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Social Inequality and Social Mobility: Is there an Inverse Relation?

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Abstract

In this paper, we have two objectives. First, while we accept the possibility that an inverse relation exists between inequality and mobility, we question whether the Great Gatsby Curve provides a representation of such a relation that is either empirically secure or theoretically well grounded. Second, we show that if mobility is considered in terms of social class, rather than income, a relation with inequality is suggested of a more complex kind than that expressed in the Great Gatsby Curve, but one that has a stronger empirical basis and is no less theoretically comprehensible. Based on a newly constructed dataset, our results indicate that European nations are best seen not as displaying entirely continuous variation in the degree of equality in their relative rates of class mobility, but rather as falling into a number of comparatively high and low fluidity groups. We then suggest that an interpretation of these results can be provided by starting out from the supposition that, within societies with a capitalist market economy, a nuclear family system and a liberal democratic polity, a limit exists to the extent to which relative mobility rates can be brought towards equality. It is then possible to understand variation in relative rates of class mobility in terms of how closely different countries approximate to the limit: some will be quite close, others a good way off – but for quite different reasons.

Introduction

The relation between social inequality and social mobility has been discussed from a number of different standpoints. A view often taken from a broadly liberal position is that socio-political concerns over inequality are mitigated if mobility is at a high level: that is, if the extent to which more or less advantaged social positions are transmitted across generations is limited and individuals' life-chances are in some large part independent of the circumstances of their birth. It is this view that would appear to underlie the fact that in countries such as the UK and the US, in which over recent decades a marked increase in social inequality has occurred, mobility has become a prime focus of political and policy interest. Because of the increase in inequality, raising levels of mobility takes on a greater importance as in effect a way of legitimating inequality. In this view, rather than any tension being recognised between inequality and mobility, what is implied is that if inequality is the problem, then mobility is the solution.

Sociologists have always tended to be sceptical of this liberal position because of awareness of the ways in which inequalities of condition can compromise equality of opportunity. However, of late the strongest challenge has come from economists who claim that a direct empirical demonstration can be provided that the relation between inequality and mobility is in fact an inverse one. This demonstration takes the form of the so-called 'Great Gatsby Curve': actually, a best-fitting straight line drawn through a bivariate scatterplot of national societies in which their level of intergenerational income mobility is set against the degree of their income inequality (Krueger, 2012). Mobility appears lower in societies where inequality is higher.

In this paper, we have two main objectives. First, while being very ready to accept the possibility that an inverse relation of some kind does exist between inequality and mobility, we wish to question whether the Great Gatsby Curve - in any of its now numerous versions - provides a representation of such a relation that is either empirically secure or theoretically well grounded. And second, and more constructively, we aim to show that if mobility is considered in terms of social class, rather than income, a relation with inequality is suggested of a more complex kind than that expressed in the Great Gatsby Curve but one that has a stronger empirical basis and is at all events no less theoretically comprehensible.

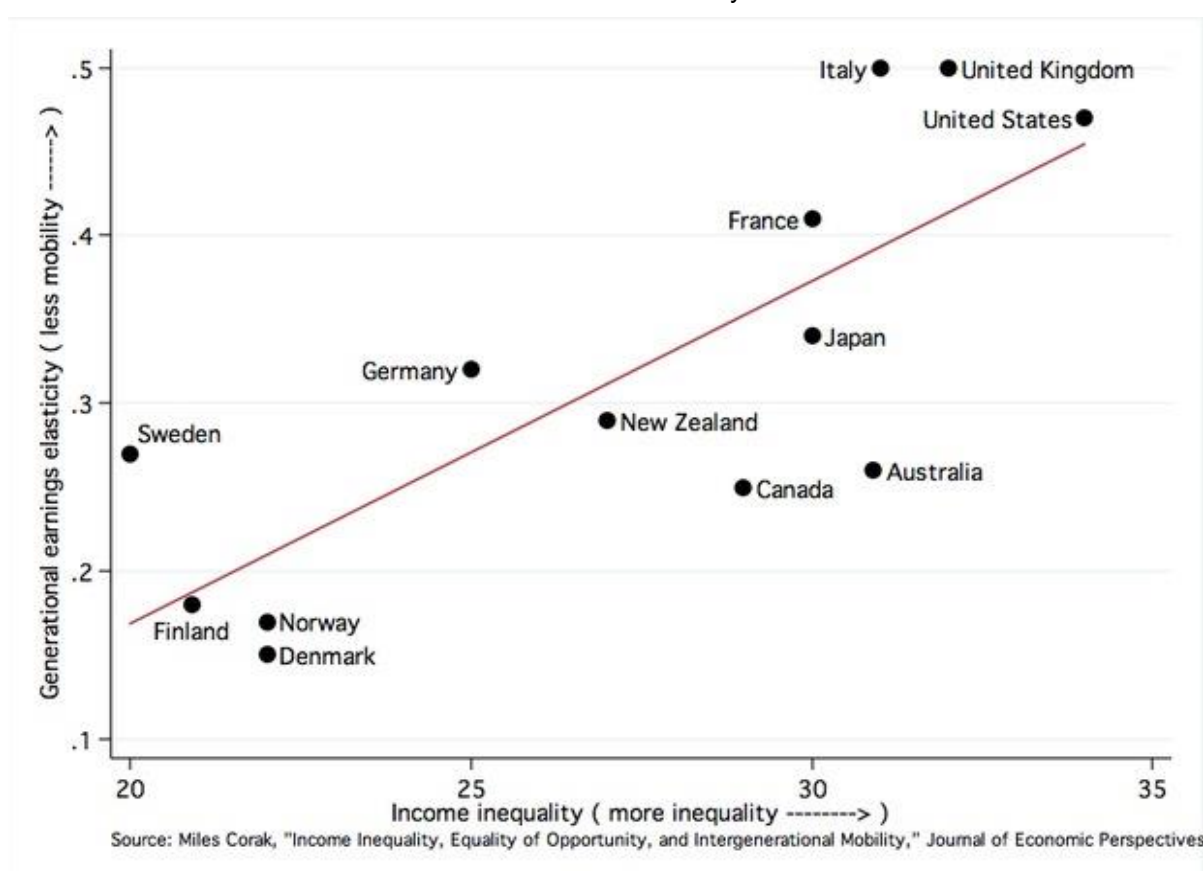
The Great Gatsby Curve

The problems associated with the Great Gatsby Curve (henceforth the GGC) are various. We will note, in turn, issues of concepts, data, measurement and theory. As a point of reference, we show in Figure 1 a representative version of the GGC (Corak, 2013).

Income is by no means a straightforward concept: income comes in many different forms. Thus, on the X-axis of the GCC, income inequality is measured by Gini coefficients which in most cases are calculated for *household income from all sources after taxes and transfers*. But on the Y-axis the measure of mobility is one that relates only to labour income or *earnings* - the intergenerational earnings elasticity (the IEE) - and, further, almost always to the earnings of fathers and sons *before tax*. Such discrepancies are clearly problematic. It has been shown by Setzler (2013), working with the version of the GGC in Figure 1, that if Gini

coefficients are taken that relate to household incomes before taxes and transfers, then the slope of the GGC is much reduced and is in fact indistinguishable from zero at the 5% level of significance. This is not perhaps all that surprising; but what could be thought of greater interest would be to see what would happen to the GGC if both Ginis and IEEs were treated in *net* terms.

FIGURE 1: The Great Gatsby Curve



The foregoing difficulties no doubt arise, in part at least, from data limitations. And such limitations certainly create problems for the GGC in several other respects. To begin with, the best sources for cross-national comparative Ginis, as required on the X-axis, are the Luxembourg Income Study and the Chartbook of Economic

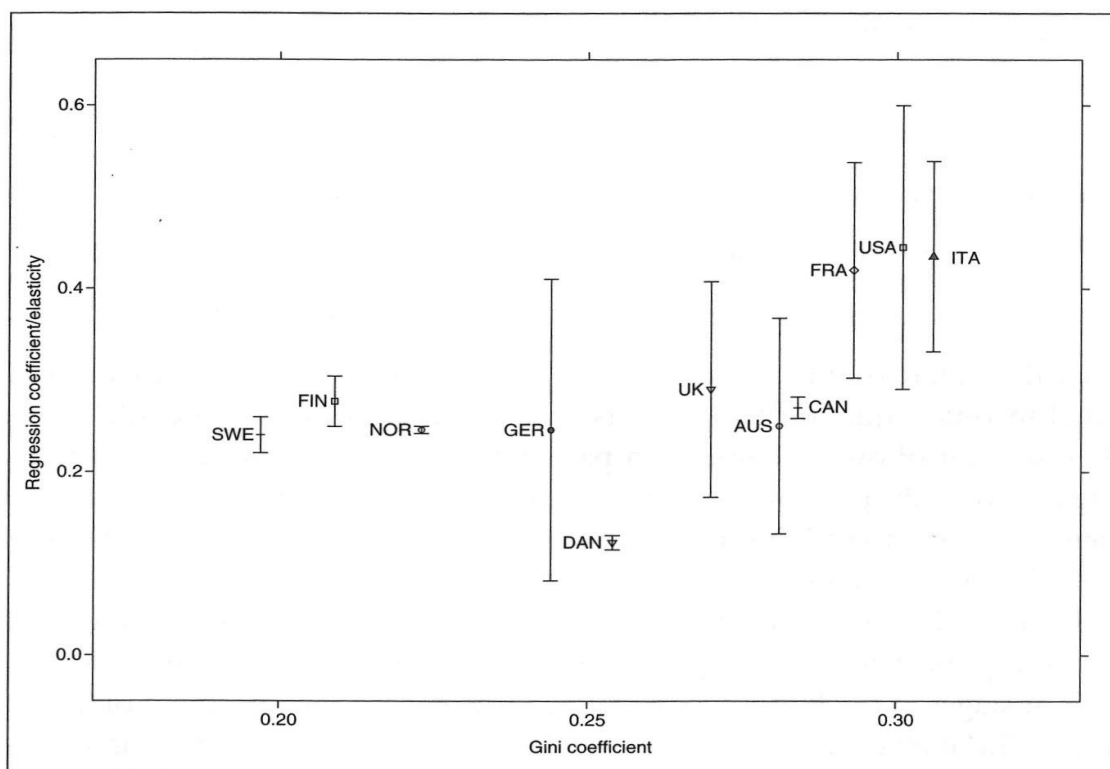
Inequality. But in the former case the Ginis often do not go back all that far in time, so that if they are used they may – as in Figure 1 – be thought ‘too late’ in relation to the birth cohorts of men whose mobility is being studied, referring, that is, to a time when these men were already in adulthood rather than to the period of their childhood or adolescence which would appear more relevant. And in the latter case, although earlier Ginis are available, this is, so far, only for a more limited range of countries. Ginis from other sources have been used but their quality is doubtful.

Turning to the Y-axis, the main problem here arises with fathers’ earnings as required for the calculation of the IEE. In countries with income or tax registration systems or long-established birth cohort or panel studies, information on fathers’ earnings may be available that can be directly linked to sons’. But in many countries that have been represented in versions of the GGC this possibility does not exist. In these cases, the typical situation is that sons’ earnings have been obtained from their responses to surveys and fathers’ earnings have then been ‘imputed’ on the basis of further information provided by sons on their fathers’ education and/or occupation.¹ The reliability of such imputation, usually carried out by means of ‘two-sample, two-stage least-squares’ methods, is, however, very questionable. The choice and the measurement of imputer variables and the particular imputation models used are likely to lead to inconsistencies in estimates of earnings mobility, whether based on the IEE - which tends to be over-estimated - or otherwise (Jerrim, Choi and Simancas, 2016).

¹ While sons can fairly reliably provide such information relating, say, to the time of their own adolescence, they cannot be expected to recall, or even to have known, their fathers’ earnings at that time.

Figure 2, taken from Björklund and Jäntti (2009; Figure 20.1), shows IEE estimates for a number of countries together with 95% confidence intervals. Where the intervals are small, fathers' as well as sons' earnings are actually observed; where the intervals are large, the data are from surveys and fathers' earnings are imputed. This figure was published a few years before the GGC was proclaimed, and it is difficult to understand why more note was not taken of it. What is suggested is that cross-national variation in income mobility may not be as great as implied in most versions of the GCC, so that any close relation with variation in inequality becomes less likely. The IEEs of countries such as Germany, the UK and Australia are not obviously higher than those of the Nordic countries, despite their higher Ginis.

FIGURE 2: Estimates for intergenerational income elasticities for fathers and sons and cross-sectional disposable income Gini coefficients in 11 developed countries



Source: Björklund and Jantti (2009)

Doubts about the empirical robustness of the GCC are then further increased when issues of measurement - and specifically of mobility - are considered. The IEE has attractions as a descriptive statistic, showing, roughly, the proportion of earnings differences in one generation that is, on average, transmitted the next.² However, the IEE has a major disadvantage for analytical purposes. Since it is a regression coefficient - the coefficient resulting from the regression of children's log earnings on parents' log earnings - it reflects not only what one might call the *net* intergenerational association of earnings but also any changes in the degree of inequality in earnings between the generations. Thus, as used in the GCC, it leads to an unfortunate confounding of the two key variables of inequality and mobility. Following the IEE, a society in which the net intergenerational association of earnings is relatively weak but in which earnings inequality has widened between the generations could appear as less mobile than a society with a stronger net association but in which earnings inequality was stable (see further Jäntti and Jenkins, 2015; Winship, 2017).³

A better measure of the association between children's earnings and parents' earnings would therefore be the Pearsonian correlation coefficient, r , which would control for intergenerational change in earnings inequality. But r still shares a further shortcoming with the IEE in that it assumes that the relation between (log) earnings across the generations is linear, and research indicates that this is not always the case. For example, while it has been suggested that the relation is close to linear in

² More precisely, it shows the percentage differential in the geometric mean of children's earnings with respect to a marginal percentage differential in parental earnings.

³ Jäntti and Jenkins plausibly suggest (2015) that one reason why the IEE continues to be used is 'simply inertia': i.e. researchers want to compare their estimates with those of others before them. But this is scarcely a good reason.

the UK and US, in the Nordic countries it proves to be highly non-linear. At the lower levels of fathers' earnings the association with sons' earnings is quite weak but strengthens considerably at the middle and higher levels (Bratsberg et al., 2007). If, then, a 'one number' measure of mobility is required, a rank correlation, such as Spearman's ρ , could be regarded as preferable (Jäntti and Jenkins, 2015: section 3.3).⁴

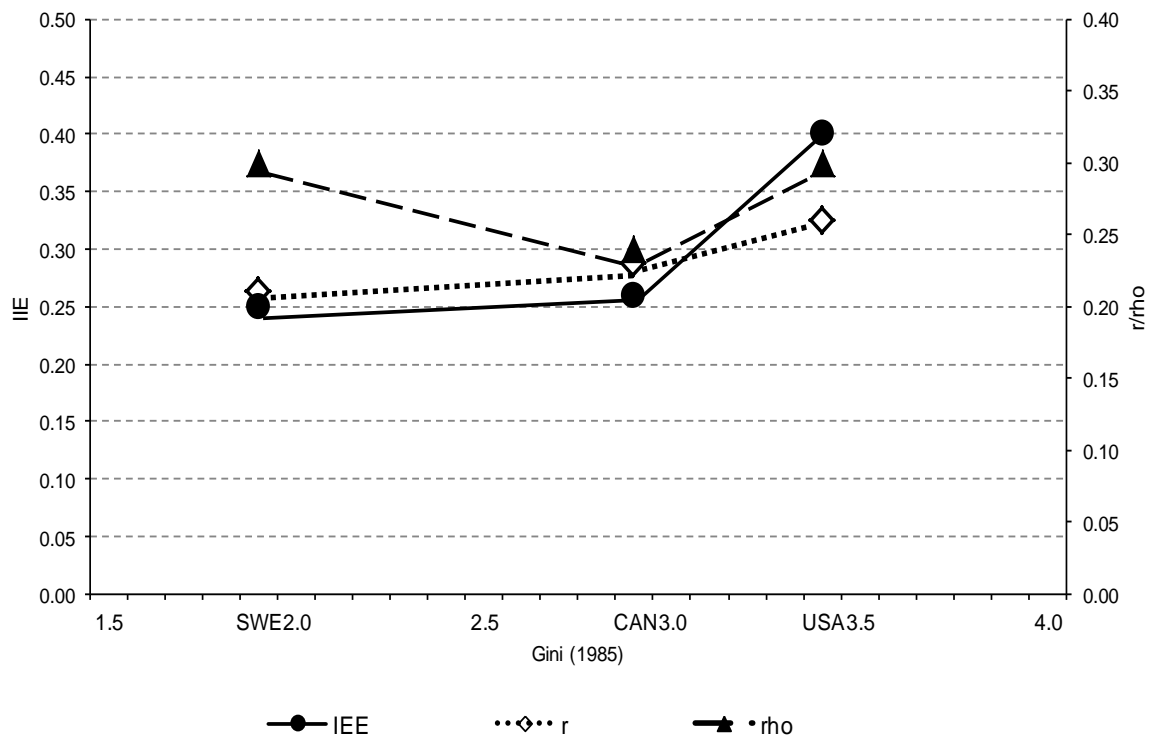
The foregoing considerations are important because the use of different measures of mobility can lead to very different results as regards the relation to inequality. In Figure 3 we show, on the basis of data taken from Corak, Lindquist and Mazumder (2014), this relation for three countries using in each case the IEE, r and ρ . The data are of relatively high quality with fathers' earnings being observed, not imputed. With the IEE, the results obtained are much in line with those shown in all versions of the GCC: the US has clearly lower mobility than Sweden, while Canada is similar to the US in this regard but, in having a lower Gini, is something of an outlier below the curve. With r , controlling for intergenerational changes in earnings inequality, the slope is shallower with the difference between the US and Sweden being less marked - chiefly because the US now appears as more mobile. And then with ρ , allowing for non-linearities in the association between the earnings of fathers and sons, the inverse relation between mobility and inequality - i.e. the GGC - completely disappears. It is Canada that stands as the most mobile society, if not by any wide margin, with the US and Sweden being tied at a somewhat lower level of

⁴ In national studies, various other approaches to the measurement of intergenerational earnings mobility, and of income mobility more widely understood, have been developed that both control for intergenerational changes in inequality and allow for nonlinearities - for example, 'rank-rank slope' and semi-parametric and non-parametric methods. But these innovations have not, so far, been carried over into comparative studies.

mobility, chiefly because Sweden now appears as less mobile, despite these two countries being at opposite ends of the international Gini range.

It would obviously be desirable to have similar analyses for a larger number of countries. But Figure 3 is in itself sufficient to suggest that when mobility is more appropriately measured, just as when greater attention is given to issues of data, the inverse relation with income inequality appears clearly weaker than in existing versions of the GGC, and primarily because cross-national variation in mobility is less than the IEE would indicate.

FIGURE 3: Income mobility by income inequality for three countries with three measures of mobility, men of prime working age born between 1960 and 1975



Source: Corak, Lindquist and Mazumder (2015)

Now, proponents of the GGC have always been careful to say that the inverse relation between income inequality and mobility that is shown up cannot be taken as in itself demonstrating causation. Nonetheless, they have at the same time maintained that the GGC gains in credibility because it is consistent with economic theory - and with theory that does in fact imply that the relation *is* a causal one. Very briefly, the argument can be stated as follows, drawing on Krueger (2012) and Corak (2013, 2015). If income inequality widens in one generation - as the result, say, of rising earnings returns to human capital, and especially to education, in the context of skill-biased technological change and globalisation - then this will lead to a greater inequality in relative mobility chances in the next generation. This will occur because there will be a greater inequality in the economic resources that parents have available to 'invest' in their children in order to promote their educational attainment and, in turn, their earnings prospects in the labour market, and also because in more unequal societies parents will have stronger incentives to make such investments. Thus, to the extent that countries differ in their income inequality, so too will they differ, inversely, in their levels of income mobility.⁵

However, the difficulty with this argument becomes apparent as it is developed in greater detail. It turns out that the parental or wider familial resources that are regarded as important in the furtherance of children's education and labour market prospects *are by no means limited to income*. Resources of other kinds are

⁵ A causal relation is clearly implied in Krueger's suggestion (2012: 4), based on the GGC, that the increase in income inequality in the US in the recent past is likely to lead to an increase in the intergenerational persistence of income mobility of up to 20 per cent. But Chetty et al. (2014), using high quality administrative data, show that at least for individuals born in the US between 1980 and 1993, the net association of their incomes with their parents' incomes has been remarkably stable. For a detailed empirical critique of the 'investment model', causally linking parental income to children's education attainment, see Mayer (1997).

repeatedly invoked, even if in an essentially ad hoc fashion. To take examples from the papers by Corak cited above, references are made to 'family culture', 'family connections' and parents' own educational attainment and, further, to the sources as well as the level of parental income - i.e. whether or not this comes from self-employment, wage work or salaried employment.

Now there is nothing at all here to which sociologists would wish to object - *except* for the assumption that Corak and others would appear to make that these further aspects of parental resources are highly correlated with income, so that in empirical analyses income can in effect stand for all of them: i.e. they are just different ways in which inequalities in income are manifest. However, sociological research would indicate otherwise. Parental resources of different kinds are indeed correlated but the correlations are only moderate. Thus, in analyses of the effects of parental resources on children's educational attainment separate indicators of resources of the kinds in question can be included without any problems of multicollinearity, and, moreover, with the result that *different resources prove to have independent effects, among which those of parental income are in no way predominant.*

For purposes of illustration, we show in Table 1 results from analyses relating to the educational attainment of men in Sweden, in which are included parental earnings (for which high quality registration data can be obtained) and also measures of parental social class, parental social status and parental education. We take parental class as capturing economic resources over and above income level, in the form of income security, short-term income stability and longer-term income prospects (see further Goldthorpe and McKnight, 2006; McGovern et al., 2007). Parental social status, based on measures of the occupational structure of more intimate social

relations - who eats together and who sleeps together - is then taken to capture sociocultural resources in the form of social networks and levels and styles of cultural participation (Chan and Goldthorpe, 2007; Chan, 2010). And parents' education is taken to indicate their ability to create a favourable home-learning environment for their children and to provide them with informed guidance through the educational system.

From Table 1 it can be seen that under Model 0 parents' earnings are significantly and strongly associated with sons' educational attainment; and so too, under Model 1, are parental class, status and education. However, when, under Model 2, all four parental variables are included in the analysis together, the effect of earnings weakens substantially, and far more so than the effects of the other three parental variables. Further, the t-statistics indicate that parental earnings are of no distinctive importance; by this measure parental education in fact carries greater weight. And we may add that there is no reason to suppose that these results are in any way atypical. They are essentially replicated for Swedish women and also for British men and women, although it should be said that in this case family income has to replace parental earnings and the data are of lower quality (see further Bukodi, Erikson and Goldthorpe, 2014: Online Appendix 2; and also for more recent British results, Bukodi, Bourne and Betthäuser, 2017: Online Appendix, Table D2).

TABLE 1: OLS regression of educational attainment on parental earnings, class, status and education, Swedish men born 1948-1972 ^(a)

	Model 0		Model 1		Model 2	
	B	t ^(b)	B	t ^(b)	B	t ^(b)
Parental class (0-1)			0.75 **	10.78	0.70 **	9.96
Parental self-employment (0-1)			-0.43 **	-10.19	-0.24 **	-5.16
Parental status (0-1)			0.95 **	7.48	0.82 **	6.42
Parental education (0-1)			0.81 **	16.05	0.76 **	14.94
Parental earnings (0-1)	4.43 **	23.55			1.85 **	8.54
Constant	0.22		2.74 **		1.41 **	
R ²	0.28		0.33		0.33	

* p < 0.05; ** p < 0.01

Notes:

(a): Cohort dummies and individuals' cognitive ability are included in all models.

(b): Bring (1994) shows that the squared t-value for a factor in a regression model is directly related to the increase in R² when this factor is added as the last one in the model.

Source: Bukodi, Erikson and Goldthorpe (2014)

For present purposes, therefore, the crucial questions that arise are these. Given that in the theoretical arguments that are advanced in support of GGC it is acknowledged that other parental resources apart from income are involved in the ways in which parents can influence their children's relative mobility chances, and given the support for this position that can be provided on the lines illustrated in Table 1, why is it that the X-axis of the GGC refers simply to income inequality? And, since this is the case, why should it be expected that any strong relation with income mobility should show up? In short, we do not see how it can be claimed that the lack of empirical robustness of the GGC is in some way compensated for by the coherence of the theory that is taken to underlie it.

Inequality and Social Class Mobility

Sociologists differ from economists in preferring to study mobility between social strata, conceptualised in one way or another, rather than between levels in the income distribution. Of late, interest has increasingly centred on mobility between social classes, defined in terms of the social relations in which individuals are involved in labour markets and production units or, in other words, in terms of their *employment relations*. An initial division is thus that between employers and the self-employed, on the one hand, and employees on the other. And then, among employees, further differentiation is made according to the form of their employment contracts, considered in their implicit as well as explicit aspects. In this regard, the main line of division - though intermediate and 'mixed' cases are recognised - is that between wage-workers, involved with their employers in something approximating a spot contract for their labour and paid on a piece- or time-rate basis, and salaried employees whose contracts entail a longer-term and more diffuse exchange of service to their employing organisations in return for compensation that includes, in addition to a certain level of current income (and fringe benefits), a greater assurance of income security, income stability and income advancement.⁶

This approach to the conceptualisation of social class is now embodied to a greater or lesser degree in the social classifications used in the official statistics of several European nations and, most importantly for present purposes, directly informs the

⁶ Accounts of the theoretical basis for the conceptualisation of class indicated in the text can be found in Goldthorpe (2007, vol. 2, ch. 5) and McGovern et al. (2007, ch. 3). The theory derives largely from economics: e.g. from organisational, personnel and transaction cost economics (e.g. Simon, 1991; Milgrom and Roberts, 1992; Lazear, 1995; Williamson, 1985, 1996).

European Socio-economic Classification (ESeC) that provides the basis for the mobility analyses that we will present.⁷

The main argument for studying mobility on the basis of class rather than of income is that, because class can in fact be shown to capture income security, income stability and income prospects as well as current income level, class mobility more fully reflects the extent to which economic advantage and disadvantage are intergenerationally transmitted. And there is confirmatory evidence in this regard in that the intergenerational association between individuals' class positions can be shown to be generally *stronger* than that between their income levels (Goldthorpe, 2013; Erikson, 2016).

In pursuing the question of the relation between inequality and class mobility, we draw on a new dataset derived from the European Social Survey (ESS) that allows us to produce class mobility tables for 30 European countries. The data come from the first five waves of the ESS, carried out between 2002 and 2010, which involved face-to-face interviews with individuals in probability samples drawn from the adult population of each country. The tables are constructed by cross-classifying the class positions of respondents aged 25-64 at time of interview - class destinations - with the class positions of their parents at respondents' age 14 - class origins - according to the 7-class version of ESeC that is shown in Table 2. To maintain a parallel with analyses relating to the GGC, we concentrate here on the tables for men.

⁷ ESeC was in fact developed with the idea that it would become the official EU social classification but Eurostat abandoned this possibility. However, ESeC (for full details see Rose and Harrison, 2010) is now widely used in academic research and also in fact by some EU bodies such as Eurofound.

TABLE 2: The European Socio-economic Classification (ESeC)

Class	Description
Class 1	Large employers, higher managers and professionals
Class 2	Lower managers and professionals, high-level supervisors
Class 3	Intermediate occupations
Class 4	Small employers and own account workers
Class 5	Lower supervisors and technicians
Class 6	Lower service, sales and technical occupations
Class 7	Routine occupations

In analysing these tables, our focus is then on *relative* rather than *absolute* mobility rates - a distinction central to sociological discussion of mobility at least from the 1970s but one that has only more recently been introduced into the economics literature: that is to say, we focus on mobility chances as expressed in the association existing between the class positions of men and of their parents *when considered net of all changes in class structure* as these may be reflected in the marginal distributions of mobility tables. Again, this is to parallel that aspect of mobility that, we would suppose, the GGC aims to capture - even if inadequately insofar as the IEE is used rather than measures such as r and ρ that control for intergenerational differences in the distribution of incomes.

Modelling and Results

Following now standard sociological practice, we model relative class mobility by using loglinear and logmultiplicative models for categorical data, the basic elements

of which are odds ratios (for a review, see Breen, 2004). In the present context, two models are of main relevance.

(1) The loglinear model proposing a common pattern of association between class origins and destinations from one country to another –the CA model. This can be written as

$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \lambda_{ij}^{OD}$$

where F_{ijk} is the expected frequency in a cell of a three-way table of class origins (O) by class destinations (D) by country (C), μ is a scale factor, and the following terms capture the marginal effects of origins, destinations and countries and also the three possible two-way associations. The model thus recognises that the distributions of class origins and destinations vary by country but states - the λ_{ij}^{OD} term - that the association existing between origins and destinations net of marginal effects is the same across countries. That is to say, all the log odds ratios defining the origins-destinations associations - there are 441 of them in a 7 x 7 mobility table - are identical from one country to another; or, in other words, *there is no cross-country variation in relative rates*. The one possible three-way association that would allow for such variation - the λ_{ijk}^{ODC} term - and that would in fact saturate the model is excluded.

(2) The logmultiplicative UNIDIFF model (Erikson and Goldthorpe, 1992), proposing a uniform difference in the strength of the association between class origins and destinations from one country to another. This can be written as

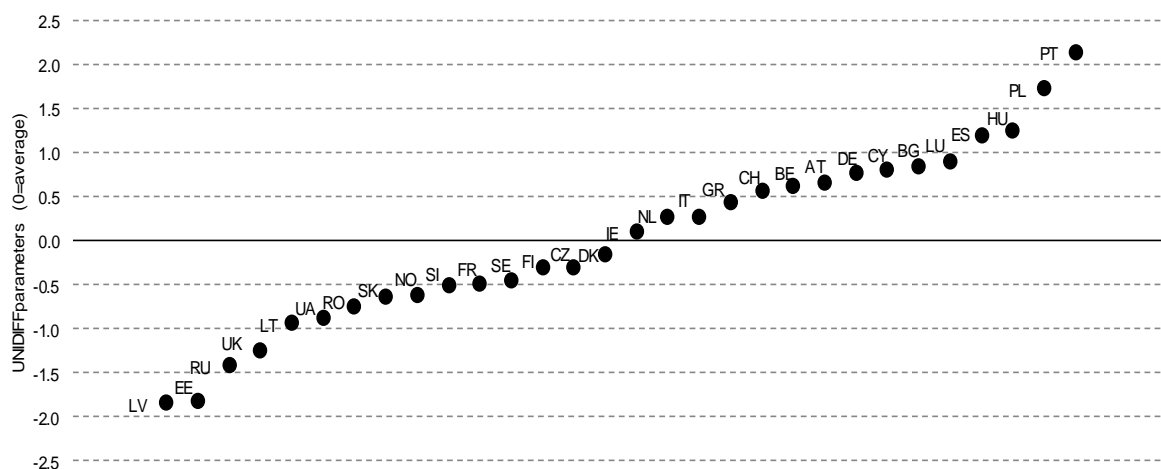
$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \beta_k X_{ij}^{OD}$$

where in the $\beta_k X_{ij}^{OD}$ term that is added to the CA model X_{ij}^{OD} represents the general pattern of the origin-destination association across the countries involved and β_k the relative strength of this association *that is specific to a particular country*. This model thus allows us to test for the possibility that from one country to another the log odds ratios defining the origin-destination associations are all greater or less by some common, multiplicative factor, thus implying greater or less equality in relative rates or a systematic difference in the degree of ‘social fluidity’ within countries’ class structures.⁸

We proceed by fitting the CA and the UNIDIFF models to *each pair* of the 30 countries in our data set. One way of summarising the results obtained is shown in Figure 4. This figure is arrived at as follows. First, the average of all the UNIDIFF parameters returned from the pairwise comparisons of the 30 countries is taken and set at zero. The individual countries are then ordered in terms of their deviation from this average according to the average of the UNIDIFF parameters returned from each of the pairwise comparisons in which they were themselves involved. Negative deviations can be taken to indicate that the odds ratios capturing the association between class origins and destinations in a country’s mobility table are uniformly lower than the average - i.e. there is greater social fluidity within its class structure; while, conversely, positive deviations indicate that the odds ratios are uniformly higher than the average – i.e. there is less social fluidity.

⁸ The λ_{ij}^{OD} and $\beta_k X_{ij}^{OD}$ terms in the models can be seen as analogous to what Chetty et al. (2014: 141-2) refer to, in the context of their analyses of income mobility, as the *copula* of the joint distribution of parents’ and children’s incomes as distinct from their marginal distributions. As they note, some measures of income mobility, such as r , focus entirely on the copula, while others, such as the IEE, reflect features of both the copula and the marginal distributions.

FIGURE 4: Country differences in relative rates of social mobility, men aged 25-64



Note: LV: Latvia; EE: Estonia; RU: Russia; UK: United Kingdom; LT: Lithuania; UA: Ukraine; RO: Romania; SK: Slovakia; NO: Norway; SI: Slovenia; FR: France; SE: Sweden; FI: Finland; CZ: Czech Republic; DK: Denmark; IE: Ireland; NL: Netherlands; IT: Italy; GR: Greece; CH: Switzerland; BE: Belgium; AT: Austria; DE: Germany; CY: Cyprus; BG: Bulgaria; LU: Luxembourg; ES: Spain; HU: Hungary; PL: Poland; PT: Portugal

However, while Figure 4 gives a useful summary of our findings, it is misleading insofar as it might be taken to imply an entirely continuous variation in levels of relative rates across the countries covered, such as would allow for some kind of 'international league table' of social fluidity to be formed. More detailed analyses actually reveal that many of the differences in fluidity among countries that are indicated by Figure 4 are not statistically significant; and that a better understanding of cross-country variation may in fact be gained if countries are seen as falling into a number of groups such that, so far as overall levels of fluidity are concerned, within-group differences are generally less than between-group differences. We would identify six such groups as follows: a set of three comparatively 'high fluidity' groups of countries lying below or just on the average line of Figure 4 and a set of three 'low fluidity' groups of countries lying above this line.

Groups in the high fluidity set

- (1) Five former countries of the USSR, Estonia, Latvia, Lithuania, Russia and Ukraine
- (2) Four other post-communist countries, the Czech Republic, Slovenia, the Slovak Republic and Romania
- (3) Four Nordic countries, Denmark, Finland, Norway and Sweden together with three West European countries, France, Ireland and the UK.

Groups in the low fluidity set

- (1) Six West-Central European countries, Austria, Belgium, Germany, Luxembourg, the Netherlands and Switzerland
- (2) Five Southern European countries, Cyprus, Greece, Italy, Portugal and Spain
- (3) Three further post-communist countries, Bulgaria, Hungary and Poland.

The main substance of the analyses on which we here draw is presented in Figure 5. This takes the form of a half-matrix which shows the results of fitting both the CA and the UNIDIFF models to all pairs of our 30 countries. The countries are placed in the groups indicated above but otherwise as far as possible according to the ordering of Figure 4. Hollow circles indicate that the CA model gives an adequate fit to the two mobility tables in question at the $p > 0.05$ level; and hollow triangles indicate that while the CA model does not fit the tables, the UNIDIFF model does not improve on it. In other words, there are in these cases significant differences in the pattern of relative rates of class mobility, but these do not result in one country being systematically more fluid than the other. Filled circles then indicate that the UNIDIFF model both

improves significantly on the CA model and gives an adequate fit to the two tables, with the country on the B axis having lower fluidity than that on the A axis - i.e. showing a stronger net association between class origins and destinations; and filled triangles indicate that although the UNIDIFF model significantly improves on the CA model, it still does not fit adequately: as well as the country on the B axis being less fluid than that on the A axis (or vice versa with the two half-filled triangles) there are further differences in their mobility regimes.

In considering the results presented in Figure 5, it is important to keep in mind that sample sizes vary a good deal across countries - from 4300 in Germany down to 709 in Italy. Thus, there are differences in statistical power that would make it easier to detect deviations from our models in some comparisons than in others; and for this and other reasons some apparent inconsistencies arise of the kind that while, say, the CA model is shown as fitting for countries X and Y and also for countries Y and Z, it does not fit for countries X and Z. One obvious possibility here is that while the difference between X and Z is sufficiently large to achieve significance, the differences between X and Y and Y and Z are not. Nonetheless, such inconsistencies are unlikely to be of sufficiently large consequence to affect the major features emerging from the figure.⁹

⁹ As a robustness check, we have for all countries for which the sample size is less than 1000 (Lithuania, Latvia, Romania and Luxembourg as well as Italy) re-run our models with their sample size scaled up to be the same as that of the comparator country. While in some cases, as would be expected, both the CA and UNIDIFF models no longer give acceptable fits, the overall pattern of results shown in Figure 5 is changed only that in these cases hollow triangles replace hollow circles or filled triangles, filled circles.

FIGURE 5: Results of fitting the CA and the UNIDIFF models to each pair of countries, men aged 25-64 ^(a)

Country A	Country B																															
	EE	LV	RU	LT	UA	RO	SK	SI	CZ	UK	NO	FR	SE	FI	DK	IE	NL	CH	BE	AT	DE	LU	IT	GR	CY	ES	PT	BG	HU	PL		
EE		△	○	○	○	○	●	●	●	○	●	○	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
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Note: (a)

- CA fits ($p > 0.05$) and UNIDIFF does not improve;
- △ CA does not fit but UNIDIFF does not improve;
- UNIDIFF improves on CA and fits ($p > 0.05$); country B less fluid than country A;
- ▲ UNIDIFF improves on CA but does not fit; country B is less fluid than country A;
- △ UNIDIFF improves on CA but does not fit; country A is less fluid than country B.

First, if one focuses on those sections of the half-matrix that fall along the diagonal, where results are shown for the pairwise comparisons of countries in the same group, it can be seen that in all cases hollow circles or triangles predominate: i.e. within each of the six groups what might be called the endogenous mobility regimes of the countries comprised tend to have a high degree of commonality, with such differences as arise not being ones indicating greater or less fluidity overall. The most obvious exception is that in the Southern group Portugal appears as having lower fluidity than the other countries included, apart from Spain.

Second, hollow circles or triangles are also for the most part found in the sections of the half-matrix towards the top-left and bottom-right corners where the comparisons involved are between pairs of countries in different groups but groups within either the high fluidity or low fluidity set. That is to say, there is also a quite high degree of similarity in mobility regimes across the countries in each of these sets. In the high fluidity set, only Estonia and to a lesser degree Russia stand out as having still higher fluidity than most countries in both the other post-communist and the Nordic-West groups, while Denmark appears as less fluid than Latvia and Russia as well as Estonia within the post-USSR group. In the low fluidity set, Portugal, again, and to a lesser degree Poland are the outliers, the former showing lower fluidity than all of the countries in the West-Central group, and the latter lower fluidity than most of the countries in this group.

Third, in the nine sections of the half-matrix towards the upper right corner, where the comparisons involved are between one country from a group in the high fluidity set and another from a group in the low fluidity set, filled circles and triangles are by far most commonly found - in almost four-fifths of all entries. The exceptions largely

arise with a small number of countries that could be regarded as in some respects borderline cases. Thus, Ireland appears as borderline between the Nordic-West group in which it is placed in the high fluidity set and the West-Central and Southern groups in the low fluidity set. And the Netherlands in the West-Central group and Greece and Italy in the Southern group, while clearly less fluid than the countries in the post-USSR group are not differentiated in their fluidity from most of the countries in the other two groups in the high fluidity set.¹⁰

However, despite the existence of these borderline cases, Figure 5 would still suggest that it is more revealing to view differences in relative rates of class mobility among European countries as having a segmented rather than an entirely continuous form. And it may in this connection be added that there appears to be no strong association between the groupings of countries that we distinguish and economic inequality as measured in continuous form as by Gini coefficients. Thus, while the Nordic countries within the high fluidity set do all have, from the later twentieth century onwards, low Ginis for net household incomes of around 0.25, as also do most of the post-communist countries other than those formerly part of the USSR, though ones clearly on the rise, the post-USSR countries themselves have Ginis, where available, of over 0.30, and so too do the UK and Ireland, with France falling just below this mark. And while among the low fluidity groups the Southern countries all have Ginis of over 0.30, as also do Bulgaria and Poland, though not Hungary, the Ginis for the countries in the West-Central group are little higher than those for the Nordic countries and in no case exceed 0.30.

¹⁰ Italy has in fact to be regarded as an especially problematic and uncertain case, in part because, as well as the sample size being unusually small, one might well expect marked regional differences.

It could therefore be maintained that the relation between inequality and mobility, at least when mobility is considered in terms of class, has to be understood as a good deal more complex than the simple inverse linear one, focusing on income inequality, that the GGC purports to show. We go on to suggest a theoretically grounded interpretation of our empirical findings that can accommodate this complexity.

Theory and Interpretation

In the light of some early data from national studies of intergenerational social mobility, Featherman, Jones and Hauser (1975: 340) advanced a bold hypothesis: that in all societies with a market economy and a nuclear family system the pattern and level of their relative rates - their endogenous mobility regimes - would be 'basically the same'. Erikson and Goldthorpe (1992: ch. 4), with more extensive and more comparable data at their disposal, suggested qualifying the 'FJH hypothesis', at least as regards class mobility, in two main ways: first, by replacing the idea of a basic similarity in relative rates with that of a 'core pattern', around which some amount of variation of a nationally specific kind occurs; and second, by noting that a potent source of such variation could be the use of state power in order to regulate and modify mobility processes. The theoretical basis on which we would interpret the results that we have reported represents a further development of these ideas.

What we propose is that in all societies with a capitalist market economy, a nuclear family system *and* a liberal-democratic polity, a *limit* exists to the extent to which relative rates of class mobility can be brought towards equality or, in other words, to

the extent to which the net association between the class positions of parents and their children can be reduced. This is so because of the capacity of parents in more advantaged class positions to draw on their superior resources to the extent necessary in order to maintain their children's greater chances of success in educational systems and labour markets, relative to those of children of parents in less advantaged class positions. In a liberal democracy, policy interventions aimed at creating a greater equality of opportunity must, beyond a certain point, face increasing political difficulties: that is, insofar as these interventions are aimed *either* at restricting parents' abilities, and what might indeed be regarded as their rights, to 'do the best they can' for their children *or* at significantly reducing the overall level of inequality that exists in parental resources - inequalities in economic resources, including income, but *also* inequalities in socio-cultural and specifically educational resources that, while correlated with class, have their own independent effects on children's life-chances and are in fact far less open to political modification.

Given, then, that a limit of the kind in question exists, it is possible to understand variation in relative rates of class mobility in terms of how closely different countries approximate to it: some will be quite close, others a good way off. However, what we would further wish to argue is that, rather than it being possible to relate differences in this regard to any one underlying factor, to the extent that countries fall short of the limit, *they can do so for quite different reasons.*

In viewing our results in this perspective, we may consider, first of all, countries in the West-Nordic group within the high fluidity set. These countries we would regard as being not far removed from our proposed limit on equality in relative mobility rates, and as ones in which we would not therefore expect any further increases in

social fluidity of a substantial kind to occur, since attempts in this direction would have to be ones made in the face of severe political resistance. In the case of the Nordic countries themselves there is in fact evidence that the rising social fluidity observed in studies made in the later twentieth century reflected the distinctive experience of particular birth cohorts and has not continued, so that, through processes of cohort replacement, relative rates are tending to stabilise (for Sweden, see Jonsson, 2004, Breen and Jonsson, 2007; for Finland, Erola, 2009). Similarly, increases in fluidity in France, earlier driven in part by the decline of the agricultural sector, in which a high propensity for immobility prevailed, would now appear to be levelling out, if not to have ceased (Vallet, 2014). And in the cases of the UK - or at all events, Britain - and also Ireland relative rates have shown only slight, if any, change towards greater fluidity from the mid-twentieth century onwards (for Britain, see Bukodi et al., 2015, Buscha and Sturgis, 2017; for Ireland, Layte and Whelan, 2004).

With both of the two groups of post-communist countries that are also included in our high fluidity set, we would, however, see a quite different situation. These countries, we would argue, are ones which, under communist regimes, were able to achieve a level of social fluidity that *went beyond* the limit we would envisage - but countries in which fluidity is now falling back to a level somewhat below this limit following their transition to capitalist market economies and some form of democracy. In mobility research carried out before the break-up of the Soviet bloc those communist countries of East-Central Europe for which sufficiently good data were available were found to be generally more fluid than most of those in Western Europe (Erikson and Goldthorpe, 1992: chs. 4 and 5; Marshall, Swift and Roberts, 1997: ch. 4; Titma, Tuma and Roosma, 2003). This appeared to be the result of close state control over

educational systems, aimed directly at reducing social inequalities in attainment - to the point in some cases of negative discrimination against children of supposed 'bourgeois' origins - together with the tight linkages that were imposed between qualifications and level and type of employment. Further, the raising of the earnings of manual workers so as often to equal, or even to exceed, those of the 'intelligentsia', meant that mobility was, in any event, a 'low stakes game': the incentives to achieve upward mobility or to avoid downward were alike reduced.¹¹

However, in mobility research subsequently carried out in post-communist countries it has been quite generally found that fluidity within the class structure is in decline (see for Russia, Gerber and Hout, 2004; for Hungary, Bukodi and Goldthorpe, 2010; for Estonia, Saar 2010; and for a comparative analysis, Jackson and Evans, 2017). Factors frequently cited as underlying this decline include the growth of private education, the increasing stratification of public educational systems, widening economic inequality resulting from rising earnings returns to education and also the dismantling of egalitarian social policies, and intensifying competition for access to higher level positions, often involving the exploitation of social networks. While, then, the post-communist countries in our high fluidity set appear together with the West-Nordic countries at close to what we would take to be the limit on increased fluidity, they are not to be understood as ones that are pushing this limit. Although transitional economic and social turbulence may, especially in USSR successor

¹¹ Special privileges were of course enjoyed by the *nomenklatura*, including ones that helped them maintain their children in advantaged positions, but the consequences of this can easily be exaggerated at least so far as 'mass' rather than 'elite' mobility is concerned (Titma, Tuma and Roosma, 2003). The most detailed account of the attempt to design an egalitarian society under communism is that provided by Szelényi (1998) for Hungary, and it is for Hungary that we can best trace the increase in fluidity from the pre-communist to the communist era (Andorka, 1990).

countries, have helped to maintain intergenerational fluidity through creating greater uncertainty in class returns to education and creating increased *intragenerational* mobility (see e.g. Titma and Roots, 2006; Saar and Unt, 2011; Bühler and Konietzka, 2011), post-communist countries are to be regarded as in general moving *away from* the limit; and a continuation of this movement has to be regarded as quite likely.

This last point is underlined when we turn to our low fluidity set of countries and consider the further group of post-communist countries, Bulgaria, Hungary and Poland, that is included. While we have little knowledge of mobility in Bulgaria during the communist era, Hungary and Poland could certainly be ranked at this time among European countries with the highest levels of social fluidity; yet within two decades of their transition they appear as low fluidity ones. Hungary and Poland would be generally regarded as having become, by the start of the twenty-first century, two of the most liberalised of all post-communists societies, and there is evidence that degree of liberalisation is negatively correlated with mobility.¹² Nonetheless, it would appear that different features of the transition in the two countries have led to their declining fluidity being brought about in significantly different ways.

In Hungary the transition was accompanied by ‘a fundamental change in the ... school system’ (Keller and Robert, 2016), which in effect re-established the German tradition of stratified secondary education with early selection for *Gymnasium* places;

¹² See Gugushvili (2015, 2017). However, it should be noted that in this research, mobility is assessed on the basis of a measure of ‘socio-economic status’, not class, and that the analyses involved rely on regressing children’s status scores on parental status scores, so that - as with the IEE previously discussed – the net effect of origins on destinations is not isolated.

and some degree of privatisation also occurred, especially in the tertiary sector. At the same time as social inequalities in educational attainment were thus widened (Bukodi and Robert, 2011), class returns to education increased, and, if anything, more so than earnings returns (Bukodi, 2010). What we then find from ongoing, more detailed analyses of our ESS data is that in the Hungarian case an important part is played in the low fluidity that now exists by *barriers to mobility of a long-range kind*: that is, from origins in the broadly defined wage-earning working class - ESeC Classes 6 and 7 - to destinations in salaried managerial and professional positions - ESeC classes 1 and 2.¹³

In Poland, in some contrast, the most significant change in the educational system associated with the transition was the very extensive privatisation of the tertiary sector - the number of private institutions of higher education rising to around double that of public institutions (Baranowska, 2008: 279), and at the same time returns to higher education in terms of both class and income increased quite dramatically (Domanski, 2011). In addition, a further distinctive feature of the Polish transition has been the rise and stabilisation of the proportion of the workforce in self-employment - at something over 20 per cent (Baranowska, 2008: 284). Our more detailed analyses then reveal that a major factor in low fluidity in Poland is a *high propensity for immobility*, and especially in ESeC Classes 1 and 4: that is, in the classes that include higher level self-employed professionals and small proprietors and other 'independents', and in which therefore the possibility exists of the direct

¹³ These analyses are based on a topological model of the pattern of social fluidity developed in the British case (Bukodi, Goldthorpe and Kuha, 2017) but which proves to have much wider applicability. It is relevant to note that the decrease in fluidity in Hungary did actually begin before the end of communism, following on the increased 'marketisation' introduced under the rubric of the 'New Economic Mechanism' at the end of the 1970s (see Róbert and Bukodi, 2004; Bukodi and Goldthorpe, 2010).

intergenerational transmission of businesses as 'going concerns' or of amounts of capital.¹⁴

The Bulgarian case, in which the transition was an especially difficult one, is different again. GDP and fiscal revenues declined well into the 1990s, with very adverse consequences for the educational system. Real expenditure on education did not return to its 1990 level until the early 2000s. Over this period, educational standards among children from less advantaged backgrounds actually fell, and it has been shown (Hertz, Meurs and Selcuk, 2008) that a marked strengthening occurred in the association between children's level of educational attainment and that of their parents: i.e. intergenerational educational mobility significantly declined. In our more detailed analyses, we find that low fluidity in Bulgaria is expressed *both* in comparatively high barriers to long-range mobility *and* in generally high propensities for class immobility, although especially among the higher managers and professionals of ESeC Class 1.

Moving on now to the Southern countries in our low fluidity set, it is here, despite the borderline cases previously noted, that we find perhaps the most straightforward relation between inequality and mobility. As earlier observed, these are countries with high economic inequality, as indicated by Ginis for net household incomes of over 0.30; and, further, ones with high educational inequality as indicated by Ginis for years of education (Ziesemer, 2016) ranging from 0.25 for Italy to around 0.40 for Portugal and Spain - in comparison with, say, with such Ginis for countries in the

¹⁴ ESeC Class 4 is notably large in the marginal distributions of our Polish mobility table. Poland was, of course, distinctive within the Soviet bloc in that agriculture was never collectivised. To try to impose this on the Polish peasantry, Stalin observed, 'would be like putting a saddle on a cow'. And small scale enterprises outside of agriculture, especially in the services sector, were more widely permitted than elsewhere.

Nordic-West group which in no case exceed 0.20. In addition, the Southern countries are all ones in which comparatively large numbers of men are found in ESeC Class 4, that of small proprietors and self-employed workers, due in part to still relatively large agricultural sectors but also to the prevalence of small-scale enterprises in both manufacturing and services. In these countries, therefore, the role of education in weakening the association between class origins and destinations would appear especially limited and, correspondingly, the 'direct effect' of origins on destinations - i.e. that *not* mediated via education - has been shown, where relevant analyses can be made, to be especially strong (Ballarino and Bernhardt, 2016: Figure 16.1). In our own more detailed analyses low fluidity in these countries proves to be associated with a generally strong propensity for class immobility but, in particular, within ESeC Class 4.¹⁵

However, what may also be noted is that in those Southern European cases where relevant evidence is available - Italy and Spain - social fluidity would appear to be on the increase, even if, so far as men are concerned, only to a rather modest extent (for Italy, see Pisati and Schizzerotto, 2004 and Schizzerotto, 2017; for Spain, Gil-Hernández, Marqués Perales and Facelli, 2017). In the perspective we would adopt, these countries, being some way off the limit on rising fluidity that we would envisage, can at all events be seen as ones that have the clear possibility of moving closer towards it.

Finally, we come to our West Central group of countries within the low fluidity set. These countries stand in contrast to those in the Southern group in that they can all

¹⁵ These analyses cannot be extended to Italy because of the small sample size previously noted.

be regarded as advanced industrial societies with high standards of living and, moreover, with not especially marked economic inequality. For countries in this group Gini for net household incomes all cluster in the range of 0.27 to 0.30 and, as we have earlier remarked, are thus not greatly different from those of the Nordic-West countries in the high fluidity set. The main source of the lower fluidity that the West Central countries display lies, we would suggest, in the fact that, in comparison with those of the Nordic-West group, they have somewhat greater social class inequalities in educational attainment *and also* stronger linkages between educational qualifications and class position. In other words, they are distinctively 'credentialist' societies in which inequalities in educational attainment translate very directly into inequalities in class mobility chances.¹⁶

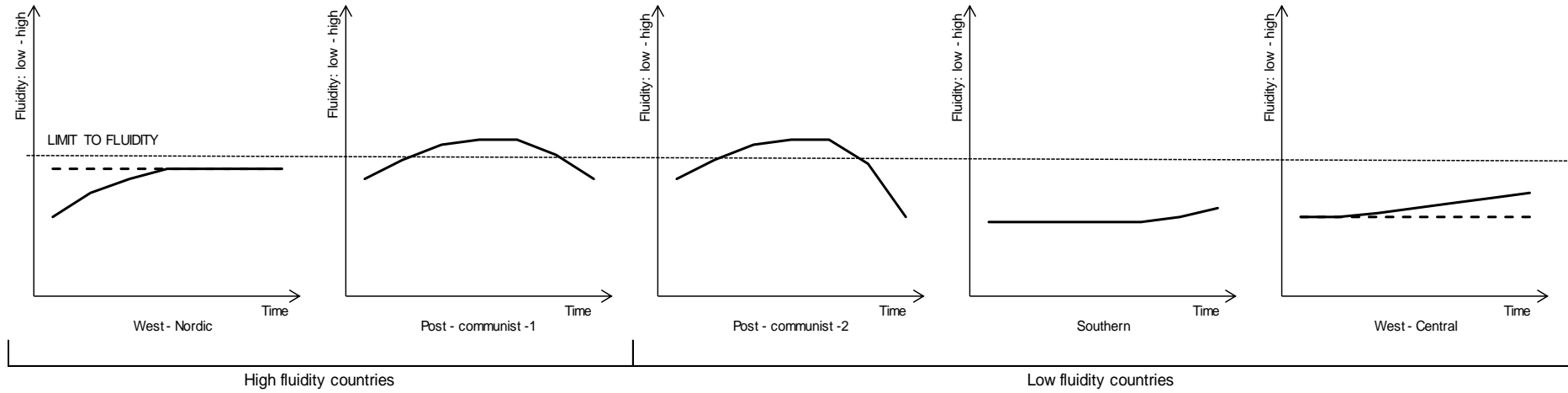
This view is supported by research into the extent of changes in fluidity in West-Central countries over recent decades. Where some change has occurred, this has been, as in the Southern countries, in the direction of greater fluidity; and such change would then appear to be closely associated with the reduction of educational inequalities. Such a reduction has clearly occurred in the Netherlands (Breen et al., 2009), and at the same time fluidity within the class structure has increased (Ganzeboom and Luijkx, 2004,a,b) - to the point in fact, that the Netherlands, as was earlier recognised, could be regarded as a borderline case between the West-Central and the Nordic-West groups. A similar pattern of change is possibly to be found in Germany, although there is somewhat conflicting evidence over the extent to which either educational inequality has declined or social fluidity increased (on the

¹⁶ The strongest evidence in this latter regard is for Germany. See, for example, Klein (2011) and Grätz and Pollak (2016). For Britain as a contrasting case, where education is to a clearly lesser degree 'class destiny', see Bukodi et al. (2016).

former issue see Breen et al., 2009 and Bukodi et al., 2017; on the latter, Müller and Pollak, 2004, 2015 and Mayer and Aisenbrey, 2007), and it has also to be noted that all analyses so far made relate to the former West Germany and may not apply unqualified to Germany after reunification (cf. Gebel, 2011). Switzerland could, however, be taken as standing in quite clear contrast with the Netherlands. The available evidence indicates little or no change in educational inequality (Buchman and Charles, 1993), while fluidity within the class structure has remained essentially constant across cohorts extending back to those born in the inter-war years (Falcon, 2012). In other words, in highly credentialist societies it is the reduction specifically of educational inequalities - a weakening of the association between social origins and educational attainment - that would appear key to the equalisation of relative mobility chances.

In Figure 6 we attempt to sum up the foregoing interpretative arguments in graphical form.

FIGURE 6: Fluidity trajectories in relation to proposed limit for countries with a capitalist market economy, a nuclear family system and a liberal democratic polity



Conclusions

In this paper we have taken up the question of the relation between social inequality and social mobility from a position that, we believe, would be shared by most sociologists: i.e. that this relation has to be understood as an inverse one at least in the sense that, beyond some point, inequality of condition must compromise equality of opportunity. However, we have argued that the attempt to relate inequality to mobility purely in terms of income, in the way that is attempted via the GGC, fails to convince on either empirical or theoretical grounds. Once due attention is given to problems of data and analysis, the robustness of the GGC becomes open to serious doubt; and there seems little basis for the assumption that income inequality is the only, or even perhaps the primary, factor conditioning income mobility.

We have gone on to maintain that treating mobility in terms of social class, rather than income, enables a more comprehensive account to be given of the intergenerational transmission of economic advantage and disadvantage; and we have sought to show, exploiting a newly constructed European dataset, that if mobility is treated in this way, a fuller, albeit more complex, understanding of the relation of mobility to inequality can be gained. With the focus on relative mobility, the results of our analyses indicate that European nations are best seen not as displaying entirely continuous variation in the degree of equality in their relative rates – or that is, in the degree of social fluidity prevailing within their class structures – but rather as falling into a number of comparatively high and low fluidity groups.

We have then suggested that an interpretation of these results can be provided by starting out from the supposition that, within societies with a capitalist market economy, a nuclear family system and a liberal democratic polity, a limit exists to the

extent to which relative rates of class mobility can be brought towards equality. And some countries within our high fluidity set - that is, the group we have labelled as West-Nordic - we would regard as approximating this limit, and as thus being likely to meet with increasingly severe political difficulties in any attempts made through public policy to move yet closer to it. The other groups of countries within our high fluidity set - the USSR successor countries and a second group of post-communist countries - we see as ones that, under their previous political regimes, were able to achieve a level of social fluidity that went beyond the limit for capitalist, liberal democracies but as ones that, subsequent to their transitions, have moved back to somewhat below this limit - and may be thought likely to move still further in this same direction.

In the case of countries in our low fluidity set - i.e. ones that are some way below our proposed limit - and which include another group of post-communist societies, a Southern group and a West-Central group, our aim has been to show, in some detail, that their situation results not from greater inequality in some general and uniform way but rather from a variety of quite different conditions. And these conditions in turn carry different implications for the changes that will need to occur for these countries either to check an evident decline in social fluidity, as in the post-communist group, or to increase social fluidity from comparatively low levels, as in the Southern and West-Central groups.

In short, what our paper seeks to bring out is that while the relation between inequality and mobility may be regarded as, in general, an inverse one, the way in which this relation actually works out cannot be captured in any simple linear fashion

but is a complex and differentiated one, an understanding of which requires close attention to the specifics of particular countries and of the courses of their histories.

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