EF1664 Social mobility in the EU: Annexes

Annex 1: List of workshop participants

National workshops in the UK (June 9th, 2016), Poland (July 13th 2016), Baltic countries (November 3rd) and the Netherlands (November 4th, 2016 and the expert seminar at Eurofound (August 28th, 2015)

Full list of participants in alphabetical order:

Stephen Aldridge - Department for Communities and Local Government, UK
Bastian Betthaeuser - University of Oxford, UK
Prof. Richard Breen - University of Oxford, UK
Dr. Erzsébet Bukodi - University of Oxford, UK
Dr. Mollie Bourne - University of Oxford, UK
Prof Henryk Domański - Institute of Philosophy and Sociology, Polish Academy of Sciences, Poland
Prof. Robert Erikson - Swedish Institute for Social Research (SOFI), Sweden
John Ermisch - University of Oxford, UK
Prof. Harry Ganzeboom - VU University Amsterdam, the Netherlands
Laura Gies - European Youth Forum, Belgium
Prof. John Goldthorpe - University of Oxford, UK
Prof. Anthony Heath - University of Oxford, UK
Prof. Krystyna Janicka - Institute of Philosophy and Sociology of the Polish Academy of Science, Poland
Paul Johnston - Social Mobility and Child Poverty Commission, UK
Prof. Janne Jonsson - University of Oxford, UK
Prof. dr. Romas Lazutka, Department of Economic and Department of Social Work, Vilnius University, Lithuania
Prof. Richard Layte, Trinity College, Ireland
Alice Lazzati - University of Oxford, UK
Prof. Bogdan W. Mach - Institute of Political Studies of the Polish Academy of Science, Poland
prof. Aleksander Manterys - Institute of Political Studies of the Polish Academy of Science, Poland
Dr. Vaidas Morkevičius, LiDA, KTU Policy and Public Administration Institute, Lithuania
Michelle Murphy, Social Justice, Ireland
Dr. Jekaterina Navickė, Department of Social Work, Vilnius University, Lithuania
Dr. Mareks Niklass - Faculty of Social Sciences, University of Latvia
Prof. Brian Nolan - University of Oxford, UK
Prof. dr. Zenonas Norkus, Department of Sociology, University of Vilnius, Lithuania
Ana Llena Nozal - OECD
Marii Paskov - University of Oxford, UK
Shannon Pfohman - Caritas Europa, Belgium
Dr. Olga Rajevska - Scientific Institute of Economics and Management, University of Latvia
Dr. Lindsay Richards - University of Oxford, UK
Dr. Ave Roots, Research Fellow, Institute of Social Studies, Estonia
Prof. dr. Ellu Saar, professor at Tallinn University and senior researcher at Institute for International and Social Studies, Estonia
Ireneusz Sadowski - Institute of Political Studies of the Polish Academy of Science
Kazimierz M. Słomczyński - Institute of Philosophy and Sociology of the Polish Academy
Prof. Andrzej Szpociński - Institute of Political Studies of the Polish Academy of Science, Poland
Franciszek Sztabiński - Institute of Philosophy and Sociology of the Polish Academy of Science

Annex 2: Questionnaire on Social mobility in the EU

Questionnaire used to gather contributions from the Network of European correspondents

Please consult the background note for the brief overview of the focus of Eurofound's work, explanation of the main definitions, illustrative examples of the **main barriers and challenges** identified in the existing literature and **examples of potential measures** aimed at fostering social mobility.

In providing information please begin by examining national level measures, broadest in terms of scope or impact. Provide information on more specific, regional or local situations afterwards.

In providing information please focus on issues most relevant in your country.

Part 1: Policy debate

1.1 ***Policy discourse over the last decade*. Provide information on the way in which the topic of social mobility (life chances or improvement of opportunities) or lack of it has been prominent in the policy debate over the LAST 10 YEARS (2005-2015). Please refer to the background note for description of the terms and the definition of social mobility.**
Please identify key policy documents including 'grey literature' (strategies, background papers, position papers by social partners, manifestos of main political parties) that have referred to either (lack of) social mobility, uneven life chances, lack of equal opportunities etc. *(Max 350 words)*.

Please highlight:

Main drivers behind the policy debate (e.g. increase in poverty, growing social and economic inequalities, increased emphasis on opportunities for women)	
Main stakeholders involved (e.g. social partners, civil society)	
Most prominent **policy areas** (e.g. education, access to the labour market)	
Main target groups that policy discourse focused on (e.g. households on low income, migrants)	

Other relevant information:

Please provide list of references.

1.2 ***Policy debate at present.*** **Is the issue of social mobility (improving life chances or equality of opportunities) currently present in the policy discourse?** ***(Max 300 words).***

In preparing to answer this question, please identify key policy documents including 'grey literature' (strategies, background papers, position papers by social partners, manifestos of main political parties) that have referred to either (lack of) social mobility, uneven life chances, lack of equal opportunities or measures to promote opportunities for disadvantaged in relation to education, health or labour market

Then, summarise in relation to **WHICH** social groups and **WHICH** policy areas the policy debate centres in your country.

Part 2: Key barriers to social mobility

What are the main barriers and key obstacles to social mobility that have been acknowledged and raised in the policy debate in your country?

Please identify and describe <u>TOP THREE</u> main barriers most relevant in your country - (*Max 250 words).*

Please consult the background note for some examples of barriers identified in the literature
Please be explicit with regard to:

Barrier	**(yes/no)**	**Comment – main characteristics**
Early childhood *education (lack of ECE, high cost)*		
Schools system *(early tracking, ability grouping)*		
Financial barriers to completing education *(enrolment fees, cost shifting to parents,)*		
Transitions from school to work *(lifelong learning)*		
Labour market *(access to certain occupations)*		
Social inequalities *(social*		

networks)		
Income inequalities		
Health inequalities		
Regional differences		
Discrimination *(race, religion, gender)*		
Other		

Part 3: Measures to promote social mobility

In this section, please list policy measures, identify their remit and duration, and comment on their scope and content (were those universal/mainstreaming measures or measures targeting specific groups; in the latter case, identify the criteria or definitions applied). Please focus on those policy areas and measures that are most relevant in your country.

Please note that some of the measures may not necessarily have been labelled or positioned as promoting social mobility; however, if there is evidence about their impact in terms of positive or negative effect on social mobility or improving opportunities in education, training, jobs for disadvantaged groups, please note them down. Although our focus is on intergenerational social mobility it is evident that most policy measures are addressed to improving life chances for the current generation of disadvantaged groups. After listing the measures aimed at improved mobility outcomes (or in case such were absent), please also consider: awareness raising or informational measures to promote the implementation of the measures.

Please consult the background note for examples of policies measures identified in literature.

Has there been any assessment of impact of the measures listed above? – Please provide references and key conclusion(s) in brief.

Please focus on the time period 2005-2015. Please limit your answers to TWO MEASURES PER POLICY AREA. – (Maximum 200 words per measure)

Measures related to childcare or early childhood education

Measures may include measures that improve access to early childhood education and care (ECEC), policies or mechanisms that offer parenting support, measures that offer and facilitate out of school activity programmes. Please give priority to measures with documented impact. (Max 200 words)

Please consult background note for more examples and illustrations of potential measures.

Measure	**Time reference**	**Description of objectives, scope and content**	**Main target group**	**Impact assessment (if available)**

Measures related to the education system

(when looking at education system please **specify** if measures described relate to primary, secondary, or tertiary *Measures may include mechanisms related to changing tuition fees, grants, measures that change admission procedures or measures that alter tracking system (for example by raising the age or criteria applied). There may be measures that provide additional assistance to disadvantaged pupils including specialised curriculum and additional teaching assistance. There may be measures aimed at improving teacher quality particularly in disadvantaged areas.*

Please consult background note for more examples and illustrations of potential measures. – (Max 200 words)

Measure	**Time reference**	**Description of objectives, scope and content**	**Main target group**	**Impact assessment (if available)**

Measures related to labour market – both in public and private sector

(When looking at measures related to the labour market please specify if measures were established by the government or employer or social partners)

Measures may include policies or mechanisms that broaden access to certain occupations or measures in recruitment practices to open up certain sectors.

Please consult background note for more examples and illustrations of potential measures. - Max 200 words

Measure	**Time reference**	**Description of objectives, scope and content**	**Main target group**	**Impact assessment (if available)**

Other measures implemented in your country

Measures may include policies or mechanisms that aim at regenerating disadvantaged neighbourhoods to tackle regional inequalities or measures that aim to foster social mobility of certain disadvantaged groups such as migrants or low income households or people with disabilities.

Please consult background note for more examples and illustrations of potential measures. Max 200 words

Measure	**Time reference**	**Description of objectives, scope and content**	**Main target group**	**Impact assessment (if available)**

Part 4: Key sources of knowledge about social mobility

In this section, list important studies and sources of data on social mobility in your country.

References

References	Main findings (content, target groups covered, type of data used

(add rows as necessary)

Please list key experts that you contacted to obtain above information (*some experts and sources for some countries will be provided by Eurofound's project team*).

Expert contacted for the purpose of information gathering:

Name	Contact details	Expertise area (in relation to contents provided above)

(add rows as necessary)

Please provide list of stakeholders and experts in the field that may be relevant for Eurofound's work especially for carrying out in-depth case studies, focus groups.

Expert contacts:

Name	Contact details	Expertise area (in relation to contents provided above)

(add rows as necessary)

Annex 3: Country clusters used in the analysis

This report uses Eurofound's country typology that has been developed to analyse different dimensions of quality of life in Europe (2014). When all 28 EU Member States are included in the analysis, the recommendation is to cluster the countries as follows:

Table 2: EU28 Country Groups

Cluster	Label	Countries (EU28)
1	Nordic	DK, FI, SE
2	Continental and Western Islands	AT, BE, DE, FR, IE, LU, NL, UK
3	Western Mediterranean	ES, IT, MT, PT
4	Central and Eastern Europe and Baltic	CZ, EE, HR, HU, PL, LT, LV, SI, SK
5	Eastern Mediterranean and Balkan	BG, CY, EL, RO

The methodology applied to the grouping comprised of three elements:

1. an in-depth 'rapid evidence assessment' review of the literature on country grouping, focusing on quality of life;
2. an empirical cluster analysis of a small number of indicators of state capacity and action to investigate whether this approach could be used to expand, update and validate a system derived from the literature review;
3. an empirical analysis of the 2012 EQLS to test the extent to which the system of grouping countries accounted for country-level differences in quality of life.

The study identified eight groups of countries for quality of life research: Nordic countries, the western islands, continental countries, western Mediterranean countries, eastern Mediterranean countries, Baltic states, central and eastern Europe, and the Balkan countries.

For the purpose of the current study, where the focus is on the EU28, a five-group system was used. It involved combining groups that are similar in terms of quality of life patterns, in order to avoid having groups with only one or two countries. Here, the continental group is combined with the western islands; the Baltic states are combined with the countries of central and eastern Europe; and the countries of the eastern Mediterranean (Cyprus, Greece) are combined with the Balkan countries.

Annex 4: Note on methodology and statistical analysis

A. Methodological notes

EGP class scheme

The EGP scheme allocates individuals to social classes based on their position in the occupational structure of a society. Goldthorpe et al (1980) originally developed a sevenfold scheme, which sought to combine 'occupational categories whose members would appear, in the light of the available evidence, to be typically comparable, on the one hand, in terms of their sources and levels of income, their degree of economic security and chances of economic advancement [market situation]; and, on the other hand in their location within the systems of authority and control governing the processes of production in which they are engaged, and hence in their degree of autonomy in performing their work-tasks and roles [work situation]' (Goldthorpe, Llewellyn and Payne, 1980, p. 40). In a series of revisions that followed the initial EGP framework the following changes were introduced:

- Routine non-manual employees were subdivided into clerical (higher) and personal service (lower) categories;
- The petite bourgeoisie of own-account workers was separated into its constituent elements of small proprietors with employees, small proprietors without employees, and farmers and smallholders; and
- Agricultural workers were distinguished from other rank-and-file semi-skilled and unskilled manual labourers.

In subsequent work Erikson and Goldthorpe (1992) point out that the rationale of the class schema adopted subsequently is 'to differentiate positions within labour markets and production units or, more specifically … to differentiate such positions in terms of the employment relations they entail' (p. 35ff). For this reason it is important to distinguish between employers and self-employed on the one hand and employees on the other.

The latter category of employees is of course fairly heterogeneous category. Meaningful distinctions to be made among those in dependent employment are first on the nature of the labour contract and second on the conditions of employment. Erikson and Goldthorpe write that the 'employment relationships regulated by a labour contract entail a relatively short-term and specific exchange of money for effort. Employees supply more or less discrete amounts of labour, under the supervision of the employer or of the employer's agents, in return for wages which are calculated on a 'piece' or time basis.

In contrast, employment relationships within a bureaucratic context involve a longer-term and generally more diffuse exchange. Employees render service to their employing organisation in return for 'compensation' which takes the form not only of reward for work done, through a salary and various perquisites, but also comprises important prospective elements—for example, salary increments on an established scale, assurances of security both in employment and, through pension rights, after retirement, and, above all, well-defined career opportunities' (Erikson and Goldthorpe, 1992, p. 41f.).

For those workers who have barely more to offer than their time, the default is a labour contract, they are paid by the hour or week, are subject to high levels of monitoring and usually possess low level of skills. Such workers are easily replaceable as the level of specific skills is very low. For workers that possess a specific and rare combination of skills that is highly in demand, monitoring is usually difficult and it is hard to tell for a principal if the work or services delivered are adequate. In such situations the contract of choice is a service contract which is usually long-term, with higher remuneration and other fringe benefits as the aim of such a work relationships is to create loyalty and commitment (Goldthorpe 2000).

The implementation routine for the ESeC variant of the EGP we use was prepared by a team of researchers at the MZES in Mannheim[1].For the more detailed information to implement parent's class membership the coding done by group of researchers at the Free University of Amsterdam[2] is used. The original ESS data disseminated has too limited information on parent's occupation. The following table shows the description of occupational classes and how the older version of the EGP and the ESeC are corresponding.

Table A1: Comparison of different class schemes and terminologies

	EGP (1987)	ESEC (2006)	ESeC class (2006)	Common terminology	Employment regulation
I	Higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors	1	Large employers, higher grade professional, administrative and managerial occupations	Higher Salariat	Service relationship
II	Lower-grade professionals, administrators, and officials, higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employee	2	Lower grade professional, administrative and managerial occupations and higher grade technician and supervisory occupations	Lower Salariat	Service relationship (modified)
III	Routine non-manual employees, higher and lower grade (administration, sales and service)	3	Intermediate occupations	Higher grade white collar workers	Mixed
		7	Lower services, sales and clerical occupations	Lower grade white collar workers	Labour contract (modified)
IV	Petty Bourgeoisie, Farmers and smallholders	4	Small employer and self-employed occupations (excluding agriculture etc.)	Petit bourgeoisie or independents	None
		5	Self-employed occupations (agriculture, logging, fishing etc.)	Petit bourgeoisie or independents	None
V	Lower-grade technicians; supervisors of manual workers	6	Lower supervisory and lower technician occupations	Higher grade blue collar workers	Labour contract (modified)
VI	Skilled manual workers	8	Lower technical occupations	Skilled workers	Labour contract

[1] The Stata program to implement the EseC can be downloaded from: http://www.mzes.uni-mannheim.de/d7/en/projects/the-development-of-a-european-socio-economic-classification-esec.

[2] The ESS-DEVO project *Improving the Measurement of Social Background in the European Social Survey* develops improved measures of social background indicators for the European Social Survey [ESS]. For further details see: http://www.harryganzeboom.nl/ESS-DEVO/index.htm.

(modified)

VII	Semi-skilled and unskilled manual workers (not in agriculture, etc.)	9	Routine occupations	Semi- and non-skilled workers	Labour contract

Analysis of the ESS data

The data source: The report, as explained above uses extensively the European Social Survey (ESS) produced by a consortium of researchers and funded by contributing countries, by the European Union's successive Framework programmes and the EU'S Horizon 2020 programme. The data of 24 EU countries was used to carry out mapping and analysis of social mobility of the respondents aged 35-75. The data were sourced from the European Social Survey website at http://www.europeansocialsurvey.org.

Weighting: data were weighted with frequency weight based on rounded design weights: round(w)=⌊DWEIGHT+0.5⌋. The design weights were used as provided by the ESS; weights were rounded by Eurofound researchers in order to use frequency weights in the flat files. Frequency weights have to be integers. Adding 0.5 to the weight is a linear transformation and is supposed to avoid losing cases where the weight is below 0.5.

Country coverage: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. Countries with too few observations have been discarded for the analysis of social mobility (Croatia, Cyprus, Lithuania and Luxembourg).

Limitations of the data: No population weights were used in the analysis as the crucial information to present was on the relationship between origin and destination and the breakdown to the country level. This approach does not permit to draw any conclusions on Europe as a whole. The combined results presented here should be read as averages over countries rather than mobility of individuals in the European Union.

B. Statistical measures

In the three fictive mobility tables below with three classes U (upper), M (middle) and L (lower), we see two extreme cases (A and B) and a more realistic example (C). In example A there is perfect immobility and all the frequencies are on the diagonal, in example B there is perfect mobility and it does not matter what origin someone has to end up in any of the destinations, and in C 7 individuals with upper class origin stay in that class, four move to the middle class and 1 individual joins lower class. Further, 8 individuals from lower class stay in the lower class, 2 move up to the middle class and 2 end up in the upper class. This last scenario is close to reality, where some individuals stay in the same class as their parents, other mover either up or down. In this case we have 3+2+2=7 cases that are upward mobile (in the lower left corner below the diagonal) and 4+3+1=8 cases that are downward mobile (in the upper right corner above the diagonal). For table C the upward mobility rate is equal to 7/36*100=21.3% and the downward mobility rate is 8/36*100=22.2%. The immobility rate is equal to 7+6+8=21 out of 36 or 58%. And finally, considering horizontal mobility to be between U and M, it would be equal to (3+4)/36*100=19%.

A

Origin \ Destination	U	M	L	Margins
U	12			12
M		12		12
L			12	12
Margins	12	12	12	36

B

Origin \ Destination	U	M	L	Margins
U	4	4	4	12
M	4	4	4	12
L	4	4	4	12
Margins	12	12	12	36

C

Origin \ Destination	U	M	L	Margins
U	7	4	1	12
M	3	6	3	12
L	2	2	8	12
Margins	12	12	12	36

Dissimilarity index

Another measure used subsequently is the dissimilarity index. It represents the share of individuals that would have to change cells in order to get equal distribution or the share of individuals that would have to go to other cells in order to move from table C to B above. This measure is often used when dealing with segregation or comparing distributions. A plastic example is to imagine that there is a bus with two rows of seats, on the right hand side there are three girls and one boy while on the left side there are three boys and one girl. How many boys and girls have to change to the opposite row of seats to obtain equal distribution? Each a boy from the left and a girl from the right will have to switch sides so the numbers are even on both sides. The dissimilarity index is calculated as the sum of the absolute difference in proportions divided by 2.

	Destination U	M	L	Margins
U	0.08	0.00	0.08	0.2
M	0.03	0.06	0.03	0.1
L	0.06	0.06	0.11	0.2
	0.2	0.1	0.2	0.5

Sum of abs(B_{ij}-C_{ij}) or $\lvert B_{ij} - C_{ij} \rvert$	0.50
Index of dissimilarity, D	0.25

The cells above are obtained by taking the absolute difference between each corresponding cell proportions of the above tables (B) and (C). E.g. |4/36 – 7/36| = 0.08 (the rows and columns are indexed with i and j). The resulting absolute differences of proportions are added up and divided by 2 which give an index of dissimilarity of 0.25 or 25%. A simple way of formulating this is that 25% of

people, or 9 in absolute numbers, have to change cells in order to get an even distribution across the table like in table (B). A proportion close to 1 represents a case where the distribution is farthest away from an even distribution or most unequal. The method can be applied to any two tables, e.g. mobility tables for different countries, men and women, different cohorts and allows conclusions as to how different the tables are from each other. The dissimilarity index will be used throughout the chapter. In the following are discussed the metrics of the different country-wise mobility tables by sex.

Odds ratios

One way of measuring the association between origin and destination, holding the changes in the class structure constant is to use odds ratios which express the chance for two groups to end up in one class as opposed in another. For example one can calculate the odds ratio for the offspring of class 2 to stay in the same class or end up in class 6 in comparison the offspring from class 7 to end up in class 1 as opposed to stay in their own class: (F22/F26) / (F71/F77). F stands for frequencies in the cells of a mobility table. If we refer to the mobility table above, we can fill in the numbers as: (7110/1706) / (754/1193) = 4.17/0.63 meaning that it is four times more likely that someone from class 2 remains in class 2 than going to class 6 and the chances for someone of class origin 7 to move to class 1 are less than two out of three. If we then compare the two ratios, we obtain 4.17/0.63=6.59, or it is over six times as likely that someone with a class two origin stays in that class instead of going to class 6 when compared to someone from class seven to go to class 1.

Log-linear models

To analyse a frequency table with three categorical variables such as Origin (9), Destination (9) by cohort (3) which we denote O, D and C and the indices i, j, and k to denominate the two times nine and 3 categories. The expected frequencies in the table of observed values are denoted by m_{abc}. Let $m_{3\ 5\ 2}$be the frequency of the cell for origin 3, destination 5 for cohort number 2.

The saturated log-linear model for the three-way table ODC will be written:

$$\log m_{ijk} = \lambda + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ij}^{OD} + \lambda_{ik}^{OC} + \lambda_{kj}^{DC} + \lambda_{ijk}^{ODC}$$

$$\log m_{ijk} = \lambda + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ij}^{OD} + \lambda_{ik}^{OC} + \lambda_{kj}^{DC} + \lambda_{ijk}^{ODC}$$

The saturated model contains all interaction terms and no restrictions are imposed to the data. However the model above is not informative because it just reproduces the original data table. After applying a set of constraints (like in effect coding in ANOVA models) such as the sum of each term is equal to zero:

$\sum_i \ \lambda_i^O = \sum_j \ \lambda_j^D = \sum_k \ \lambda_k^C = 0$ etc.

$\sum_i \ \lambda_i^O = \sum_j \ \lambda_j^D = \sum_k \ \lambda_k^C = 0$

The term λ represents the (geographical) grand mean of the table frequencies. With effect coding used, the parameters of the model can be interpreted as deviations from the mean.

The aim of log-linear analysis is to test hypotheses. This implies to test more parsimonious models, when some a priori restrictions are imposed on the parameters. For example leaving the highest order parameter λ_{ijk}^{ODC}

$$\lambda_{ijk}^{ODC}$$

out equates to say that origin and destination do not vary across countries or to say that mobility is the same in each cohort. If the so fitted table is not significantly different from the original table, the null-hypothesis can be rejected and the association between origin and destination can be assumed to be the same across countries. Another example would be to estimate the fit of the following model:

$$\log m_{ijk} = \lambda + \lambda_i^O + \lambda_j^D + \lambda_k^C$$

$$\log m_{ijk} = \lambda + \lambda_i^O + \lambda_j^D + \lambda_k^C$$

The model sets to zero all second and the third order interactions, thus specifying that there is no association between Origin and Destination, neither between Origin and cohort nor between Destination and cohort and equally no association between Origin and Destination within countries. This means that the only information we need is on the distributions of origin, destination and countries. Mobility would be simply random in this case.

Among the models developed by Erikson and Goldthorpe (1992) is the so-called 'constant social fluidity model (CnSF), which is reproduced with the ESS data in the table below but only for those countries that Erikson and Goldthorpe included in their study. The model uses three cohort specific tables with origins (O), destinations (D) by cohorts (C) for men only. The hypothesis of constant social fluidity (CnSF) does assume that mobility can be explained by the association between origin (O) and destination (D), however assumes that there is no difference across successive cohorts in the strength of the association between O and D. This model reduced the unexplained variation by two thirds (66.5% reduction of G^2) and leaves only 7% of the empirical distribution unexplained. The model is still not significant and the hypothesis that OD association is constant across cohorts must be rejected as well.

A standardised measure of goodness of fit is $G^2(S)$, as presented by Erikson and Goldthorpe (1992) and recalculated for a standardized sample with the formula (G2-df)/N)*K+df, where K is a standard sample size. As a standard sample size we take N=1746 as it was used by Erikson and Goldthorpe in the Constant Flux. This permits us to compare our results to those published in the Constant Flux. The last two columns of the table below show the G2(S) standardised to 1746 observations in the study by Erikson and Goldthorpe as well as the reduction in the goodness of fit from their study. The standardised goodness of fit of the conditional independence model varies little between the two studies as G(S) is 412 in the present analysis and 405 in the study from 1992. The differences are greater for other countries and in particular for France where the independence model has a higher goodness of fit (a lower value for G^2) for the ESS data. This means that the conditional independence model explains even less than in the previous study.

Looking at the results of the CnSF model we find that it also leaves more to be explained then in the 1992 study. After fitting the constant fluidity model, 7.3% of the observations are misallocated, in contrast to 2.6% in the Constant Flux study. Overall the study from 1992 left less than 5% of cases misallocated, while with the ESS data between 7% and 9% are misallocated after fitting the CnSF model. Part of this is due to a different class system used with nine instead of seven classes but previous studies show some changes as well. Breen and Luijkx (2004) are also presenting the CnSF model for different data to the 1992 study and their indices of dissimilarity tend to be slightly higher in some countries as well, when compared to the Constant Flux results (see also the additions in the table below). To conclude, the CnSF model for the present study seems to explain less than it did twenty five years ago, which can be interpreted that the association of origin and destination does have less explanatory power than it used to have back then.

Relative social mobility/'social fluidity': The uniform difference model

To gauge relative social mobility (or, one can also assess what the chances are of someone with a lower technical social origin becoming a lower-grade professional, compared with someone with a lower-grade professional background becoming a higher-grade professional. Each of the four cells in a mobility table can be used to calculate odds ratios for relative mobility. Unfortunately, for 9 times 9 mobility tables, there are 1,296 possible odds ratios. However, it is possible to calculate a statistical model fitting the empirical data with a maximum-likelihood procedure, holding the marginal distributions constant and estimating one odds ratio for the origin–destination association (OD) per mobility table to estimate the level of relative mobility. This statistic can reflect the equality of opportunity for a country–cohort subtable and be compared to the odds ratio for another country–cohort subtable.

A simple way of illustrating odds ratios is in betting. If Horse A has won 3 races out of 8 and Horse B has won 5 races out of 12, the odds of winning for Horse A are 3/8, or 0.375, while the odds of winning for Horse B are 5/12, or 0.416. How much likelier is Horse B to win the next game when compared to Horse A? This is expressed as an odds ratio: 5/12 divided by 3/8, or 0.416/0.375, which is equal to 1.11. Therefore, Horse B is 1.11 times likelier to win the next race.

In the rest of this section, so-called log-linear models will be used, an estimation technique that is not unlike analysis of variance or regression analysis (see Annex 4). The observed frequencies in mobility tables are reproduced with more parsimonious models and the fit is tested. If a more parsimonious model successfully generates a distribution close enough to the real data, this model's parameters are sufficient to explain the observed distribution.

In the course of the analysis, the so-called 'constant social fluidity model' (CnSF), first developed by Erikson and Goldthorpe (1992) in their book The constant flux, was reproduced with data from the ESS. The model uses three country-specific tables with origins (O), destinations (D) by cohorts (C), for men only. This follows Erikson and Goldthorpe's approach, which allows for comparison of results. Two models will test two hypotheses: first, the independence of origin and destination for mobility processes omitting the O–D association, and second, the constant model of social fluidity (CnSF) is testing if the association between origin and destination has not changed for successive cohorts. Both models hold constant the distribution of origin (O) and destination (D) as well as the association between cohorts and origin (C–O) and cohorts and destination (C–D). For example for the UK, the conditional independence model results in a goodness of fit statistic G2=783 and 192 degrees of freedom, a result that points to the fact that the estimated distribution is significantly different from the observed distribution in the mobility table, and that means the hypothesis of no association between origin and destination has to be rejected clearly for the UK, as for all the countries in the data analysed. Furthermore, the independence model leaves over 15% of the cases not misallocated (the results of the models for other countries are shown in Annex 3).

The CnSF model does not fit the data well enough in any of the countries in the study, but it reduces the unexplained variance by the independence model by a substantial amount (see Annex 4 for more detailed tables of the models presented here). Between 6% and 10% of the observations are still not properly allocated after fitting the CnSF model. In conclusion, there is a clear association between origin and destination in all the countries below and the association is not constant over cohorts. In other words, social origin plays a role for social mobility in all countries and the strength of this association varies across birth cohorts in all countries as well

Table A2: Constant Social Fluidity Model (men only): O=Origin Class; D=Destination Class; C=Cohort

	Eurofound study based on ESS						*Erikson and Goldthorpe (1992)*		
	G^2	df	p	rG^2	Δ[3]	G^2(S), (1746)	G^2(S)	rG	Δ
UK									
(N = 4,693)									
OC DC (cond. Ind)	783.01[4]	192	0.000	-	15.4%	412	405		16.1%
OC DC OD (CnSF)	262.16	128	0.000	66.5%	7.3%	178	49	96.9%	2.6% (2.4%)[5]
DE									
(N = 5,375)									
OC DC	1,456.33	192	0.000	-	19.3%	603	567		21.2%
OC DC OD	272.45	128	0.000	81.3%	6.9%	175	65	92.5%	4.4% (5.2%)
FR									
(N = 3,522)									
OC DC	756.46	192	0.000	-	17.2%	472	734		24.7%
OC DC OD	220.86	128	0.000	70.8%	8.3%	174	53	98.5%	2.0% (2.3%)
PL									
(N = 3,389)									
OC DC	1,143.76	192	0.000	-	20.6%	682	519		19.6%
OC DC OD	207.21	128	0.000	81.9%	7.0%	169	49	99.1%	1.4% (1.3%)
HU									
(N = 2,799)									
OC DC	985.38	192	0.000	-	22.9%	687	457		19.2%
OC DC OD	301.63	128	0.000	69.4%	9.2%	236	52	97.1%	2.4% (3.3%)
SE									
(N = 3,492)									
OC DC	1,081.26	192	0.000	-	20.1%	637	379		17.3%
OC DC OD	321.03	128		70.3%	9.5%	225	45	88.8%	5.1% (3.9%)

Notes:

The UNIDIFF model used in chapter 2 allows a flexible specification for the typical association pattern between O and D and then to constrain its cross-layer variation to be log-multiplicative (see Xie 1992). The model allows for a flexible specification of λ_{ik}^{OC} but constrains λ_{ijk}^{ODC} so that the equation from above becomes:

$$\log m_{ijk} = \lambda + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ij}^{OD} + \lambda_{ik}^{OC} + \lambda_{kj}^{DC} + \beta_k \varphi_{ij}$$

[3] Index of dissimilarity is abbreviated by the Greek symbol Delta Δ. This statistic is calculated in the same way as indicated above.

[4] G2 is the same as L2 in other software packages. It indidates the fit of a model, the higher the number the lower the fit. The statistic is not comparable across models however, unless standardised to a uniform sample size.

[5] Index of dissimilarity of the CnSF model presented in the Study on Social mobility in Europe by Breen 2008, table 3.9, page 55.

In this setup φ_{ij}

$$\varphi_{ij}$$

is assumed to be the same across different tables, and the interest in comparing odds-ratios across tables is captured by the β_k

$$\beta_k$$

parameter (Erikson and Goldthorpe 1992, Hout 1983, Xie 2003). This model can be estimated via an iterative log-likelihood estimation method (Goodman 1979; Xie 1992). Power and Xie (2000, pp.140-145) provide a more detailed discussion of the variations and the practical implications of alternative approaches.

Table A3: Absolute mobility rates across cohorts for 24 EU member states

Austria	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	983	33.9%	22.3%	43.8%
1946–1964	3220	33.3%	20.0%	46.6%
1965–1977	980	37.8%	17.1%	45.1%
Men				
1927–1946	512	27.0%	23.4%	49.6%
1946–1964	1482	30.4%	22.5%	47.1%
1965–1977	384	34.6%	24.0%	41.4%
Women				
1927–1946	471	41.4%	21.0%	37.6%
1946–1964	1738	35.8%	17.9%	46.3%
1965–1977	596	39.8%	12.8%	47.5%

Belgium	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1787	32.5%	22.8%	44.7%
1946–1964	3822	35.7%	21.6%	42.7%
1965–1977	1416	37.5%	22.0%	40.5%
Men				
1927–1946	938	27.7%	22.9%	49.4%
1946–1964	1846	34.4%	22.8%	42.8%
1965–1977	716	34.1%	25.4%	40.5%
Women				
1927–1946	849	37.8%	22.6%	39.6%
1946–1964	1976	36.9%	20.5%	42.6%
1965–1977	700	41.0%	18.6%	40.4%

Bulgaria	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1375	26.5%	26.0%	47.5%
1946–1964	3031	33.2%	26.5%	40.3%
1965–1977	1218	43.3%	25.4%	31.4%
Men				
1927–1946	577	22.4%	26.9%	50.8%
1946–1964	1308	34.6%	26.8%	38.6%
1965–1977	505	40.2%	28.1%	31.7%
Women				
1927–1946	798	29.6%	25.3%	45.1%
1946–1964	1723	32.2%	26.3%	41.6%
1965–1977	713	45.4%	23.4%	31.1%

Cyprus	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	503	43.1%	16.9%	40.0%
1946–1964	1338	41.2%	15.9%	42.9%
1965–1977	610	33.4%	17.2%	49.3%
Men				
1927–1946	321	37.1%	14.0%	48.9%
1946–1964	657	39.0%	14.3%	46.7%
1965–1977	293	30.0%	21.8%	48.1%
Women				
1927–1946	182	53.8%	22.0%	24.2%
1946–1964	681	43.3%	17.5%	39.2%
1965–1977	317	36.6%	12.9%	50.5%

Czech Republic	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1288	34.1%	25.8%	40.1%
1946–1964	3472	38.2%	23.7%	38.2%
1965–1977	1499	42.6%	20.7%	36.6%
Men				
1927–1946	597	32.2%	27.0%	40.9%
1946–1964	1722	38.8%	25.0%	36.2%
1965–1977	725	43.4%	21.9%	34.6%
Women				
1927–1946	691	35.7%	24.7%	39.5%
1946–1964	1750	37.5%	22.3%	40.1%
1965–1977	774	41.9%	19.6%	38.5%

Germany	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	2637	31.7%	21.7%	46.6%
1946–1964	5768	33.4%	19.4%	47.2%
1965–1977	2309	35.4%	24.5%	40.1%
Men				
1927–1946	1383	27.6%	22.7%	49.7%
1946–1964	2887	32.5%	21.8%	45.7%
1965–1977	1105	35.3%	26.5%	38.2%
Women				
1927–1946	1254	36.1%	20.7%	43.2%
1946–1964	2881	34.3%	17.1%	48.7%
1965–1977	1204	35.5%	22.6%	41.9%

Denmark	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	2536	33.8%	15.8%	50.5%

1946–1964	4622	33.8%	18.6%	47.6%
1965–1977	1734	36.2%	24.0%	39.8%
Men				
1927–1946	1358	31.2%	16.6%	52.1%
1946–1964	2282	34.2%	20.0%	45.8%
1965–1977	844	39.3%	26.3%	34.4%
Women				
1927–1946	1178	36.7%	14.8%	48.6%
1946–1964	2340	33.5%	17.3%	49.2%
1965–1977	890	33.3%	21.8%	44.9%

Estonia	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	2010	41.8%	16.7%	41.5%
1946–1964	3606	45.0%	19.6%	35.4%
1965–1977	1558	43.1%	21.3%	35.6%
Men				
1927–1946	742	47.2%	18.1%	34.8%
1946–1964	1516	49.5%	21.4%	29.2%
1965–1977	676	49.1%	19.8%	31.1%
Women				
1927–1946	1268	38.6%	15.9%	45.4%
1946–1964	2090	41.7%	18.4%	39.9%
1965–1977	882	38.5%	22.4%	39.0%

Spain	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1586	31.6%	28.8%	39.6%
1946–1964	3370	34.2%	24.1%	41.6%
1965–1977	1885	34.1%	22.4%	43.4%
Men				
1927–1946	1011	28.7%	27.8%	43.5%
1946–1964	1754	29.8%	26.3%	43.9%
1965–1977	984	33.2%	24.9%	41.9%
Women				
1927–1946	575	36.7%	30.6%	32.7%
1946–1964	1616	39.0%	21.8%	39.2%
1965–1977	901	35.1%	19.8%	45.2%

Finland	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	3568	42.8%	16.4%	40.8%
1946–1964	6368	38.6%	16.9%	44.6%
1965–1977	2040	34.4%	23.2%	42.4%

Men				
1927–1946	1682		39.7%	18.3%	42.0%
1946–1964	3226		37.8%	20.4%	41.8%
1965–1977	1020		34.3%	22.4%	43.3%
Women				
1927–1946	1886		45.5%	14.7%	39.8%
1946–1964	3142		39.4%	13.2%	47.4%
1965–1977	1020		34.5%	24.1%	41.4%

France	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1616		35.3%	16.5%	48.2%
1946–1964	3982		36.7%	17.6%	45.7%
1965–1977	1704		42.0%	16.9%	41.1%
Men				
1927–1946	849		29.1%	18.0%	52.9%
1946–1964	1912		33.9%	19.0%	47.0%
1965–1977	761		41.0%	20.2%	38.8%
Women				
1927–1946	767		42.1%	14.9%	43.0%
1946–1964	2070		39.3%	16.2%	44.5%
1965–1977	943		42.8%	14.2%	42.9%

United Kingdom	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	2764		35.7%	21.7%	42.5%
1946–1964	4931		35.6%	21.6%	42.8%
1965–1977	2045		42.2%	21.5%	36.3%
Men				
1927–1946	1359		33.0%	22.1%	44.9%
1946–1964	2382		33.3%	22.6%	44.1%
1965–1977	952		40.0%	21.2%	38.8%
Women				
1927–1946	1405		38.4%	21.4%	40.3%
1946–1964	2549		37.7%	20.6%	41.7%
1965–1977	1093		44.0%	21.8%	34.2%

Greece	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1838		38.1%	33.3%	28.6%
1946–1964	3271		35.8%	22.6%	41.6%
1965–1977	1917		36.4%	20.5%	43.1%
Men				
1927–1946	1036		33.8%	30.0%	36.2%
1946–1964	1612		30.6%	24.5%	44.9%

1965–1977	853	35.6%	25.3%	39.0%
Women				
1927–1946	802	43.6%	37.5%	18.8%
1946–1964	1659	40.9%	20.7%	38.4%
1965–1977	1064	36.9%	16.6%	46.4%

Croatia	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	259	30.5%	22.8%	46.7%
1946–1964	1005	29.2%	19.4%	51.4%
1965–1977	581	30.8%	22.2%	47.0%
Men				
1927–1946	131	28.2%	24.4%	47.3%
1946–1964	528	31.1%	17.4%	51.5%
1965–1977	242	35.1%	16.9%	47.9%
Women				
1927–1946	128	32.8%	21.1%	46.1%
1946–1964	477	27.0%	21.6%	51.4%
1965–1977	339	27.7%	26.0%	46.3%

Hungary	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1559	33.4%	23.5%	43.1%
1946–1964	3347	33.1%	25.6%	41.2%
1965–1977	1240	38.2%	25.6%	36.1%
Men				
1927–1946	676	32.2%	23.5%	44.2%
1946–1964	1539	34.6%	29.2%	36.2%
1965–1977	584	43.0%	28.4%	28.6%
Women				
1927–1946	883	34.2%	23.6%	42.2%
1946–1964	1808	31.9%	22.6%	45.5%
1965–1977	656	34.0%	23.2%	42.8%

Ireland	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1396	31.9%	25.9%	42.2%
1946–1964	3110	30.1%	21.4%	48.5%
1965–1977	1212	36.4%	21.3%	42.3%
Men				
1927–1946	757	30.0%	29.1%	41.0%
1946–1964	1351	27.2%	27.2%	45.5%
1965–1977	541	38.1%	25.5%	36.4%
Women				
1927–1946	639	34.3%	22.1%	43.7%

1946–1964	1759	32.2%	16.9%	50.8%
1965–1977	671	35.0%	17.9%	47.1%

Lithuania	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	160	25.6%	32.5%	41.9%
1946–1964	499	31.9%	22.2%	45.9%
1965–1977	355	43.1%	27.0%	29.9%
Men				
1927–1946	64	32.8%	39.1%	28.1%
1946–1964	185	44.3%	16.2%	39.5%
1965–1977	114	46.5%	27.2%	26.3%
Women				
1927–1946	96	20.8%	28.1%	51.0%
1946–1964	314	24.5%	25.8%	49.7%
1965–1977	241	41.5%	27.0%	31.5%

Luxembourg	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	559	28.4%	24.0%	47.6%
1946–1964	1304	30.1%	19.3%	50.6%
1965–1977	332	32.8%	19.6%	47.6%
Men				
1927–1946	336	25.6%	25.9%	48.5%
1946–1964	681	28.0%	24.5%	47.4%
1965–1977	174	30.5%	20.1%	49.4%
Women				
1927–1946	223	32.7%	21.1%	46.2%
1946–1964	623	32.3%	13.6%	54.1%
1965–1977	158	35.4%	19.0%	45.6%

the Netherlands	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	2401	29.4%	19.0%	51.6%
1946–1964	5330	29.9%	17.9%	52.2%
1965–1977	2045	30.5%	21.0%	48.5%
Men				
1927–1946	1326	24.4%	19.4%	56.2%
1946–1964	2487	27.1%	19.9%	53.0%
1965–1977	873	28.4%	24.4%	47.2%
Women				
1927–1946	1075	35.4%	18.5%	46.0%
1946–1964	2843	32.3%	16.3%	51.5%
1965–1977	1172	32.0%	18.5%	49.5%

Poland	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1684	41.0%	28.3%	30.7%
1946–1964	4052	39.6%	23.8%	36.6%
1965–1977	1193	39.6%	23.8%	36.5%
Men				
1927–1946	794	46.3%	24.3%	29.3%
1946–1964	2002	42.5%	25.3%	32.2%
1965–1977	593	40.6%	28.5%	30.9%
Women				
1927–1946	890	36.3%	31.8%	31.9%
1946–1964	2050	36.7%	22.4%	40.9%
1965–1977	600	38.7%	19.2%	42.2%

Portugal	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1506	36.1%	29.7%	34.2%
1946–1964	2495	33.5%	23.4%	43.0%
1965–1977	1166	35.2%	23.3%	41.5%
Men				
1927–1946	634	31.4%	25.7%	42.9%
1946–1964	997	30.5%	24.0%	45.5%
1965–1977	534	31.8%	25.7%	42.5%
Women				
1927–1946	872	39.6%	32.6%	27.9%
1946–1964	1498	35.5%	23.1%	41.4%
1965–1977	632	38.0%	21.4%	40.7%

Sweden	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1680	35.0%	18.8%	46.2%
1946–1964	3678	37.0%	20.1%	42.8%
1965–1977	1628	37.6%	24.7%	37.7%
Men				
1927–1946	850	31.8%	21.2%	47.1%
1946–1964	1810	37.3%	21.3%	41.3%
1965–1977	832	35.1%	25.5%	39.4%
Women				
1927–1946	830	38.3%	16.4%	45.3%
1946–1964	1868	36.7%	19.0%	44.3%
1965–1977	796	40.2%	23.9%	35.9%

Slovenia	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1124	31.3%	16.7%	52.0%

1946–1964	2872	30.3%	19.9%	49.8%
1965–1977	1232	29.9%	23.5%	46.6%
Men				
1927–1946	540	27.4%	17.4%	55.2%
1946–1964	1338	31.1%	20.9%	48.0%
1965–1977	598	34.4%	23.7%	41.8%
Women				
1927–1946	584	34.9%	16.1%	49.0%
1946–1964	1534	29.6%	19.0%	51.4%
1965–1977	634	25.6%	23.3%	51.1%

Slovak Republic	N	Downward mobile (%)	Stable (%)	Upward mobile (%)
Total				
1927–1946	1284	34.7%	21.0%	44.4%
1946–1964	3705	34.1%	22.7%	43.3%
1965–1977	1432	40.3%	22.1%	37.6%
Men				
1927–1946	551	33.8%	20.3%	45.9%
1946–1964	1756	35.4%	23.6%	41.0%
1965–1977	657	43.5%	21.8%	34.7%
Women				
1927–1946	733	35.3%	21.4%	43.2%
1946–1964	1949	32.9%	21.8%	45.3%
1965–1977	775	37.5%	22.3%	40.1%