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The Effect of Education on Earnings Distribution in Poland: 1988–2013

Abstract: The effect of education on incomes may reflect the rise of a meritocracy in the patterns of social stratification. Using survey data based on national samples, I analyze the dynamics of this relationship in Poland in 1988–2013 across educational levels controlling for social origin and demographic variables. The results show that the rise of a meritocracy began in the 1980s and continued until 2005, as indicated by an increase in returns to university education. In 2005–2013, the wage premium for higher education persisted despite the economic crisis, the growth of non-standard forms of work, and turmoil of varying kinds in the market economy. At the same time, social origin significantly affects the distribution of incomes, although it occurs indirectly via cultural capital and social connections.

Keywords: stratification, meritocracy, ascription, incomes

In every country where studies have been conducted, the evidence shows that higher education raises income often by very substantial amounts (Becker 1964; Jencks et al. 1972; Taubman and Wales 1974; Solon 1992; Zimmerman 1992; McIntosh 2004; Hanushek and Woessmann 2005). According to the canonical economic model, earnings are determined by human capital, which consists of the capacity to contribute to effectiveness and profits. Another set of explanations for distribution of earnings relies on the impact of productivity gains related to educational level (Freeman and Katz 1994; Bach et al. 2007). In the conventional sociological model, the association between education and income ensures the rise of a meritocracy. The existence of a meritocracy maintains the equilibrium of socio-economic systems and provides political legitimation, since rewarding people for education is a widely accepted practice.

The collapse of state socialism, with the attendant institutional changes in the direction of a market economy, has provided researchers with an opportunity to raise the question to what extent these mechanisms develop. The paper addresses this issue by investigating the relationship between education and earnings in Poland, conditional on social origin and other variables attributed to social position. Using data from 1988–2013 national samples I have attempted to determine whether the significant increase in the impact of education on incomes that revealed until the beginning of the 2000s (Domański 1995; Rutkowski 1996), persists, has slowed, or has even declined.

Recent attempts to explain the changing stratification system have yielded a variety of causal accounts specifying a broad repertoire of mechanisms. Specifically, various theories about the growing flexibility of work and about over-education causing a penalty in earnings were employed (McGuinness 2006). For example, post-Fordism theory predicts a weaker relationship between education and job rewards and a correspondingly stronger relationship between general labor-force experience and job rewards for highly educated workers. Work duration has been regarded, arguably, as an even more dominant source of value creation (DiPrete et al. 2002). However, assessing how value creation evolves is not possible without taking into account the specific national context. Unlike previous empirical studies, my paper utilizes a long-range data set on comparable educational levels and individual incomes. This analysis permits the findings of other studies on the stratification of labor markets in transition societies to be expanded. In particular, I counter the argument that under communist societies, the provision of education was in all cases extended and serious efforts were made to create a greater education-based meritocracy, and thus only after transition to a free market economy was the "tight" link between education and economic returns loosened in certain respects (Bukodi and Goldthorpe 2010).

In the first section of the article, I summarize the relevant theoretical and empirical literature while focusing on the Polish case. In the second section, I describe the data used in the empirical analysis and discuss the methodology used. In the third section I analyze the determinants of incomes using an estimate of mixed effects and structural equation models. In the concluding section I discuss possible developments in the distribution of incomes according to educational level as compared to family background. From there, it is a short step to the belief that parental economic advantages are passed to children and the persistence of the advantage is especially large among those raised in the middle to upper reaches of the income distribution.

Theoretical background

Market transition theory predicts that moving from central planning to a market economy will result in two changes in the stratification system: a relative decline in the advantage to the political elite and increasing returns to human capital (Nee 1996). Thus, any signs of declining returns to education in emerging market economies would indicate various dysfunctions: according to theorists of post-industrialism, the association should rise, or at least not decrease. Inevitably, the imperative of modernization is the logic of meritocracy, where differences of incomes are based on education. If we agree that the "rags-to-riches" ascents that dominated the early stage of the capitalist system have been replaced by formal credentials, then the university has become the current arbiter of occupational position (e.g., Polanyi 1944; Treiman 1970; Bell 1973).

In fact, that claim reasonably well predicts the growing role of education in the distribution of incomes. According to numerous studies, tertiary graduates receive—overall— clearly higher wages relative to persons with lower levels of education. The same kind of association was disclosed in regard to incomes and other human capital variables such as

competences, cognitive abilities, skills, or IQ (Harkness and Machin 1999; Chevalier et al. 2004; Dickerson 2005).

Certainly, various mechanisms may be behind the remarkably consistent positive impact of education on incomes. While human capital theories argue that school leavers are sorted into occupations on the basis of their merits and productivity, the credentialist theory suggests that the process of the school-to-work transition is ruled by dominant status groups who define the educational requirements for a given occupation and, in this way, control and limit access to their privileged positions (Collins 1978). Bourdieu (1979) added that educational attainment reflects not only credentials but also the strategy of the higher classes to legitimate and maintain the status quo. The critique of the human capital assumption that education increases individual productivity is also the starting point of the signal theory of education. 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 expected training costs and costs associated with the risk of selection. Education, indeed, provides individuals with productive capacities and potential employers with signals of those capacities (Spence 1973; Polachek and Siebert 1993).

In contrast to class-based interpretations, a more plausible version of market evolution theory makes claims contingent on changes in the stratification order induced by moving away from the mass-production "Fordist" model of the firm to a more dynamic model organized along "post-Fordist" lines. While there is no single accepted theory of the "post-Fordist" economy, most accounts emphasize two complementary aspects: (1) greater internal flexibility achieved through the flattening of organizational hierarchies, and (2) increased reliance on the external market (often through various forms of relational contracting) for skills which are then combined with internal competencies to form products. The hypothesized shift to post-Fordist production arguably has several important consequences not only for the structure of firms and the organization of the economy but also for employment relationships and work careers.

While there are manifold theoretical propositions on the mechanisms behind the associations studied here, they do not allow us to draw firm conclusions about changes in time. In line with prior evidence, I would distinguish two competing theoretical approaches. In human capital theory, ideas about skill-biased technological change (SBTC) posit that growth in labor-market sectors requiring high technical skills has outpaced the supply of highly educated workers. If educational expansion does not keep pace with the rising demand for high skills, returns to education—in particular, higher education—increase (Goldin and Katz 2008). On the other hand, signaling (Thurow 1975) and screening theories (Spence 1973) hold that educational expansion would be expected to inflate the value of degrees and result in decreased returns to education. Widely cited findings of increasing income returns to education (Goldin and Katz 2008), and especially to college degrees, correspond to the predictions of SBTC. However, findings from many European countries show decreasing social-class returns (Breen and Luijkx 2004), as is more consistent with the predictions of screening and signaling theories.

If enhanced school resources are important determinants of earnings, what about the influence of social, and especially class, origins? The crucial role of educational attainment notwithstanding, numerous studies have disclosed that the advantages possessed by

children of successful parents parallel the benefits of superior education. Specifically, in the United States, the net effect of parental income explained a significant part of an offspring's wages, after controlling for schooling, employment, and cognitive performance (Mulligan 1997). These findings repeat the findings of a number of other studies: for example, in the United Kingdom two thirds or more of the substantial intergenerational transmission of income status appeared independent of the covariation of parental income with a range of measures of the offspring's schooling (Atkinson et al. 1983). The puzzle is to understand what it is that successful parents pass on to their children that gives them labor market advantages beyond superior schooling.

Communist Societies: Poland

The experience of Central and Eastern European countries over the last 30 years is especially interesting given the dismantling of the centrally planned economy in the early 1990s. After the breakdown of the communist regime, an increase in wage returns to education might have been expected, as demand for education can be reflected in the market. However, there is also a competing hypothesis that emphasizes the role of "path dependence," namely, that post-communist societies follow divergent modes of political and economic transition depending on their historical legacy (Burawoy 1997). Jadwiga Staniszkis (1991), for example, connected the transition route with "political capitalism," and specifically with the success of the late state-socialist managerial elites in retaining their positions at the top of state enterprises. Other researchers traced the phenomena to inheritance of a *homo sovieticus*-based mentality and a shortage of economic capital (Rona-Tas 1994; Cao and Nee 2000). If these researchers were correct, the rate of return to education might even be expected to fall instead of increase.

Recently, the idea of the existence of meritocracy has been subject to critical assessment on grounds related to the mechanisms underlying socio-economic achievements under the communist system compared to those under the free market system (Bukodi and Goldthorpe 2010). In this interpretation, an education-based meritocracy was relatively highly developed in the command economy. Serious efforts were made to create greater equality of educational opportunity, especially for children of working-class or peasant backgrounds. In analyzing socioeconomic status in Hungary, Bukodi and Goldthorpe suggest that especially in the first stage of the communist system some reduction in the educational inequalities between children of differing class origins was in fact achieved, with especially strong linkages between individuals' qualifications and their class destinations. Such a phenomenon is generally counter to the processes driven by the functional imperatives of modernization under liberal capitalism. The assumption is that a "free market" economy—that is, one operating within a liberal form of society—is not in fact compatible with meritocracy.

Has a meritocracy really developed? As adjudicating such conceptual plurality becomes difficult, the solution lies in empirical data. The data shows that, in contrast to the 1980s, during the 1990s graduates from the tertiary level in Poland had clearly higher earnings than individuals with lower education (Domański 2011). A rise of economic returns to human capital was also detected in China, the Czech Republic, Hungary, and Slovakia (Noorikov et

al. 1997; Svenjar 1999; Zhao and Zhou 2002; Campos and Jolliffe 2004; Vecernik 1999). In contrast, Russia's reforms have had relatively little impact on the distribution of incomes in connection with university educations. Russia's market transition led to a sharp contraction of output, to layoffs, and to growing unemployment (Gerber 2002). There was a shift from a supply-constrained to a demand-constrained labor market, which gave rise to a delay in payments by employers and, in many cases, the replacement of financial remuneration by payments in kind. Gerber and Mayorova (2006) found specific prevalence of networks based on employer-side considerations; these networks provided an advantage in the labor market, paralleling the effect of educational attainment. In spite of serious turbulences, it must be admitted that in the earliest stage of the post-communist transition, the association between earnings and occupational position in Russia increased (Bian and Gerber 2004).

The use of data sets covering a wider span of time allows the mix of competing market arrangements to be identified. Given a rapid shift from closed to open employment systems it might be expected that market-coordinated regulations should lead to a more meritocratic distribution of incomes. Returns to human capital should increase, as individuals with talent and expertise become able to secure a high salary through bargaining and voluntary job changes, while those with little capital are likely to be forced to settle for a minimum. The alternative hypothesis, for which I opt, contends that the effect of educational investment on monetary rewards did in fact increase quickly but leveled out or even tended to weaken at the next stage in the transition to a market economy. This can be attributed to the growing supply of more highly educated persons outstripping demand and also perhaps to employers who, in a context of "credentials inflation," increasingly use a range of other selection criteria. A quite crucial point is that increasing participation in education might result in an inflation of certificates, since the rising supply of university diplomas contrasts with the stable demand.

As an illustration, consider the following contrast: Table 1 presents dynamics in the distribution of educational levels in Poland over recent decades. What appears is the steady "upgrading" of the educational structure. The data captures these trends well: the share of holders of a MA degree or higher rose rapidly and linearly from 8.2 percent in 1988 to 19.7 percent in 2013. These trends were reversed at the lower level of educational distribution, where elementary school dropout rates decreased sharply and linearly from 34.4 to 10.1 percent in 2010.

Table 1

Trends in Education Structure in 1988–2013 (in percentages)

Level of education	1988	1992	1995	2002	2005	2010	2013
Elementary	34.4	28.2	26.8	17.1	16.3	10.1	10.7
Basic vocational and incomplete secondary	28.4	29.9	30.5	32.4	34.4	26.2	32.6
Completed secondary	22.9	27.1	27.6	27.3	25.6	31.0	30.9
Some college	6.8	6.0	7.0	13.0	12.9	13.8	6.1
MA or more	8.2	8.8	8.1	10.1	10.8	18.9	19.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Data from national representative surveys, based on random samples, carried out in Poland in 1988, 1992, 1995, 2002, 2005, 2010 and 2013 (see Domański et al. 2018).

To see whether the evolution of the educational structure corresponded to the growing demand for managerial and professional cadres, Table 2 shows changes in the class structure during the same period. Highly skilled white-collar positions (service class) expanded in 1988–2010 from 7.2 to 13.7 percent but then declined to 9.7 percent for 2013. What we observe then is that notwithstanding an expansion in the supply of graduates the proportion of jobs held by individuals with higher credentials shows no pronounced trends. In fact, the share of the service class appears to be two-fold less than the share of people with tertiary education. Educational expansion was not matched by demand on the part of the occupational structure. The numerical increase in the occupational category referred to the "new intelligentsia" was too slow to absorb the expansion of the percentage of individuals with a tertiary education.

The tailing-off of service-class occupations has been paralleled by the stable proportion of intermediate categories, referred to in Table 2 as lower non-manual workers. The proportion of men and women working in routine and semi-routine occupations oscillated around 31 to 32 percent over the ensuing 25 years. It should be noticed that consistent with the logic of the modern economy, which requires more service-based positions than working-class positions, we see rapid fluctuations in the numbers of skilled manual workers. In 1988–2010, this category decreased from 26.3 to 12.2 percent, before moving upward to 20.9. The decline of the working class was partly compensated for by the expansion of lower-grade manual positions: the category of unskilled manual workers increased from 12.9 to 18.7.

Overall, basic changes in the size of different classes resulted from growth in the proportion of business owners, though these were mostly offset by a declining proportion of the peasant class. The latter were an exceptional element of the private economy in communist Poland. However, the peasants, having succeeded in retaining their farms under an inimical political regime, were unable to withstand the capitalist system. A question of particular interest is whether such adverse market conditions reduced the financial returns from education. Implicit in the theory of modernization is that returns to education should increase over time because technological and economic efficiency requires ability and education to become the dominant criterion of selection in labor markets. The findings confirmed the transition theories in regard to the rise of a meritocracy—in the next decades the shift to a market economy might have been halted. The returns to education became stable or even slightly declined, as reflected in the decrease of earnings received by university graduates.

Table 2

Trends in Class Structure in 1988–2013 (in percentages)

Social classes	1988	1992	1995	2002	2005	2010	2013
Service class	7.2	9.2	8.5	9.1	10.6	13.7	9.7
Lower non-manual workers	31.6	26.8	28.0	29.2	30.1	37.4	32.8
Owners	3.0	5.7	6.4	6.5	5.5	8.8	6.2
Skilled workers	26.3	19.6	18.1	20.0	19.8	12.2	20.9
Unskilled workers	12.9	24.4	26.1	23.0	25.4	19.5	18.7
Farmers and agricultural workers	19.0	14.3	12.9	12.3	8.6	8.5	11.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Finally, I expect my results to vary with social origin. The monetary rewards are affected not only by current conditions but also by conditions from the past (Black and Devereux 2010; Ishida and Miwa 2012). Parents of higher socio-economic status invest more to support their children during the children's school years and occupational career. Resources associated with social origin continue to play a relevant role even after graduation, although the intergenerational transmission of class inequalities has more impact on individuals' educational attainment and occupational careers than their financial outcomes. The latter association is weaker since earnings are more influenced by factors such as the state's redistributive fiscal and welfare policies, strong trade unionism, or economic turmoil (Gregg et al. 2013; Breen et al. 2016). What is of chief interest here is that class-origin effects proved to be generally a weak determinant of earnings in Poland under the communist regime. Individuals' class origins mostly exerted an "indirect" effect on their earnings (channeled via education) while direct effects were taken to be in decline (Pohoski et al. 1978). Supposedly, the distribution of incomes in the planned economy was "sponsored" by the state, which diminished the role of family background, perhaps to even less than in Western societies. Turning toward a market economy should therefore result in an increase of the parental social class, since parents are inclined to invest more in education and other resources that provide their offsprings with higher advantages. Thus, I opt for the hypothesis that social origin has an increasing effect on inequality of earnings.

Data and Variables

To answer my research questions, I used ten surveys conducted in 1988–2013 on random samples of adults, "Social Structure II" (the first wave of the panel, referred to hereafter as POLPAN) interviewed a representative sample of 5,817 individuals (Słomczyński et al. 1989). For research conducted in 1992–2010 I drew on data sets from the Polish General Social Survey based on household samples: the number of respondents in the PGSS varied between 1,250 and 1,700. The last dataset comes from the POLPAN 2013 survey, with a sample size of 2,780 respondents.

The outcome variable is monthly earnings. In 1988 and 2013 respondents first provided detailed characteristics of their occupations, then reported their average wages over the most recent three months. In the POLPAN survey, the question was asked about earnings from the respondent's main job, while in the PGSS survey the question concerned total earnings from all sources. Nevertheless, it may be assumed that the same variable was captured in both cases. For cross-time comparability, and to deal with skewness, I used log-transformed earnings.

My explanatory variables are as follows. With regard to the respondent's education, five categories were distinguished: (1) elementary education, (2) basic vocational and uncompleted secondary education, (3) completed secondary education, (4) lower tertiary education, and (5) higher tertiary education. Social origin was measured using the prestige score of the father's occupation when the respondent was 14 years of age. I applied the Polish Occupational Prestige Scale (POPS) constructed in 1979, and modified in 2009, to adjust scores to changes in social structure (Domański et al. 2009). Both the old and the

new versions of the POPS are very close to Treiman's SIOPS (1977). I used the father's occupation as the measure of origin because information on the mother's occupation is not available for earlier years. The same scale of occupational prestige was used to assess the respondent's socio-economic position.

I introduced a couple of control variables. I used socio-demographic variables such as sex, age, size of place of residence (a 7-point scale, from the countryside to cities with a population over 500,000). In addition, I took the supervisory position into account. Since the factor proved to be an important determinant of earnings, a 3-point scale was employed to represent: (1) non-supervisors, (2) lower supervisors, and (3) higher supervisors, that is, those with supervisors below them.

I estimate the parameters of mixed-effect models to allow for the possibility that unobserved heterogeneity biases the parameters through correlation between education and the error term. Standard application of the ordinary least square (OLS) is not suitable for this study as it assumes that observations are independent. With cross-time data, observations may be linked in highly structured ways. If these linkages are not addressed, standard applications of OLS will transfer unmeasured unit-specific or time-specific effects onto the error term, resulting in biased estimates. If we did not account for these interdependencies, we would violate the independence assumption. Mixed-effect models include additional random-effect terms (and associated variance and covariance components), and are appropriate for representing clustered—and therefore dependent—data when the conclusions that we draw pertain to specific characteristics of the samples used in the study. In the case of my model here, I add a random effect for "time of research"; it characterizes idiosyncratic variation due to differences related to the various times of conducting the study and allows endogeneity problems between earnings and independent variables to be avoided.

Results

The key question in this analysis is whether the increased number of diploma-holders reduces the effect of education on incomes. It should be recalled that a close association may be due not only to the existence of a meritocracy but also to the presence of a still pervasive credentialism and to social origins, which indirectly contribute to the reproduction of social distances. Hence, the basis for the legitimacy of education may shift away from "equal opportunity" to the fundamentally different issue of whether returns from education are high enough to justify its cost. To examine this question, I estimated a random-effects model to control for unobserved time-specific characteristics omitted from the model. Table 3 shows the influence of education and social origin on people's earnings for consecutive points of time. The coefficients of the random slope model are presented: respondents from different surveys are allowed to have different intercepts and different slopes for parameters.[1] Dummy variables for education were entered to the model as effect-coded variables, mak-

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[1] Statistics of fit for the full random slopes model (parameters not presented here) are: AIC = 23602.2, BIC = 24115.9, Log-likelihood = −11734.1, and df.resid is 15718. To apply the mixed-effect model I used the R package lme4. The full output of the model is available upon request.

ing it possible to interpret the values of parameters as a measure of the distance between the average (non-weighted) incomes for a given category and the sample mean.

As expected, earnings vary considerably by educational levels. We can observe a clear monotonic increase of earnings relative to the mean with the highest returns obtained by individuals with university-level education. In 2013, for instance, having the highest level of education increased log wages by .252, and in 2010 by .328; transformed to percentages, these amounted respectively to .288 ($e^{.252}$–1) and .388 percent ($e^{.328}$–1). This is what graduates from tertiary education earned after controlling for their fathers' occupational positions and additional variables. In accord with previous research (Domański 2011), we can also see that the situation for people with the highest education was worst in the People's Poland. In 1988, the net effect of a tertiary education was 156, thus university graduates gained only 169 percent above mean wages.

Nonetheless, the crucial question concerns trends over recent decades: to what extent has the effect of education increased? As Table 3 reveals, the breakdown of the planned economy triggered an increase in returns to higher schooling. The upward tendency lasted until 2005—the wage premium for tertiary education relative to mean wages rose at the time from 169 to 609 percent.[2] These findings plausibly suggest that the monetary gains for tertiary degree-holders reached their peak then, as the trend is no longer apparent. In the language of economists, the "law of diminishing marginal utility" can be observed, that is, there was a fall in returns to higher education in the following years. Actually, between 2005 and 2008 the impact of tertiary-level education was reduced to 461 percent; in 2010 it fell to 388 percent, and in 2013 to 287 percent. These outcomes would thus seem to speak in favor of the hypothesis noted at the outset: while higher education still plays a major part in determining earnings, its importance has flattened and slightly weakened. As in some other countries (Pfeffer and Hertel 2014), post-secondary education expanded faster than did eligibility for such education. Educational expansion therefore inflated the value of degrees and resulted in decreased returns from education for the growing pool of applicants. Obviously, a cautionary note to this interpretation is needed. I cannot empirically disentangle other potential macro-systemic factors due to the analyzed datasets being limited to nine surveys, although the interpretation is rather typical for longitudinal data.

A third observation concerns social origin. According to my prediction, social origin does not affect the earnings net of education, age, and other variables, although an "indirect" parental effect is not excluded, as I examine below. However, the effect of gender, size of place of residence, and the supervisory features of a position are significant. Men had much higher earnings than women did; supervisors earned more than subordinates; and people living in metropolitan areas fared better than residents of smaller areas. The results also showed that these regularities were consistent over time, although in 2005–2013 living in larger cities became less advantageous, perhaps due to Poland's entry into the European Union. An inflow of EU donations was intended to erase regional divisions.

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[2] The net effect of tertiary education in 2005 amounted to .476. In exponential form it was 1.609.

Table 3

Mixed-effect model regression for log wage on education, social origin, and control variables—by time of the surveys. Parameters from random slope models. Poland 1988–2013

	1988	1992	1995	1997	1999	2002	2005	2008	2010	2013
Gender (male = 1)	.468***	.389***	.331***	.351***	.209**	.281**	.330**	.306**	.213**	.317**
Age	.047***	.076***	.062***	.034*	.062***	.060***	.042***	.045***	.065***	.081***
Age²	-.000	-.001	-.001	-.000	-.001	-.001	-.000	-.001	-.001	-.001
Education										
Higher tertiary	.156***	.151**	.303***	.271**	.294**	.411**	.476**	.379***	.328***	.252**
Lower tertiary	.041	.043	.119**	.056	.084	.150**	.196***	.111*	.082	.044
Completed secondary	.022	.067	-.002	.029	.011	.026	-.054	.054	.007	.004
Basic vocational and uncompleted secondary	-.061	-.010	-.115*	-.172**	-.046	-.198**	-.144**	-.138**	.106*	-.119*
Elementary (ref.)	0	0	0	0	0	0	0	0	0	0
Fathers' occupational prestige	.000	.006**	.002	.001	.000	.001	.002	-.001	.004	-.005
Supervisory position	.192***	.260***	.238***	.188***	.290**	.253**	.265**	.275**	.266**	.298**
Size of place of residence	.042***	.044***	.046***	.038*	.043***	.043**	.046**	.036*	.047**	.042**
Constant	3.335	2.978	4.169	5.216	4.933	5.058	5.325	5.569	5.493	6.035

Indirect Effects

As net effects do not capture total associations between earnings and education combined with father's position, one solution is to turn to a path model. I used an SEM model where the exogenous variables are social origin, sex, and age. Fathers' occupations are transmitted to their offspring's earnings through education and the individuals' occupational position, and in the last stage, occupation mediates the effect of educational level.[3] In Table 4, I present the results for a model that satisfactorily meets closeness-of-fit criteria.

The findings I obtained are as follows. First, concerning social origin, the net effect of the parental score on earnings was confirmed to be weak—and as regards trends, neither monotonic decline nor increase could be found. This statement does not apply to all the years under examination. The parental score itself culminated at .089 in 2010; however, in the following years it began to decline. The result is quite clear: transition to the capitalist system did not make class origin more influential in terms of the direct transmission of economic resources, cultural capital, and other attributes of family background. But a crux arises from the indirect effect of parental position. The parameters reported in Panel B indicate that an increase in parental score brings about a significant increase in earnings although the total impact of education on earnings (Panel C) has always been much larger. Concerning changes in time, we observe no indication of long-lasting increase in ascription, although in 2008–2013 the "total" association between father's position and earnings rose from .147 to .285. The estimated coefficient of .285 implies that an increase in the one standard deviation in parental score brings about a change of approximately 30 percent of standard deviation in earnings. Generally speaking, the effect of class origins is still visible. The findings reported here reinforce those of earlier analyses (Pohoski et al. 1978): the influence of class origins on earnings is channeled mainly though educational attainment and occupational career. Social background might well become increasingly relevant, especially as a consequence of the development of job positions in the tertiary sector for which employers attach importance to attributes that are acquired more or less as a matter of course through family or community socialization rather than through ability and effort in the educational system. Seemingly irrelevant personal characteristics such as beauty, height, obesity, and even whether one keeps a clean house, are often robust predictors of earnings (Bowles et al. 2000).

Second note relates to educational attainment. Not surprisingly, the effect of education on earnings functions both directly and through occupational position. Generally speaking, the direct effect of education was stronger, with the exception of 1988, when mediation via occupational position prevailed. The parameters reported in panel A show that in 1988–2002 the monetary gains brought by educational attainment went up from .102 to .381, declined in 2002–2008, and rose again until 2013. Individuals with higher education benefited from the systemic change by an increase in wages. As regards secular trends, only trendless fluctuations appeared and the same occurred in the case of indirect effects. Most importantly, the advantage afforded by higher education is mostly revealed in its "total"

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[3] Using SEM I replaced education, measured in terms of five dummy variables from the Mixed-effect model, with a quantitative variable—with 1 referring to "some elementary and completed elementary," 2 to "basic vocational and some secondary," and so forth until five, "completed tertiary."

Table 4

Log Wage on Education, Social Origin, and Occupational Position in a Path Model by Time of the Surveys. Poland 1988–2013

	1988	1992	1995	1999	2002	2005	2008	2010	2013
Panel A. Direct effects of:									
Father's occupational prestige	.047**	.065**	.042**	.001	.029	.044	-.011	.089*	.035
Education	.102**	.316**	.265**	.344**	.381**	.362**	.234**	.270**	.347
Respondent's occupational prestige	.303**	.036*	.205**	.102**	.132**	.152**	.324**	.157**	.232
Panel B. Indirect effects of:									
Father's occupational prestige via education and respondent's occupational prestige	.085**	.007	.027**	.019*	.029**	.027**	.062**	.034**	.053
Father's occupational prestige via education	.039**	.096**	.061**	.105**	.130**	.093**	.070**	.094	.139**
Father's occupational prestige via education and respondent's occupational prestige	.016	.003	.027**	.007	.018**	.001	.027**	.016*	.058
Education via respondent's occupational prestige	.224	.022*	.116**	.063**	.084**	.104**	.206**	.097**	.131**
Panel C. Total effects of:									
Father's occupational prestige	.173**	.170**	.157**	.133**	.205**	.166**	.147**	.233**	.285**
Education	.326**	.339**	.381**	.407**	.465**	.466**	.440**	.367**	.478**
R^2	.221**	.171**	.285**	.225**	.297**	.352**	.342**	.214**	.383**

** $p < .01$;   * $p < .05$

effect (Panel C). The association with earnings increased from .326 to .466 in 1988–2005, remained stable in the next period, and in 2013 amounted to .478. In sum, a detailed analysis reveals that taken as a whole the effect of education did not decline. The findings I have reported cast some doubt on the hypothesis concerning the negative consequences of the inflation of educational credentials.

Third, I examined the effect of occupational position and the role it played in comparison to educational level. What is important is that in 1988 earnings depended more on occupation than in the next decades. The net impact of occupational position tripled at the time effect of educational attainment (.303 vs .102), which implies that in an economy regulated by the state, finding a proper job mattered more than human capital. Afterwards, as we can see, education overcame the impact of occupational position. I suspect that the reason lies in the growing flexibility of market economy relations, as reflected in the growing number of precarious jobs and fixed-contracts. Workers in routine jobs are presumed to be losing, at least to some extent, the benefits of employment stability and can no longer expect steadily rising wages until midcareer. Wage flexibility is connected with the lower influence of occupational position on earnings. Ultimately, the question arises of whether such an increase in social fluidity will continue in the future, in the context of weak economic growth, a persistently high unemployment rate, and an increasing disequilibrium between the distribution of degrees and the structure of available positions, which produces a decline of occupational returns to earnings.

Concluding Comments

The results of my analysis, which is based on cross-time data from Poland, are consistent with hypotheses pertaining to how market economy institutions reshape the impact of education on incomes. During the course of Poland's transition to a market economy, the association became stronger than in the 1980s and nothing suggests that it will dramatically revert. These mechanisms reflect the shift from a supply-constrained to a demand-constrained labor market.

What may come as a surprise, however, is evidence of a puzzling contradiction in the role of education as the main factor in upward mobility. As university graduates are more likely to gain higher financial rewards, the systematically declining association between education and occupational position is a reversal of the tendency (Domański et al. 2018). The latter tendency, which has appeared in Poland from the beginning of the 1990s, has been paralleled by the same pattern in other societies such as France, Germany, and the United Kingdom (Breen and Luijkx 2004; Blossfeld et al. 2005; Bouchet-Valat et al. 2016). This has been attributed to a universal rule about educational expansion and unfavorable changes in the labor market being driven by the growing role of non-standard job forms. But, as my analysis suggests, the inflation of educational credentials does not necessarily reduce the advantages of higher education. A university diploma remains an important asset, at least as a key resource for obtaining high wages. The findings presented above confirm what all previous analyses have disclosed, namely, that educational returns are channeled through occupational position. Indeed, advanced education makes gaining monetary returns via ac-

cessing top jobs more likely. Only those who obtain lucrative occupational positions benefit from a university diploma. While education may have lost some power as a factor enabling success in one dimension, it may have gained traction in another dimension.

This runs counter to arguments about the declining strength of the association between educational qualifications and socio-economic position established in the socialist era (Bukodi and Goldthorpe 2010). Nothing indicates that in Poland the transition to a market economy undermined the effect of a university diploma on income. Actually, the relationship increased, in accord with the idea of the "meritocracy as a functional imperative" of modernization processes. It should be added that the efforts made in the post-war Soviet bloc to create greater equality of educational opportunity did not succeed (Sawiński 2018); to view the system as representing the most fully developed "form of meritocracy" is to overlook the various non-meritocratic privileges enjoyed by the families of the *nomenklatura*—on grounds of economic inefficiency and lack of political freedom alike.

Empirical evidence on the issue is limited because of the scarcity of appropriate data. In order to corroborate these findings much remains to be clarified concerning the relationship between skills, schooling, and earnings. One methodological implication of these trends is that aside from formal education there is a need to provide avenues for the development the various kinds of human capital required by all knowledge-based economies: for instance, on-the-job training in specific occupational skills, vocational courses, and apprenticeship training after completion of a comprehensive secondary education. In accord with meritocratic theory, we should also expect achievement of better occupational positions to be driven by academic performance and motivation. Indeed, research has shown that abilities play an important role not only in shaping individual academic achievement but also in influencing occupational careers. Another strategy is for youth to take on multiple roles, such as combining school and work. Given the growing flexibility of modern economies, further analyses should take into account flexible employment contracts (temporary work-agency employment, part-time, irregular hours, etc.), precarious jobs, and the uncertain employment situation.

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Appendix A1. Description of Selected Variables

	1988	1992	1995	1997	1999	2002	2005	2008	2010	2013
Log wage (mean in quartiles)										
1	3.33	4.38	5.22	5.83	5.99	6.02	6.12	6.46	6.67	6.75
2	5.08	4.96	5.77	6.31	6.59	6.72	6.80	7.01	7.29	7.36
3	5.43	5.32	5.08	6.64	6.90	7.04	7.09	7.42	7.65	7.68
4	5.92	5.94	6.67	7.23	7.46	7.65	7.70	7.99	8.24	8.30
Male (%)	46.1	44.9	44.7	43.8	43.1	42.4	47.5	48.1	45.6	45.4
Size of residence (%)										
village	38.4	36.4	36.2	37.3	38.6	35.3	36.0	35.0	34.2	41.4
10–20.9 thous.	11.7	13.9	15.9	16.2	14.6	14.4	15.2	19.0	18.0	12.6
21–99.9 thous.	20.0	18.2	17.9	16.7	18.0	16.9	16.6	15.8	17.4	19.9
100–499.9 thous.	19.2	19.6	19.0	18.4	19.4	20.3	19.0	16.7	17.7	16.5
500 thous. or more	10.7	12.0	11.6	11.0	9.4	13.2	13.4	13.7	12.8	9.7