

'PRIMARY' FACTORS IN INTERGENERATIONAL CLASS MOBILITY IN EUROPE: RESULTS FROM THE APPLICATION OF A TOPOLOGICAL MODEL

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Accepted for publication in *European Sociological Review*

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Abstract

There is little consensus in past research regarding the sources of cross-national variation in relative rates of intergenerational class mobility. We argue for the importance of distinguishing between ‘primary’ factors that explain why inequalities in relative chances of mobility exist in the first place, and ‘secondary’ factors that explain variation in these chances. Our main aim is to identify primary factors. We follow Erikson and Goldthorpe (1992) in developing a topological model of the endogenous mobility regime which we then apply to class mobility tables for 30 European nations. The model claims that inequalities in relative class mobility chances derive from three kinds of effect: those of class hierarchy, class inheritance and status affinity. When applied to all nations together, the model accounts for the very large part of the total association between class origins and destinations. Clear differences, however, show up between the mobility regimes of men and of women: gender is a secondary factor. When the model is applied separately to nations in the high fluidity and low fluidity sets that we distinguish, we find that the effects of the primary factors identified by our model strengthen in a consistent way from the former set to the latter, although it seems likely that different secondary factors may operate in offsetting ways. Finally, when the model is applied to the groups of nations that we distinguish within the high and low fluidity sets, few differences in the strengths of the various effects show up, but those that do are highly concentrated in post-socialist nations and can be related to secondary factors of a specific kind associated with particular features of their transitions to some form of capitalist democracy.

Introduction

There is by now a well-established tradition of cross-national comparative research into intergenerational class mobility. As regards absolute rates, general agreement exists that these display significant cross-national variation; and further that this variation overwhelmingly results from differences in, and changes in, the form of class structures (see e.g. Erikson and Goldthorpe, 1992: ch. 6; Breen and Luijkx, 2004: 383-5; Breen and Müller, 2020). There is also agreement that cross-national variation occurs in relative rates of class mobility or, that is, in the degree of fluidity existing within class structures as expressed in the strength of the association between individuals' class origins and class destinations considered *net of* structural effects. In more technical terms, the log-linear model of common social fluidity (CmSF model) does not fit well when applied to cross-national class mobility tables. However, there remains disagreement, and indeed much uncertainty, over the question of how far variation in relative class mobility rates is related to general, cross-nationally operative macrosocial factors, such as level of economic development or degree of economic or educational inequality, or has rather to be seen as reflecting distinctive, historically-formed features of particular nations or groups of nations.¹

For example, Ganzeboom, Luijkx and Treiman (1989), analysing multiple mobility tables from 35 countries for the period 1947-87, reported wide cross-national variation in relative rates

¹ We should emphasise that in this paper we are concerned specifically with *class* mobility rather than mobility considered in terms, say, of 'socioeconomic status' or income. The research subsequently discussed in the text was very largely based on versions of the EGP class schema (Erikson, Goldthorpe and Portocarero, 1979).

together with a general tendency for the level of fluidity to increase over time. Although the link was only implicitly made, the variation could then be taken as consistent with Treiman's (1970) argument that inequalities in relative mobility chances decrease in course of nations' economic development, as 'achievement' rather than 'ascription' becomes, from functional necessity, the dominant principle of social selection. However, the analyses in question attracted a good deal of criticism (Jones, 1992; Erikson and Goldthorpe, 1992: 99-101; Wong, 1994); and Treiman himself, in later work with Yip (1989), modified his position, making the alternative suggestion that the level of fluidity within the class structure of a society would be inversely related to the degree of economic or educational inequality that prevailed. Erikson and Goldthorpe (1992: 380-8), considering mobility data for 15 nations relating to the 1970s, found no evidence for such a relationship between fluidity and educational inequality, although some – qualified – evidence for a relationship between fluidity and income inequality. But Breen and Luijkx (2004: 396-7), using data from the 1970s to the 1990s, could not replicate this latter result for 10 nations, 6 being the same as those covered by Erikson and Goldthorpe. Further, while reporting, like Ganzeboom, Luijkx and Treiman, some cross-national tendency for fluidity to increase over time, Breen and Luijkx (2004: 397-8) were unable to show any unambiguous link between this tendency and economic development. Finally, Hout and Beller (2006), analysing class mobility data for 18 nations collected at the end of the twentieth century, present evidence that greater fluidity *is* associated with educational equality, although only in a complex interaction with type of welfare state.

This rather unsatisfactory situation lends point to an argument advanced by Erikson and Goldthorpe at the conclusion of their book (1992: 389-92). While, as noted, they participated in the discussion reviewed in the previous paragraph, they also raised the possibility that it

might be to some extent misguided. Following Lieberman's (1987) observation that to explain variation in a phenomenon is not to explain the phenomenon itself, they argued as follows: 'To seek to explain cross-national variation in relative rates of class mobility or, that is, variation in the pattern of net association between class origins and destinations, need not at all be the same thing as explaining why such association should exist in the first place.' (Erikson and Goldthorpe, 1992: 390). That is to say, the association itself might be accounted for by reference to one set of, in Lieberman's terminology, 'primary' factors, while variation in its strength could be accounted for by another set of 'secondary' factors, which serve to modify the operation of the primary factors. These reservations underlay Erikson and Goldthorpe's attempt to show (1992: chs. 4, 5) that across the nations they studied, variation in relative rates of class mobility could be seen as occurring around a broad *cross-national commonality* that they referred to as the 'core pattern' of social fluidity, reflecting, they could be taken to imply, the operation of primary factors. Cross-national variation could then be seen as deriving from the modification of the effects of primary factors by secondary factors, which could be either ones of a general or of a more nationally specific kind. In this latter case, Erikson and Goldthorpe highlighted the potential importance of the consequences, both intended and unintended, of political intervention and the use of state power in order to shape inequalities of both condition and opportunity.

In other words, what was in effect suggested was that research into cross-national variation in relative class mobility should be regarded as a two-stage process, in which the identification of primary factors precedes the identification of secondary factors through which variation might be created. In this paper we follow this approach. The focus of our analyses is, however, on primary factors. We consider their modification by various secondary factors only in a tentative

way, drawing on evidence from previous work in the field, and in order simply to illustrate the potential of the two-stage approach. At the same time, we aim to go beyond what Erikson and Goldthorpe were able to achieve, in two respects.

First, they established what they saw as the core pattern of social fluidity by developing Hauser's (1978) proposal for what later became known (Hout, 1983) as topological log-linear models for mobility tables, by means of which the 'endogenous mobility regime' operating within a class structure could be described. They went beyond Hauser in seeking to give their model a theoretical grounding by specifying a number of effects through the operation of which the level of origin-destination association in each cell of the mobility table was determined. We follow a similar procedure but our model is more directly formulated than that of Erikson and Goldthorpe, while also being a good deal simpler. We have shown ((Bukodi, Goldthorpe and Kuha, 2017)) that this model can give a good representation of the endogenous mobility regime prevailing within the British class structure over a lengthy historical period (see also Bukodi and Goldthorpe, 2018a: ch. 4). We seek here to apply the model comparatively.

Second, a new dataset has been assembled covering 30 European nations, with, we believe, higher standards of data comparability than has been previously achieved and relating to a more recent period than that covered in the research previously referred to. On this basis, the nature and extent of cross-national differences in levels of both absolute and relative rates have been established (Bukodi and Paskov, 2018; Bukodi and Goldthorpe, 2018b; Bukodi, Paskov and Nolan, 2020) and the results reported in the papers cited provide the starting point for what we now further attempt.

Brief but necessary reviews of these two earlier stages in our work are given in the two sections of the paper that immediately follow before, in the central section, we go on to report on the results of applying our model to class mobility tables for our 30 European nations that we treat at different levels of disaggregation. In a concluding section we summarise our findings and discuss some implications for future research in the field.

The model

It has become standard practice for the associations existing between individuals' class origins and destinations, considered net of class structural effects, to be defined and quantified in terms of odds ratios. In large mobility tables very many odds ratios are implicit, so analysis typically starts out from the basic log-linear model:

$$\log F_{ij} = \mu + \lambda_i^O + \lambda_j^D + \lambda_{ij}^{OD}, \quad (1)$$

where F_{ij} is the expected frequency in cell ij of a two-way table comprising origin i (O) and destination j (D); and, on the right-hand side of the equation, μ is a scale factor, λ_i^O and λ_j^D represent the main effects of the distributions of individuals over origins and destinations, and λ_{ij}^{OD} refers to the net associations between origins and destinations. It follows that the odds ratios – or, that is, the natural logarithms of them – are determined by the λ_{ij}^{OD} parameter:

$$\log \frac{F_{ij} F_{lm}}{F_{im} F_{lj}} = \lambda_{ij}^{OD} + \lambda_{lm}^{OD} - \lambda_{im}^{OD} - \lambda_{lj}^{OD}, \quad (2)$$

where $i = 1, \dots, I-1, l = i+1, \dots, I, j = 1, \dots, J-1$ and $m = j+1, \dots, J$. Our aim is then to develop a well-fitting model that defines all such log odds ratios from a much smaller number of parameters than $(I-1)(J-1)$.

Such a model ultimately requires dividing the ij cells of the mobility table into a number of mutually exclusive levels of association (S) and specifying that $\lambda_{ij}^{OD} = \alpha_s$ for every cell (i,j) that belongs to level $s = 1, \dots, S$. However, we proceed by deriving these levels for λ_{ij}^{OD} from configurations of R binary characteristics, each of which either applies or does not apply to each cell of the table:

$$\lambda_{ij}^{OD} = \gamma_{(ij)}^{(1)} + \dots + \gamma_{(ij)}^{(R)} \quad (3)$$

That is to say, the levels are defined by the distinct combinations of the R binary characteristics, so that the number of levels (S) is the number of these combinations, and the level parameters (α_s) are given by the possible values of the sum on the right-hand side of equation (3). Equation (3) is then applied to all log odds ratios in the table by substituting it into equation (2):

$$\log \frac{F_{ij} F_{lm}}{F_{im} F_{lj}} = (\gamma_{(ij)}^{(1)} + \dots + \gamma_{(ij)}^{(R)}) + (\gamma_{(lm)}^{(1)} + \dots + \gamma_{(lm)}^{(R)}) - (\gamma_{(im)}^{(1)} + \dots + \gamma_{(im)}^{(R)}) - (\gamma_{(lj)}^{(1)} + \dots + \gamma_{(lj)}^{(R)}) \quad (4)$$

In sum, our model aims to reproduce the counts found in each cell of the mobility table, and thus all log odds ratios expressing the associations between class origins and destinations, in terms of a linear combination of the binary effects specified – for which a theoretical grounding can be provided.

All previous analyses of our data have been based on the European Socio-economic Classification (ESeC) as shown in Table 1.

[Table 1 here]

ESeC, like the EGP class schema (Erikson, Goldthorpe and Portocarero, 1979), defines class positions in terms of social relations in labour markets and production units – or, in short, in terms of employment relations (for full details see Rose and Harrison, 2010). Correspondingly, we now specify the effects included in our model with reference to ESeC.² Three kinds of binary effects are represented: class hierarchy, class inheritance and status affinity effects.³

Hierarchy effects

These are effects *limiting* social mobility that derive from differences in the general desirability of class positions and, further, from the relative advantages that are offered by different classes when considered as classes of origin, in terms of the availability of family economic resources, and from the relative barriers that exist to their attainment when considered as classes of destination, in terms of required skills, qualifications or capital. We propose four hierarchy effects that are determined by the five hierarchical levels that have become standard practice to distinguish within ESeC and that are indicated by the dashed lines in Table 1. It can

² As applied initially to the British case the model was specified by reference to the British National Statistics Socio-economic Classification (NS-SeC). But ESeC can in fact be regarded as a ‘Europeanisation’ of NS-SeC.

³ Our model is simpler than that of Erikson and Goldthorpe mainly in that it leaves out various effects that they introduced in order to capture barriers to, and distinctive features of, mobility between classes in the agricultural and non-agricultural sectors. By the early twenty-first century the decline in numbers employed in agriculture makes such effects of greatly reduced importance and has reached a point at which their estimation would become quite unreliable in many European nations, at least with population samples of the size available to us.

be seen that Classes 3, 4 and 5 are treated as being at the same hierarchical level. While members of these classes do hold qualitatively different class positions – that is, are involved in different kinds of employment relations – the classes cannot be seen as unequivocally ordered. Our first hierarchy effect, labelled HI1, operates in cells of the 7 x 7 ESeC mobility table for each nation that imply the crossing of any one of the five hierarchical levels; the second effect, HI2, in cells implying the crossing of two levels; the third effect, HI3, in cells implying the crossing of three levels; and the fourth, HI4, in cells implying the crossing of all four levels. These hierarchy effects are thus cumulative, so that, for example, cells in which HI4 applies will be ones in which HI1, HI2 and HI3 also apply.

Inheritance effects

These are effects that enhance social *immobility*, and thus limit mobility, and derive from the special desirability for individuals of positions falling within their own class of origin and, further, from their distinctive opportunities for entry into such positions – e.g. via family traditions, connections or resources; or from constraints existing on mobility away from their class of origin – e.g. as resulting from restricted possibilities in local labour markets. We propose two inheritance effects. The first, IN1, is intended to capture a general propensity for intergenerational class *immobility* and operates in all seven cells on the main diagonal of the mobility table. The second inheritance effect, IN2, is then limited to just two cells on this diagonal: those relating to immobility in Class 1, that of higher-level managers and professionals, and in Class 4, that of small employers and own account workers. This further effect, additional to IN1, is introduced in order to reflect the fact that in these two classes the propensity for immobility is likely to be increased in that inheritance may occur more directly than in other classes through the intergenerational transmission of capital or of actual

businesses or practices. It should here be noted that although Class 1 is predominantly made up of employee – i.e. salaried – managers and professionals, it does also include a small number of ‘large’ employers (i.e. those with more than 25 employees) and a probably larger number of managers and professionals who, while salaried, will also have ownership interests in the businesses or practices in which they work.⁴

Affinity effects

These are effects *enhancing* social mobility that derive from linkages between classes. We propose two effects that are intended to capture affinities of *social status* – specifically, of ‘white-collar’ and ‘blue-collar’ status. Status is here treated (see further Chan and Goldthorpe, 2007) as a form of social stratification qualitatively different from, and only imperfectly correlated with, class. It is expressed in differential association, especially in more intimate aspects of social life such as close friendship, partnership or marriage, and in lifestyles, and is more closely associated than is class with patterns and levels of social participation and of cultural orientations and consumption (Chan and Goldthorpe, 2007; Chan, 2010a). Shared status can then be seen as facilitating mobility and, insofar as class and status positions are not fully aligned, status affinities can offset constraints on mobility imposed by hierarchical class effects. The white-collar/blue-collar distinction proves to persist as a major line of status division within modern societies (Chan, 2010b), and we therefore take a status affinity effect to operate, on the one hand, in the case of all cells of the mobility table implying mobility within the largely white-collar world – that is, as between Classes 1, 2 and 3; and, on the other hand,

⁴ In preliminary analyses we introduced separate additional inheritance effects for Class 1 and for Class 4 but this proved to give no significant improvement in fit over working with a single IN2 parameter.

in all cells implying mobility within the largely blue-collar world – that is, as between Classes 5, 6 and 7. We allow for these white-collar and blue-collar status affinity effects to be of differing strength, with the former being labelled AF1 and the latter AF2. Unlike hierarchy and inheritance effects, these affinity effects are obviously not to be treated as cumulative.

In all, therefore, our model comprises parameters for eight binary effects. Table 2 shows their distribution over the cells of the 7 x 7 class mobility table, and also the 11 different levels of origin-destination association that result from the combinations of these effects in particular cells.

[Table 2]

Cross-national differences in relative mobility rates: our earlier findings

The new dataset that has been assembled for the study of class mobility across 30 European nations is described in full in Bukodi, Paskov and Nolan (2020). It is primarily derived from pooled data from the first five waves of the European Social Survey (ESS) carried out between 2002 and 2010 but supplemented with improved data on respondents' class origins from the ESS-DEVO dataset (Ganzeboom, 2014). All data were collected with the aim of achieving a high level of cross-national comparability. Using this dataset, intergenerational class mobility tables have been constructed for men and women aged 25-64 at time of interview by cross-classifying their class positions at that time with the class positions of their parents at respondent's age 14. Where parents held different class positions, the 'dominance' method (Erikson, 1984) was applied.⁵ One omission should be noted: because of a deficient sample, no table for women in

⁵ For analyses validating this procedure, see Bukodi and Paskov (2020), online Appendix 2.

Italy was constructed. In online Appendix 1 we show class origin and destination distributions for all countries and for both genders.

The main results for relative rates of class mobility that have so far been reported from analyses relating to men and to women *who at interview were in full-time employment* are the following.

First, using both log-linear and log-multiplicative modelling and also analyses of global log-odds ratios (Cox, Jackson and Lu, 2009), it is confirmed that, as found in most earlier research, clear cross-national variation exists in levels of social fluidity, both for men and for women working full time (Bukodi, Paskov and Nolan, 2020).

Second, rather than this variation being seen as quite continuous, European nations would appear better understood as dividing into a high fluidity and a low fluidity set, within each of which sets further groups of nations are distinguishable, on a geopolitical basis, that have generally, if not entirely, similar levels of fluidity. Table 3 shows the distribution of nations into the high and low fluidity sets and into the groups distinguished within each set. The key figures from Bukodi, Paskov and Nolan (2020) that provide the basis for this table are reproduced in online Appendix 2.

[Table 3 here]

Third, from analyses based on quasi-cohorts – i.e. age groups – little evidence emerges (Bukodi, Paskov and Nolan, 2020) of any systematic change in levels of fluidity over the historical period covered, except for a tendency within post-socialist nations for fluidity to decrease following their transitions to some form of capitalist democracy (cf. Jackson and Evans, 2017). This tendency, however, proved to be statistically significant only in the case of the group of Post-

Socialist-2 nations, Bulgaria, Hungary and Poland (cf. Herz, Meurs and Selcuk, 2009; Róbert and Bukodi, 2004, Bukodi and Goldthorpe, 2010).

Fourth, as the distribution of nations in Table 3 would itself suggest, no very strong association is found between level of fluidity and either level of economic development, as measured by GDP per capita, or level of economic inequality, as measured by Gini coefficients for household disposable income (Bukodi and Paskov, 2018: Figures 13.2, 13.3). In both cases, the association does become stronger if the post-socialist nations are omitted from the analysis, but the rationale for so doing, in the present context at least, is obviously questionable.

In the section that follows, we report the results of applying our topological model to the 30 nations in total and then at different levels of disaggregation. Throughout, we distinguish between men and, as in previous analyses, women who at interview were working full-time (subsequently simply ‘women’).⁶

⁶ In concurrent research (Bukodi and Paskov, 2020), it has been found that while there is little systematic difference in the *levels* – i.e. in the overall degree of inequality – of relative rates of intergenerational class mobility as between women working full-time and those working part-time, differences in the *patterns* of relative rates do arise. And, in post-socialist societies women not in employment when interviewed show clearly more unequal relative rates – a stronger association between their class origins and destinations – than do women working full-time. In other words, we would regard the applicability of our model as being, without further modification, limited to men and to women who are in full-time employment.

Results of fitting the topological model

We begin by applying our topological model to data for all 30 nations brought together in a single table, with sample sizes being standardised to the cross-national average ($N = 2158$ for men and 1090 for women) so that each nation carries equal weight. The results we obtain are set out in Table 4. As can be seen from the upper panel of the table, the lack of fit of the model to the data is significant, which is scarcely surprising given the total N s involved. However, it can also be seen that this lack of fit is slight. For men and women alike the model accounts for the very large part of the association that exists between class origins and destinations and misclassifies only 3 per cent of all individual cases across the cells of the table.⁷ Further, as is shown in the lower panel of the table, all the effect parameters take their expected sign and all are significant except for the HI1 effect for men.

[Table 4]

What is therefore indicated is that the pattern of social fluidity prevailing on what might be regarded as a pan-European basis – with each nation counting equally – can be essentially captured by the three kinds of effect included in our model: that is, by those of class hierarchy, class inheritance and status affinity, as these are expressed in the eight parameters and their various combinations as shown in Table 2. We would therefore suggest that these may be regarded as primary factors in Lieberman's sense: that is, as effects accounting for why inequalities in relative chances of mobility should in fact exist.

⁷ We have inspected differences between observed cell values and those estimated under our topological model and cannot find any meaningful pattern in those that are statistically significant.

Three further points of interest emerge from Table 4 relating to gender differences. First, hierarchy effects, when cumulated, prove to be stronger in the case of women than of men – significant differences arising with the HI2 and HI3 effects. That is to say, women have a lower propensity than men to experience medium- and long-range mobility across the class hierarchy, whether in an upward or a downward direction. One may think here of both stronger ‘glass ceilings’ for women preventing upward mobility and of stronger ‘glass floors’ protecting against downward mobility.

Second, a gender difference also exists in that the tendency for class inheritance, as represented by the IN1 effect, is significantly stronger in the case of men than of women; or, alternatively put, women are more likely than men to move away from their class origins. This finding is consistent with that of earlier research (Jonsson et al. 2009; Erikson, Goldthorpe and Hällsten, 2012; Bukodi, Goldthorpe and Kuha, 2017) which shows that men appear more class immobile than women, largely on account of having a stronger propensity to follow their fathers *into particular occupations* than women have to follow either their fathers or their mothers.

Third, status affinity effects are stronger for men than for women. In other words, such effects do more in the case of men than of women to offset hierarchical barriers to mobility *within* the white-collar and the blue-collar worlds. We would see these results as reflecting the fact that cross-class status homogeneity is generally stronger for men than for women. In the white-collar world women, even if of advantaged class origins, are more likely than men to be found in the lowest status groups, mainly those of routine office and sales work; and in the blue-collar world they are less likely than men to be found in the higher status groups of technical and supervisory workers (on status divisions within classes, see Chan, 2010a: Fig. 2.3).

In the light of the foregoing, gender effects can then be regarded one kind of secondary factor through the operation of which the primary factors of class hierarchy, class inheritance and status affinity on relative chances of class mobility may be in some degree modified. However, the question of further interest that arises is that of what happens when we fit our topological model separately to the two sets of European nations, shown in Table 3, that in our previous research we distinguish as having comparatively high and comparatively low levels of fluidity within their class structures.

The results of this next step in our analyses are given in Table 5. From the upper panel of the table it can be seen that even with common parameters for the two sets the model still accounts for 90 per cent or more of the association between origins and destinations and misclassifies only 4.3 per cent of men and 3.9 per cent of women. But, as might be expected, an improvement in both these respects is made when its parameters are allowed to vary by set – now only 3.3 per cent of men and 3.4 per cent of women are misclassified – and it is these variable parameters that are shown in the lower panel of Table 5. All, again, take their expected sign except for the HI1 effect for men in the low fluidity set which becomes marginally positive but is not significant, and also not significant are the HI1 effect for women in the high fluidity set and the AF2 effect for women in both the high and low fluidity sets.

[Table 5]

What is then shown is that for the high fluidity set of nations, as compared with the low fluidity set, hierarchy effects are less strongly negative and inheritance effects less strongly positive for men and women alike. The differences between individual parameters for these effects are often statistically significant but it is with the cumulative effect parameters that in both cases

this outcome becomes most apparent. It is, however, at the same time important to note that within these differences a number of regularities remain.

First, in the case of hierarchy effects little cumulative difference comes about where only the HI1 and HI2 parameters are involved – that is, those representing barriers to relative short-range mobility within the class structure. For men and women in the low fluidity set of nations, just as for those in the high fluidity set, these barriers do not appear all that restrictive. One reason for this is that the AF1 effect – the white-collar status affinity effect – is significantly *stronger* for both men and women in the low fluidity than in the high fluidity set. In the former case, shared white-collar status counts for more in weakening hierarchical barriers to short-range mobility within the white-collar world of Classes 1, 2 and 3.⁸ It is when the HI3 and HI4 parameters also come into play that marked cumulative differences arise between the two sets of nations. In other words, so far as hierarchy effects are concerned, it is differences in propensities for *longer-range* class mobility that chiefly serve to distinguish the two sets. And what may further be observed is that for men and women alike these increases at the higher cumulative levels of hierarchy effects are of a fairly consistent magnitude. It can be calculated from Table 5 that for both men and women, the HI1+HI2+HI3 and also the HI1+HI2+HI3+HI4 cumulative effects are between 1.2 and 1.5 times greater in the low than in the high fluidity sets.

⁸ With two of the nations in the low fluidity set status, Germany and Italy, an indication of status effects offsetting class effects also emerges from the analyses of Bukodi et al. (2018) in that parental status would appear to have a stronger effect, relative to parental class, on children's educational attainment than in Britain or Sweden – two nations in the high fluidity set.

Second, in the case of inheritance effects something similar can be seen. With men, both the IN1 and the IN2 effects are significantly stronger in the low fluidity than in the high fluidity set of nations and both the IN1 effect and the cumulative IN1+IN2 effect are around 1.5 times greater in the former case than in the latter. With women, there is no difference between the sets in the strength of the IN1 effect but then a large difference in that of the IN2 effect – that referring to the propensity for immobility specifically in Classes 1 and 4. It thus turns out that in the case of women the IN1+IN2 effect also is around 1.5 times greater in the low fluidity than in the high fluidity set.

Third, Table 5 shows that the gender differences that were observed when our model was applied to all our 30 nations together *are very largely replicated within the high and low fluidity sets*. Thus, in both sets hierarchical barriers to medium- and long-range mobility appear to operate more strongly with women than with men, while propensities for class immobility are stronger in the case of men than of women. And also in both sets status affinity effects offset hierarchical barriers within both the white-collar and blue-collar worlds to a greater extent for men than for women.

In sum, the application of our topological model to the nations in our high and low fluidity sets shows that the differences in fluidity that exist derive from differences of a fairly consistent magnitude in the strength of the three kinds of effect that we would regard as primary factors accounting for the very existence of inequalities in relative mobility chances. The endogenous mobility regimes characteristic of nations in the low fluidity set are, one might say, essentially ‘blown-up’ versions of those characteristic of nations in the high fluidity set, with gender differences remaining more or less unchanged.

From the foregoing it might then be supposed that in separating the nations forming our high and low fluidity sets, secondary factors are operating on the primary factors we distinguish in quite uniform ways. However, we would suggest that the situation is in fact more complex. The effect of gender, as an individual attribute, does appear to be fairly consistent across nations in the two sets.⁹ But other, societal factors that have been widely seen as creating variation in relative rates, as referred to in the Introduction, may be of differing importance among nations within these sets.

For example, while results reported in our previous papers, as summarised in Table 3, do not point, as already noted, to level of economic development or of economic inequality as having any very systematic impacts, in the case of nations in the Southern group there is in fact evidence that their relatively slow economic development and high economic inequality do contribute substantially to their low levels of fluidity (Bukodi and Goldthorpe, 2018b ; and see also for Italy, Barone and Guetto, 2020; and for Spain, Gil-Hernandez, Bernardi and Luijkx, 2020). Relatively high proportions of small employers and self-employed workers still in the agriculture sector but also in manufacturing and services strengthen propensities for class immobility through a compositional effect; and marked inequalities of condition – reflected in equally marked social inequalities in educational attainment – strengthen hierarchical barriers to mobility, especially of a long-range kind.

⁹ Further individual attributes that should also be recognised as potential secondary factors are those of race and ethnicity, and especially where associated with minority status. But, unfortunately, data limitations prevent us from considering them in the present paper.

However, slow economic development could scarcely be regarded as being of similar importance in accounting for low fluidity in the West-Central group of nations. In this case, propensities for immobility and hierarchical barriers to long-range mobility would appear to stem from more distinctive institutional factors. That is, from the co-existence of stratified educational systems that generate social inequalities in educational attainment and of close linkages between educational qualifications and class positions that lead to educational inequalities being rather directly translated into inequalities in class mobility chances (for Germany, see Klein, 2011, Grätz and Pollak, 2016, Pollak and Müller, 2020; for Switzerland, Falcon, 2013, 2020).¹⁰ And, conversely, the greater fluidity that prevails in the West-Nordic group could be seen as resulting from educational systems being generally somewhat less stratified than in the West-Central group and, perhaps more importantly, from there being less rigorous ‘credentialist’ restrictions on intragenerational and thus in turn on intergenerational mobility (for Britain, see Bukodi and Goldthorpe, 2018a: ch. 7).

Moreover, the yet further possibility has to be recognised that secondary factors modifying the effects on fluidity of the primary factors embodied in our model may be of the kind, stressed by Erikson and Goldthorpe, that reflect the political histories of nations and, in particular, the part played by state intervention in regard to inequalities of condition and opportunity alike.

¹⁰ A further way in which the low fluidity of the Southern and West Central groups of nations might be thought to result from differing secondary factors would be through their differing types of welfare state – i.e. the ‘Mediterranean’ in the former case and the ‘conservative’ or ‘corporatist’ in the latter. However, we have ourselves some scepticism about how far such typologies do adequately capture the extent of national variation in welfare provision and can thus identify actual social processes creating greater or less fluidity within their class structures.

Light can be thrown on this issue if we move on in our analyses to a further level of disaggregation: that of the six groups of nations that we distinguish.

As shown in Table 3, the high and low fluidity sets each comprise three groups of nations. From the figures reproduced in Appendix 2, it can be seen that across the groups within each set there is a high degree of similarity in levels of fluidity, as indicated by the frequent good fit of the log-linear CmSF model in pairwise comparisons. Nonetheless, there are instances where the log-multiplicative UNIDIFF model (Erikson and Goldthorpe, 1992: ch. 3) improves on the CmSF model, indicating uniform differences in levels of fluidity, or where non-uniform differences have to be recognised. It is not therefore surprising that when we fit our topological model to the groups of nations within each set separately, we obtain a clear improvement in fit if we allow its parameters to vary by group (full results are given in online Appendix 3): 3.2 per cent of men and 3.8 per cent of women are then misclassified in the high fluidity set and 3.7 per cent of men and 5.0 per cent of women in the low fluidity set.

In Tables 6.1 and 6.2 we show the parameters in question together with those for the model as fitted to the high and low fluidity sets overall, reproduced from Table 5. Parameters given in bold are those that differ significantly from those for the set. Despite the global improvement in fit that is achieved by allowing the parameters of the model to vary by group, differences in particular parameters turn out to be not at all numerous. In Figures 1.1 and 1.2 the results are summarised graphically, with hierarchy and inheritance effects being taken in cumulated form. It can be seen that there is a generally high degree of similarity in the effects of the topological model across the groups within both sets, despite such differences in levels of fluidity as may be present.

[Tables 6.1 and 6.2, Figures 1.1 and 1.2]

What has, though, to be further noted is that where deviations do exist *this is almost entirely in the post-socialist groups*. In the high fluidity set they occur chiefly with men in the post-Soviet group in the weakness of inheritance effects, both IN1 and IN2, offset in part by the strength of hierarchy effects. In the low fluidity set they occur chiefly with women in the post-socialist-2 group in the strength of the IN2 effect, offset in part by the weakness of hierarchy effects. It is then difficult to see these variations as having any other source than the specific political and related economic circumstances of the period covered by our data.

The weak inheritance effects among men in the post-Soviet nations can be associated with the general disruption of mobility processes following the break-up of the Soviet Union (for the Russian case, see Gerber and Hout, 2004); and, more directly, with the fact that in these nations only 2-3 per cent of the parental generation, who lived largely under the Soviet regime, were found in the ESS surveys to be in Class 4, that of small employers and self-employed workers, while this proportion rises to 7-8 per cent among male respondents interviewed between 2002 and 2010. The strong IN2 effect among women in the post-socialist-2 group then turns out, following more detailed analyses, as described in note 12, to be primarily a compositional Polish effect – and one that is apparent among men as well as women. It can plausibly be seen as resulting from the fact that under socialism in Poland agriculture was never collectivised and greater possibilities than elsewhere also existed for small-scale private enterprise outside of agriculture. In the Polish case, as much as a third of the parental generation were found in the ESS surveys to be in Class 4 and, despite the decline of the agricultural sector, Class 4 still accounts for 13 per cent of female respondents in full-time work – and for 19 per cent of male respondents.

In sum, across the groups of nations that we distinguish within our high and low fluidity sets, a high degree of commonality in their mobility regimes would appear to prevail, with the primary factors represented by our topological model being modified so as to create significant differences in fluidity patterns only by secondary factors associated with different aspects of the transition of former socialist societies to versions of capitalism.

A logical next step in considering the extent to which such factors might modify primary factors would then be that of taking our disaggregation yet further, to the level of the individual nations within groups. This we are unfortunately unable to do because the sizes of our national samples too often gives us insufficient statistical power to fit our model reliably case by case. However, as can be seen from the figures in Appendix 2, among the nations within each group differences in their overall levels of fluidity are only infrequently indicated: that is, in 6 out of 65 pairwise comparisons for men and 10 out of 61 pairwise comparisons for women.¹¹ It is then unlikely that we neglect any large amount of variation in fluidity in being forced to remain with our groups as our basic units of analysis.¹²

¹¹ The differences in question very largely occur with nations that are either ones we recognise as borderline cases – for example, with Ireland and the Netherlands on the borders of the West-Nordic and West-Central groups – or that represent extreme cases such as Portugal which shows still lower fluidity than all other nations in the Southern group.

¹² We have further examined how far the class mobility regimes of our six groups of nations could be regarded as homogeneous in terms of effects under the topological model by fitting the model to each group with one of its constituent nation at a time being dropped. From the results reported in online

Conclusions and implications

We start out in this paper by observing that while it is accepted that some significant degree of cross-national variation is apparent in relative rates of intergenerational class mobility, little consensus has been achieved as regards the sources of this variation. We note the argument advanced by Erikson and Goldthorpe (1992), following the general position taken up by Lieberman (1987), that factors relevant to explaining variation in an established social phenomenon, such as inequalities in relative class mobility chances, need not be the same as those relevant to explaining why this phenomenon exists in the first place. Attempts to identify what may be regarded as the primary factors underlying the phenomenon itself should then, we propose, precede attempts to identify the secondary factors that create variation in the phenomenon through modifying the operation of primary factors. Further, following Erikson and Goldthorpe, in their concern to bring out the ‘core pattern’ of fluidity existing within the class structures of advanced societies, we too opt to work with a topological model, though one more directly formulated and simpler than theirs. We apply this model to class mobility tables for 30 European nations derived from a new dataset, with the explicit aim of identifying primary factors in inequalities in relative mobility chances.

The model claims that these inequalities derive from three kinds of effect: class hierarchy, class inheritance and status affinity effects, the nature of which we spell out in some detail. These effects are represented in the model through eight parameters that operate in various combinations across the cells of the mobility table. When applied to all nations together, the

Appendix 4, it can be seen that very few clear outliers are in this way revealed, although the strength of the IN2 effect among Polish women, referred to in the text, is one.

model accounts for the very large part of the association existing between class origins and destinations, and misclassifies only 3 per cent of all individual cases. We take this as evidence that our model can be regarded as capturing, at least to a very substantial extent, the primary factors that create relative inequalities in class mobility chances.

At the same time, clear differences are shown up in the mobility regimes that prevail with men and with women in full-time employment. Hierarchy effects limit the mobility of women more than that of men and are less offset by status affinity effects, but inheritance effects are weaker with women than with men. Gender has then to be seen as one significant secondary factor.

Further, when the model is applied separately to nations in the high and low fluidity sets that we distinguish, we find that, although the pattern of gender differences remains largely unaltered, with nations in the latter set increases of a fairly consistent kind occur in the strength of those hierarchy effects that limit longer-range mobility, and are thus not modified by status affinity effects, and again in the strength of inheritance effects. However, it does not necessarily follow that the variation in question derives from a similar operation of secondary factors across all nations alike. It may be that in some cases it is general factors, such as level of economic development or of economic inequality, that are of main importance in determining levels of fluidity, while in others it is more specific institutional features, such the degree of stratification of educational systems and the strength of the linkage between educational qualifications and class positions.

Finally, when the model is applied to the groups of nations that we distinguish within the high and low fluidity sets, few differences in the strengths of the various effects show up, but those that do are highly concentrated in our groups of post-socialist nations, and can be rather

readily related to particular aspects of their class structures under socialism and of their transitions to some form of capitalist democracy.

Making the distinction between primary and secondary factors in regard to variation in relative rates of class mobility could then be taken as carrying implications for the further study of *trends* in these rates. Thus far, attention has largely centred – under the influence of various theories of ‘modernisation’ and critique thereof – on whether or not, over time, a general increase in levels of fluidity can be observed. However, if different secondary factors are seen as bearing, with differing force, on the primary factors of class hierarchy, class inheritance and status affinity in the case of particular nations or groups of nations, the possibility can be recognised that no overall trend in relative rates need be in process. And research could then focus on how the effects of different secondary factors may, in different cases, lead to levels of fluidity that are increasing, decreasing or essentially constant.

For example, we have elsewhere (Bukodi and Goldthorpe, 2018b) made suggestions as to why such changes in relative rates as have been observed in both our Southern and West Central groups of nations have been ones in the direction of increased fluidity, at least up to recent times (see for Italy, Barone and Guetto, 2020; for Spain, Gil-Hernández, Marqués Perales and Facelli, 2017; Gil-Hernandez, Bernardi and Luijkx, 2020; for the Netherlands, Ganzeboom and Luijkx, 2004a,b; Breen, Luijkx and Berkers, 2020; for Germany, Pollack and Müller, 2020). And, in our view, insofar as any further changes in these nations do occur, they are likely to be in this same direction. In contrast, in the case of our groups of post-socialist nations, we would envisage that the reverse will apply. The changes brought about in relative rates by secondary factors associated with features of their transitions have been generally in the direction of decreased fluidity (Jackson and Evans, 2017), and our expectation would again be for this same

trend to continue. That is, we would expect levels of fluidity in the nations in our post-Soviet and post-socialist-1 groups to move closer to those in our post-socialist-2 group, which are already located in the low fluidity set. Then, in further contrast, with the nations in our West-Nordic group we have noted that the evidence points either to a falling off of previous marked increases in fluidity (e.g. for Sweden, Breen and Jonsson, 2020; for Finland, Erola, 2009; for France, Vallet, 2014, 2020) or to a long-term constancy in relative rates (e.g. for Britain, Bukodi and Goldthorpe, 2018a; for Ireland, Layte and Whelan, 2004). These findings, we have ventured to propose (Bukodi and Goldthorpe, 2018b) reflect the approximation of these nations to a notional *limit* on the extent to which relative rates of class mobility can be brought towards equality in societies with a capitalist market economy, a nuclear family system and a liberal democratic polity. Or, at all events, policy initiatives aimed at further increasing fluidity can in these cases be expected to be ones that will meet with mounting socio-political difficulties and opposition.

Our speculations may of course prove mistaken. But, at all events, we would believe that projects designed to take further the study of variation in relative rates of class mobility that work with the distinction between primary and secondary factors represent the most promising way of overcoming the present unsettled situation in this area of research.

References

- Barone, C. and Guetto, R. (2020). Education and social fluidity in contemporary Italy; an analysis of cohort trends. In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press.
- Beller, E., and Hout, M. (2006). Welfare states and social mobility: How educational and social policy may affect cross-national differences in the association between occupational origins and destinations. *Research in Social Stratification and Mobility*, 24, 353-365.
- Breen, R. and Luijkx, R. (2004). Conclusions. In: Breen, R. (ed.), *Social Mobility in Europe*. Oxford: Oxford University Press.
- Breen, R. and Müller, W. (2020). Social Mobility in the Twentieth Century in Europe and the United States. In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press.
- Breen, R., Luijkx, R. and Berkers, E. (2020). The role of education in the social mobility of Dutch cohorts, 1908-74. In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press.
- Bukodi, E. and Goldthorpe, J.H. (2010). Market versus meritocracy: Hungary as a critical case. *European Sociological Review*, 26, 655-74.
- Bukodi, E. and Goldthorpe, J.H. (2018a). *Social Mobility and Education in Britain: Research, Politics and Policy*. Cambridge: Cambridge University Press.
- Bukodi, E. and Goldthorpe, J.H. (2018b). *Social Inequality and Social Mobility: Is there an Inverse Relation?* SocArXiv. doi:10.31235/osf.io/jkqne.
- Bukodi, E. and Paskov, M. (2018). Income inequality, living standards, and intergenerational social mobility. In B. Nolan (ed.), *Generating Prosperity for Working Families in Affluent Countries*. Oxford: Oxford University Press.
- Bukodi, E. and Paskov, M. (2020). Intergenerational class mobility among men and women in Europe: Gender differences or gender similarities? *European Sociological Review*, doi: 10.1093/esr/jcaa001.
- Bukodi, E., Goldthorpe, J.H. and Kuha, J. (2017). The pattern of social fluidity within the British class structure. *Journal of the Royal Statistical Society, Series A*, 180, 841-862.
- Bukodi, E., Paskov, M. and Nolan, B. (2020). Intergenerational class mobility in Europe: A new account. *Social Forces*, 98, 941-972.

- Bukodi, E. et al. (2018). Linking the macro to the micro: a multidimensional approach to educational inequalities in four European countries. *European Societies*, 20, 26-64.
- Chan, T. W. (2010a). *Social Status and Cultural Consumption*. Cambridge: Cambridge University Press.
- Chan, T. W. (2010b). The social status scale: its construction and properties. In: Chan, T. W., (ed.), *Social Status and Cultural Consumption*. Cambridge: Cambridge University Press.
- Chan, T.W. and Goldthorpe, J.H. (2007). Class and status: The conceptual distinction and its empirical relevance. *American Sociological Review*, 72, 512-532.
- Cox, D. R., Jackson, M., and Lu, S. (2009). On square ordinal contingency tables: A comparison of social class and income mobility for the same individuals. *Journal of the Royal Statistical Society, Series A*, 172, 483-493.
- Erikson, R. (1984). Social class of men, women and families. *Sociology*, 18, 500-514.
- Erikson, R., and Goldthorpe, J.H. (1992). *The Constant Flux: A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press.
- Erikson, R., Goldthorpe, J.H. and Portocarero, L. (1979). Intergenerational class mobility in three Western European societies: England, France and Sweden. *British Journal of Sociology*, 30, 415-441.
- Erikson, R., Goldthorpe, J.H. and Hällsten, M. (2012). No way back up from ratcheting down? A critique of the 'microclass' approach to the analysis of social mobility. *Acta Sociologica*, 55, 211-229.
- Erola, J. (2009). Social mobility and education of Finnish cohorts born 1936-75: Succeeding while failing in equality of opportunity. *Acta Sociologica*, 52, 307-327.
- Falcon, J. (2013). *Social Mobility in 20th Century Switzerland*. Lausanne: University of Lausanne.
- Falcon, J. (2020). The Swiss El Dorado? Education and social mobility in twentieth-century Switzerland. In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press.
- Ganzeboom, H.B.G. (2014). ESS-DEVO (ESS Developmental Project: Improving the Measurement of Social Background in the European Social Survey). Retrieved from <http://www.Harryganzeboom.Nl/ESS-DEVO/Index.Htm>.
- Ganzeboom, H.G.B. and Luijkx, R. (2004a). Recent trends in intergenerational occupational class reproduction in the Netherlands. In Breen, R. (ed.), *Social Mobility in Europe*. Oxford: Oxford University Press.

- Ganzeboom, H.G.B. and Luijkx, R. (2004b). More recent trends in intergenerational occupational class reproduction in the Netherlands 1970-2004: Evidence from an expanded database. *Netherlands Journal of Social Science*, 40, 114-142.
- Ganzeboom, H.G.B., Luijkx, R. and Treiman, D.J. (1989). Intergenerational class mobility in comparative perspective. *Research in Social Stratification and Mobility*, 8, 3-84.
- Gerber, T. P., and Hout, M. (2004). Tightening up: Declining class mobility during Russia's market transition. *American Sociological Review*, 69, 677-703.
- Gill-Hernandéz, C.J., Marqués-Perales, I. and Fachelli, S. (2017). Intergenerational social mobility in Spain between 1956 and 2011: the role of educational expansion and economic modernisation in a late industrialised society. *Research in Social Stratification and Mobility*, 51, 14-27.
- Gil-Hernandez, C. J., Bernardi, F. and Luijkx, R. (2020). Intergenerational social mobility in twentieth-century Spain: Social fluidity without educational equalization? In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press.
- Grätz, M. and Pollak, R. (2016). Legacies of the past: social origin, educational attainment and labour market outcomes in Germany. In: Bernardi, F. and Ballarino, G. (eds.), *Education, Occupation and Social Origin*. Cheltenham: Edward Elgar.
- Hauser, R. M. (1978). A structural model of the mobility table. *Social Forces*, 56, 919-53.
- Hout, M. (1983). *Mobility Tables*. Beverly Hills: Sage.
- Hertz, T., Meurs, M. and Selcuk, S. (2009). The decline in intergenerational mobility in post-socialism: Evidence from the Bulgarian Case. *World Development*, 37, 739-752.
- Jackson, M., and Evans, G. (2017). Rebuilding walls: Market transition and social mobility in the post-socialist societies of Europe. *Sociological Science*, 4, 54-79.
- Jones, F. L. (1992). Common social fluidity: A comment on recent criticisms. *European Sociological Review*, 8, 255-59.
- Jonsson, J. O. et al. (2009). Microclass mobility: Social reproduction in four countries. *American Journal of Sociology*, 114, 977-1036.
- Klein, M. (2011). Trends in the association between educational attainment and class destinations in West Germany: Looking inside the service class. *Research in Social Stratification and Mobility*, 29, 427-444.
- Liebertson, S. (1987). *Making It Count*. Berkeley, CA: University of California Press.

- Layte, R. and Whelan, C.T. (2004). Class transformation and trends in social fluidity in the Republic of Ireland 1973-94. In Breen, R. (ed.), *Social Mobility in Europe*. Oxford: Oxford University Press.
- Pollak, R. and Müller, W. (2020). Education as an equalizing force: How declining educational inequality and educational expansion have contributed to more social fluidity in Germany. In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press
- Róbert, P. and Bukodi, E. (2004). Changes in intergenerational class mobility in Hungary, 1973-2000. In: Breen, R. (ed.) *Social Mobility in Europe*. Oxford: Oxford University Press.
- Rose, D., and Harrison, E. (2010). *Social Class in Europe: An Introduction to the European Socio-Economic Classification*. London: Routledge.
- Treiman, D. J. (1970). Industrialization and social stratification. In E. O. Laumann (ed.), *Social Stratification: Research and Theory for the 1970s*. Indianapolis: Bobbs-Merrill.
- Treiman, D. and Yip, K .B. (1989). Educational and occupational attainment in 21 countries. In: Kohn, M. (ed.), *Cross-National Research in Sociology*. Beverly Hills: Sage.
- Vallet, L. A. (2014). Mobilité observée et fluidité sociale en France de 1977 à 2003. *Idées économiques et sociales*, 175, 6-17.
- Vallet, L. A. (2020). Intergenerational mobility and social Fluidity in France over birth cohorts and across age. In: Breen R. and Müller, W. (eds.), *Education and Intergenerational Mobility in Europe and the United States*. Stanford: Stanford University Press.
- Wong, R.S-K. (1994). Postwar mobility trends in advanced industrial societies, *Research in Social Stratification and Mobility*, 13, 121-44.

Tables and Figures

TABLE 1: Description of the European Socio-Economic Classification (ESeC)

Class	Description
Class 1	Large employers, higher grade professionals and managers
Class 2	Lower grade professionals and managers, higher grade technicians and supervisors
Class 3	Intermediate occupations ^(a)
Class 4	Small employers and own account workers
Class 5	Lower supervisors and lower technicians
Class 6	Lower services, sales, clerical and technical occupations
Class 7	Routine occupations

Note

(a) Intermediate occupations comprise mainly ancillary professional and administrative employees.

TABLE 2: Distribution of parameters of topological model and resulting 11 levels of origin-destination association^(a)

Class of origin	Class of destination									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7			
Class 1	IN1 IN2 <i>Level 1</i>	HI1 AF1 <i>Level 3</i>	HI1 HI2 AF1 <i>Level 4</i>	HI1 HI2 <i>Level 7</i>	HI1 HI2 <i>Level 7</i>	HI1 HI2 HI3 <i>Level 8</i>	HI1	HI2	HI3	HI4
Class 2	HI1 AF1 <i>Level 3</i>	IN1 <i>Level 2</i>	HI1 AF1 <i>Level 3</i>	HI1 <i>Level 6</i>	HI1 <i>Level 6</i>	HI1 HI2 <i>Level 7</i>	HI1	HI2	HI3	
Class 3	HI1 HI2 AF1 <i>Level 4</i>	HI1 AF1 <i>Level 3</i>	IN1 <i>Level 2</i>	<i>Level 5</i>	<i>Level 5</i>	HI1 <i>Level 6</i>	HI1	HI2		
Class 4	HI1 HI2 <i>Level 7</i>	HI1 <i>Level 6</i>	<i>Level 5</i>	IN1 IN2 <i>Level 1</i>	<i>Level 5</i>	HI1 <i>Level 6</i>	HI1	HI2		
Class 5	HI1 HI2 <i>Level 7</i>	HI1 <i>Level 6</i>	<i>Level 5</i>	<i>Level 5</i>	IN1 <i>Level 2</i>	HI1 AF2 <i>Level 10</i>	HI1	HI2	AF2	
Class 6	HI1 HI2 HI3 <i>Level 8</i>	HI1 HI2 <i>Level 7</i>	HI1 <i>Level 6</i>	HI1 <i>Level 6</i>	HI1 AF2 <i>Level 10</i>	IN1 <i>Level 2</i>	HI1	AF2		
Class 7	HI1 HI2 HI3 HI4 <i>Level 9</i>	HI1 HI2 HI3 <i>Level 8</i>	HI1 HI2 <i>Level 7</i>	HI1 HI2 <i>Level 7</i>	HI1 HI2 AF2 <i>Level 11</i>	HI1 AF2 <i>Level 10</i>	IN1			

Note

(a) HI1: hierarchy-1; HI2: hierarchy-2; HI3: hierarchy-3; HI4: hierarchy-4; IN1: inheritance-1; IN2: inheritance-2; AF1: affinity-1; AF2: affinity-2.

TABLE 3: Nations and national groups in high and low fluidity sets

Post-Soviet	High fluidity set			Low fluidity set	
	Post-Socialist-1	West-Nordic	West-Central	Southern	Post-Socialist-2
Estonia (EE)	Czech Republic (CZ)	Denmark (DK)	Austria (AT)	Cyprus (CY)	Bulgaria (BG)
Lithuania (LT)	Romania (RO)	Finland (FI)	Belgium (BE)	Spain (ES)	Hungary (HU)
Latvia (LV)	Slovenia (SI)	France (FR)	Switzerland (CH)	Greece (GR)	Poland (PL)
Russia (RU)	Slovakia (SK)	Ireland (IE)	Germany (DE)	Italy (IT)	
Ukraine (UA)		Norway (NO)	Luxembourg (LU)	Portugal (PT)	
		Sweden (SE)	Netherlands (NL)		
		United Kingdom (UK)			

TABLE 4: Fit statistics and effect parameters for topological model applied to all 30 nations^(a)

	G^2	rG^2	p	df	DI (%)
Men (N=64740)					
(0) Independence	8730.2		0.00	36	15.7%
(1) Topological model	432.4	0.95	0.00	28	3.0%
Women in full-time employment (N=31610)					
(0) Independence	3758.0		0.00	36	13.2%
(1) Topological model	210.4	0.94	0.00	28	3.0%

Effect parameters ^{(b)(c)}						
	Men			Women in full-time employment		
	CI	Est.	CI	CI	Est.	CI
Effect parameters						
HI1	[-0.09]	-0.04	[0.01]	[-0.14]	-0.08	[-0.03] *
HI2	[-0.20]	-0.17	[-0.15] *	[-0.26]	-0.23	[-0.20] *
HI3	[-0.26]	-0.22	[-0.19] *	[-0.43]	-0.37	[-0.32] *
HI4	[-0.38]	-0.32	[-0.25] *	[-0.49]	-0.39	[-0.29] *
IN1	[0.38]	0.44	[0.49] *	[0.17]	0.24	[0.31] *
IN2	[0.38]	0.43	[0.49] *	[0.40]	0.48	[0.56] *
AF1	[0.40]	0.44	[0.47] *	[0.29]	0.34	[0.39] *
AF2	[0.20]	0.23	[0.27] *	[0.00]	0.05	[0.10] *
Cumulative effect parameters						
HI1		-0.04			-0.08	
HI1+HI2		-0.22			-0.31	
HI1+HI2+HI3		-0.44			-0.69	
HI1+HI2+HI3+HI4		-0.75			-1.08	
IN1		0.44			0.24	
IN1+IN2		0.87			0.73	

Notes

(a) Sample size standardised to average per nation - men: 2158; women: 1090.

(b) Parameters in bold are significantly different between men and women in full-time employment.

(c): * parameter is significant at 5% level.

TABLE 5: Fit statistics and effect parameters for topological model applied separately to high and low - fluidity sets of nations

		G^2	rG^2	p	df	DI (%)
Men	(0) Independence	9563.5		0.00	72	15.6%
	(1) Common effect parameters for High- and Low Fluidity sets	716.3	0.93	0.00	64	4.3%
	(2) Different effect parameters for High and Low Fluidity sets	501.1	0.95	0.00	56	3.3%
	(2) - (1)	215.2		0.00	8	
Women	(0) Independence	3769.6		0.00	72	13.2%
	(1) Common effect parameters for High- and Low Fluidity sets	369.6	0.90	0.00	64	3.9%
	(2) Different effect parameters for High and Low Fluidity sets	285.6	0.92	0.00	56	3.4%
	(2) - (1)	84.0		0.00	8	

Effect parameters^{(a)(b)}

	Men						Women working full-time					
	High fluidity set			Low fluidity set			High fluidity set			Low fluidity set		
	CI	Est.	CI	CI	Est.	CI	CI	Est.	CI	CI	Est.	CI
Effect parameters												
HI1	[-0.14]	-0.07	[-0.00] *	[-0.06]	0.01	[0.07]	[-0.14]	-0.05	[0.04]	[-0.18]	-0.10	[-0.02] *
HI2	[-0.18]	-0.15	[-0.11] *	[-0.26]	-0.22	[-0.19] *	[-0.42]	-0.30	[-0.18] *	[-0.29]	-0.24	[-0.19] *
HI3	[-0.27]	-0.22	[-0.18] *	[-0.42]	-0.36	[-0.30] *	[-0.42]	-0.35	[-0.28] *	[-0.55]	-0.47	[-0.38] *
HI4	[-0.40]	-0.33	[-0.25] *	[-0.49]	-0.39	[-0.28] *	[-0.40]	-0.28	[-0.16] *	[-0.84]	-0.66	[-0.48] *
IN1	[0.28]	0.36	[0.43] *	[0.43]	0.51	[0.58] *	[0.13]	0.23	[0.32] *	[0.13]	0.24	[0.34] *
IN2	[0.23]	0.30	[0.38] *	[0.43]	0.51	[0.59] *	[0.14]	0.26	[0.38] *	[0.44]	0.56	[0.68] *
AF1	[0.31]	0.36	[0.42] *	[0.43]	0.48	[0.54] *	[0.13]	0.20	[0.27] *	[0.36]	0.43	[0.50] *
AF2	[0.16]	0.20	[0.26] *	[0.15]	0.20	[0.25] *	[-0.01]	0.06	[0.13]	[-0.06]	0.01	[0.09]
Cumulative effect parameters												
HI1		-0.07			0.01			-0.05			-0.10	
HI1+HI2		-0.22			-0.22			-0.35			-0.34	
HI1+HI2+HI3		-0.44			-0.58			-0.70			-0.81	
HI1+HI2+HI3+HI4		-0.77			-0.97			-0.98			-1.47	
IN1		0.36			0.51			0.23			0.24	
IN1+IN2		0.66			1.02			0.49			0.79	

Notes

(a) Parameters in bold are significantly different between high and low fluidity sets.

(b): * parameter is significant at 5% level.

TABLE 6.1: Effect parameters of topological model applied to national groups within high fluidity set^{(a)(b)}

	High fluidity set											
	Set			Post-Soviet			Post-Socialist-1			West-Nordic		
	CI	Est.	CI	CI	Est.	CI	CI	Est.	CI	CI	Est.	CI
Men												
HI1	[-0.14]	-0.07	[-0.00] *	[-0.41]	-0.24	[-0.06] *	[-0.11]	0.03	[0.17]	[-0.09]	-0.01	[0.08]
HI2	[-0.18]	-0.15	[-0.11] *	[-0.19]	-0.13	[-0.06] *	[-0.27]	-0.20	[-0.13] *	[-0.18]	-0.13	[-0.08] *
HI3	[-0.27]	-0.22	[-0.18] *	[-0.38]	-0.30	[-0.22] *	[-0.33]	-0.24	[-0.14] *	[-0.31]	-0.24	[-0.16] *
HI4	[-0.40]	-0.33	[-0.25] *	[-0.54]	-0.43	[-0.31] *	[-0.50]	-0.33	[-0.16] *	[-0.43]	-0.30	[-0.18] *
IN1	[0.28]	0.36	[0.43] *	[-0.17]	0.02	[0.20]	[0.29]	0.45	[0.60] *	[0.38]	0.49	[0.59] *
IN2	[0.23]	0.30	[0.38] *	[0.06]	0.24	[0.42] *	[-0.16]	0.02	[0.20]	[0.29]	0.40	[0.50] *
AF1	[0.31]	0.36	[0.42] *	[-0.01]	0.11	[0.23]	[0.29]	0.41	[0.52] *	[0.35]	0.42	[0.49] *
AF2	[0.16]	0.20	[0.26] *	[0.03]	0.12	[0.21] *	[0.09]	0.18	[0.27] *	[0.11]	0.19	[0.26] *
Women in full-time employment												
HI1	[-0.14]	-0.05	[0.04]	[-0.19]	0.06	[0.31]	[-0.09]	0.11	[0.31]	[-0.12]	-0.01	[0.11]
HI2	[-0.42]	-0.30	[-0.18] *	[-0.25]	-0.16	[-0.08] *	[-0.37]	-0.28	[-0.19] *	[-0.34]	-0.27	[-0.20] *
HI3	[-0.42]	-0.35	[-0.28] *	[-0.44]	-0.33	[-0.22] *	[-0.72]	-0.57	[-0.43] *	[-0.46]	-0.35	[-0.24] *
HI4	[-0.40]	-0.28	[-0.16] *	[-0.63]	-0.45	[-0.26] *	[-0.39]	-0.17	[0.06]	[-0.73]	-0.50	[-0.28] *
IN1	[0.13]	0.23	[0.32] *	[-0.06]	0.20	[0.47]	[0.32]	0.54	[0.76] *	[0.15]	0.29	[0.43] *
IN2	[0.14]	0.26	[0.38] *	[0.06]	0.32	[0.57] *	[-0.19]	0.07	[0.33]	[0.10]	0.27	[0.43] *
AF1	[0.13]	0.20	[0.27] *	[-0.03]	0.11	[0.25]	[0.04]	0.18	[0.32] *	[0.14]	0.24	[0.34] *
AF2	[-0.01]	0.06	[0.13]	[-0.09]	0.03	[0.15]	[-0.06]	0.07	[0.20]	[-0.05]	0.06	[0.16]

Notes

(a) Parameters in bold are significantly different between group and set.

(b): * parameter is significant at 5% level.

TABLE 6.2: Effect parameters of topological model applied to national groups within low fluidity set^{(a)(b)}

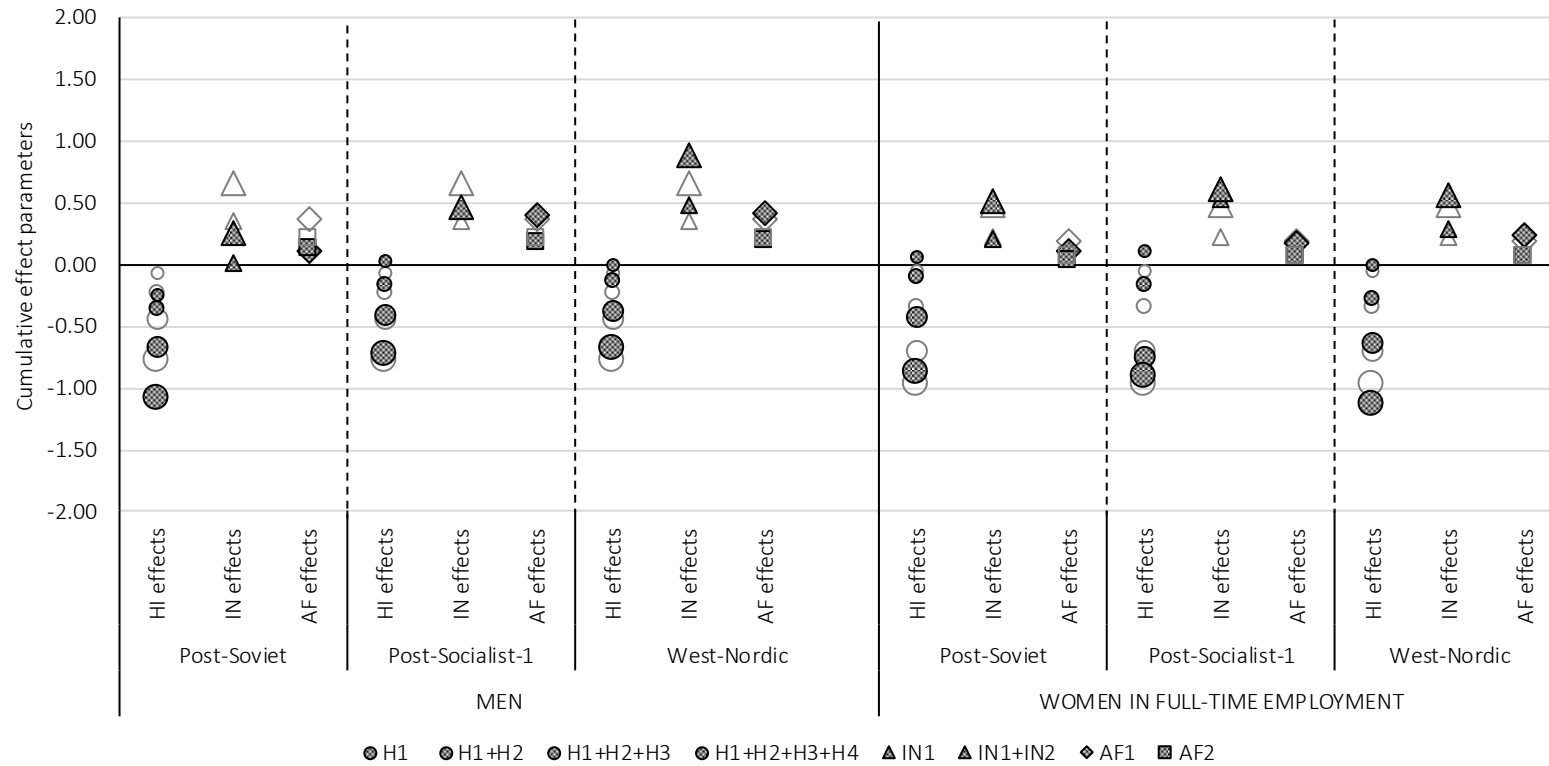
	Low fluidity set											
	Set			West-Central			Southern			Post-Socialist-2		
	CI	Est.	CI	CI	Est.	CI	CI	Est.	CI	CI	Est.	CI
Men												
HI1	[-0.06]	0.01	[0.07]	[-0.05]	0.04	[-0.13]	[-0.09]	0.01	[0.11]	[-0.17]	-0.01	[0.16]
HI2	[-0.26]	-0.22	[-0.19] *	[-0.24]	-0.19	[-0.14] *	[-0.28]	-0.22	[-0.15] *	[-0.38]	-0.30	[-0.22] *
HI3	[-0.42]	-0.36	[-0.30] *	[-0.39]	-0.30	[-0.22] *	[-0.48]	-0.37	[-0.25] *	[-0.52]	-0.40	[-0.28] *
HI4	[-0.49]	-0.39	[-0.28] *	[-0.47]	-0.32	[-0.16] *	[-0.67]	-0.47	[-0.26] *	[-0.67]	-0.45	[-0.22] *
IN1	[0.43]	0.51	[0.58] *	[0.46]	0.56	[0.67] *	[0.31]	0.44	[0.58] *	[0.23]	0.42	[0.62] *
IN2	[0.43]	0.51	[0.59] *	[0.30]	0.41	[0.53] *	[0.34]	0.49	[0.65] *	[0.30]	0.49	[0.68] *
AF1	[0.43]	0.48	[0.54] *	[0.34]	0.42	[0.49] *	[0.48]	0.59	[0.70] *	[0.29]	0.43	[0.56] *
AF2	[0.15]	0.20	[0.25] *	[0.13]	0.20	[0.28] *	[0.12]	0.21	[0.31] *	[0.08]	0.19	[0.30] *
Women in full-time employment												
HI1	[-0.18]	-0.10	[-0.02] *	[-0.18]	-0.07	[0.05]	[-0.28]	-0.13	[0.01]	[-0.14]	0.08	[0.31]
HI2	[-0.29]	-0.24	[-0.19] *	[-0.34]	-0.27	[-0.20] *	[-0.36]	-0.27	[-0.17] *	[-0.22]	-0.12	[-0.01] *
HI3	[-0.55]	-0.47	[-0.38] *	[-0.57]	-0.45	[-0.33] *	[-0.54]	-0.37	[-0.21] *	[-0.64]	-0.49	[-0.33] *
HI4	[-0.84]	-0.66	[-0.48] *	[-0.91]	-0.65	[-0.38] *	[-1.14]	-0.77	[-0.41] *	[-0.92]	-0.59	[-0.26] *
IN1	[0.13]	0.24	[0.34] *	[0.15]	0.29	[0.43] *	[0.00]	0.20	[0.40] *	[0.08]	0.34	[0.59] *
IN2	[0.44]	0.56	[0.68] *	[0.12]	0.30	[0.47] *	[0.22]	0.45	[0.68] *	[0.62]	0.88	[1.14] *
AF1	[0.36]	0.43	[0.50] *	[0.25]	0.35	[0.45] *	[0.17]	0.33	[0.49] *	[0.40]	0.55	[0.70] *
AF2	[-0.06]	0.01	[0.09]	[-0.11]	0.00	[0.12]	[-0.08]	0.06	[0.20]	[-0.05]	0.10	[0.26]

Notes

(a) Parameters in bold are significantly different between group and set.

(b): * parameter is significant at 5% level.

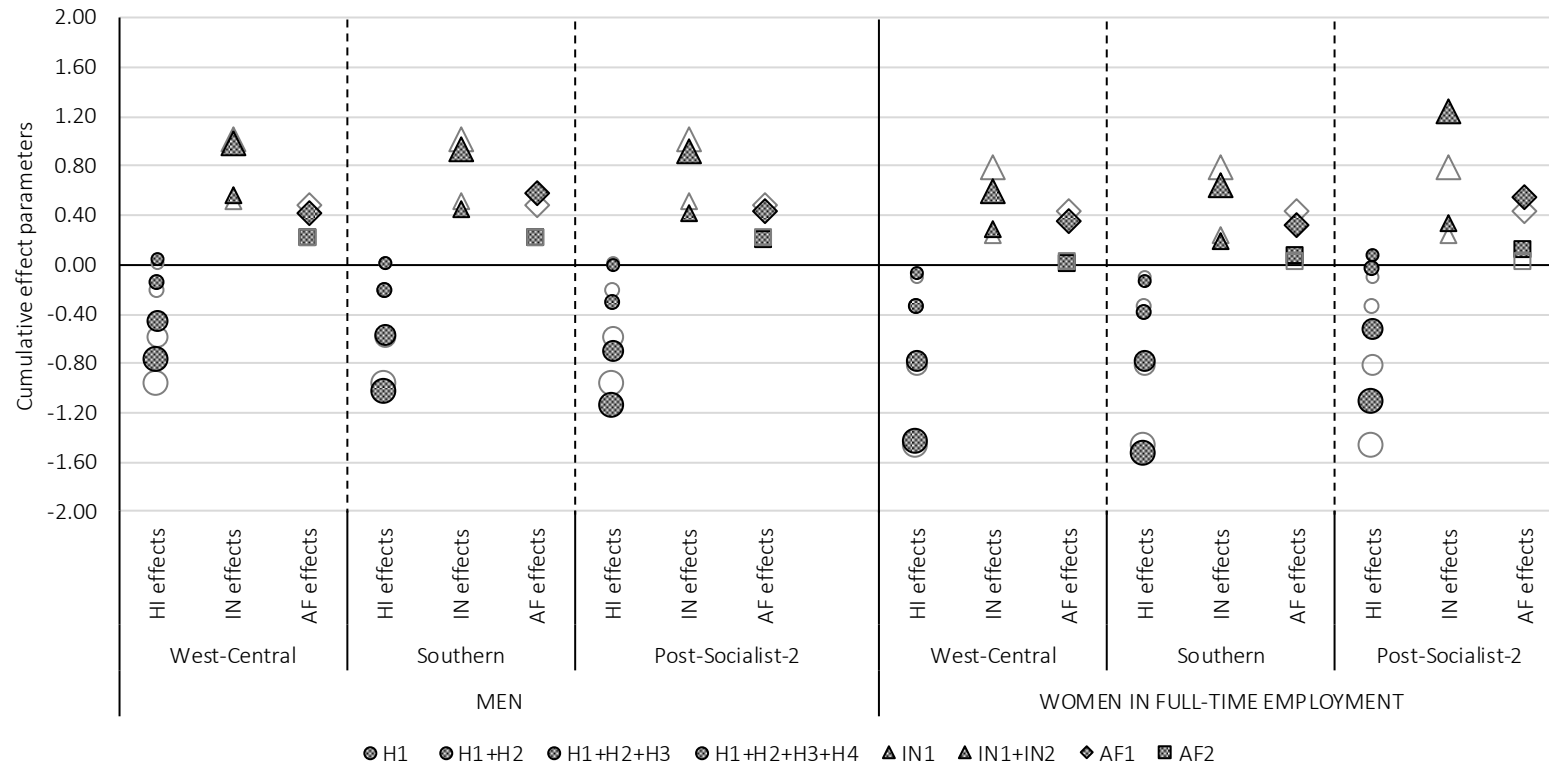
FIGURE 1.1: Cumulative effect parameters for national groups in high fluidity set (shaded symbol) in comparison with cumulative effect parameters for set as shown in Table 5 (hollow symbol)^(a)



Note

(a) Larger size of symbols represents higher level cumulative effects.

FIGURE 1.2: Cumulative effect parameters for national groups in low fluidity set (shaded symbol) in comparison with cumulative effect parameters for set as shown in Table 5 (hollow symbol)^(a)



Note

(a) Larger size of symbols represents higher level cumulative effects.

Appendix

APPENDIX TABLE1: Distribution of men, women and women working full-time when interviewed, aged 25-64, by class of destination (D) and class of origin (O), by country (%)

West-Nordic

ESeC	DK			Origin		FI			Origin		NO			Origin		SE			Origin	
	Destination			Men	Women	Destination			Men	Women	Destination			Men	Women	Destination			Men	Women
	Men	Women-all	Women-FT			Men	Women	Women-FT			Men	Women	Women-FT			Men	Women	Women-FT		
Class 1	17	10	13	16	15	20	10	12	9	9	15	7	11	13	13	20	13	15	15	14
Class 2	18	25	30	17	16	18	24	27	20	18	24	27	35	26	25	23	26	33	23	22
Class 3	5	16	17	4	6	2	13	15	4	4	5	15	17	3	4	5	17	18	6	6
Class 4	11	4	4	27	25	14	7	7	32	31	12	5	3	22	22	11	5	4	20	20
Class 5	15	9	9	8	7	7	5	4	5	5	18	9	9	11	10	11	6	6	7	7
Class 6	17	22	16	15	16	23	25	23	20	20	16	24	17	16	16	16	24	17	20	21
Class 7	17	14	11	14	15	16	16	12	10	13	10	13	8	9	10	14	9	7	9	10
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	2442	2412	1370	2442	2412	3114	3002	1821	3114	3002	3087	2669	1821	3087	1400	2869	2740	1720	2869	2740

West-Nordic (cont.)

ESeC	FR			Origin		IE			Origin		UK			Origin	
	Destination			Men	Women	Destination			Men	Women	Destination			Men	Women
	Men	Women	Women-FT			Men	Women	Women-FT			Men	Women	Women-FT		
Class 1	15	8	10	13	12	14	10	16	8	8	18	12	18	16	16
Class 2	20	19	20	16	16	17	28	36	14	14	21	26	35	23	22
Class 3	8	21	25	6	6	3	13	14	4	4	4	13	15	4	5
Class 4	9	4	4	20	19	20	5	5	33	32	15	5	5	13	13
Class 5	11	6	7	11	12	11	9	9	8	8	13	9	9	12	12
Class 6	20	22	20	22	22	17	21	12	13	13	12	21	11	17	16
Class 7	16	20	14	12	13	18	14	8	20	21	17	14	7	15	16
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	2662	2961	1416	2662	2961	2620	3111	942	2620	3111	2997	3415	1204	2997	3415

West-Central

ESeC	AT					BE					CH				
	Destination			Origin		Destination			Origin		Destination			Origin	
	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women
Class 1	14	8	8	10	10	16	9	15	13	13	18	9	13	12	13
Class 2	28	24	29	17	15	21	27	29	19	19	27	30	33	17	18
Class 3	9	20	25	9	9	5	14	20	5	6	6	20	18	6	6
Class 4	12	8	7	23	24	11	7	5	21	21	13	7	8	26	26
Class 5	11	6	8	11	10	16	6	8	8	7	15	7	9	12	12
Class 6	16	20	15	20	20	14	16	11	18	18	12	15	10	17	17
Class 7	10	14	8	10	12	16	21	12	16	16	9	12	9	10	8
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	2455	2833	714	2455	2833	2607	2511	904	2607	2511	2773	3020	1101	2773	3020

West-Central (cont.)

ESeC	DE					LU					NL				
	Destination			Origin		Destination			Origin		Destination			Origin	
	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women
Class 1	14	7	9	10	11	17	8	12	8	8	23	12	21	11	13
Class 2	21	26	34	17	17	24	26	28	14	14	26	36	44	21	21
Class 3	6	21	21	7	8	5	16	16	4	4	4	16	14	5	4
Class 4	10	5	6	12	12	7	5	7	21	21	11	5	4	21	20
Class 5	15	7	7	13	12	16	8	8	10	10	16	6	6	13	12
Class 6	19	19	14	29	28	16	16	8	22	22	11	16	8	17	18
Class 7	15	15	9	12	12	15	21	21	20	21	8	9	3	11	12
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	4303	4119	1412	4303	4119	963	842	285	963	842	2828	3312	835	2828	3312

Southern

ESeC	CY					ES					GR					IT					PT				
	Destination			Origin		Destination			Origin		Destination			Origin		Destination			Origin		Destination			Origin	
	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women
Class 1	12	7	9	4	6	12	7	9	8	8	8	6	8	4	4	11	N/A	N/A	5	N/A	5	5	6	3	3
Class 2	13	17	19	9	9	13	16	20	9	10	10	13	13	5	7	15			13		11	14	15	4	5
Class 3	7	18	22	5	5	7	15	19	4	5	4	12	15	3	3	6			5		4	9	12	3	4
Class 4	17	11	10	44	41	17	12	11	27	28	34	21	24	57	56	25			36		16	10	8	30	27
Class 5	13	5	7	5	4	12	5	6	6	6	8	5	5	3	4	11			6		11	4	5	6	5
Class 6	23	22	17	14	17	20	20	17	21	20	21	22	20	12	11	14			14		33	27	28	29	30
Class 7	15	20	16	19	18	19	25	18	23	23	16	21	15	15	15	18			21		20	31	26	25	26
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100			100		100	100	100	100	100
N	1017	951	534	1017	951	2774	2509	1264	2774	2509	2559	2642	1223	2559	2642	709			709		2235	2957	1540	2235	2957

Post-Socialist - Post-Soviet

ESeC	EE					LT					LV					RU					UA				
	Destination			Origin		Destination			Origin		Destination			Origin		Destination			Origin		Destination			Origin	
	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women
Class 1	14	14	16	18	19	10	11	11	11	13	6	8	9	16	17	14	13	14	22	21	11	12	14	17	19
Class 2	10	24	25	15	17	13	26	30	16	17	12	21	26	19	20	12	25	25	21	20	17	27	29	18	18
Class 3	2	9	10	5	5	3	13	14	4	4	3	11	13	2	2	2	12	14	2	2	1	10	10	2	2
Class 4	10	4	4	3	3	5	3	2	4	3	6	4	3	1	2	8	3	2	2	2	8	4	4	2	2
Class 5	11	7	8	10	10	4	3	3	3	4	6	6	5	8	7	11	6	6	6	6	9	5	6	7	6
Class 6	26	21	20	34	33	35	22	20	23	23	34	28	25	30	30	28	26	25	26	27	28	23	21	24	25
Class 7	28	21	17	15	13	30	22	20	40	36	33	22	19	24	22	25	15	14	22	22	26	19	16	30	28
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	1567	2026	1298	1567	2026	840	1064	571	840	1064	831	1234	723	831	1234	1832	2382	1221	1832	2382	1662	2556	1062	1662	2556

Post-Socialist - 1

ESeC	CZ					RO					SI					SK				
	Destination			Origin		Destination			Origin		Destination			Origin		Destination			Origin	
	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women
Class 1	9	5	6	8	6	12	12	14	5	7	13	12	15	12	11	8	6	8	12	13
Class 2	16	23	26	22	21	12	18	23	12	13	16	24	29	15	15	17	23	25	14	15
Class 3	4	16	18	7	7	3	11	15	2	2	4	15	14	4	4	3	14	16	3	4
Class 4	12	6	6	4	4	6	3	5	14	11	11	3	4	14	14	13	5	5	2	2
Class 5	8	4	4	8	9	9	4	4	5	5	20	10	10	15	13	9	5	6	10	9
Class 6	27	21	20	37	37	33	32	26	38	38	22	17	15	24	25	25	23	20	33	32
Class 7	24	25	20	15	16	25	20	13	24	24	14	19	13	16	18	25	24	20	26	25
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	2627	2655	1415	2627	2655	1001	543	256	1001	543	1352	1477	834	1352	1477	1862	2225	1184	1862	2225

Post-Socialist -2

ESeC	BG					HU					PL				
	Destination			Origin		Destination			Origin		Destination			Origin	
	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women	Men	Women	Women-FT	Men	Women
Class 1	8	8	12	10	11	9	6	8	8	8	9	9	13	6	6
Class 2	13	17	21	17	18	13	19	23	16	15	14	21	23	16	14
Class 3	3	8	10	3	4	3	16	18	5	6	2	12	14	3	5
Class 4	9	5	6	5	4	9	4	3	5	5	19	13	13	34	34
Class 5	6	4	4	6	7	7	4	4	9	8	10	4	4	7	6
Class 6	31	25	23	30	27	34	26	24	31	31	24	20	18	19	21
Class 7	31	33	24	28	29	25	25	20	26	27	21	21	15	15	14
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N	1550	1939	1011	1550	1939	2128	2435	1204	2128	2435	2619	2676	1177	2619	2676

APPENDIX FIGURE 2.1: Results of fitting the CmSF and the UNIDIFF models to each pair of countries, men aged 25-64

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		△	○	○	○	○	●	●	●	○	●	○	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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																													△	○

Note:

CmSF fits ($p > 0.05$) and UNIDIFF does not improve;

CmSF does not fit but UNIDIFF does not improve;

UNIDIFF improves on CmSF and fits ($p > 0.05$); country B is less fluid than country A;

UNIDIFF improves on CmSF but does not fit; country B is less fluid than country A;



UNIDIFF improves on CmSF but does not fit; country A is less fluid than country B.

APPENDIX FIGURE 2.2: Results of fitting the CmSF and the UNIDIFF models to each pair of countries, women aged 25-64 in full-time employment

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	GR	CY	ES	PT	BG	HU	PL	
EE		○	○	○	○	△	●	△	●	○	●	△	●	○	●	●	●	●	△	●	●	●	▲	▲	●	●	●	●	●	●
LV			○	○	○	△	●	△	●	○	○	△	○	○	▲	●	●	●	△	●	●	●	▲	▲	●	●	●	●	●	●
RU				○	○	○	▲	○	▲	△	○	△	○	○	△	○	△	▲	△	▲	●	▲	△	△	●	●	●	●	●	●
LT					○	△	●	△	●	○	△	△	△	○	▲	●	●	●	△	●	●	●	▲	▲	●	●	●	●	●	●
UA						○	●	△	●	△	○	△	△	○	△	▲	●	●	△	●	●	▲	△	△	●	●	●	●	●	●
RO							○	○	○	△	△	△	△	○	△	△	△	△	△	▲	●	●	○	△	●	●	●	▲	▲	▲
SK								○	○	△	○	△	△	△	○	△	○	○	△	△	▲	△	△	△	●	●	△	△	△	△
SI									○	△	○	○	△	△	○	○	△	△	○	△	●	△	○	○	●	●	▲	▲	▲	▲
CZ										△	○	△	△	△	○	△	○	○	△	△	●	△	△	△	●	●	△	△	△	△
UK											○	△	○	○	△	●	▲	●	△	●	●	●	△	△	●	●	●	●	●	●
NO												○	○	○	○	○	○	●	△	▲	●	▲	△	△	●	●	▲	▲	▲	▲
FR													△	△	△	△	○	△	△	△	▲	△	△	△	●	●	▲	▲	▲	▲
SE														○	○	△	○	●	○	●	●	▲	△	△	●	●	▲	▲	▲	▲
FI															○	▲	○	●	○	●	●	●	○	○	●	●	●	●	●	●
DK																○	○	○	△	△	●	○	△	△	●	●	▲	▲	▲	▲
IE																	○	△	△	△	●	△	△	△	●	●	▲	▲	▲	▲
NL																		△	○	▲	●	○	△	△	●	●	▲	▲	▲	▲
CH																			△	○	○	○	△	△	△	▲	○	○	○	○
BE																			△		○	△	○	○	●	●	●	●	●	●
AT																				▲	●	○	△	△	△	△	△	△	△	△
DE																					○			△	△	△	△	△	△	△
LU																							○	△	●	●	▲	▲	▲	▲
GR																								○	●	●	●	●	●	●
CY																									●	●	●	●	●	●
ES																									○	○	○	○	○	○
PT																										○	△	△	△	△
BG																												○	○	○
HU																														
PL																														

Note:

CmSF fits ($p > 0.05$) and UNIDIFF does not improve;

CmSF does not fit but UNIDIFF does not improve;

UNIDIFF improves on CmSF and fits ($p > 0.05$); country B less fluid than country A;

UNIDIFF improves on CmSF but does not fit; country B is less fluid than country A;

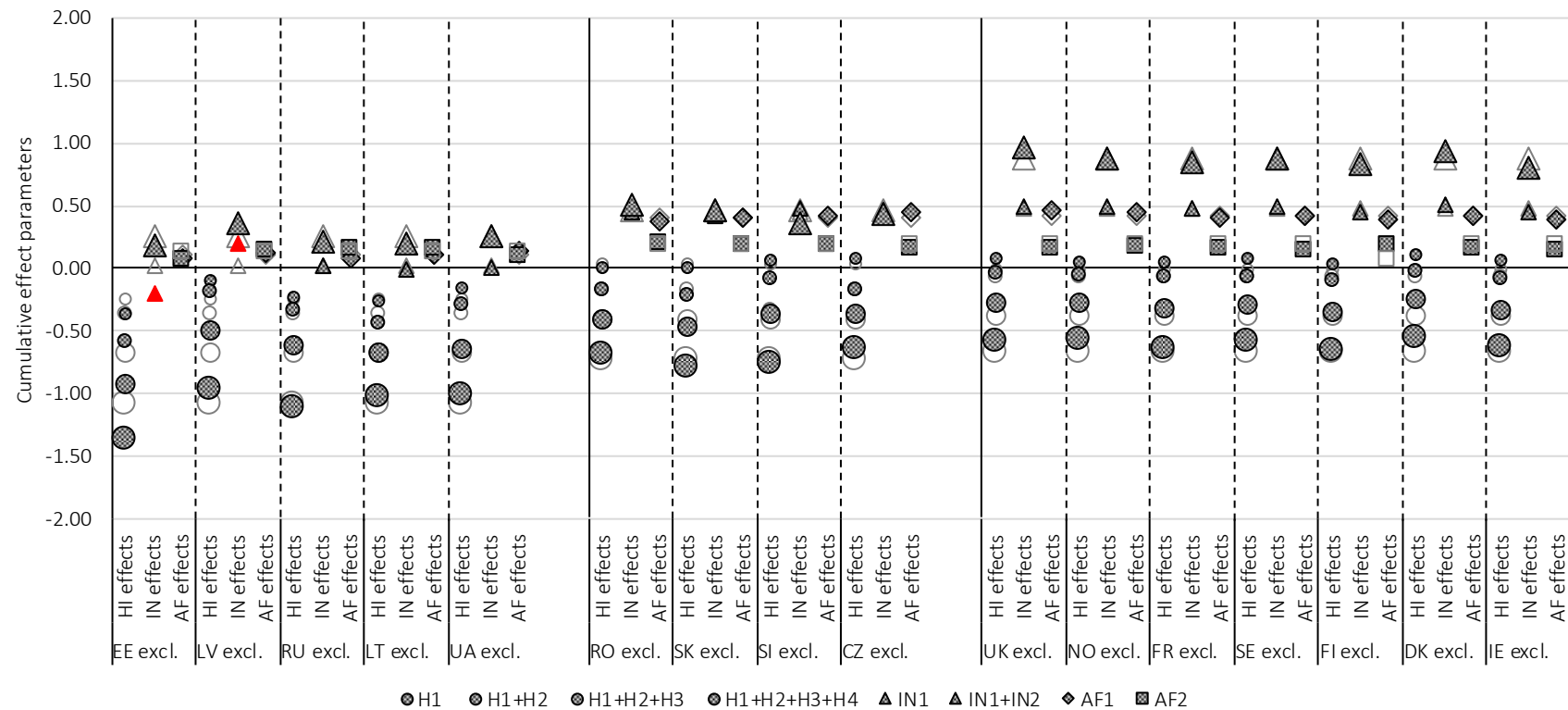


UNIDIFF improves on CmSF but does not fit; country A is less fluid than country B.

APPENDIX FIGURE 3: Fit statistics for topological models with common- and different effect parameters across national groups *within* high and low fluidity sets

		G^2	rG^2	p	df	DI (%)
High fluidity set						
Men	(0) Independence	3439.4		0.00	108	13.1%
	(1) Common effect parameters across national groups	433.9	0.87	0.00	100	3.9%
	(2) Different effect parameters across national groups	336.6	0.90	0.00	84	3.2%
	(2) - (1)	97.2		0.00	16	
Women	(0) Independence	1696.2		0.00	108	12.3%
	(1) Common effect parameters across national groups	294.7	0.83	0.00	100	4.5%
	(2) Different effect parameters across national groups	218.0	0.87	0.00	84	3.8%
	(2) - (1)	76.7		0.00	16	
Low fluidity set						
Men	(0) Independence	4640.9		0.00	108	16.0%
	(1) Common effect parameters across national groups	352.6	0.92	0.00	100	3.9%
	(2) Different effect parameters across national groups	319.8	0.93	0.00	84	3.7%
	(2) - (1)	32.9		0.01	16	
Women	(0) Independence	1949.7		0.00	108	13.9%
	(1) Common effect parameters across national groups	325.9	0.83	0.00	100	5.7%
	(2) Different effect parameters across national groups	285.6	0.85	0.00	84	5.0%
	(2) - (1)	40.3		0.00	16	

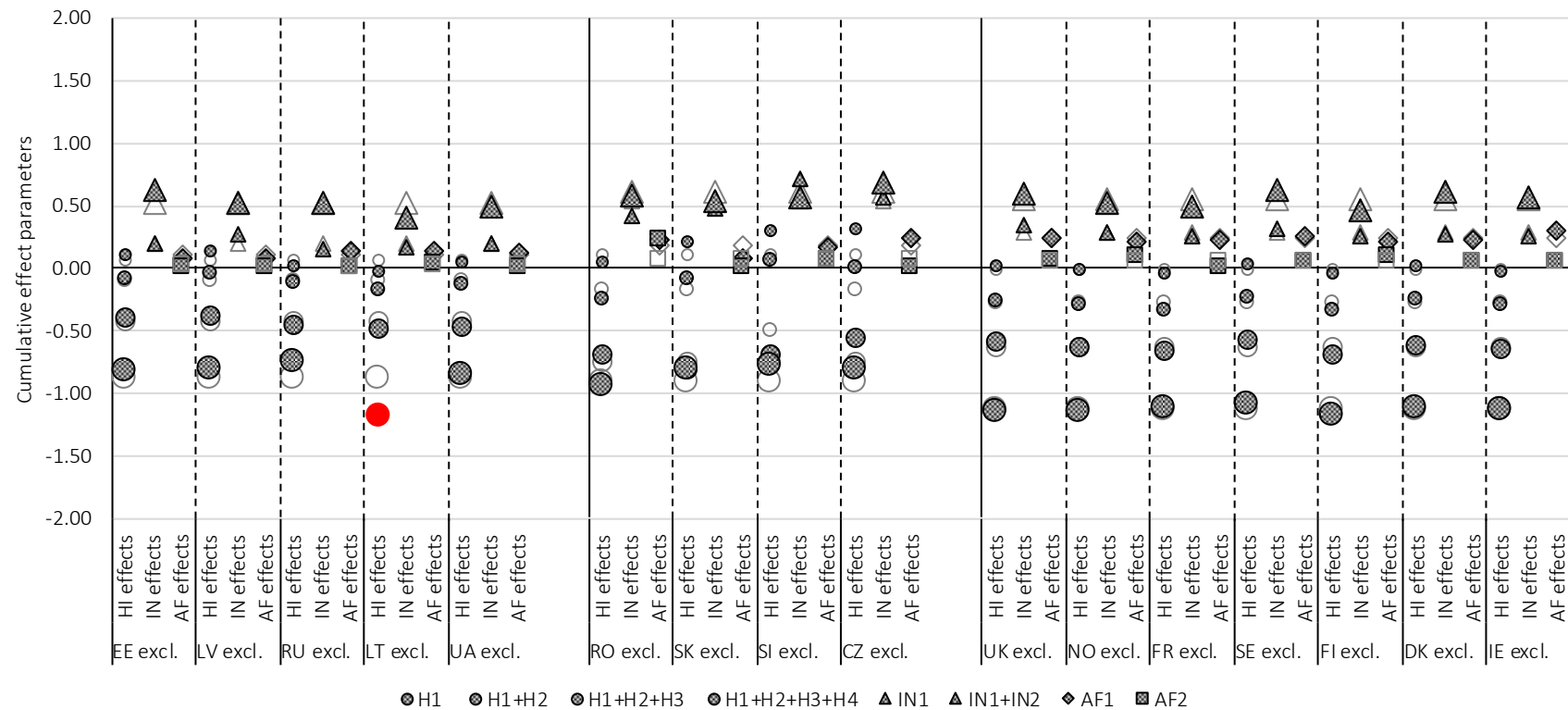
APPENDIX FIGURE 4.1: Cumulative effect parameters for national groups *excluding one nation at a time* (shaded symbol) in comparison with cumulative effect parameters for national groups as shown in Figure 2 (hollow symbol) - men in high fluidity set^(a)



Note

(a) Larger size of symbols represents higher level cumulative effects. Filled red symbols indicate significance difference in parameters between national group intact and national group excluding the country in question.

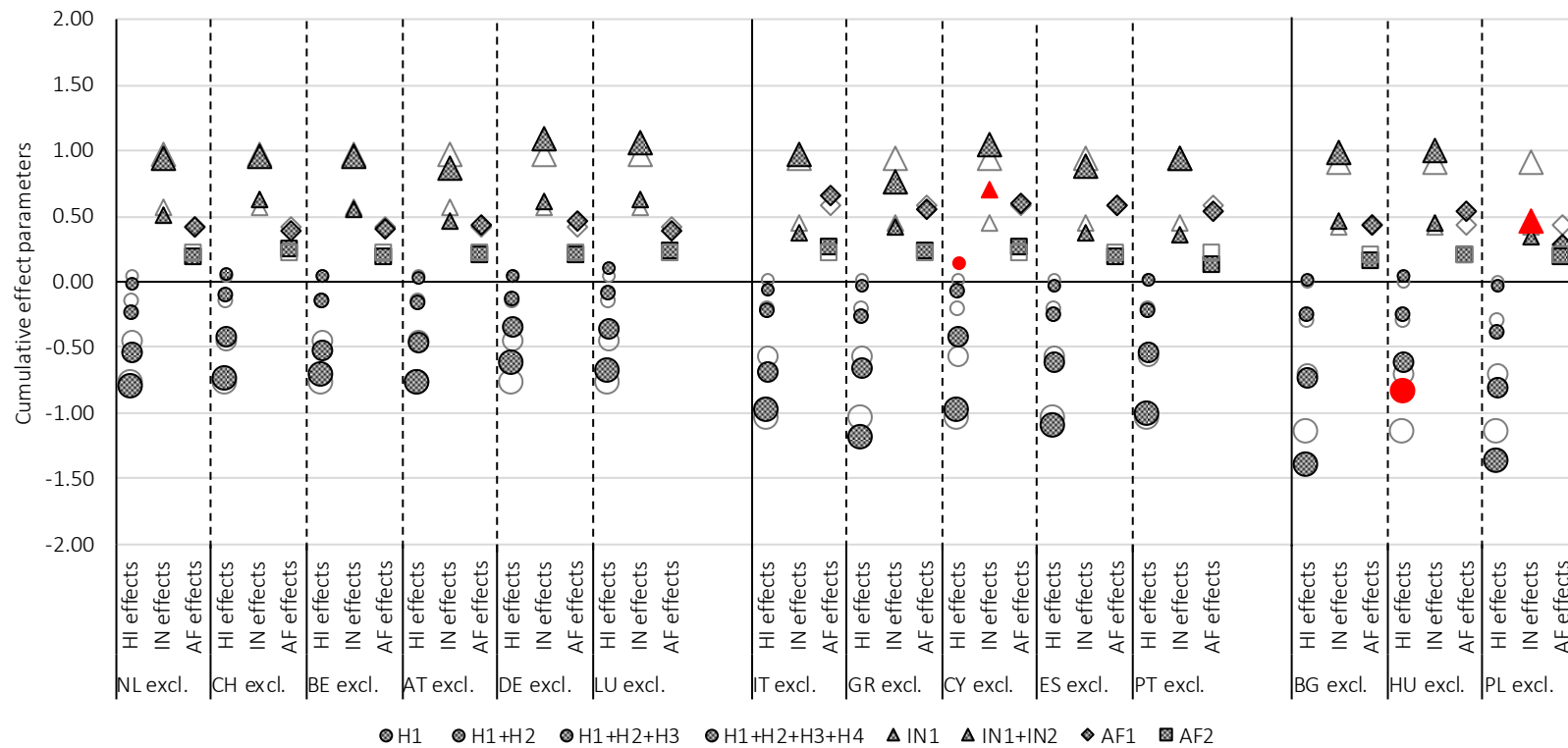
APPENDIX FIGURE 4.2: Cumulative effect parameters for national groups *excluding one nation at a time* (shaded symbol) in comparison with cumulative effect parameters for national groups as shown in Figure 2 (hollow symbol) - women in high fluidity set ^(a)



Note

(a) Larger size of symbols represents higher level cumulative effects. Filled red symbols indicate significance difference in parameters between national group intact and national group excluding the country in question.

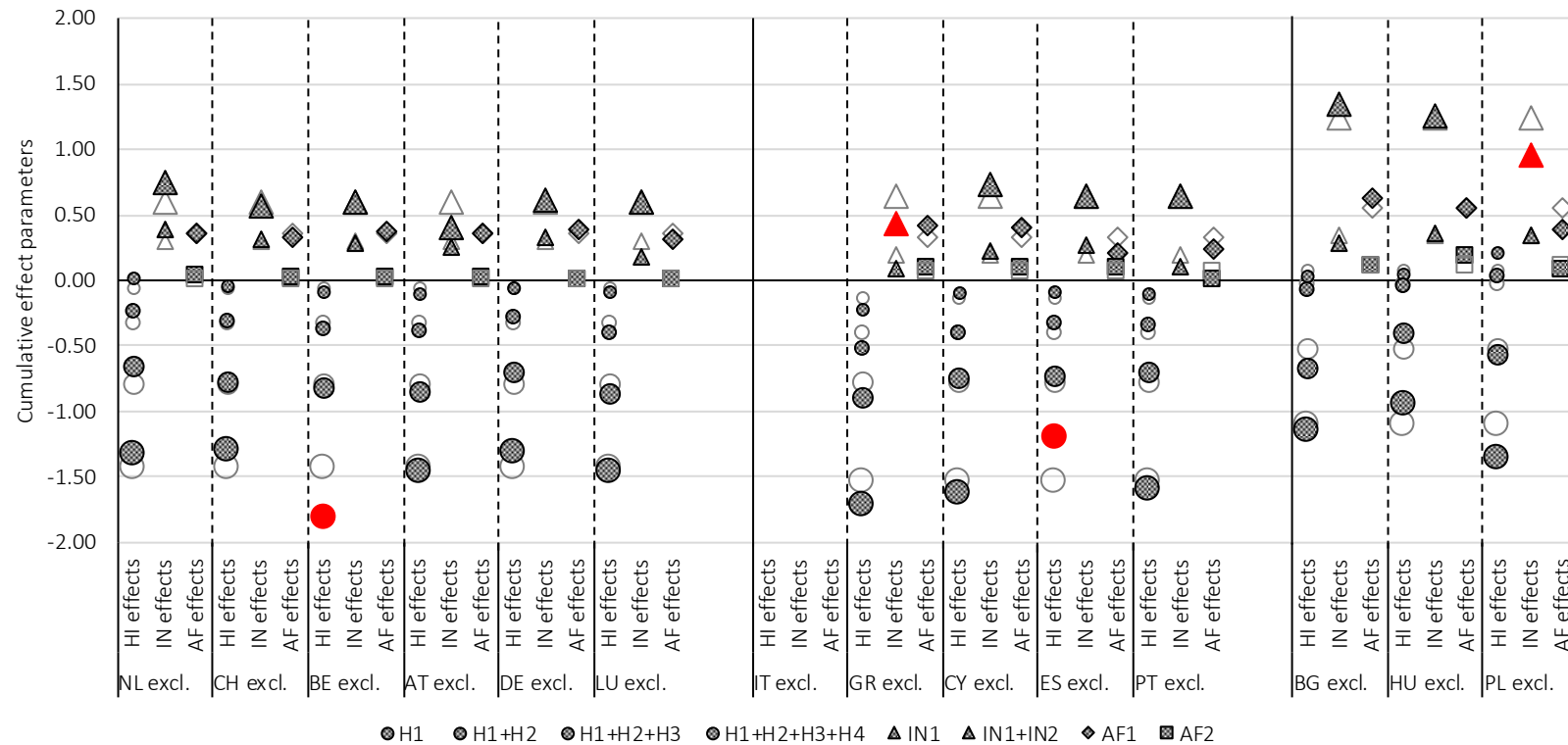
APPENDIX FIGURE 4.3: Cumulative effect parameters for national groups *excluding one nation at a time* (shaded symbol) in comparison with cumulative effect parameters for national groups as shown in Figure 2 (hollow symbol) - men in low fluidity set^(a)



Note

(a) Larger size of symbols represents higher level cumulative effects. Filled red symbols indicate significance difference in parameters between national group intact and national group excluding the country in question.

APPENDIX FIGURE 4.4: Cumulative effect parameters for national groups *excluding one nation at a time* (shaded symbol) in comparison with cumulative effect parameters for national groups as shown in Figure 2 (hollow symbol) - women in low fluidity set^(a)



Notes

(a) Larger size of symbols represents higher level cumulative effects. Filled red symbols indicate significance difference in parameters between national group intact and national group excluding the country in question.