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The Effect of Education on Occupational Position in European Countries: 2002–2016

Abstract: This study revisits the question of whether the effect of education on occupational position declines in affluent societies. Based on the European Social Survey datasets 2002–2016 we investigate, first, to what extent this relationship really declines. Second, we examine the effect of education and occupational position in cross-national settings, which have their own history and specific labor-market organization. Third, we test the hypothesis that the connection between education and occupational position for women has been stronger as compared to men. Using log-linear models we find scarce support for the prediction of a long-term decline in the market value of educational levels. As regards country-specific settings, the study shows that education had a higher impact on occupational position in Eastern and Mediterranean countries and especially appeared to have a lower impact in countries with liberal regimes. Our analyses demonstrate a consistently higher effect of education on occupational position among women.

Keywords: over-education, returns from education, flexibility of jobs, cross-country differences

In modern societies, education may be regarded as a channel of primary opportunities. First, education is one of the principal mechanisms of social stratification, given that workers are paid differently according to the value of their knowledge and skills. Students with higher education are likely to have almost limitless opportunities to achieve higher occupational positions. Second, higher educational credentials have been presented as crucial for economic development, particularly in meeting the changing needs of a knowledge-driven economy (Erikson and Goldthorpe 1992; Hout and Di Prete 2006; Marks 2014). In hiring, an employer assesses potential productive capacity on the grounds of a job applicant's education. The higher the credentials an applicant has obtained, the more an employer will assume the worker is disciplined and has important skills. Third, insofar as social mobility is contingent on educational achievements, education acts to legitimize the economic and political system. It is commonly regarded as a "just" rule of recruitment to occupational positions (Saunders 2010).

While young people are now remaining in education in much greater numbers than in the past, they are still deeply attached to the idea of getting an appropriate job. Thus, educational achievements are even more embedded in the ideas of openness and a meritocracy (Wooldridge 1995; Jackson 2001). At the same time, however, education is

also the main factor in the reproduction of class barriers. Historically, higher education credentials, particularly those that have denoted elite status, have been used to reproduce class advantage and provide access to labor market outcomes. Higher education credentials have traditionally served as a "status confirmation" for the middle (and aspiring middle) classes. Seen from this perspective, education can foster both mobility and the rules of ascription (Shavit et al. 2007).

We have cited arguments that some decades ago would not have given rise to serious doubts. However, recent research has brought into question the link between the supply of graduates and economic growth, and has challenged the supply-side focus of much policy thinking on expanding higher education (Keep and Mayhew 2004). According to research conducted in France, Germany, and the United Kingdom, the effect of education on occupational position tends to decline (Bernardi and Ballarino 2016; Bouchet-Valat et al. 2016; Breen and Mueller 2020). The widely discussed downturn in the opportunities resulting from education corresponds with changes taking place in employment relations. Decreasing employment security, labor market flexibility, externalization, outsourcing, and seasonal shifts are likely to have substantial bearing upon career trajectories and outcomes (Boltanski and Chiapello 2005). The results do not unequivocally support the hypothesis that those with a university degree are in general better protected against insecure employment contracts (Kurz et al. 2005). Although young people are now better trained and educated, since the end of the 1980s they have had an increasingly hard time finding work.

Using data from the European Social Survey we will attempt to determine, first, to what extent the effect of education on occupational position (henceforth referred to as the EO association) really declines, and second, whether cross-country differences in this relationship emerge that can be attributed to macro-structural variables such as economic development, type of educational system, or the organization of workplaces.

The remainder of the paper is structured as follows. In the next section, we describe the causal mechanisms that can lead to decline in the impact of educational achievements on occupational positions. The hypotheses tested in the empirical analyses are then discussed. This section also explores the potential implications of structural developments in educational systems and employability (seen as socially constructed processes). Subsequently, we provide an overview of the data and methods used. Then, we present our results, focusing on cross-time trends across countries in regard to the EO link. We conclude with a discussion of what these results tell us about recent trends in the effect of education on occupational position in European countries.

Reasons for the Downturn in the Impact of Education on Occupational Position

There are many explanations of why labor market outcomes are linked to educational level. First and foremost, a considerable number of studies concerning this issue have largely been built around the concepts of human capital theory. Underpinning the human capital model is the idea of a clear, direct, and linear relationship between educational attainments and financial returns (Becker 1964). In contrast, while human capital theories argue that school leavers are sorted into occupations on the basis of their merits, the credentialist theory

suggests that the school-to-work transition is ruled by dominant status groups who define the educational requirements for a given occupation and thereby control and limit access to privileged positions (Collins 1979). The signal theory of education also begins with a critique of the human capital assumption that education increases individual productivity. In hiring, employers are believed to select those individuals whom they expect to fulfill the tasks best and at the lowest cost. Costs include not only salary, but also training and expenses associated with the risk of selection (Spence 1973). Finally, education-to-work transitions are also attributed to institutional arrangements—this interpretation revolves around the relation between the supply of graduates and labor market demand for the qualifications of new entrants (Raffe 2003). In our analysis we refer to all of these linkages.

Turning to changes over time, four main arguments for the thesis about a decrease in the effect of education on occupational position can be distinguished. First, a potentially most revealing theory addresses the role of over-education. A growing body of research has investigated the match between workers' education and jobs, with a focus on the relation between the years of schooling required for certain jobs and completed schooling. Workers who possess more schooling than their job requires are deemed to be overeducated, while those with less schooling than required are defined as undereducated (e.g., Green and Zhu 2010: 3). This research has given rise to questions about the economic demand for the increasing supply of graduates and the capacity of the labor market to accommodate the upsurge in graduate credentials. One conclusion to be drawn from these studies is that the growing number of graduates has led to a potential mismatch between their level of qualification and its market utility. Such evidence therefore brings into question the importance of a university degree for the skill requirements of many graduate-level jobs. At all events, the graduate job would now appear to be a fast-fading concept and a situation of over-qualification at graduation seems to have become not a temporary but a permanent characteristic of market societies (Goldthorpe 2013). This tendency can be seen not only among youth cohorts. Longitudinal studies conducted in the U.K. revealed that around 40 percent of graduates were in jobs that do not require degrees—only one in 20 held a lucrative job with a blue chip firm—and the expansion of higher education threatens to leave large numbers of graduates on low incomes or unemployed (Brown and Hesketh 2004). Similar findings have emerged from Smetherham's (2006) study. Five years after transition to work, 22 percent of graduates reported that they felt overqualified for the jobs they were doing.

Second, declining returns from education are inherently related to structural developments in labor markets. After the almost three decades of remarkable progress following the end of the Second World War, economic growth slowed in the Western world. Beginning in the 1970s, the standard employment relationship began to unravel and various kinds of non-standard or flexible work arrangements, such as fixed-term contracts, part-time work, or subcontracting emerged. Rather than recruiting from a wide pool of diverse talent, employers target those graduates who are technically and socially suited to the organization. Under these circumstances, concerns have been raised about how far the deregulation of labor markets has undermined recruitment patterns. It has come to be expected that workers will experience more frequent spells of unemployment, flexible contracts, and lower quality jobs than they would have done previously. Moreover, their prospects of making a career within the same firm are often less bright and, basically, this situation has the potential to

weaken ties between education and occupational position by producing the need for each individual to undertake diverse occupational roles and by reshaping relations between employees and employers (Luijkx and Wolbers 2009; Moreau and Leathwood 2006). The kind of permanent jobs that several decades ago were built into life careers have been replaced by jobs that workers hold temporarily, in accord with cyclical or seasonal shifts. We propose a labor market flexibility hypothesis which contends that with the rise in non-standard job forms, education has come to be less strongly associated with occupational position.

Third, based on previous research, we anticipate that decline in the EO association results from the declining importance employers are attaching to academic credentials. Instead, increasing weight is given to personal attributes and skills. Graduates may be valued for their academic knowledge, yet the discourse of their employability appears to be moving away from credentials to less formal and non-meritocratic signals related to cultural capital. According to a study conducted by Brown and Hesketh (2004), employers are increasingly defining employability around notions of "behavioral competence" and the capacity for graduates to demonstrate a wider range of personal, performative, and organizational abilities. Recruitment decisions are increasingly made on the basis of culture, that is, of a cultural fit, which means that "personal capital" and soft skills have become as important as paper qualifications. As academic qualifications have come to be taken for granted, the value of an individual to an employer is no longer represented by the denomination of academic currency but by the economy of experience (Unt 2007: 13; Goldthorpe and Jackson 2008). Emphasis is placed on how individuals convert their cultural resources into personal capital, which means looking the right way, sounding right, and feeling right to the employer (Boltanski and Chiapello 2005). As a consequence, the symbolic efficacy of social background is strongest in its most concealed forms: in the social competencies and dispositions inculcated into sons and daughters by their parents and the social networks to which they are privy—for example, school networks, to which economic capital may purchase access.

Finally, it is not just the difficulties faced on entering the labor market that matter—of equal importance are the employment conditions then offered. With marketization, various forms of "atypical" guarantees of education have come to the fore that hardly existed half a century ago, when an employment contract was usually based on a school certificate (Goldthorpe and Mills 2004; Chevalier and Lindley 2009). Here it is important to make a distinction between countries, which variously organize training, mainly through (1) practical training in vocational schools (France, the Netherlands, Hungary, Ireland, Estonia), (2) on-the-job training (Great Britain, Italy, Spain, Sweden, Norway, and outside Europe, the United States and Canada), or (3) the so-called "dual" system (Germany), a pragmatic combination of theoretical learning at school and job experience at the work place (Mills and Blossfeld 2005). Within the field of stratification research, a growing number of empirical studies have investigated the distinction between "qualificational" versus "organizational" systems (Maurice and Sellier 1979) or—according to another criterion—the division between a "standardized" and "stratified" educational system (Shavit and Müller 1998). In an "organizational" system, education is academic or general in character, with specific occupational skills learned on the job. In a "qualificational" system, however, education is closely tied to job requirements in the vocational system, with

more importance placed on diploma requirements and certificates. In these countries (e.g., Germany), employers know the meaning of nationwide standardized certificates. The more training is organized in different educational institutions, or tracks with specific training curricula, the more recognizable are abilities and their signaling. The more occupationally specific (rather than general) training is, the more qualifications should be of direct use in specific jobs. Based on these distinctions, we expect that this type of market regulation should have positive effects on entry into the labor market and increase the effect of education on occupational position. In both organizational and qualificational systems this trend toward increasing mobility may have stalled or, in selected dimensions of the class structure, even reversed.

Hypotheses

All of the above-mentioned arguments are predicated mostly on a rejection of the "knowledge-based economy" discourse, in which it is assumed that there is a growing amount of work and number of occupational roles that require an increasingly highly educated workforce (Avis 2000). This brings us to consider of what we know about empirical processes in Europe. In the following paragraphs, we will confront the above arguments with the ESS data from 2002–2016. Three questions can be posed.

First, we ask whether there is indeed a strong link between education and occupational position. The rapid growth in educational attainment is one of the most striking trends in education statistics in the post-WWII world. It would be desirable to verify arguments for a decline in the EO association against alternative interpretations derived from a more general understanding of the fundamental social processes that govern the dynamics of occupational attainment over the life course. Particularly, findings coming from those countries that show decreasing educational returns (Breen and Luijkx 2004) have to be checked against hypotheses related to the human capital and functional theory of social stratification, which emphasizes the stability of this relation and that returns from education are rather increasing. This interpretation remains of central interest and indeed is a sharply debated issue in current sociology. In particular, the "Increased Merit Selection" hypothesis—as Jonsson (1993) labelled it—has suggested that, in modern societies, "access to education becomes decreasingly determined by class origin and that class position is increasingly dependent on educational achievement, as the influence of characteristics associated with family background becomes irrelevant" (Whelan and Layte 2002: 38). If so, labor market success in modern societies would increasingly depend on "merit" as embodied in an individual's own educational achievement. The same argumentation applies to theories of skill-biased technological change (SBTC) as developed on the basis of human capital theory. Focusing on the upward mobility-inducing effects of educational expansion, the SBTC posits that, for about the past three decades, growth in labor-market sectors requiring high technical skills has outpaced the supply of highly educated workers. This argument is based on the premise that the computerization of work enhances the demand for non-routine cognitive skills and thereby increases the wages of educated employees. On the other hand, the need for routine clerical and unskilled workers has naturally been

reduced (Morgan and Cha 2007; Acemoglu and Autor 2011). If educational expansion does not keep pace with the rising demand for high skills, returns from education—in particular, from higher education—increase (Goldin and Katz 2008).

We would argue that, at both the economic and social level, there are some inherent problems in this account of the relationship between higher education and labor market outcomes. There is a clear tension between the idea that graduates' higher education will propel them toward greater labor market returns and the idea of a mismatch between graduates' skills and those required for work after graduation. In first case it is assumed that the skills possessed by graduates and those demanded by the labor market are stable over time and well coordinated. The above considerations lead us to hypothesize a certain degree of heterogeneity in the dynamics of the relationship between education and occupational returns across institutional settings. We do not envision finding an overwhelming and clear-cut decline in the effect of education on occupational positions.

Our second aim is to provide new evidence of the role of a country's economy (e.g., the main industries and whether they require an educated workforce) and the supply and demand for skills. There are great differences among nations in the way they (1) differentiate the maximum number of school years attended by all, (2) employ a tracking system, (3) value certificates or ability-based learning, and (4) link education with entry into the labor market. Intensified competition in a globalizing context has produced a gradual proliferation of various non-standard job forms across Europe and across welfare regimes as a result of different labor market deregulation policies. The question has arisen as to the extent to which these differences translate into the strength of a relation between education and occupational position. We predict that tracking systems, which are reflected in many countries by a division into general secondary, technical secondary, and basic vocational schools—exert a stronger impact on occupational career in Europe, as compared, for instance, with the United States, where streams into vocational tracks are lower. The vocational training system feeds directly into the job system and people, especially youth cohorts, are more effectively "screened" during their education (through exams which show their abilities) in comparison to the rules of an education-to-occupation transition based on practical job training (Shavit and Müller 1998).

Differences in educational systems cross-cut with distinctions resulting from political and economic systems. Seen from this angle, former communist countries still differ from Western societies. For a planned economy, the typical solution was planned pathways from school to work as produced by politically motivated efforts to adjust the educational system to the policy of industrialization adopted by the state. This strategy was displayed—among other ways—in the development of basic vocational schools which provided candidates for the working class. The category of skilled manual workers accounted for 20–25 percent of all persons actively employed in East European countries (Domański 2000). It seems likely that such a huge category—the largest at the time in East European countries—underpinned relatively strong ties between the type of qualification and the type of job. Although the collapse of the communist system made the transition from school to work more flexible and the match between the type of qualification and the type of job is not so strong anymore, we assume that education still remains closer to occupational position than in Western societies. The Polish system used to be meritocratic, in the sense that the

educational prerequisites of different jobs were well described, there was a strong link between education and occupation, and mobility was typically qualificational in nature (e.g., Maurice and Sellier 1979). Moreover, structural changes in the Polish economy over the last decades have strongly influenced the demand side of the labor market. Industrial employment has continuously decreased and, on the whole, the country has moved in the direction of a service society. Employment in the service sector started to increase in the 1990s when more and more jobs became available in the tertiary sector compared to the traditional secondary sector. This process accelerated in the 1990s when the demand rose for unskilled service jobs in particular. The cross-national variation in institutional settings implies that the European economies can be divided into those that are relatively stable in regard to the impact of education on occupational position and those facing a decline in this relation. The basic distinction is hypothesized to lie between the old and the new market economies.

Finally, a closer look is needed at sex differences in occupational returns. A huge number of studies have reported separate estimates for men and women on returns from education. In many countries women are currently better trained than men, and thus they are much better equipped to enter the knowledge-based, service-oriented economy. The fairly consistent pattern in these studies has been that the average return from an additional year of education is somewhat higher for women than for men. Dougherty (2005) cites 27 U.S studies, of which 18 report unambiguously higher returns for women. Trostel et al. (2002) report estimates for 28 different, mostly European, countries, of which in 24 the returns are higher for women. With respect to educational level and occupational position, Becker's (1964) argument can be applied again. Due to their rising economic independence (and the resulting higher opportunity costs), women with high human capital and those in upper-class positions are less likely to get married and have children, although there are countries where this is no longer the case (De Hauw et al. 2017). Notably, while female educational attainment clearly dominates male educational attainment in a majority of industrialized countries, with regard to the status of their jobs, women hold lower positions than men. This has led many researchers to speculate that women have to invest more in education because employers regard them as less effective, available, and flexible than men. Since women (compared with men) tend to have less stable career paths, employers might consider investments in training women to be less secure and profitable. They are perceived as less reliable in the workplace (Estevez-Abe 2005). Another reason could be that women are disadvantaged in those recruitment processes in which selection is primarily based on informal qualifications. They make use of their formal credentials mostly, whereas men can rely on alternative career routes to reach good jobs (Erikson and Jonsson 1998). In light of the above, we hypothesize that in terms of labor market returns, the relationship between education and occupational attainment should be greater for women than for men.

Data and Methods

Our analyses are based on data from the European Social Survey. In order to examine the dynamics of the association between education and occupational position we employed

data from 8 waves of the ESS, conducted in 2002–2016. The ESS data is particularly suitable for our analyses because it provides comparable information about educational level and occupation in 32 countries across time. In each country the surveys are based on probability samples of men and women (usually the sample size varies between 1,500 and 2,500 persons), representing the adult population (above age 14). For substantive reasons we chose for our analysis all countries which took part in at least two waves of the survey (for more details on the ESS see http://europeansocialsurvey.org/). To ensure comparability we used design weights.

Respondents' educational attainment is measured as the highest degree attained in the following three categories: (i) basic and lower secondary, (ii) upper secondary, (iii) tertiary and post-secondary. The ESS datasets are coded according to the ISCED. We restricted our analysis to three categories for reasons of comparability—in recent waves of the ESS the newest version of the ISCED was applied, which is comparable with the oldest ISCED only after collapse of the detailed classification into broader educational levels. In addition, in many countries sample sizes are too small to distinguish more detailed categories. As a measure of occupation, we used the EGP class scheme (Erikson and Goldthorpe 1992), which has been widely used in quantitative research, and several studies have provided evidence of acceptable construct and criterion validity for this measure (e.g., Connelly et al. 2016). Social class destination was assessed on the basis of the respondents' reports of their current occupation (or last occupation for people unemployed or out of the labor force). The detailed version of the EGP was collapsed into six basic categories: (i) higher professionals and managers (also referred to as the "service class"), (ii) other non-manual labor employees (clerical, sales, and service), (iii) business owners outside agriculture, (iv) skilled manual workers, (v) unskilled manual workers, and (vi) agricultural categories (farmers and agricultural laborers).

For each country we constructed a 3×6 EO table for men and women separately. We have in all more than 380 tables: 2 for each country by 8 waves. In analyzing changes in relative rates across time, it was necessary to resort to the statistical modelling of the data comprised by the tables. To analyze trends in the relation between education and occupation, we used log-linear and log-multiplicative models that allowed us to capture the net effect of education on occupational position, that is, by controlling for changes in marginal distributions (Powers and Xie 2000).

We fit to these tables the three standard models which treat the EO association in terms of log odds ratios. The baseline model is that of the conditional independence of education (E) and the EGP category (O). In this model, all log odds ratios defining associations between education and occupation remain equal at 0, implying no association. This is substantively implausible but the model serves as a useful baseline. Next, we turned to the constant association model between education and EGP class across waves, known as the constant social fluidity (CSF) model in social mobility studies. This model recognizes that an association exists between education and occupational position—thus, the further two-way association is added to the conditional independence model—but requires that the log odds ratios defining this association do not change from one wave to another and are the same for all countries. Finally, to capture temporal changes in the association between education and occupational position we drew on the "uniform difference" (UNIDIFF)

model (Xie 1992). The UNIDIFF model allowed us to test for the possibility that from one wave to another the log odds ratios defining the EO association increased or decreased by some common, multiplicative factor, or in other words, the model required the pattern of association to be the same for all countries and all waves although the strength of this association could be different.

Results for Core Models

Education and Occupation in 2002–2016

The answer to the question of whether or not education is linked to occupational position was indisputably positive. What remains to be determined is whether this association declined or remained stable despite changes taking place in employment settings. Table 1 provides the fit statistics for three different models of trends in social mobility. After the baseline, conditional-independence model, we fit the CSF model that assumes the association to be constant across the years and countries studied. The third model allows the strength of association to differ freely across years and countries.

Table 1

Fit statistics for observed trends in effect of education on occupation in European countries: 2002–2016

Model	L^2	df	p	Δ	BIC
Conditional independence	86756.5	1870	0.0000	18.9	63092.7
Constant	11021.3	1860	0.0000	6.0	–12515.9
Unidiff	6833.7	1674	0.0000	4.7	–14349.8

For the processes studied, the second and third models fit the data much better than the conditional-independence model; nevertheless, they should be rejected even at 0.0001 significance level. This is a typical situation when an analysis is based on a large sample from many countries. For this reason, we relied on dissimilarity indices (Δ) and BIC statistics. These indicate that the UNIDIFF model fits the data quite well and is preferred to the CSF model even if we find relatively trendless fluctuation in class-related returns from education in European countries.

These findings yield general but insufficient evidence regarding the role of education and its expansion in explaining recruitment to occupational positions. Indeed, it did not reveal trend lines in various societies depending on their educational system or welfare regime. To investigate how this association played out in particular countries we turn now to the parameter estimates yielded by the UNIDIFF model. Table 2 reports parameter estimates for all countries with the reference value fixed at 1 for Austria in 2002. Higher values indicate a respectively higher strength of the relationship. Inspecting these values for each country by columns we can see whether the strength of the association increased or decreased, or there was relatively trendless fluctuation in class-related returns

Table 2

Parameters from the undifference model for effect of education on occupational position in 2002–2016

Country	Year							
	2002	2004	2006	2008	2010	2012	2014	2016
Austria**	1.00	0.96	0.91	—	—	—	1.08	1.20
Belgium**	1.01	0.94	0.87	0.91	0.70	0.66	0.67	0.74
Bulgaria	—	—	1.43	1.35	1.37	1.35	—	—
Croatia	—	—	—	1.33	1.21	—	—	—
Cyprus**	—	—	1.18	1.40	1.30	0.95	—	—
Czech Republic**	1.26	1.52	—	1.45	0.96	0.67	0.88	0.94
Denmark	0.96	0.94	0.97	0.90	0.81	0.79	0.92	—
Estonia*	—	0.77	0.74	0.62	0.68	0.76	0.72	0.81
Finland**	0.87	0.95	0.92	0.94	0.87	0.83	0.90	0.81
France**	—	—	0.81	0.80	0.78	0.66	0.83	0.30
Germany**	0.86	0.94	0.96	0.88	0.97	0.73	0.83	0.82
Greece**	1.50	1.16	—	0.97	1.03	—	—	—
Hungary**	1.28	—	1.38	1.27	1.63	1.26	1.59	—
Iceland	—	0.57	—	—	—	0.73	—	0.65
Ireland**	0.77	0.79	0.72	0.56	0.47	0.51	0.54	0.56
Israel	0.75	—	—	0.83	0.97	0.72	0.74	0.81
Italy*	1.33	1.58	—	—	—	1.02	—	—
Lithuania	—	—	—	—	0.83	0.90	0.80	—
Luxemburg	0.94	0.91	—	—	—	—	—	—
Netherlands**	0.88	0.80	0.68	0.71	0.76	0.84	0.70	0.77
Norway*		0.74	0.78	0.82	0.75	0.79	0.78	0.82
Poland**	1.25	1.15	1.22	1.17	1.15	1.23	1.12	1.16
Portugal**	1.57	1.42	1.42	1.54	1.49	1.28	1.22	—
Russia*	—	—	0.80	0.74	0.77	0.78	—	0.72
Slovakia	—	1.18	1.34	1.31	1.34	1.23	—	—
Slovenia**	1.27	1.62	1.38	0.96	1.21	1.18	1.07	1.22
Spain	1.00	0.78	0.86	0.89	0.94	0.80	0.79	—
Sweden**	0.90	0.82	0.79	0.83	0.71	0.65	0.69	0.74
Switzerland**	0.81	0.81	1.02	1.02	0.79	0.90	0.76	0.90
Turkey**	—	1.31	—	0.95	—	—	—	—
Ukraine**	—	0.92	1.02	0.86	0.88	0.93	—	
United Kingdom**	0.59	0.67	0.47	0.54	0.57	0.58	0.60	0.53

* $p < 0.05$, ** $p < 0.01$

from education.[1] We also indicated countries in which temporal differences (estimated separately for each country) differ significantly at the 0.01 or 0.05 level.

Differences in the magnitude of the relationship across countries are apparent. As suggested by Table 2, the impact of education on occupational position used to be highest in post-communist and Mediterranean societies. Overall, in 2002–2016, Portugal placed

[1] Although the ESS implements high-quality standards, it should be noted that the categories of education that are distinguished in each country have changed in successive rounds of the survey. To some extent this is due to changes in the educational systems in a given country. Although we attempted to make the categories as comparable as possible, there is no doubt that full comparability is impossible to achieve. To some extent, this may affect the results, and the fluctuations in some countries are difficult to explain.

highest in this regard, followed by Hungary and Bulgaria. Below these countries were Italy, Croatia, Slovakia, Slovenia, and then—within a small distance in degree of the association—Cyprus and Poland. The Czech Republic, Greece, and Turkey were also countries where education shaped working life relatively strongly. In terms of the matching model, it could be said that in the Eastern and Southern European countries, matches between qualifications and particular kinds of jobs were tighter.

In contrast, generally the lowest association between education and occupational position occurred in the Nordic countries and some other Western societies, especially those classified among liberal regimes (Esping-Andersen 1999). In the ESS, the latter are represented by Ireland and the UK. Britain has already experienced some effects of globalization in terms of increased levels of deregulation, the liberalization of the labor market, and the decline of traditional unionism (Francesconi and Golsch 2005).

In contrast, Eastern European countries are considered to be examples of the post-communist welfare regime model. Manpower allocation under the communist system operated in a highly credentialist way, as the state intervened in many areas of life and especially in the organization of employment and education. Indeed, vocational schools were established to provide industrial sectors with skilled workers and, respectively, to legitimate the policy of the state. The remnants of this system are perhaps reflected in the higher impact of education on occupational position in such different countries as, on the one hand, Bulgaria and Croatia, and on the other, Poland, Slovenia, or Hungary, which are perhaps closer to modern capitalist regimes.

The latter case is suggested in Table 2. In spite of a rather smooth transition to a social-democratic regime (Robert and Bukodi 2005), Hungary witnessed higher returns from education than Ukraine and Russia, which are closest in nature to the former socialist tradition.

Turning now to the main question concerning decline in the EO, we see that this tendency is limitedly displayed. The downward swing appeared only in 11 European societies out of 32 taken into account—and almost nowhere did the association increase, with the possible exception of Austria. Table 2 indicates that the decline was most pronounced in the Mediterranean countries: in Portugal, Greece, and France, followed by Cyprus, Italy, and Turkey. As regards the post-communist societies the decline emerges clearly in the Czech Republic, and to a lesser extent in Bulgaria and Croatia. As far as the other European regions are concerned, it also appeared in Belgium and Iceland. It can be seen that a decline in the association is far from a universal rule, and thus what we had hypothesized was confirmed.

In fact, the different institutional arrangements and contextual variables are not powerful predictors of these patterns but still matter. First, Table 2 demonstrates that the highest occupational returns from education prevailed in countries marked by a statist tradition or high unemployment risk. Second, decline of the EO association occurred mainly in countries located at the top of the degree of association—they had more space in which to decline. The caveat should be made that we investigated a limited period of time. The analysis of changes covers only 2002–2016, omitting the economic turmoil in the 1980s, the growing number of non-standard job forms, and other macro-structural conditions that could impede the ties between education and occupational outcomes. Our

accounts are incomplete, as it seems likely that there are countries where the decline in the relationship took place earlier but then was halted, and thus what we see does not reflect this pattern in a comprehensive way. The fluctuation of these opportunities in different countries does not always take the same direction as a result of specific local turbulences. It should be noted that a quite significant limit on the amount of cross-time data is common for all studies concerning the dynamic of school-to-work transitions (e.g., Saar at al. 2008).

According to the logics of life course trajectory, education should be more tied to occupation among people at mid-life. Young people often respond to sluggish labor market prospects by continuing their tertiary education, or entering precarious or part-time employment instead of holding permanent jobs. The uncertainty reduces or delays the propensity of youth to enter long-term binding commitments (Eichhorst et al. 2015). Although how this relationship varies by cohort needs to be inspected, the perspective had to be omitted as data allowing such a wider analysis was not available in the ESS due to the small size of samples. As a proxy for controlling for age cohorts we examined whether education affected occupation more strongly in the age range of 25–50, that is, in categories of people who hold permanent jobs and are less vulnerable to deregulation of the labor market. To investigate change in the ED association across cohorts in the 25–50 age range, we reverted to a log-multiplicative modelling approach, directly analogous to the one we used for the population with an unrestricted age range (presented in Table 2). Contrary to our expectations, the parameter estimates for the UNIDIFF models in the sample restricted to respondents aged 25–50 did not exceed the parameters received for the population with an unrestricted age range.[2] This can be interpreted as a tentative sign that the impact of education on occupational position is much the same across all the generations studied. We also found that although higher occupational activity does not tie education more closely to occupational position, this relationship becomes more stable in time as we see that the decrease of the EO in this age group occurred in a smaller number of countries as compared to the number of countries in which there was a decline in the EO in the total population. In the sample, the downturn in the EO occurred in 9 countries in the 25–50 age range, while in the total population of 11 countries. It may be that more durable commitments to work tend to countervail deregulation of the labor market settings.

Occupational Returns for Men and Women

As indicated above, there are reasons to believe that the transitions from education to work are different for men and women (Acemoglu and Autor 2011; Van Reenen 2011). In light of the earlier studies, it seems fair to conclude that the connection between education and class position for women has been stronger, although women obtain much smaller returns on their education than men do in that they hold lower positions. In order to investigate whether this tendency is confirmed in more recent data, we estimated the parameters for men and women under the UNIDIFF model, which is equivalent to those reported in Tables 1–2.[3]

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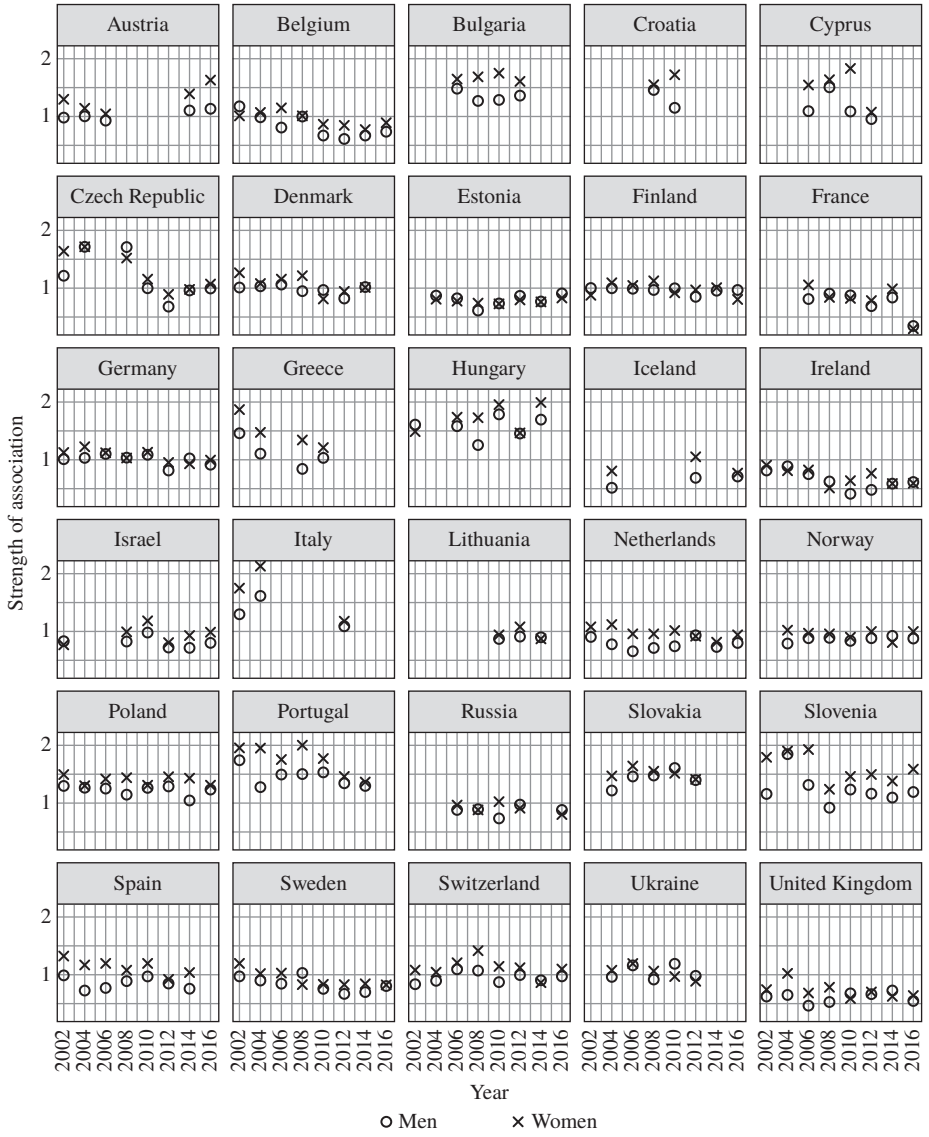
[2] The results are available upon request.

[3] The fit statistics for this model are: $L^2 = 8378{,}0$ with $df = 3285$ ($p < 0.0001$), $\Delta = 4.9$, and $BIC = 33144.1$. We omit Luxemburg and Turkey, where women's occupational activity was too small to employ EGP classes.

Figure 1

Effect of education on occupational position in 2002–2016 for women and men



For illustration, we show them in Figure 1—women are represented by crosses and men by circles. The higher location on the vertical line indicates a respectively higher association.[4]

Our graph leads us to conclude that according to expectations, the estimated parameters were generally higher for women. This tendency most clearly appeared in Cyprus, Bulgaria, Italy, Spain, and Greece—a representation of Mediterranean and Eastern European

[4] Table with the UNIDIFF parameters available upon request.

countries with a certain Balkan addition. Occupational returns from education for women prevailed over those for men in the majority of countries, with the exception of Ukraine, Estonia, and Russia. The reason for the latter lies, perhaps, in the recent past: in the Soviet Union, educational credentials seem to be a better guarantee of "good" jobs for men than for women.

There are two points that deserve to be mentioned. First, as far as changes over time are concerned, gender gaps in returns from education have held stable with the sole exception being an—admittedly temporary—decline in the Italian case. Second, we interpreted the higher association between education and occupational position among women as an indication that the life careers of women and men are regulated in various ways. The higher conversion of human capital variables in connection with occupational attainment is regarded as reflecting the principle of meritocracy and the openness of social barriers. Nevertheless, although women have a better chance of being rewarded for their formal attainments than do men, gender parity has not been achieved. Indeed, men obtain good jobs in spite of there being a clear majority of women among tertiary graduates, and regardless of women's higher occupational returns from education. This substantiates the thesis that men are recruited to higher occupational positions on the basis of grounds that are not necessarily meritocratic (Erikson and Jonsson 1998). Women are thus left in the paradoxical situation of needing to acquire more skills in order to secure good jobs, but the globalized knowledge-based economy is unable to pay them properly for these skills.

Tertiary Education and Access to the Service Class

To gain deeper insight into the linkages between education and occupational position we deconstructed them into detailed associations. A constituent of this relationship is the effect of tertiary education on entry to the higher classes. Higher educational credentials are seen as a way of providing individuals with access to opportunities in the labor market, especially in recruitment to higher occupational positions (Clegg et al. 2006). We will see, then, to what extent overall trends in the EO association are reflected in access to the top categories. Due to the small sample size of the ESS data, we focus on individuals classified in the top category of the EGP schema, i.e. higher managerial and professional categories, including specialists in medical, business, legal, educational, and various other fields. Holding jobs in these fields is associated with high incomes, authority, a certain lifestyle, prestige, and other resources provided by privilege. We will examine to what extent tertiary education serves as a "port of entry" to higher occupational prospects, and whether some linear tendencies are revealed.

Table 3 indicates just how highly male graduates from tertiary institutions were concentrated within the first EGP class in European countries. In Table 4 we show the corresponding results for women. A quite crucial point is that these proportions are remarkably higher among men and the comparable figures for women are lower. Even in Norway—a country with notably egalitarian gender attitudes (as in all Nordic societies)—42.1 percent of male graduates were in managerial or professional categories relative to 21.2 percent of female graduates. What this means is that despite higher educational attainment, women were less likely to reach privileged positions. Research

concerning occupational segregation clearly reveals that women are over-represented among teachers, bookkeepers, lower supervisors, and routine clerical workers, whereas they wield a disproportionately small share of power in corporations and other lucrative places (Bertrand 2010; Goldin 2014). We claim that educational capital serves as a main route to the topmost positions, although in the case of women, it is less effective because they fulfill traditional family duties related to roles as wives and mothers. Women are less oriented on occupational careers than men, and suffer from stereotypes and prejudices in the workplace.

Table 3

Percentages of higher managers and professionals among graduates from tertiary education. Men, 2002–2016

Country	Year							
	2002	2004	2006	2008	2010	2012	2014	2016
Austria**	48.6	41.2	31.9	—	—	—	30.8	18.7
Belgium**	47.7	44.7	40.5	46.6	30.3	32.8	32.7	31.7
Bulgaria	—	—	44.2	41.9	43.1	38.5	—	—
Croatia	—	—	—	43.0	32.4	—	—	—
Cyprus	—	—	27.5	38.5	30.0	26.8	—	—
Czech Republic**	36.6	45.2	—	50.0	29.4	28.6	25.5	29.8
Denmark	42.7	42.5	48.0	43.5	44.0	40.0	44.4	—
Estonia	—	29.7	34.2	36.7	26.5	31.6	35.5	27.8
Finland**	43.4	53.6	48.1	47.3	41.5	36.2	42.5	34.9
France**	—	—	45.0	38.5	44.7	32.6	36.0	30.3
Germany**	35.1	41.2	45.1	44.3	45.4	37.5	42.0	41.1
Greece**	43.3	36.1	—	25.6	30.4	—	—	—
Hungary**	54.8	—	41.7	28.9	34.3	29.6	35.8	—
Iceland	—	31.5	—	—	—	36.8	—	41.1
Ireland**	45.2	37.5	35.9	32.9	25.5	24.7	28.1	32.1
Israel**	56.2	—	—	41.3	38.6	34.1	33.7	39.7
Italy	46.6	54.1	—	—	—	44.0	—	—
Lithuania**	—	—	—	—	27.3	15.8	19.2	—
Luxemburg**	50.7	36.2	—	—	—	—	—	—
Netherlands**	51.6	47.3	43.2	51.4	47.0	38.8	40.7	53.6
Norway**	—	31.1	28.5	34.9	36.7	38.3	36.6	42.1
Poland**	44.7	39.5	35.7	41.6	46.1	50.8	34.7	32.1
Portugal*	67.9	33.8	43.1	53.9	40.0	48.9	46.7	—
Russia**	—	—	24.7	25.7	26.4	16.6	—	16.7
Slovakia*	—	48.5	52.9	48.4	41.8	34.4		—
Slovenia**	46.2	64.4	47.4	39.1	45.8	37.7	43.1	36.8
Spain*	30.1	37.1	22.8	32.2	30.5	35.4	34.9	—
Sweden**	48.6	50.8	41.8	51.7	34.0	32.6	28.6	28.9
Switzerland	46.8	39.4	44.6	43.3	37.9	48.0	46.6	45.7
Turkey	—	35.3	—	31.4	—	—	—	—
Ukraine**	—	22.6	22.7	20.8	31.1	18.7	—	—
United Kingdom**	45.0	44.1	34.8	37.7	44.8	32.6	30.0	23.0

* $p < 0.05$, ** $p < 0.01$

Table 4

Percentages of higher managers and professionals among graduates from tertiary education. Women, 2002–2016

Country	Year							
	2002	2004	2006	2008	2010	2012	2014	2016
Austria**	32.2	19.1	14.3	—	—	—	18.8	9.4
Belgium**	28.1	16.2	29.2	22.6	18.5	17.7	18.2	21.8
Bulgaria**	—	—	38.7	31.6	28.1	22.8	—	—
Croatia	—	—	—	26.8	25.4	—	—	—
Cyprus	—	—	13.4	14.8	16.5	12.7	—	—
Czech Republic**	20.9	25.6	—	32.9	14.3	23.3	16.3	13.0
Denmark	21.5	20.5	25.0	18.7	22.6	22.5	25.3	—
Estonia**	—	19.2	29.4	33.4	25.5	27.2	27.4	23.6
Finland*	19.9	20.6	23.5	26.3	20.7	16.1	19.3	20.8
France	—	—	24.4	23.2	16.4	21.5	18.3	19.5
Germany	22.1	20.3	18.6	21.9	23.3	19.0	18.7	19.9
Greece**	28.2	17.3	—	12.4	16.1	—	—	—
Hungary**	—	—	14.5	21.4	15.3	18.2	18.7	
Iceland	—	21.9	—	—	—	34.0	—	25.6
Ireland	21.5	19.0	17.9	17.5	20.2	18.0	19.5	22.9
Israel	25.9	—	—	23.6	23.4	19.4	19.8	20.2
Italy	22.3	22.7	—	—	—	21.4	—	—
Lithuania**	—	—	—	—	24.2	12.3	15.3	—
Luxemburg	22.4	27.0	—	—	—	—	—	—
Netherlands	27.8	25.1	28.1	23.2	25.2	24.6	23.6	31.0
Norway	24.7	22.9	17.7	23.4	21.8	22.7	27.4	21.2
Poland**	21.6	14.7	26.5	32.4	34.1	29.8	20.0	29.4
Portugal	32.0	30.8	21.8	34.0	22.2	21.2	28.0	—
Russia**	—	—	21.7	21.4	18.4	14.8	—	16.5
Slovakia**	—	43.8	29.9	37.5	30.5	21.9	—	—
Slovenia	39.8	43.1	33.5	31.1	29.3	31.0	25.0	30.7
Spain**	10.4	27.7	16.2	13.1	17.5	17.8	17.1	—
Sweden**	27.4	28.6	23.5	22.7	23.5	20.5	16.9	22.1
Switzerland	33.4	21.2	28.0	28.7	29.9	27.8	28.4	24.2
Turkey	—	21.0	—	10.1	—	—	—	—
Ukraine**	—	17.9	16.8	23.1	21.2	17.1	—	—
United Kingdom**	24.1	31.7	22.6	25.2	22.5	16.7	17.7	18.2

* $p < 0.05$, ** $p < 0.01$

The basic question is the following: in which countries was tertiary education strongly connected to attainment of the highest positions? This would be reflected in a relatively high percentage of graduates from tertiary schools in the service class. According to our data, in the case of men the highest such share appeared across years in the Netherlands (38.8–53.6%) and Portugal (40.0–67.9%). A relatively high percentage also appeared in Sweden (28.6–51.7%) and Italy (44.0–54.1). In close vicinity were Slovenia (36.8–64.4), and Poland (32.1–50.8). In contrast, investment in a university diploma turned out to be "less profitable" in Russia, Ukraine, and Lithuania, which represent the former Soviet bloc. The exception was Estonia, where tertiary graduates had a relatively high propensity

to enter this class category. As regards women, only Slovenia showed slightly higher percentages confirming that female dominance in tertiary education does not transfer to their entry to higher occupational categories. In summary, employment in managerial and professional categories across Europe can hardly be related to nation-based labor markets and educational systems.

The second question is whether this relationship has decreased or not. The signs of a decline appeared only among men. The percentage rates of those with the highest EGP positions tied to university level decreased in 18 countries. This reaffirms our overall findings that decline in the EO is by no means universal. The same emerges in what we refer to as the constituent link of this relationship.

Having looked at admission to the top occupations in absolute rates we now consider this relationship in relative terms. In research on social stratification, the association is measured by what are known as odds ratios. For each country, and for each ESS wave separately, individuals were cross-classified by two levels of education (university graduates contrasted with all below them) and by two categories of occupational position (managers and professionals versus other EGP classes). If the odds ratio works out at 1, this means that the chance of graduates from the highest level being found in the "service class" rather than in other classes are equal, and that there is no association between these variables. As the odds ratio rises above 1, the more unequal are the relative chances, and the stronger the association between graduating from tertiary level and accession to the managerial and professional category. It thus taps the net association between tertiary level and the top occupational categories, independent of the structural changes as reflected in the marginal distributions. Relative rates impinge little on individuals' awareness of being upwardly mobile (or not) but have direct relevance for issues of openness and meritocracy. In other words, considering net effects allows for a fuller understanding of the extent of the advantages and disadvantages associated with education.

Table 5 reports odds-ratios across 8 ESS waves. We see that the disparities that do exist between countries are large. For example, in Austria in 2016, for those with tertiary education, the chance of ending up in the salariat rather than in the other five EGP classes was around 21 times greater than the chance of those with lower education ending up in the top EGP classes. In the case of Finland this chance was respectively 10.16 times greater, in the Czech Republic 6.06 times greater, and in France 2.18 times greater. The relative rates have been declining somewhat in Denmark, Spain, France, Greece, and Turkey. At the same time, a certain tendency to increase occurred in Austria, Lithuania, and Ukraine. These outcomes yield a picture that sharply differs from the trends described above in percentage distributions. What we find overall is a considerable variation in upward and downward trends in relative rates. There has in no way been a decline contradicting the more visible decrease in proportions of men with a university education in the topmost category. Neither do the outcomes correspond to decline in the association between education and occupational position yielded by the UNIDIFF model. The key lesson from the changes in returns from education is that while the impact of education on occupational position has modestly declined, it is a structurally induced change rather than a change in the relative chances of accession to higher types of jobs. In our interpretation, the key driving forces at work were, on the one hand, the stable demand for personnel in the managerial and

Table 5

Odds-ratios for effect of tertiary education on entry to category of managers/professions in European countries, 2002–2016. Men and women

Country	Year							
	2002	2004	2006	2008	2010	2012	2014	2016
Austria**	5.31	5.80	4.53	—	—	—	7.62	20.96
Belgium**	7.15	5.61	4.97	6.00	4.08	3.12	4.52	5.78
Bulgaria	—	—	14.18	20.32	14.72	13.87	—	—
Croatia	—	—	—	9.20	9.20	—	—	—
Cyprus	—	—	26.82	11.20	21.39	8.22	—	—
Czech Republic**	6.11	16.70	—	14.01	8.25	5.03	6.88	6.06
Denmark	7.48	7.38	6.20	6.29	6.21	4.94	7.69	—
Estonia	—	5.48	6.75	4.79	5.54	6.96	5.91	6.91
Finland	6.89	8.50	7.24	9.13	10.87	8.53	9.89	10.06
France**	—	—	6.58	6.00	4.78	4.82	6.34	2.18
Germany**	11.98	7.86	11.81	10.99	9.88	5.99	9.53	7.25
Greece**	28.92	11.12		15.32	11.99			
Hungary**	17.83	—	17.19	16.24	17.57	9.76	16.28	
Iceland	—	5.49	—	—	—	9.81	—	6.65
Ireland**	8.10	6.88	4.38	4.40	4.94	2.96	3.73	6.15
Israel	6.55	—	—	6.11	8.51	4.96	5.29	6.59
Italy**	9.98	15.28	—	—	—	5.04	—	—
Lithuania	—	—	—	—	7.53	10.85	11.30	—
Luxemburg	5.18	7.35	—	—	—	—	—	—
Netherlands*	7.08	6.91	4.98	4.49	5.40	6.12	4.25	7.14
Norway	—	10.67	8.79	6.99	6.18	8.88	7.31	5.33
Poland	10.40	7.44	9.32	10.58	9.99	15.66	8.08	9.10
Portugal*	26.10	19.10	17.56	48.15	25.70	34.34	24.85	
Russia	—	—	22.08	10.42	10.40	16.85	—	19.16
Slovakia	—	9.84	10.16	10.90	13.62	8.11	—	—
Slovenia**	8.87	17.05	9.23	6.05	8.46	9.06	5.31	8.57
Spain	20.68	10.48	12.48	10.32	11.27	8.32	7.36	—
Sweden	7.56	7.17	5.62	6.21	6.22	5.41	4.60	5.35
Switzerland	8.41	8.39	14.15	11.61	8.95	9.18	9.05	8.34
Turkey**	—	55.74	—	5.74	—	—	—	—
Ukraine**	—	8.76	45.79	21.02	8.74	23.03	—	—
United Kingdom*	5.17	5.85	4.04	5.88	4.70	3.39	4.54	3.81

* $p < 0.05$, ** $p < 0.01$

professional category, and on the other hand, a growing degree of overeducation, resulting from the expansion of university enrollment.

Conclusions

A systematic decline in returns from education was found only in France, Germany, Poland, and the UK (Jackson et al. 2005; Büchel and Mertens 2004; Breen et al. 2010; Bouchet-Valat et al. 2016; Domański et al. 2018). In contrast, in the United States the expansion

of education did not impact class-related returns from educational degrees (Pfeffer and Hertel 2015). Due to the small number of countries under investigation, earlier research has yielded preliminary or partial evidence on the question of the decrease in life chances based on education. We extended the investigation to 32 countries that allows to assess the relevance of educational attainment in regard to the allocation of jobs, in connection with the massive growth of education in contemporary societies and shifts in employment relations.

Four main general findings emerge. First, our results cast doubts on the validity of the hypothesis that there has been a decline in this relationship. We find a steady decrease in the effect of education in the first two decades of the twenty-first century on the EGP classes only in 11 out of 32 of the countries analyzed. Notwithstanding the growing degree of over-education, non-standard job forms, short-term contracts, and stop-gap jobs, educational capital remains a springboard to an occupational career.

Second, we show support for the expectation that nation-specific institutions serve to funnel this relationship in unique ways. Education had a higher impact on occupational position in Eastern and Mediterranean countries and appeared to have a relatively lower impact in the Nordic and liberal regimes. Our explanation is that in the latter case flexibility is a general or guiding principle of all employment relationships. The sweeping form of fixed contracts in Britain, Ireland, the Netherlands, and Sweden enables firms to rapidly reduce costs and adjust more quickly to changes in the global market, which in turn leads to greater competitiveness and higher employment. Conversely, in post-communist countries higher education is still the most important type of human capital and transfers to higher returns. Considering the systemic transformations after 1990, the trajectory of these welfare regimes is still in evolution.

Third, women in almost all countries clearly have higher returns from education than do men. However, it seems to be true that, in regard to rates of returns, comparisons mask the large differences in favor of men in occupational positions. Our findings intersect with the well-documented notion of a gendered "glass ceiling" (Laurison and Friedman 2015). Women still work fewer paid hours over their life cycle than do men and are employed in less profitable positions. According to our analyses, even if there are substantial differences in university education between men and women, men are still more likely to be found in prosperous occupations.

Fourth, we might say something, briefly, about what follows from our research for the assumption—which some might wish to challenge—that the greater effect of education on occupation is an objective to be pursued. If the aim is to increase this relationship because it furthers economic effectiveness and a meritocracy—which people approve of—it should be realized that formal education does not comprise all the assets that transfer into occupational achievement. People are also rewarded for such "merits" as ability, talent, innovativeness, effort, and skills acquired in on-the-job training. Since the rules of meritocracy affect many areas of occupational career, the decline in the relation between education and occupation might identify a decrease only in its formal linkages, which are being replaced by mechanisms better suited to contemporary settings. To this extent, employability is a socially constructed process that encompasses a multitude of different workplaces and involves different graduate roles.

Finally, we must recognize that our data, while being quite powerful in establishing these empirical facts, is poorly suited to tracing the concrete channels by which education exerts its long-lasting influence in European societies. Further research should analyze long-term occupational returns and whether the findings are corroborated when other datasets are used, with social class of origin and age cohorts as additional independent variables. Moreover, possible extensions of this work would involve the inclusion of a larger number of countries and direct measurement of the relationships between each macro-variable and the effect of social background on occupational outcomes.

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