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# A Cohort-Based Temporal Analysis of Social Stratification in Poland

*Abstract:* The question of whether formal education has ceased to be an effective lever for socio-economic achievement in modern societies and has been replaced in that function by social capital derived from social background is a hotly debated topic of modern social sciences, especially in the Western sociology of social stratification. This study examines the question on the basis of nationally representative data from research conducted in Poland from the 1980s to 2019. We analyze the trends in relative intergenerational class mobility, educational inequality, returns to education, and the interactions between background, education, and destination known as compositional effects. We especially consider the postulate that the direct influence of social-class background (origin) on class destination has lessened over time due to the growing number of individuals attaining higher levels of education. Overall, we observe no indication of a decreasing level of forces of ascription in Poland over the last decades. Our analyses also provide a cautionary tale about a long-term trend of decreasing effect of social origin on destination across educational levels that was found in other countries. In Poland, the effect of parental background clearly does not disappear for tertiary degree holders.

*Keywords:* social stratification, intergenerational mobility, returns to education, compositional effect, cohort-based analysis

## Introduction: Conceptual and Methodological Background

Our analysis focuses on changes in the influence of formal education on social mobility and social stratification. Using several nationally representative datasets from 1982 to 2019, we offer multi-cohort comparisons that build the first large-scale, long-term application of the cohort-based approach to the dynamics of social stratification in Poland. In this way, the paper provides a necessary Polish complement that adheres to the accepted high standards for comparative cohort-based studies (Breen and Mueller 2020). Our analysis is especially interesting as a test of the generalizability of findings from other countries. First, social stratification is a truly social institution, and therefore the range of possible changes in it is most effectively examined where significant institutional upheavals have occurred over a long period of time. Over the past several decades, East-Central Europe has offered a promising context for such an investigation, and Poland forms a large block of that context. Second, Polish sociology has a long and, in non-Western sociology, rather unusual tradition of stratification research, with results and interpretations from an array

of high-quality social studies dating back to before 1989. Third, we will analyze all sides of the origin, education, and destination triangle, as they constitute a typical "self-forming whole" and should not be examined separately.

The cohort-related replacement of individuals within changing institutions and period-related institutional changes are two distinct, yet closely related, modes of social dynamics. Except in rare cases, the limitations of the available data preclude a focus on both modes. Cohort-based analysis seems better for analyzing stratification in the context of changing social policies directed to specific, especially cohort groups, for instance, in countries aiming to reform and expand their educational systems (Mueller and Pollak 2004; Yang and Land 2013). The period-related perspective seems more appropriate for studying changes in stratification in the context of institutional alterations affecting whole societies, for instance, development and reconstruction in post-war Europe. Currently, most key researchers of social mobility and stratification prefer the cohort approach arguing that temporal changes observed are mostly cohort phenomena explained by replacement of older less socially fluid (mobile) cohorts by younger, more mobile ones (Breen and Jonsson 2007; Breen and Mueller 2020). However, interest in comparative changes in mobility and stratification started primarily with period-based analyses and led to the seminal books by Erikson and Goldthorpe (1992) and Breen (2004).

Domański et al. (2019) recently summarized results from the period-based approach to temporal changes in the Polish stratification system and mobility, and documented several important findings. These should be checked from a cohort-related perspective as well. The first is that in Poland, as in Western societies, formal education is losing its power to provide a good occupational position. The second is that, with the increase in education, the direct impact of social origin on social destination has rather increased in Poland, while it has generally decreased in countries further to the west. The third is that other links within the origin, education, and destination triangle display trendless fluctuations with U-turns rather than any clear tendency. In contextualizing the above results, the authors emphasize that such findings clearly do not support the optimistic liberal scenario implied by early modernization theory.

This paper focuses on the cohort approach, with the aim of systematically checking whether a cohort-based analysis supports the previous conclusions or leads rather to new results and insights. The rationale (both substantive and methodological) for the current analysis is that if we find patterned, interpretable differences between the period- and cohort-related approaches, then a more complex scientific endeavor combining both is needed. A recent book by Breen and Mueller (2020) suggests that, in some countries, such an approach may be necessary.

The remainder of the paper is structured as follows. First, we briefly discuss the historical background of stratification research. Next, we focus on the prior empirical evidence in regard to temporal changes in linking individuals and social positions. The template for analyzing these links is built from four different "pathways of influence": the first is the effect of origin on educational attainment (OE), which measures the degree of inequality in educational opportunity; the second is the relationship between education and occupational destination (ED), which measures the socio-economic returns to education; the third is the impact of parental origin on occupational destination (OD), which measures

absolute and relative social mobility; and the fourth is the "compositional effect" within the origin, education, and destination (OED) triangle, in which temporal change in the educational distribution of a population is seen as a major source of change in the origin and destination (OD) link (Hout 1988; Mueller and Pollak 2007; Pfeffer and Hertel 2015; Gil-Hernandez et al. 2017; Breen and Muller 2020). Following this explanation, we provide a detailed description of our data and measures, present the key findings from our analysis of the five cohorts we distinguished, and conclude with a discussion of the relevance of these findings for our understanding of recent trends in stratification in Poland and elsewhere.

## Historical Background

Social stratification studies derive from the theory of modernization, which proposes that ascriptive forces (strong origin–destination links, restricted social mobility) will fade away due to democratization, the development of a market economy, and educational expansion (Lipset and Zetterberg 1956; Blau and Duncan 1967; Treiman 1970). Subsequent analyses, based on later "waves of mobility research," refined the theory in relation to conceptual, temporal, and spatial dimensions (Featherman, Jones and Hauser 1975; Erikson and Goldthorpe 1992), and moved it from counting absolute numbers of mobile persons ("absolute mobility") toward comparing the odds of being mobile among people of different social origins (measuring "relative mobility," also known as "fluidity"). What relative rates of social mobility aim to capture are the chances of individuals of different classes of origin being found in different classes of destination when structural changes in the sizes of social classes are controlled. According to the common interpretation of intergenerational mobility, relative rates are concerned with the net association that exists between the class positions of children and their parents. In mobility research, this net association is measured by what are known as odds ratios. Using them, we capture the degree to which a person's destination depends on their origin, net of structural constraints (e.g. Breen 2020).

Answers to the question of how social mobility has changed are far from being consistent. In some countries it has increased and in others decreased (Breen 2004; Breen and Mueller 2020). Recently, using data based on the European Social Survey 2002–2010, Bukodi et al. (2020) indicated that European countries fall into a number of groups of comparatively high or low fluidity. Some post-communist countries, including Poland, have declining mobility rates due to the "commodification" of public educational systems, the expansion of private education, the rising returns to education, and the dismantling of egalitarian social policies. Bukodi et al. argue that in the case of some Nordic countries, which experienced rising social mobility in earlier decades (Erola 2009; Buscha and Sturgis 2018), relative mobility rates are tending to stabilize due to mounting difficulties that prevent parents from "investing" in their children.

Despite the valuable contributions of earlier scholarship, what we know about the associations among social background, education, and occupational achievement is far from being indisputable. In particular, we do not know how class mobility trends have been shaped by the all-encompassing institutional shifts in post-war communist and post-

communist countries. As regards longer trends in mobility, numerous studies have been conducted in Hungary and Poland.[1] More recent research has yielded evidence that the rise in absolute upward mobility among Polish men, which began in the period of rapid industrialization in the early 1950s, has ceased. In contrast, among women, upward mobility has continued to increase, though from an initially lower level than among men. Despite decades of radical political and economic alterations, relative mobility rates have displayed fluctuations rather than a sustainable trend (Mach 2004; Nemeth 2007; Domański et al. 2018).

Drawing on this tradition of research, our particular aim is to present evidence on trends in social stratification in Poland from the era of the late central planning economy to the stabilization of the market economy and democracy after 1989, in conjunction with the country's accession to the European Union in 2004, the economic recession brought on by the Great Crash of 2007–8, and subsequent developments.

## Prior Evidence on the Links Between Origin, Education, and Destination

In the socio-economic life cycle of individuals, the link between origin and education (OE) comes first. Three arguments seem important to support the thesis of a general temporal decline in the OE association. The first is that this trend arises from the increasing levels of educational attainment among young people from less advantaged backgrounds (Rauscher 2016). The second argument is that the decline is due to the material improvement of the lower classes, which coincides with policies aimed at creating more equal opportunities for higher educational attainment. Third, a decrease in the influence of parental class on education may be due to the growing role of students' ability (grades) for admission to educational institutions. At the same time, a better social network for the more advantaged students, which was reflected, for instance, in greater friendliness and support from teachers, has become less relevant than in former decades (Reay and Ball 1997; Marks 2014).

Research on social stratification, however, fails to demonstrate an across-the-board, universal trend of reduction in educational inequalities. On the one hand, a significant decline in the OE association has been observed, for example, in France (Vallet 2004), Germany (Jonsson et al. 1996), Spain (Ballarino et al. 2009), Norway (Ringdal, Birkelund 2001), and, most meaningfully, the Netherlands (Sieben et al. 2001) and Sweden (Jonsson and Erikson 2000). On the other hand, over the course of the twentieth century an overall stability in the intergenerational association between origin and education was reported in works on, among other places, the United States (Hout et al. 1993; Bloome and Western 2011) and Ireland (Whelan and Layte 2002), and in the comparative study of Shavit and Blossfeld (1993). Since then, however, in some countries the association appears to be declining (see Breen 2010). Recent analyses conducted on a cumulative dataset from

[1] In both countries, the first empirical studies based on national samples were conducted by the Central Statistical Offices. In Hungary the studies started in 1963, and in Poland in 1972 (Andorka and Zagórski 1979). In Poland, furthermore, a national survey based on 12,000 representative men and women was conducted by Pohoski in 1972 (Pohoski and Styczeń 2000).

26 countries found evidence of the declining influence of social origin on education for Sweden, the Netherlands, France, and Italy, whereas in Great Britain, Ireland, and Poland, the equalization appeared to be milder (Barone and Ruggera 2018).

For Poland, using data from 1983 to 2013, Sawiński (2018) did not find any significant decline in the association between family background and entry into secondary and tertiary education between the 1950s and 1990s. Some decrease in the impact of social origin on educational achievement could have been prompted by the expansion of tertiary education after 1989, as in the period between 1990 and 2012 the number of colleges and universities graduates grew substantially: from 8.2% to 19.7% (Rocznik Statystyczny 2013: 341).

However, any expansion-related decrease in the strength of the OE link might have been offset by two institutional factors inherent in the educational system. The first was the increasing placement of students on different educational tracks and consequently the negative effect of such placement on the educational outcomes of students from less privileged social backgrounds. This happens in Poland (Tomescu-Dubrow and Domański 2018), as elsewhere, despite the universal trend toward an increasing level of education among students from lower-status families (Ayalon and Shavit 2004). Second, any equalizing tendency contrasts with a possible decline in the over-all quality of education at the university level. In Poland, the influx to higher education occurred largely in private schools located in small towns and other areas far from the main academic centers. We anticipate that children from relatively advantaged class backgrounds are more likely than less privileged ones to attend state universities rather than private ones, and that this trend has counterbalanced the benefits from educational expansion at the tertiary level. Given the above, we do not expect any unidirectional change in educational inequalities. A U-shaped tendency, with declining equality in the post-1989 period, is a possibility.

Multiple theories explain why expanding access to schooling should increase the influence of education on occupational position (ED). In an update of the human capital theory, theories of skill-biased technological change (SBTC) posit that the growth in labor market sectors requiring high technical skills accounts for increasing returns to higher education (Goldin and Katz 2008). Educational expansion should thus coincide with growing returns to education, in particular, higher education. This belief is continued in the "Increased Merit Selection" hypothesis, which suggests that class position in modern societies is increasingly dependent on both educational achievement and other attributes (Jonsson 1993).

These general assumptions are in direct contrast to what has happened in recent decades. According to research conducted in France, Germany, Sweden, and the United Kingdom, the ED association has not strengthened but in fact has tended to weaken (Breen and Luijkx 2004; Goldthorpe 2016; Bouchet-Valat et al. 2016). This can be attributed to the fact that the increasing supply of people with a higher education is outstripping real demand, and also perhaps to employers who, given the "credentials inflation," are increasingly applying a range of other selection criteria.

How far has this scenario been realized in Eastern European countries, and particularly in Poland? Developments in the educational and occupational structure indicate that while the share of individuals with a tertiary degree has increased linearly, that share is not mirrored in the share of managerial and specialist positions. The latter category stood

in 1988 at 7.2% and in 2013 at 9.7% of total jobs. One conclusion to be drawn from these studies is that growing numbers of graduates are colonizing areas of the labor market that were once occupied by non-graduates, leading to a potential mismatch between their qualifications and the market utility of those skills. We hypothesize that as formal education does not well match the requirements of workplaces and the preferences of employers, its gross and net effects on occupational position are declining. Our hypothesis does not imply that the ED association is, in Poland or elsewhere, in long-term decline, but suggests rather that it is highly contingent on variation in the degree of fit between institutionally determined (both economically and culturally) educational and occupational structures and distributions.

The basic challenge in explaining trends in social stratification is social mobility, the transmission of social positions across generations (OD). The majority of existing studies have found the rates of relative social mobility to be more or less stable, although in the second part of the twentieth century a small increase in mobility was detected in the Netherlands and France (Breen and Luijkx 2004; Breen and Jonsson 2005). As regards long-term trends, Li and Devine (2011) found a small but significant increase in fluidity in the United Kingdom between 1991 and 2005, as did Bukodi et al. (2020) for cohorts born during and after the Second World War in some European countries. The key finding in a seminal volume by Breen and Mueller is that across seven Western European countries, the relative mobility of men was on the rise for cohorts born before the 1960s and was on the decline for those born thereafter. A slow but steady increase in mobility across the twentieth century was reported for the United States (Xie and Killewald 2013; Pfeffer and Hertel 2015), but a cohort analysis in Breen and Mueller (2020) points to stability rather than to an increase in rates of mobility among younger American cohorts.

Older international comparisons indicate that relative mobility in Poland has been high. In the last decades of the twentieth century, out of several countries compared, higher rates were observed only in Israel. Much the same rates as Poland were documented for Sweden, and substantially lower ones in Germany and the UK (Erikson and Goldthorpe 1992; Breen and Luijkx 2004). No changes in levels of mobility were found in Poland, although this is contrary to the suggestion that relative mobility became more equal in the years 1971–1994 (Mach 2004). What has to be recognized is that the increase in upward mobility in the 1950s was driven in part by changes in the occupational structure due to the rapid industrialization policies of the communist state (Zagórski 1978).

As for the impact of parental class on an individual's occupational destination, multiple mechanisms can be imagined through which the parents' class shapes the outcomes of their off-spring. Given the general rise in educational level, what is increasingly important in hiring for supervisory positions is social capital, "soft skills," and the personal attributes that individuals acquire less through formal education than through their family and peer socialization (Jackson et al. 2005). Cultural resources and social networks substitute, or in many cases, replace the role of a university diploma. There is compelling evidence that during the course of re(installing) the labor market in formerly communist countries, the prominence of personal networks in relation to finding a job has grown (Gerber and Mayorova 2010; Sadowski 2018). In other words, with respect to work-life trajectories, the supposed "education-based meritocracy" has become more and more a "cultural

and network-based meritocracy," which is characterized by actions resulting from and promoting an advantaged background. This consideration led us to hypothesize that the OD associations in Poland could not be expected to shift from relative stagnancy to a discernable increase in mobility. As in the case of the OE link, an inverted U-turn implying a decrease in mobility among the most recent cohorts is possible.

A high-level of education, combined with having parents in the service class, means that a person is more likely to find a good job. But this is only one of multiple patterns behind the OED triangle and brings us to the question of whether its three-way interaction effects, which are often referred to as "compositional effects," add to our understanding of mobility patterns. It is generally agreed that education can foster both mobility and the reproduction of class barriers. "Compositional effects" are thought to be interesting because educational expansion should lead to an increase in relative mobility (mobility measured by gross OD association), since a large share of individuals achieve an educational level at which social destinations are decoupled from social origins. This is the most important interpretation of compositional effects and holds true in many national contexts, as it was found to be the case in the United States, France, Germany, Great Britain, and Sweden (Hout 1988; Vallet 2004; Breen and Luijkx 2007; Breen and Jonsson 2007; Breen 2010). In all of these countries, the effect of parental class appears weaker—though it is still visible—among those who were more educated. This pattern has been maintained, albeit with some reshaping, in more recent times (Torche 2011; Bouchet-Valat et al. 2016). The belief that growing access to higher education contributes to higher overall rates of relative mobility may also be called into question by the earlier, period-based results from Poland, which document a strong OD link among university graduates (Domański et al. 2019). If such results could still be found in a cohort-based analysis of Poland, it would imply that compositional factors affect social mobility in a highly contextualized way. We are going to check that proposition below.

## Data

To test our hypotheses, we used data from a number of surveys conducted between 1982 and 2019 on random national samples. The earliest data set comes from a survey of a sample of households: "Life Conditions and the Needs of Polish Society, 1982" (Beskid 1984). The next survey, "Social Structure II," was conducted in 1988 on a sample of individuals (Słomczyński et al. 1989) and constitutes the first round of the Polish Panel Survey POLPAN. As for the 1990s, we used the data from the 1992, 1993, and 1994 Polish General Social Survey, PGSS (Cichomski and Morawski 2002). For the first two decades of the twenty-first century we included the data from rounds 1–9 of the Polish editions of the ESS conducted in the period 2002–2018 (Sztabiński et al. 2020). The most recent data we used came from the study "Musical Tastes and Social Stratification in the Process of Poles lifestyles formation" (Domański et al. 2021).

We restricted our analysis to people aged 30–65. We assumed that they had already achieved the stage of "occupational maturity," where the probability of changing jobs, in a sense that involves changes of a broader occupational category or of class position, have become small. Sample sizes for each time point are included in the Appendix (Table A1).

We distinguished five birth cohorts: men and women born before the Second World War (1925–1939); those born during the war, and after the war, as the communist system was being established (1940–1949); those born in the phase of industrialization and growth (1950–1959); those born during the stabilization period of the 1960s (1960–1969); and those born during the recession era of the 1970s and 1980s (1970–1984).

A two-point note on our decisions is needed. First, the age of 35 (as in Breen, Mueller 2020) or even 40 would possibly be a better choice than the age of 30, especially for the younger cohorts, as recently more and more people are still quite far from their "occupational peek" at that age. However, the numbers of people in successive birth years made the threshold of 30 the optimal choice for us. Second, as far as the number, birth brackets, and in-history location of our cohorts is concerned, our choices were dictated above all by the desire to select cohorts as comparable as possible to those chosen by Breen and Mueller (2020), and this was possible for our first three cohorts. Since the data we used came from separate surveys, a given birth cohort is observed in more than one survey in the sense that the surveys contain samples (of different people) from that birth cohort.

As indicated above, the data we used did not allow us to separate the cohorts in a fully comparable way. They differ in the range of ages of the respondents: for example, the first cohort includes only those aged 43–65 (see Table A2 in the Appendix for more detailed information on each cohort). These constraints limited our ability to capture the interplay of "intra- and inter-cohort trends" (Ryder 1965; Fosse and Winship 2023), which makes cohort analysis so attractive to sociologists studying social change.[2] For this reason we define our analysis as "cohort-based" and note that problems of this kind are common in cohort-based analyses comparing mobility patterns in time (Breen and Mueller 2020).

The three main variables in our analysis are social class origin (the father's class when the respondent was 14 years old), social class destination, and educational level. The origin and destination classes of the respondents were consistently coded as occupational categories in the Social Classification of Occupations (Domański et al. 2009). For modelling, given the limitations of the sample sizes, we collapsed the occupational codes of the father and the respondent into a four-class schema consisting of (1) higher managerial and professional categories, (2) lower clerical, combined with business owners and self-employed workers, (3) skilled and unskilled manual workers, as the working class, and (4) farmers, combined with agricultural laborers.[3] Education was operationalized in terms of three levels: (1) elementary, basic vocational, or incomplete secondary, (2) complete secondary, (3) post-secondary or tertiary.

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[2] We additionally checked if the results of our analyses—for the OE,ED, OD links—do not change after controlling for age, i.e., if the differences in the age range of the respective cohorts in our data do not limit their comparability. Control analyses are included in the Supplementary Materials (https://metody.ifispan.pl/stratification-materials). They indicate that parameters based on "cohort-age" analyses do not significantly differ from those presented in this paper. The same holds for the "cohort-period" effect. Our conclusions seem therefore robust, although "cohort-age," and "cohort-period" models are based on tables with sparse cells.

[3] We decided to use a four-class version to counter the effect of sparse cells on the stability of our models. In additional analyses lower clerical workers were separated from business owners. Overall, the five-fold class table produced results similar to the four-class version. The results are given in the Supplementary Materials at the web address https://metody.ifispan.pl/stratification-materials. The website also provides an integrated dataset, which is the basis for the analyses presented in this paper.

All the surveys analyzed were based on random samples using the face-to-face interviewing method (PAPI or CAPI).[4] The manner in which the questions regarding education and occupation were asked differed somewhat from one survey to another. Nevertheless, it would seem that these differences did not affect the way respondents were classified into the above-mentioned categories, which are quite broad. Changes in the distributions for the six-class schema (see Table 1) well reflect the real reshaping of the class structure, including the decrease in the percentage of farmers and increase in the proportion of business owners.[5]

## Method

Following the standard sociological practice, we distinguished absolute intergenerational mobility from relative intergenerational mobility ("fluidity"). Absolute intergenerational mobility refers to total mobility rates, that is, the percentage of individuals found in cells of the mobility table off the main diagonal and thus in a different class than that of their father. To consider rates of intergenerational class mobility in relative terms, we used log-linear and log-multiplicative models to describe—first separately—the odds ratio trends in each leg of the mobility triad. We tested whether each association (OD, OE, ED) was the same for subsequent cohorts (C) or whether we can parsimoniously describe a trend drawing on the log-multiplicative layer effects (Xie 1992; Erikson and Goldthorpe 1992).

We applied models of increasing complexity: the *conditional independence* (CI) model, the *constant social fluidity* (CSF) model, and the *uniform difference* (UNIDIFF) model (Erikson and Goldthorpe 1992). For the assessment of trends in educational inequality (OE) the CI model imposes a restriction of zero association between origin and educational categories, net of their marginal distributions. Of course, this is substantively implausible, but the model serves as a useful baseline. In the analysis of OE, the CSF model is:

$$F_{ijk}^{COE} = \tau \cdot \tau_i^C \cdot \tau_j^O \cdot \tau_k^E \cdot \tau_{ij}^{CO} \cdot \tau_{ik}^{CE} \cdot \tau_{jk}^{OE}, \tag{1}$$

where $F_{ijk}^{COE}$ is the expected frequency in cell i, j, k, $\tau_i^C$, $\tau_j^O$, $\tau_k^E$ identify effects of these variables, and $\tau_{ij}^{CO}$, $\tau_{ik}^{CE}$, $\tau_{jk}^{OE}$ refer to the interactions. The CSF model postulates omitting the OEC interaction, and this may be a realistic assumption as it is rather well known that associations between socio-economic origin and education are the same for all cohorts.

The UNIDIFF model (Xie 1992) releases the CSF constraint on the $\tau_{jk}^{OE}$ term in (1) to give:

[4] In general, the response rates exceeded 70%. The exceptions are the data from ESS7 (65.8%), ESS9 (60.8%), and the 2019 survey (50.3%). We used a combination of design and post-stratification weights for the ESS, PGSS, and "Musical Distinctions" data. In the 1982 and 1988 studies, no weights were available in the datasets. Additionally, within each cohort we used weights related to the respondent's year of birth to reflect the corresponding counts in the population.

[5] In the Supplementary Materials (https://metody.ifispan.pl/stratification-materials), we also include the distributions of the education and origins of the respondents in the five cohorts.

$$F_{ijk}^{COE} = \tau \cdot \tau_i^C \cdot \tau_j^O \cdot \tau_k^E \cdot \tau_{ij}^{CO} \cdot \tau_{ik}^{CE} \cdot \left(\tau_{jk}^{OE}\right)^{\phi_i} \quad (2)$$

where the $\phi_i$ represents the relative strength of the OE association that is specific to a particular cohort. This model thus allows us to test for the possibility that from one cohort to another the odds ratios defining the origin and education association increase or decrease by some common, multiplicative factor, or, in other words, for the possibility that relative rates become uniformly more or less unequal, implying either a rise or fall in mobility within the class structure. The same interpretation applies to the models including the ED and OD associations.

Finally, in simultaneous temporal analyses of the whole (OED) stratification triangle, we assess, first, how temporal changes in the educational composition of a population have impacted relative mobility trends (gross OD associations) by changing relative mobility over educational levels (net OD associations). The compositional effects (ODE), changes in class inequality in education (COE), and changes in the returns to education (CED) are the building blocks of our respective modeling. To test for changing relative mobility over educational levels we set:

$$F_{ijkl}^{COED} = \tau \cdot \tau_i^C \cdot \tau_j^O \cdot \tau_k^E \cdot \tau_l^D \cdot \tau_{ij}^{CO} \cdot \tau_{ik}^{CE} \cdot \tau_{il}^{CD} \cdot \tau_{jk}^{OE} \cdot \tau_{kl}^{ED} \cdot \tau_{ijk}^{COE} \cdot \tau_{ikl}^{CED} \cdot \left(\tau_{jl}^{OD}\right)^{\phi_k} \quad (3)$$

where $\left(\tau_{jl}^{OD}\right)^{\phi_k}$ denotes the strength of the origin and destination association at each educational level. This model implies the same pattern of OD association, allowing for its different strength across educational levels (which is expressed in terms of the $\phi_k$).

## Absolute Mobility

The key driving forces at work were structural changes related to the transition from a communist to a capitalist system. It shows in the distributions of the destination classes for the analyzed cohorts in Table 1. We find an almost 5-fold decrease in the proportions of women in agricultural categories, paralleled by a more than 3-fold decrease among men. We also see a decline for skilled manual workers: while the percentage of men born between 1940 and 1949 in this category was 43.3, in the youngest cohort it was slightly above 30, which reflects (we assume) a withdrawal from the industrialization enforced by the communist state. On the other hand, what most notably emerges is the rise in the share of social classes identified with higher socio-economic positions. The category of business owners (excluding farmers), who were counted as being the heart of the "old middle class," expanded among men from 3.5% to 12.7% and among women from 1.5 to 6.0%.

We also note the rapid growth of higher grade professionals and managers. In the case of women, this category increased from 4.1 to 15.8%, which is in line with the rapid pace of educational expansion and also with the demand-driven growth of service-class employment, which outstripped the supply of highly qualified personnel. Women experienced more educational advancement than did men, and the share of women who were post-secondary degree-holders increased, respectively, from 7.8 to 47.7% (comparing

Table 1

**Distribution of respondent's social class in five cohorts (respondents aged 30–65)**

| Men | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year of birth | Higher-grade professionals and managers | Lower nonmanual workers | Owners | Skilled manual workers | Unskilled manual workers | Farmers and agricultural laborers | N = 100% |
| 1925–1939 | 10.7 | 17.2 | 3.5 | 34.7 | 7.5 | 26.4 | 1692 |
| 1940–1949 | 12.4 | 17.3 | 6.2 | 43.3 | 6.2 | 14.5 | 1814 |
| 1950–1959 | 7.9 | 18.0 | 10.2 | 42.7 | 8.3 | 12.7 | 2892 |
| 1960–1969 | 9.1 | 17.7 | 13.2 | 37.7 | 10.1 | 12.1 | 1347 |
| 1970–1984 | 13.8 | 21.8 | 12.7 | 30.8 | 11.4 | 9.5 | 1187 |
| Women | | | | | | | |
| Year of birth | Higher-grade professionals and managers | Lower nonmanual workers | Owners | Skilled manual workers | Unskilled manual workers | Farmers and agricultural laborers | N = 100% |
| 1925–1939 | 4.1 | 30.0 | 1.5 | 9.6 | 21.4 | 33.4 | 1872 |
| 1940–1949 | 6.3 | 46.6 | 3.4 | 9.7 | 18.3 | 15.7 | 1882 |
| 1950–1959 | 6.4 | 50.4 | 4.2 | 10.7 | 17.2 | 11.2 | 3072 |
| 1960–1969 | 8.2 | 47.3 | 8.2 | 10.6 | 14.4 | 11.2 | 1335 |
| 1970–1984 | 15.8 | 54.5 | 6.0 | 7.3 | 9.4 | 7.0 | 1215 |

the first and last cohorts). For men, the corresponding percentages stood at 11.7 and 32.8. It should be added that, among men, the percentage of higher-grade professionals was lowest for those born between 1950 and 1959, with a markedly higher percentage, 13.8%, for the youngest cohort. With regard to the intermediate classes, there was a substantial increase in the size of the group of lower non-manual workers, with a rapid expansion in the number of women holding routine clerical and sales positions.

A crucial point is whether structural shifts of this kind were reflected in changes in social mobility. That such changes took place may be seen from the mobility rates shown in Table 2. For each cohort of men and women, separately, we constructed mobility tables using a three-class rather than six-class schema as the basis of our analyses. What notably emerges is the significant increase in mobility rates among women: from 32 to 64%, paralleled by a slight corresponding (12 percentage points) increase for men. While changes in the mobility of men appear to be becoming more moderate, the mobility of women seems to be significantly increasing.[6]

The disaggregation of total mobility into its upward and downward components reveals clear evidence of higher upward rather than downward rates of mobility for both men and women (Table 2). Any intergenerational movement between (i) higher-grade professionals

[6] Another way of putting this would be to say that the larger degree of the women's mobility resulted from a higher origin-and-destination dissimilarity among women than among men. It has become standard practice to express this fact in terms of a dissimilarity index (DI), which shows the percentages of cases that would have to be reallocated to make origin and destination distributions identical. This shows that there were many more such changes in the cohorts of the women compared to those of the men. Calculated on the basis of the 3 by 3 social classes, the DI values obtained for women were, for consecutive cohorts, respectively 18.5, 32.7, 37.7, 40.3, and 49.3, while for men—16.0, 14.5, 11.5, 16.9, and 21.3.

Table 2

**Absolute mobility rates for men and women in in five cohorts (respondents aged 30–65)[a]**

| Men | | | |
|---|---|---|---|
| Year of birth | Upward mobility | Downward mobility | Immobility rates |
| 1925–1939 | 24.9 | 6.5 | 68.6 |
| 1940–1949 | 25.7 | 9.7 | 64.5 |
| 1950–1959 | 23.6 | 12.9 | 63.5 |
| 1960–1969 | 26.2 | 10.7 | 63.0 |
| 1970–1984 | 32.6 | 11.2 | 56.3 |
| Women | | | |
| Year of birth | Upward mobility | Downward mobility | Immobility rates |
| 1925–1939 | 25.3 | 6.7 | 68.0 |
| 1940–1949 | 38.8 | 8.1 | 53.1 |
| 1950–1959 | 43.5 | 9.3 | 47.1 |
| 1960–1969 | 46.8 | 7.9 | 45.3 |
| 1970–1984 | 58.7 | 5.6 | 35.6 |

[a]Calculated on the basis of the 3 by 3 tables cross-classifying (i) higher-grade professionals and managers, (ii) lower non-manual workers and owners, (iii) skilled and unskilled manual workers, and farmers.

and managers, (ii) lower non-manual workers aggregated with business owners, and (iii) the working class and farmers, is regarded as either an upward or downward rate. In the case of Poland, these categories seem to be unequivocally ordered as more or less advantaged, that is, as "higher" or "lower."

As is shown, the upward mobility component prevailed remarkably, ranging in the years covered from 23% to 33% among men and 25% to 59% among women. In contrast, downward mobility rates amounted at the same time to 6–13%. Second, there is a clear pattern of change. Upward mobility steadily increased among women (from 25.3% to 58.7%), and a concomitant, though smaller, increase was experienced in the population of men (from 24.9% to 32.6%). Third, the patterns we observe demonstrate that women moved from lower to higher status occupations at a higher rate than men. In summary, these trends can be directly related to the steady "upgrading" of the class structure, as is shown in Table 1. The key driving forces at work were the growing "demand" for business owners, for the service class in business, and for service workers, paralleled by a falling demand for manual workers.

## Relative Mobility: Gross Associations

We begin our analyses of relative mobility by examining the association between origin and destination, which is independent of the structural changes reflected in changing marginal distributions. We assess models of trends in social mobility (COD), in educational inequality tied to parental class (COE), and in class returns to education (CED), as previously described. For all three processes studied, the first model is the baseline, conditional inde-

pendence model; the second, the CSF model, assumes each association (OD, OE, ED) is constant across time; and the third, the UNIDIFF model, allows the strength of associations to differ freely across age cohorts while holding the pattern of association constant.

In Table 3 we show the results of applying these models to our data, which is treated as separate three-dimensional tables. It can be seen that the UNIDIFF model, in comparison to the CSF model, does not always fit the data significantly better. The results for men indicate that the model proclaiming that educational inequalities (OE) are the same for the cohorts is acceptable at the 0.05 significance level. This is not the case for women: a conditional test shows that the UNIDIFF model reduces the $L^2$ statistic significantly compared to the CSF model. However, the UNIDIFF model is also not acceptable. This suggests that the cohorts of women do not differ solely in the strength of the OE association but also in its patterns. On the other hand, it should be recalled that with large sample sizes even models that reproduce the observed cell frequencies well do not provide a satisfactory fit with the data if we base our judgement on conventional criteria such as the p-value. In regard to ED, the UNIDIFF parameters significantly improve the model fit, although the result for women also indicates that the differences between the cohorts are more complex than the model indicates. For social mobility (OD), the UNIDIFF model is an acceptable description, although for women the differences between cohorts are not statistically significant.

We present the UNIDIFF parameters ($\phi_i$) in Figures 1a–1c, with the parameters for the first cohort being set at 1. Figure 1a shows overall stability in the association between class origin and education (OE). For women the association is weakest for the second cohort (born in 1940–49), although it increased for subsequent cohorts. What this means, then, is that the systemic changes transforming Polish society under communism did not eliminate the effect of parental socio-economic position. What we have rather found is fluctuation in educational inequality, with the OE association being an enduring link in the social order.

Roughly the same picture emerges in the case of the impact of the father's class on destination. The parameters presented in Figure 1c reveal that for men the $\phi_i$ parameters for OD increased between the 1950–59 and 1960–69 cohorts. This may suggest that for the youngest cohorts, who pursued careers in a market economy after the fall of communism, the role of social origin increased. For women, the strongest relationship is observed for the first cohort, and for subsequent cohorts the parameters are slightly weaker although the differences are not large.

Table 4 presents the pattern of association between class origins and destinations across all cohorts; it could be said to illustrate the effect of social mobility on class barriers overall.[7] What is shown is that the effect of inheritance prevails. There is a higher propensity for an individual to inherit the class position of their father—as captured for all four cells on the main diagonal, relative to the mobility effects. In line with previous investigations, immobility predominates among agricultural categories, followed by the service class. This reflects the distinct opportunities to stay in such positions based on family traditions, connections, and networks, and the constraints on mobility away from the class of origin, especially in the case of farmers (Sawiński and Domański 1990; Bukodi and Goldthorpe 2021).

[7] It has become standard practice for the associations existing between the class origins and destinations of individuals to be defined and quantified in terms of odds ratios. We present them in multiplicative form.

Table 3

**Fit statistics for observed trends in mobility components (gross effects, three-dimensional tables)**

Men

| Model | df | $L^2$ | Δ | BIC |
|---|---|---|---|---|
| A. Cohort — father's class — education (COE) | | | | |
| A1. [CO][CE] | 30 | 1415.8 (0.0000) | 13.9 | 1142.4 |
| A2. [CO][CE][OE] | 24 | 36.0 (0.0546) | 1.9 | −182.7 |
| A3. [CO][CE][$OE_{unidC}$] | 20 | 27.8 (0.1142) | 1.7 | −154.5 |
| A2 vs A3 | 4 | 8.2 (0.0845) | — | — |
| B. Cohort — education — respondent's class (CED) | | | | |
| B1. [CE][CD] | 30 | 5014.4 (0.0000) | 28.9 | 4741.0 |
| B2. [CE][CD][ED] | 24 | 62.6 (0.0000) | 2.6 | −156.1 |
| B3. [CE][CD][$ED_{unidC}$] | 20 | 23.0 (0.2887) | 1.5 | −159.3 |
| B2 vs B3 | 4 | 39.6 (0.0000) | — | — |
| C. Cohort — father's class — respondent's class (COD) | | | | |
| C1. [CO][CD] | 45 | 2092.2 (0.0000) | 17.6 | 1682.1 |
| C2. [CO][CD][OD] | 36 | 54.6 (0.0242) | 2.4 | −273.5 |
| C3. [CO][CD][$OD_{unidC}$] | 32 | 43.7 (0.0807) | 2.1 | −247.9 |
| C2 vs C3 | 4 | 10.9 (0.0277) | — | — |

Women

| Model | df | $L^2$ | Δ | BIC |
|---|---|---|---|---|
| A. Cohort — father's class — education (COE) | | | | |
| A1. [CO][CE] | 30 | 1235.9 (0.0000) | 13.4 | 962.0 |
| A2. [CO][CE][OE] | 24 | 71.8 (0.0000) | 2.7 | −147.3 |
| A3. [CO][CE][$OE_{unidC}$] | 20 | 60.2 (0.0000) | 2.4 | −122.4 |
| A2 vs A3 | 4 | 11.6 (0.0206) | — | — |
| B. Cohort — education — respondent's class (CED) | | | | |
| B1. [CE][CD] | 30 | 4969.6 (0.0000) | 29.2 | 4695.7 |
| B2. [CE][CD][ED] | 24 | 190.4 (0.0000) | 3.6 | −28.8 |
| B3. [CE][CD][$ED_{unidC}$] | 20 | 79.6 (0.0000) | 1.7 | −103.0 |
| B2 vs B3 | 4 | 110.8 (0.0000) | — | — |
| C. Cohort — father's class — respondent's class (COD) | | | | |
| C1. [CO][CD] | 45 | 1820.3 (0.0000) | 16.1 | 1409.4 |
| C2. [CO][CD][OD] | 36 | 50.4 (0.0562) | 2.1 | −278.3 |
| C3. [CO][CD][$OD_{unidC}$] | 32 | 44.1 (0.0754) | 1.8 | −248.1 |
| C2 vs C3 | 4 | 6.3 (0.1778) | — | — |

Note: C—Cohort; O—father's class; E—education; D—respondent's class

In contrast to the relatively trendless fluctuation in social class mobility, a more consistent pattern emerged in the association between education and class position (Figure 1b). As might be expected, the $\phi_i$ parameters for ED show an almost monotonic decline. For women it was highest (1.00) in the oldest cohort. In the next cohort it contracted

Figure 1a

**Association between class of origin and respondent's level of education (OE) across birth cohorts. UNIDIFF parameters with 95% confidence intervals (gross effects, three-dimensional tables)—model [CO][CE][$OE_{unidC}$]**

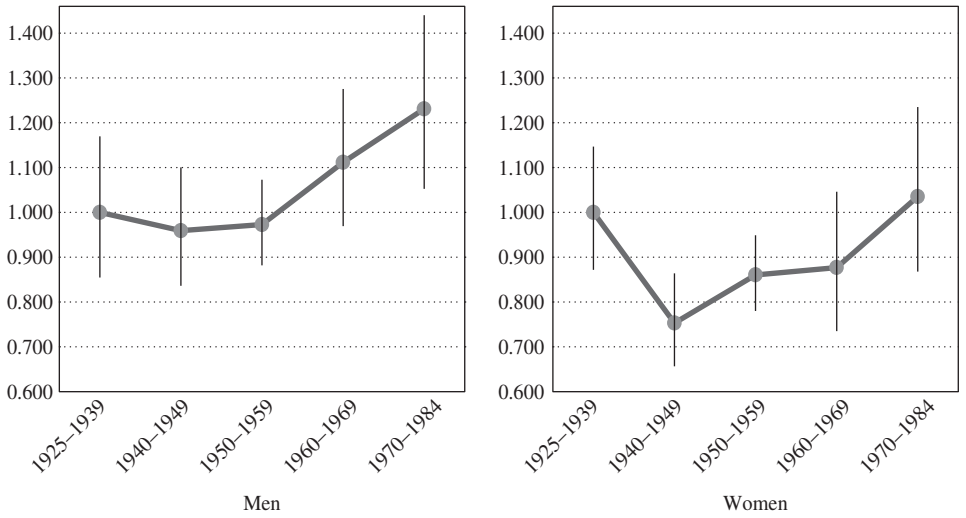
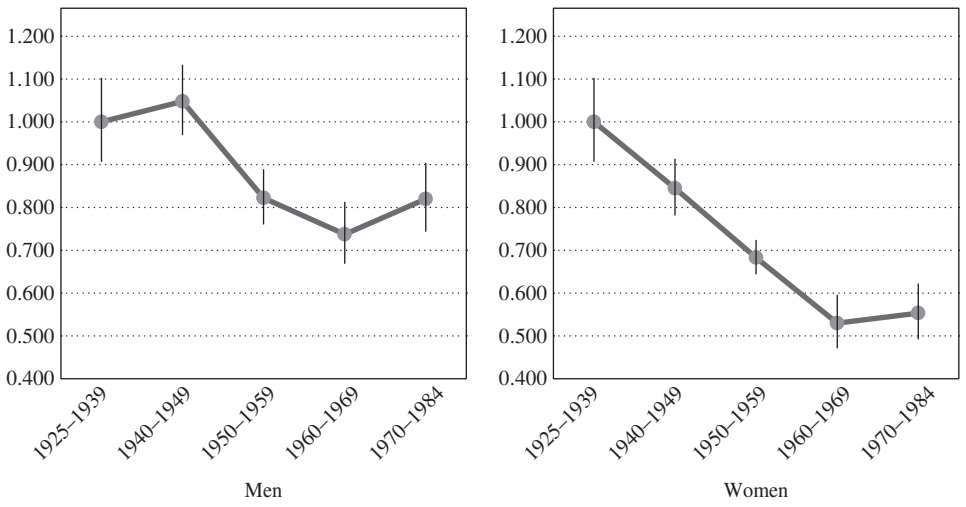



Figure 1b

**Association between level of education and respondent's class (ED) across birth cohorts. UNIDIFF parameters with 95% confidence intervals (gross effects, three-dimensional tables)—model [CE][CD][$ED_{unidC}$]**




to 0.85, and in the two youngest cohorts decreased to 0.53–0.55. As regards men, there is a weakening of the OD association between the 1940–49 and 1950–59 cohorts. Apparently, all these tendencies reveal that the allocation of people to jobs based on formal education has become both weak and inconsistent. Be that as it may, three elementary processes may

Figure 1c

**Association between class of origin and respondent's class (OD) across birth cohorts: UNIDIFF parameters with 95% confidence intervals (gross effects, three-dimensional tables)—model [CO][CD][$OD_{unidC}$]**

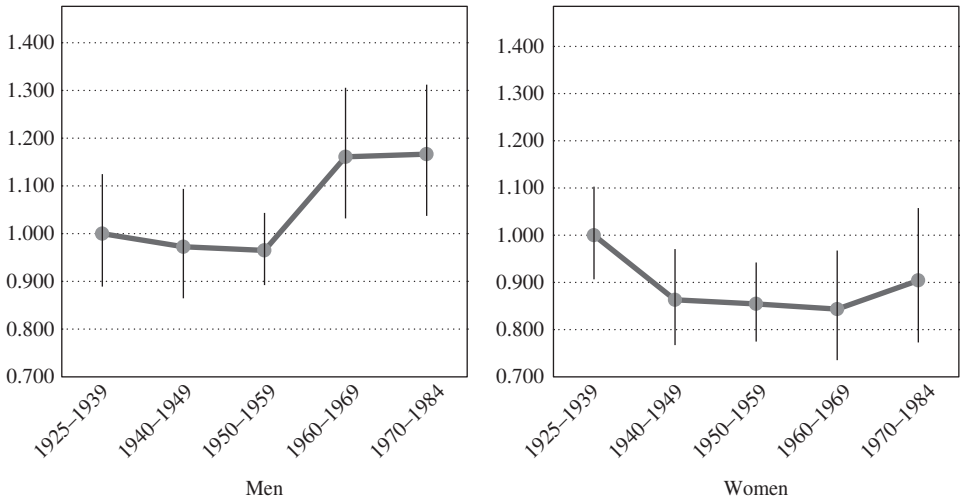



Table 4

**Origin-destination interaction parameters (multiplicative form) across all cohorts — model [CO][CD][OD]**

| Social class of father | Social class of respondent | | | |
|---|---|---|---|---|
| | higher managerial and professional categories | lower clerical + owners | workers | farmers |
| **Men** | | | | |
| higher managerial and professional categories | 3.05 | 1.55 | 0.52 | 0.40 |
| lower clerical + owners | 1.34 | 1.27 | 0.90 | 0.65 |
| workers | 0.69 | 1.00 | 1.80 | 0.81 |
| farmers | 0.36 | 0.51 | 1.17 | 4.71 |
| **Women** | | | | |
| higher managerial and professional categories | 3.32 | 1.45 | 0.52 | 0.4 |
| lower clerical + owners | 1.47 | 1.21 | 0.91 | 0.62 |
| workers | 0.66 | 1.03 | 1.67 | 0.89 |
| farmers | 0.31 | 0.56 | 1.27 | 4.55 |

have been involved over the course of the period: over-education, with a consequent decline in the relative advantage of having a degree, a concomitant decline in basic vocational schools, and the growing role of non-standard types of jobs. People experience more difficulties with integration as the flexibility of the labor market develops, with increasing shares of temporary and precarious jobs.

## Relative Mobility: Compositional Effects and Net Associations

As discussed earlier, empirical evidence based on data from various countries indicates that the influence of parental background weakens or even disappears for tertiary degree holders (Hout 1988; Vallet 2004; Buscha and Sturgis 2018). Although the compositional effect was originally discussed as a factor inducing mobility, more recent data has clearly indicated a more nuanced pattern. The analyses conducted by Torche (2011) in regard to the United States and by Bouchet-Valat et al. (2016) in regard to France revealed that educational achievements do not unequivocally decrease the impact of ascriptive factors on social mobility: in accessing service-class positions, parental background matters more for the holders of the highest degrees than for those with lower degrees, though generally, with an increase in education, the direct effect of origin on destination is progressively reduced.

Still, a different pattern is displayed in Poland, where period-based analyses of national surveys has demonstrated a significant increase in the association between class origin and destination at the highest level of education (Domański et al. 2019). It appears, thus, that the impact of educational policies is more limited in Poland, which means that the compositional effect of the kind discussed above is probably more pronounced in the liberal welfare setting represented by Western societies. For the current, cohort-based, analysis, Table 5 shows the fit statistics of our main models applied to four-dimensional (OEDC) tables to determine the compositional effects again. Model COE CED $OD_{unidE}$, which can be called a simple compositional model, specifies the association between social origin and class destination for subsequent education levels, assuming the constant strength of the OD association across cohorts. Allowing for free OD association (that is, one changing among the cohorts) we fit the model COE CED $OD_{unidC}$. Both models give a good fit to the data. Figures 2a and 2b show the parameters of these models.

The conclusion from Table 5 and, especially, Figures 2a and 2b is that in a cohort-based analysis of Poland, contrary to the results reported for Western societies, higher educational achievements do not weaken but rather strengthen the effect of social origin. According to the COE CED $OD_{unidE}$ model, estimates for the parameters of $OD_{unidE}$ reveal an upward trend in this association for subsequent educational levels—from 1.00 to 1.43 among men (Figure 2a). This suggests that the highest degree holders in particular benefit occupationally from originating from families with the highest socio-economic positions (bearing in mind the relatively wide confidence interval for this category). For women, the differences between the parameters are smaller and not statistically significant, but what we observe is an increasing rather than decreasing relationship in regard to higher education categories in Fig. 2a. Figure 2b shows the parameters describing the changes over cohorts

Table 5

**Fit statistics for models of net associations between parental and respondent's class across birth cohorts. Compositional effects in four-dimensional tables**

Men

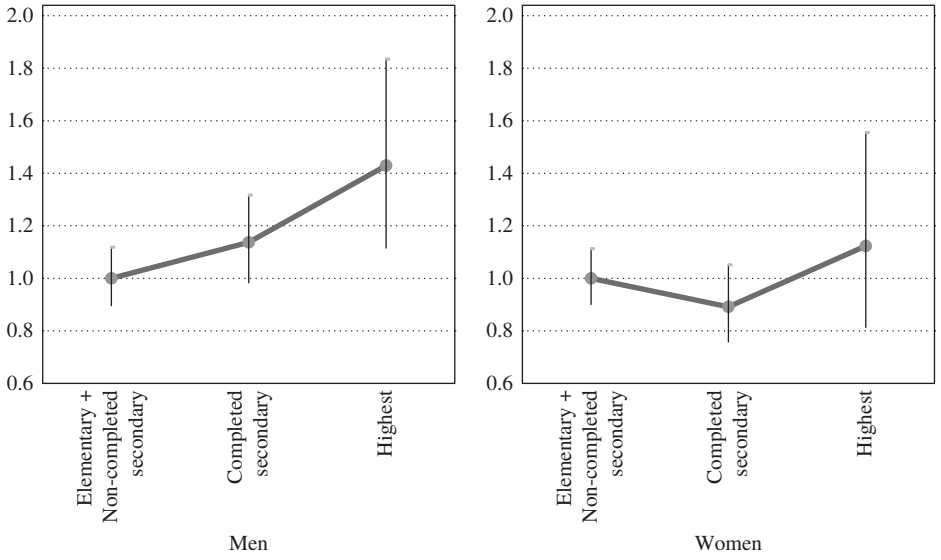
| Model | df | $L^2$ | Δ | BIC |
|---|---|---|---|---|
| A1. [COE][CED][OD] | 126 | 177.8 (0.0017) | 3.4 | −970.5 |
| A2. [COE][CED][$OD_{unidC}$] | 122 | 169.6 (0.0029) | 3.4 | −942.2 |
| A1 vs A2 | 4 | 8.2 (0.0845) | — | — |
| A3. [COE][CED][$OD_{unidE}$] | 124 | 171.6 (0.0030) | 3.4 | −958.4 |
| A1 vs A3 | 2 | 6.2 (0.0450) | — | — |

Women

| Model | df | $L^2$ | Δ | BIC |
|---|---|---|---|---|
| A1. [COE][CED][OD] | 126 | 137.8 (0.2216) | 2.8 | −1012.6 |
| A2. [COE][CED][$OD_{unidC}$] | 122 | 127.2 (0.3551) | 2.5 | −986.7 |
| A1 vs A2 | 4 | 10.6 (0.0314) | — | — |
| A3. [COE][CED][$OD_{unidE}$] | 124 | 135.6 (0.2239) | 2.8 | −996.6 |
| A1 vs A3 | 2 | 2.2 (0.3328) | — | — |

Figure 2a

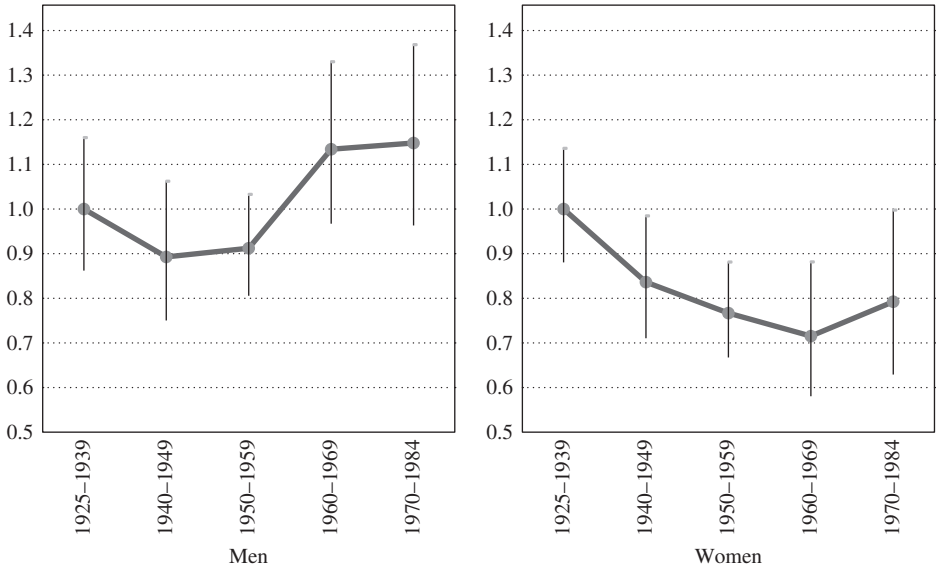
**Parameters of change in the net association between father's class and respondent's class across education (model CEO CED $OD_{unidE}$). Compositional effects in four-dimensional tables**




in the relationship OD, controlling for education level. The strength of the inheritance of occupational position decreases for men born between 1940 and 1959 (compared to the oldest cohort), while it is stronger for the two youngest cohorts. In general, this trend is similar to Figure 1c, which displays the gross effects. In comparison to the results for men,

Figure 2b

**Parameters of change in the net association between father's class and respondent's class across birth cohorts controlling for educational level (model CEO CED $OD_{unidC}$)**




the parameters for women in Fig. 2b show that the strength of the relationship decreases for subsequent cohorts, although for the youngest cohort it is slightly higher than for women born in the 1960s. The gross parameter depicts that trend less clearly. Nevertheless, the conditional test—[COE][CED][$OD_{unidC}$] versus [COE][CED][OD]—indicates that these differences are not statistically significant.

## Simulations

Our interest, however, is not only in the associations between these three variables but also in how far change in the overall association between origins and destinations can be explained in terms of the factors we discussed. To accomplish this, we have estimated the counterfactual simulation models proposed by Breen (2010). These are based on path analysis, which includes models for the COE and COED tables.

We start with a baseline model that assumes no parameters are present that could significantly affect the trends in intergenerational mobility. It includes only OE, CO interactions for the three-way table, and CD, OD, ED, COE interactions for the four-way table. In the next step, the simultaneous addition of the CE interaction (for the three-way table) and the OED interaction (for the four-way table) allows us to assess the impact of the compositional effect. Then, the parameters for COE interactions (for the three-way table), which indicate the role of educational inequalities, are added. This component is usually referred to as "educational equalization" due to the fact that the OE association is decreasing over time in most Western European countries (Breen and Muller 2020). The interaction

CED parameters (for a four-way table) are then included to show the role of returns to education. In the last step, parameters describing the COD interaction are added (for the three-way table) to assess the direct effect of social origin on destination.

For each version of the model described above, the expected COD margins (by collapsing over E) are estimated. The counterfactual COD tables generated in this way allows the strength of the association between variables O and D to be determined, usually using the UNIDIFF model. These parameters demonstrate what the strength of the association between O and D would be for subsequent cohorts for the baseline model, for the model taking into account the compositional effect, and so forth. The parameters obtained for the last simulation (after including the COD parameters) are the same as for the saturated model.

Figure 3

**UNIDIFF parameters taken from simulation models**

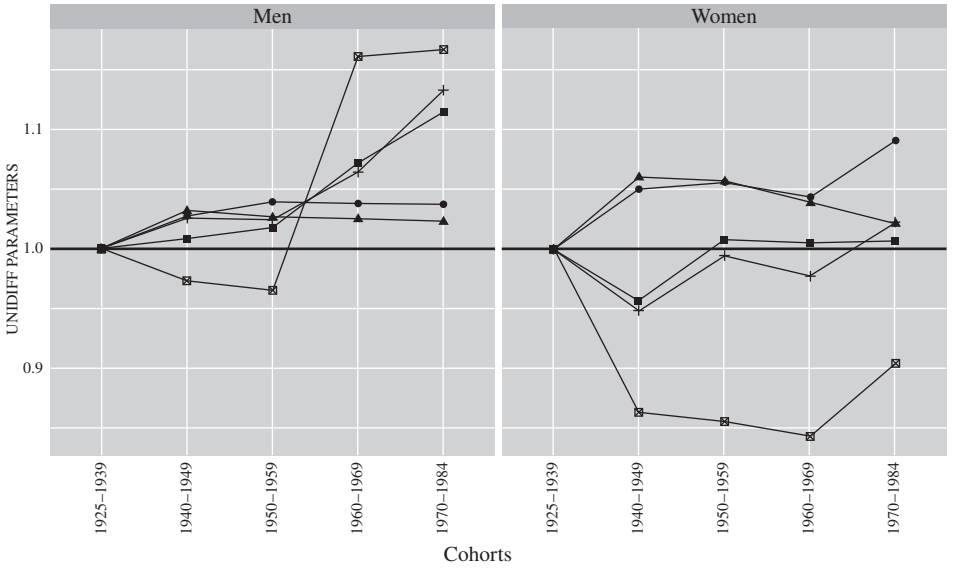



Figure 3 shows graphically how adding different effects to the baseline model of no change in social mobility accounts for the changes in intergenerational mobility. The logic underlying this analysis is to assess how close the lines generated under each of these simulations are to the OD association observed over cohorts under the baseline model. At the outset it should be noted that the parameters of the baseline model indicate a small, increasing origin–destination trend. In the case of our data, they would be equal to 1 if the CD parameters were additionally removed from the four-way table.

As far as men are concerned, the compositional effect changes little in terms of origin–destination trends. This is consistent with the results presented in previous sections of this paper. In Poland—unlike in Western European countries—the strength of mobility is not

confirmed to be weakest for tertiary education. Consequently, the effect of educational expansion (mostly at the top level) in Poland does not lead to a decline in mobility.

We can see that some of the gap between the baseline and the observed curves is accounted for by changes in educational inequalities. The simulation results demonstrate that these reduce social fluidity for subsequent cohorts. As regards changing returns to education, they do not play an important role. The main determinant of mobility trends is the changing direct effect of social origins. That change was a crucial driver of the increase in mobility among men born between 1940 and 1959; however, mobility decreases for the next two cohorts. The trend for women is approximately similar to that of men. The experience of women differs in the impact of social origin on the steepest increase in social fluidity, which occurred in the cohort born in 1940–1949. Furthermore, educational equalization (OE) among women contributed to slightly less rigidity. This is mainly true for the same cohort.

## Conclusion

Facilitating mobility and the openness of social structures has been one of the premises on which the democratic state and modernity itself have been based. It has been the way in which institutional change and widening opportunities have been reconciled with the continuing power of the middle class to secure advantaged social positions for their children, either directly through patronage or indirectly via education. In this analysis, we expand on and relate to recent stratification research in the West (Breen and Mueller 2020) by tracking the relationship between shifts in educational distributions and long-term trends in social mobility for Poland—a country that, like the whole of East-Central Europe, has undergone a massive institutional change affecting the lives of several cohorts over the last decades.

Our cohort-based results for the development of mobility and educational inequality in Poland over a long span of time can be depicted as trendless but displaying U-turns and a visible rigidification of the origin-and-destination link in more recent cohorts. In this way, they parallel not only the results reported by Breen and Mueller (2020) but also those produced by Bukodi et al. (2020) who, in analyzing data from East-Central Europe, were using different methodology than ours. While it is difficult to be very precise about when the fortunes of various cohorts changed, we can generally say that, as in Breen and Mueller (2020), we find a contrast between the fates of those born before and after the 1950s, with younger cohorts facing a less advantageous socio-economic situation than older post-war ones.

In regard to returns to education, we found an equivocally consistent trend of a declining association between formal education and occupational position. This resembles the developments observed in Western Europe and in the US. However, in regard to compositional effect, our analyses revealed trends that sharply differ from those found there. In Poland, the origin-and-destination association has generally, over cohorts, increased at higher educational levels. This differentiates Poland from a number of Western societies, in which the "direct" origin effect generally varies in strength over educational categories,

being weaker or non-existent among the higher educated. To express it in the opposite way, in the Polish case, social background is able to compensate for less prominent educational assets, and as our analysis reveals, this is especially the case for more recent cohorts.

Overall, as in previous period-based analyses (Domański et al. 2019), we observe no indication of a decreasing ascription in Poland over cohorts and decades of far-going institutional change. The educational expansion that took place does not appear to have met its goals in terms of reducing ascription effects in the economy and society. Indeed, the general rise in the educational level of more recent cohorts has led to a massive decrease in returns to education—at least for the certificates referred to as university diplomas. A considerable growth in tertiary education (of lower quality in many instances) produced a surplus of graduates who could not be absorbed by the occupational system, since the relative size of the category of higher managers and professionals did not significantly increase and the preferences of employers shifted toward more cultural, softer skills. Of course, inflation in regard to the value of a university diploma only partially explains the weakening impact of education on class position, since the trend appears mainly in the youngest cohorts. It need not be followed by an overall decline in returns to education. We should diligently investigate the real extent to which diplomas have lost their significance in favor of other credentials, such as apprenticeship, on-the-job training and experience, and more specific skills. Checking temporal trends in discrepancies between men and women in education and occupational careers might prove especially promising in such investigations.

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## Appendix

Table A1

**Sample size for each survey included in the analyses. Respondents aged 30–65, with valid information about the respondent's origin, education and destination**

| Survey | Year of survey | Sample size |
|---|---|---|
| Life conditions and the needs of the Polish society | 1982 | 2080 |
| Social structure II (POLPAN) | 1988 | 4230 |
| Polish General Social Survey | 1992 | 997 |
| | 1993 | 964 |
| | 1994 | 998 |
| | 1995 | 975 |
| European Social Survey | 2002 | 992 |
| | 2004 | 807 |
| | 2006 | 754 |
| | 2008 | 759 |
| | 2010 | 848 |
| | 2012 | 948 |
| | 2014 | 812 |
| | 2016 | 818 |
| | 2018 | 611 |
| Musical Distinctions | 2019 | 715 |
| Total | | 18308 |

Table A2

**Information about cohorts included in analyses**

| Birth cohort | Age range of respondents included in the analyses | Year of the first survey for the given cohort | Year of the last survey for the given cohort |
|---|---|---|---|
| 1925–1939 | 43–65 | 1982 | 2004 |
| 1940–1949 | 33–65 | 1982 | 2014 |
| 1950–1959 | 30–65 | 1982 | 2019 |
| 1960–1969 | 30–59 | 1992 | 2019 |
| 1970–1984 | 30–49 | 2002 | 2019 |