mobility rankings. One should bear in mind that the average birth year of sample members is approximately 1965 and that there were substantial economic and political changes in these countries during the latter part of the 20th century. These changes would have had a substantial impact upon economic opportunities, and thus the strong intergenerational associations observed for eastern Europe should be interpreted in this context.

How do these results compare with cross-country comparisons of intergenerational mobility? Table 5 provides the estimated correlation between my meta-analytic results (right-hand column of Table 4) and various cross-country comparisons of intergenerational mobility (drawn from Table 1). Panel a presents results for economic studies of income mobility, while panel b refers to comparisons with sociological research into social class (or social status) mobility.

TABLE 5

Correlation between meta-analysis results and international comparisons of intergenerational mobility

(a) Comparison for income mobility

Study	*Pearson correlation*	*Spearman's rank*	*Number of countries in common*
Jäntti et al., 2006	0.64	0.40	5
Blanden, Gregg and Machin, 2005	0.99	0.88	6
Björklund and Jäntti, 2009	0.77	0.95	8
Blanden, 2013	0.84	0.79	11
Corak, 2012	0.76	0.78	14
Average	0.85	0.82	–

(b) Comparison for social class/status mobility

Study	*Pearson correlation*	*Spearman's rank*	*Number of countries in common*
Erikson and Goldthorpe, 1992	0.20	0.36	13
Breen, 2004	0.48	0.19	8
Ganzeboom and Treiman, 2007	0.10	0.21	27
Average	0.26	0.25	–

Note: In panel a, the 'Study' column refers to cross-country comparisons of intergenerational income mobility as described in Table 1. The final column provides the number of 'observations' (countries) that the correlations are based upon. Only countries in both my meta-analysis and the 'study' in question are included. Social class/status mobility estimates used in panel b are drawn from Blanden (2013).
Source: Author's calculations.

Although one should exercise caution given the limited number of common countries, the estimated correlations in panel a of Table 5 are reassuringly high. The Pearson correlation coefficient is usually above 0.75 and it averages 0.85 across the five studies. Similar substantive findings hold when using Spearman's rank. Even when the number of common countries is maximised (in the comparison with Corak (2012)), the estimated correlation coefficient remains above 0.75. Indeed, a consensus seems to emerge between my results and the income mobility literature that the link between family background and later lifetime income tends to be weaker in Australia, Canada, Denmark, Finland, Germany, Norway and Sweden than in France, Italy and the UK. However, there seems to be relatively little variation within these two broadly-defined country groups. The US then stands out at the other extreme, where the link between family background and income is particularly strong. In contrast, panel b of Table 5 reveals that the cross-country correlation between my results and those found in the sociological literature is relatively weak (Pearson and Spearman correlations around 0.25). The fact that my estimates correlate more strongly with income mobility estimates (than with occupational mobility estimates) is perhaps not surprising, given that income/earnings is the dependent variable within my analysis. Moreover, this is consistent with Blanden (2013), who found little cross-country correlation between economic and sociological estimates of intergenerational mobility.

3. Quantile regression estimates

The previous subsection has established (a) that there is a strong association between parental education and sons' earnings/income and (b) that the strength of this association varies across developed countries. I now present quantile regression estimates to investigate differences between the lowest- (highest-) earning individuals from low parental education backgrounds and the lowest- (highest-)earning individuals from high parental education backgrounds. For brevity, I focus upon the EU-SILC results. Appendix C (available online) provides analogous findings for PIAAC.[57]

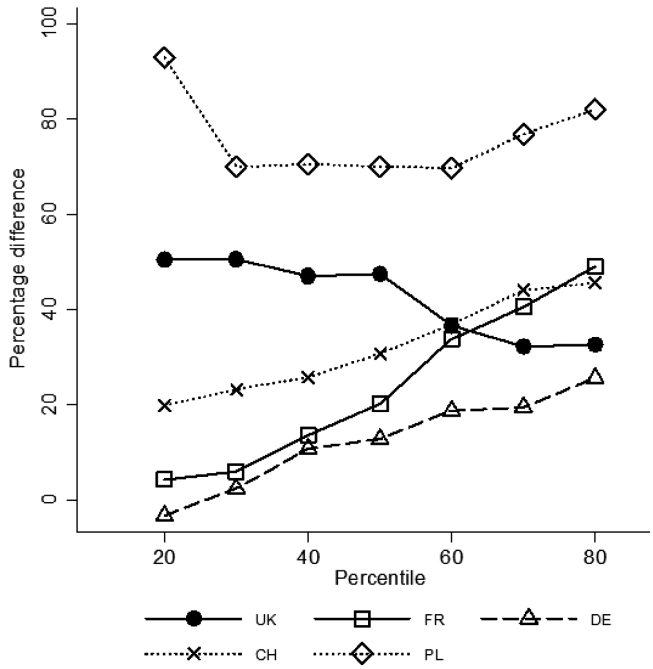
Results for selected countries can be found in Figure 6.[58] The horizontal axis plots deciles of the income distribution, while the vertical axis provides the estimated percentage difference in income between individuals from high and low parental education backgrounds. This is supplemented by Table 6, which ranks each country by the size of the parental-education–offspring-income gap at each income decile (countries with smaller differences can be found towards

[57] Quantile regression estimates are not produced using the ESS due to respondents' income being reported in banded form.

[58] I have re-estimated all quantile regression models having removed the age and immigrant status controls. There is little change to my substantive results.

FIGURE 6

Estimated parental-education–sons'-income gap at various points of the sons' income distribution: quantile regression estimates



Note: Running along the horizontal axis are the percentiles of the national income distribution. Figures on the vertical axis refer to the estimated difference in income between individuals from the 'high parental education' and 'low parental education' backgrounds. Figures can be cross-referenced with Table 6. Results are presented for five countries: UK, France (FR), Germany (DE), Switzerland (CH) and Poland (PL).
Source: Author's calculations based upon EU-SILC.

the top of the table). Grey shading illustrates where the country in question is significantly different from the UK at either the 5 or 10 per cent level.

Interestingly, the UK seems to be quite different from other European nations when considering the gap between the *lowest*-earning individuals from advantaged and disadvantaged backgrounds. For instance, the estimated difference in the 20th earnings percentile between the low and high parental education groups is approximately 50 per cent in the UK, compared with just 20 per cent in Switzerland and essentially no difference in France and Germany (see Figure 6). Indeed, Table 6 places the UK 20th in the rankings at the 20th percentile (P20), with a statistically stronger association than in seven other countries, including Austria, France, Germany and the Netherlands. Estimates from PIAAC and the meta-analysis indicate a similar pattern, with the association between family background and low pay stronger in the UK than

TABLE 6

Association between parental education and sons' income at different points of the income distribution: the UK's comparative position

P20	*P30*	*P40*	*P50*	*P60*	*P70*	*P80*
PT	PT	NL	DE	NL	NL	IS
NL	DE	DE	NL	DE	DK	NL
CY	NL	FR	CY	CY	DE	DK
DE	FR	AT	BE	IS	IS	DE
AT	AT	CY	FR	DK	CY	CY
FR	FI	IS	AT	BE	BE	ES
IS	CY	PT	IS	AT	**UK**	**UK**
SI	SI	FI	FI	ES	ES	BE
CH	BE	BE	ES	FI	SI	FI
FI	CH	ES	CH	FR	FI	SK
ES	ES	DK	GR	GR	AT	SI
CZ	DK	CH	DK	SK	SK	AT
BE	CZ	SI	CZ	**UK**	FR	CH
DK	IS	GR	SK	CH	CZ	FR
IT	GR	CZ	SI	SI	MT	GR
SK	MT	SK	MT	CZ	CH	CZ
LU	IT	IT	IT	MT	GR	MT
MT	LT	MT	PT	LV	LV	IT
LT	**UK**	LT	**UK**	IT	IT	EE
UK	SK	**UK**	LV	EE	EE	LV
GR	LU	LV	LT	PL	LU	RO
LV	LV	EE	EE	LT	PL	LU
PL	EE	LU	LU	BG	BG	PL
HU	PL	PL	PL	LU	RO	LT
BG	BG	BG	HU	PT	PT	BG
EE	HU	HU	BG	HU	HU	HU
RO	RO	RO	RO	RO	LT	PT

Note: P20 is the quantile regression at the 20th percentile, P30 at the 30th percentile, etc. Data are sorted in each column by the strength of association between parental education and sons' income. The further down the table a country sits, the stronger the association (i.e. the greater the difference in sons' income between the low parental education and high parental education groups). Countries near the top of the table that are highlighted in dark grey illustrate where the association between parental education and sons' income is significantly weaker than in the UK at the 5 per cent level. Similarly, those near the bottom of the table are where the association is significantly stronger at the 5 per cent level. A cell shaded in light grey indicates a significant difference compared with the UK at the 10 per cent level. No correction for multiple hypothesis testing has been applied. Country abbreviations refer to official two-letter country codes, which are spelt out in Table 2. Table 6 can be cross-referenced with Figure 6.

Source: Author's calculations from the EU-SILC data set.

in other countries.[59] There thus seems reasonably robust evidence that the gap between the 'least successful' (lowest-earning) individuals from high parental education backgrounds and the 'least successful' (lowest-earning) individuals from low parental education backgrounds is particularly pronounced in the UK. This may tentatively indicate that there is less downward mobility among highly-educated families in the UK than in other developed countries.

With regards to the top of the income distribution (P70 and P80), the EU-SILC and PIAAC data sets point to rather different results. In particular, the former suggests that the link between family background and high earnings tends to be weaker in the UK than in most other countries, but the same does not hold true in the latter. Given this inconsistency between data sets, I conclude that evidence from EU-SILC and PIAAC on the link between family background and high earnings is not sufficiently consistent to base policy guidance upon.

V. Conclusions

The link between family background and labour market outcomes is an issue of great academic and political concern. A number of high-impact studies have suggested that intergenerational income mobility is lower in Britain than in other developed nations.[60] This has become a widely-cited (if controversial) finding, with leading sociologists stating that 'we should . . . be very cautious about accepting the claim that Britain is lagging significantly behind other countries in social mobility'.[61] At the same time, economists have recognised that comparisons of intergenerational income mobility across countries are limited by the small number of countries with high-quality data available, a reliance upon *ex-post* harmonised data and substantial sampling variation surrounding the income mobility estimates.[62]

This paper has considered the link between an alternative measure of family background (parental education) and the earnings/income that individuals achieve in later life. My contribution has been to complement the existing income mobility literature by drawing comparisons across a large number of countries, using data that have been specifically designed for the purpose of cross-national comparisons, and triangulating evidence across multiple data sets. Consistent with the criticisms of the aforementioned sociologists, I do not typically find the UK to be at the very bottom of the cross-national intergenerational mobility rankings – though neither is this country anywhere near the top. Indeed, in a meta-analysis of 37 countries, I find that the UK sits in 19th place. Britain is thus broadly in line with several other members of the

[59] See Appendix C, available online.
[60] Blanden, Gregg and Machin, 2005; d'Addio, 2007; Blanden, 2013.
[61] Saunders, 2012, p. 11.
[62] Blanden, 2013.

OECD, including the Czech Republic, France, Ireland, Italy, Japan, Spain and Switzerland. However, there are a number of countries where intergenerational associations are notably weaker than in the UK – including Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, the Netherlands, Norway and Sweden. Interestingly, this is consistent with cross-country rankings found in the intergenerational income mobility literature, which I have shown to be strongly correlated with my results.

It is, of course, important to also recognise the limitations of this study. First, for many economists, household income remains the preferred measure of family background, due to its flexibility, straightforward interpretation and high degree of cross-national comparability (though only when it is defined, collected and measured across countries in the same way). Hence I fully support the conclusion of Blanden (2013, p. 61) that, to improve the quality and comparability of income mobility estimates, 'it is essential that longitudinal data sets continue to be developed and updated and that administrative income registers are exploited wherever possible'. Second, the aim of this paper has been to measure intergenerational inequalities in a robust and comparable manner. Although general patterns and potential drivers have been briefly discussed, further evidence is needed on the impact of institutional structures on intergenerational mobility (for example, education systems, health systems and early years provision). Although some authors have attempted to address this issue,[63] progress has been somewhat limited due to the lack of high-quality comparable data. Despite such challenges, this important work should continue, with identification of structural barriers to greater intergenerational mobility being a key long-term goal.

In the meantime, it is hoped that this paper has helped to build a better understanding of intergenerational inequalities in the UK. There are undoubtedly large socio-economic differences in lifetime chances in this country, and these differences are bigger than in some other parts of the western world. But there are also a number of countries where intergenerational associations are as strong as, if not stronger than, in the UK. Policymakers should bear this in mind when discussing this politically sensitive issue.

Supporting information

Additional supporting information may be found in the online version of this paper on the publisher's website:

- Appendices A–E

[63] For example, Ermisch, Jäntti and Smeeding (2012b).

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