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Does rising economic inequality strengthen the intergenerational transmission of educational advantage? Evidence from 32 Western countries

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Abstract
This paper examines the effect of economic inequality on inequality of educational opportunity. The paper's contributions to the field are threefold. First, it exploits within-country variation to identify the effect of economic inequality on the intergenerational transmission of educational advantages while controlling for relevant time-constant as well as time-varying confounders at the macro level. Second, rather than using standard period measures of inequality, this paper relies on measures of economic inequality taken at the point of the most significant branching point in national educational systems. Third, we compiled harmonized data from several major international surveys (ALL, ESS, EU-SILC, EVS, IALS, ISSP, PIAAC) to arrive at an analytical sample of more than 330,000 respondents born between 1970 and 1998 in 32 Western countries. Our empirical strategy consists of estimating hybrid multilevel models that exploit the over-time component of our repeated cross-sectional survey data, and that utilize parental education as our measure of respondents' social origins. In contrast to earlier cross-sectional research, we find no evidence of a Great Gatsby curve-relationship between economic inequality and inequality of educational opportunity when examining changes over time. We speculate and provide limited exploratory evidence for the interpretation that our null findings are specifically characteristic for the sample of relatively recent birth cohorts under study, whereas a Great Gatsby-type association between inequality and intergenerational reproduction appears to have existed in the oldest cohorts in our data.

Keywords
rising economic inequality, Inequality of educational opportunity, Within-Country variation

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Introduction

A broad and interdisciplinary literature has documented the existence of a negative relationship between income inequality and intergenerational mobility in recent years (Blanden 2013; Corak 2013; DiPrete 2020; Durlauf, Kourtellos, and Tan 2022; Jerrim and Macmillan 2015). This so-called "Great Gatsby curve" visualizes that countries with higher levels of income inequality systematically exhibit a higher transmission of socio-economic advantages across generations. Put differently, in countries where inequality is high, families' economic position tends to reproduce more strongly across generations, as either children from more humble origins are facing relatively stronger barriers to upward mobility, as children from more privileged social origins are being more strongly protected from experiencing downward mobility, or both. Against the background of rising inequality in the U.S. and many other Western countries, the empirical evidence on such negative consequences of inequality for social mobility has found a wide reception in academic as well as policy circles.

Given its evident substantive importance and strong political implications, we seek to provide further empirical evidence to evaluate the existence and magnitude of Great Gatsby-type associations between inequality and intergenerational reproduction in affluent countries in the present work. More specifically, we provide new empirical estimates for the impact of economic inequality on the intergenerational transmission of educational advantages from an analysis that rests on a comprehensive cross-nationally comparative survey dataset and that is exploiting within-country, over-time variation to identify the relationship between inequality and intergenerational reproduction . In doing so, we first and foremost respond to the consensus view in the methodological as well as in the substantive literature that longitudinal (a.k.a. within-) designs provide a more credible approach to isolating any possibly causal effect of conditions on outcomes than conventional cross-sectional research (DiPrete 2020; Durlauf et al. 2022; Engzell and Mood 2023; Fairbrother 2014; Giesselmann and Schmidt-Catran 2019; Jerrim and Macmillan 2015; Schmidt-Catran, Fairbrother, and Andreß 2019). In fact, conducting this type of methodologically more appropriate research seems particularly warranted with respect to the Great Gatsby curve question of whether rising inequality may be conducive to more socially stratified processes of socio-economic attainment: despite its evident theoretical and political importance, evidence supporting Great Gatsby-type associations is typically stemming from cross-sectional comparisons between high- and low-inequality countries, whereas, as to be reviewed more fully below, most of the relatively small number of longitudinal studies available to date do not find an association between inequality

and intergenerational reproduction, thus also calling the causal nature of the Great Gatsby curve into serious question.

For the present analysis, we have compiled and harmonized survey data from seven major international survey projects to provide us with a rich database that is covering more than 330,000 respondents born between 1970 and 1998 in 32 Western countries, and that should allow for a stringent, statistically well-powered, and substantively meaningful test of the much hypothesized relationship between inequality and intergenerational reproduction across a broad sample of affluent countries and over a historical observation window characterized by often significant upswings in economic inequality within these countries.

In substantive terms, we specifically focus on the impact of economic inequality on the transmission of educational advantages from parents to children in the current paper. This choice of focus certainly has the pragmatic element that parental education is the one piece of information on respondents' socio-economic origins that is available in all of the original surveys and that is quite straightforward to validly harmonize across countries and surveys, which all helps guarantee that we are able to base our substantive analysis on multilevel data that is as encompassing as possible in its coverage at the contextual level of affluent countries and birth cohorts from the last quarter of the 20th century. At a more theoretical level, a focus on inequality of educational opportunity (IEO) is likely to capture a central element in intergenerational social reproduction, as educational attainment represents the main channel through which social origins affects socio-economic destination in the well-known status attainment OED model of Blau and Duncan (1967; also see e.g. Breen and Müller 2020). Based on the selfsame conceptual background, earlier landmark studies like Jerrim and Macmillan (2015) have likewise focused on the intergenerational transmission of educational advantages, and have obtained empirical evidence to confirm the Great Gatsby association in a cross-country comparison based on survey data from the Programme for the International Assessment of Adult Competencies (PIAAC).

Even so and as fully acknowledged by the authors themselves, Jerrim and Macmillan's (2015) cross-sectional study leaves the question open if the findings may be read as speaking to genuinely causal implications of over-time changes in inequality and if other institutional and structural sources of heterogeneity across countries may have been sufficiently accounted for in order to isolate the purported effect of inequality in the first place. In seeking to provide new evidence on a possibly causal role of aggregate inequality in shaping inequality of educational opportunity, we first and foremost follow the example of earlier research that has estimated the association from trend analyses in either a single country (e.g., Hilger 2015;

Jackson and Holzman 2020; Leone 2022; Mayer 2001) or across a comparative database for a sample of different countries (Cingano 2014; Neidhöfer 2019; Ortiz-Gervasi and Palomo Lario 2024; Van Der Weide et al. 2024). In addition, we seek to improve over previous work by aligning the measurement of contextual variables – i.e., of economic inequality as well as other aggregate controls – with standard theories of families' educational decision-making by recording these at a time point when respondents have been reaching the major branching point in each national educational system, and we specifically seek to isolate the effect of economic inequality from that of other aggregate characteristics like the level of economic prosperity, the level of public support for (tertiary) education, and the speed of educational expansion. Based on our longitudinal research design and hybrid within-between (REWB) multilevel regression modeling, we do not find any association between changes in economic inequality and changes in the strength of the intergenerational transmission of educational advantages in a sample of respondents born between 1970 and 1998 in 32 affluent Western countries. Before explaining our empirical evidence in greater detail, we now first review the recent literature on the topic, derive our theoretical expectations, and then present our methodological approach and data.

Previous studies

When reviewing the recent literature on the relationship between economic inequality and the intergenerational transmission of education, it seems useful to distinguish between studies that seek to isolate the effect of inequality from differences in the strength of intergenerational transmission *between* geographical areas at the same point in time, and studies that evaluate the role of inequality from changes in intergenerational reproduction *within* geographical areas over time. To provide readers with a crisp overview on the recent literature, we compile key information on the available research in tabular form (in Table 1a for the between-design studies, and in Table 1b for within-design studies), while summarizing the main findings here.

[Tables 1a and 1b about here]

Within the first group of cross-sectional studies, *multi-country studies* generally conclude that income inequality is positively associated with intergenerational transmission of educational advantages (Daude and Robano 2015; Jerrim and Macmillan 2015). Wang and Wu's (2023) study that employs a much younger cohort reports negative significant effect of economic inequality on the association between cultural capital and educational achievement.

However, because of unobserved differences between countries, the main pitfall of these research designs is that it is hard to isolate the effect of economic inequality on intergenerational transmission of education from the effects of idiosyncratic institutional, structural, or historical differences that exist across these countries.

The studies investigating changes between regions belonging to a single country (what we called *multi-region studies*) make a step further by keeping the macro-level constant and observing the changes in economic inequality and intergenerational transmission of advantages at a lower level. Their empirical evidence however shows a much more differentiated pattern. There is some limited evidence of a GGC association beyond the US, with effects often pointing in the expected direction but rarely reaching conventional levels of statistical significance. For example, significant results are reported only in Chile (Munoz 2021) and in the US for reading skills (Workman 2022) -while effects are null for mathematics-, educational aspirations and high school and college completion (DeBacker and Routon 2021) -in the latter cases the sign of the effects is in the expected direction but it does not reach statistical significance. Supporting evidence for the GGC hypothesis also emerges from Italian data (Gioacchino, Sabani, and Usai 2023) although once again statistical significance is not reached. The evidence brought about by Kearney and Levine (2016) on older cohorts in the US is mixed. The authors measured parental education by identifying the households where mothers dropped out from high school (representing disadvantaged backgrounds) from those where mothers graduated from high school (advantaged backgrounds). Their evidence supports the GGC only for men in disadvantaged households and for women (although for the latter the significance level is not reached) while the direction of the effect is opposite to the GGC expectations among the respondents belonging to advantaged backgrounds (i.e., their probability of dropping out of (completing) high school increased (decreased) as economic inequality increased).

Besides providing a cloudier picture in terms of results then the multi-country studies, the research design of the multi-region studies is also not optimal to properly estimate the effect of income inequality on intergenerational transmission of advantages. Since multi-country and region studies are cross-sectional i.e., measured only once, exploiting geographical variation does not provide sufficient evidence for concluding that the changes in intergenerational transmission of education associated with the changes in economic inequality are not confounded by other stable macro-level characteristics.

In this regard, the *within* country studies make a specifically informative contribution by netting out idiosyncratic, but time-constant features of each context from the main association of interest. By comparing at least two birth cohorts that have been exposed to

different levels of economic inequality within the same context, this research grounds its empirical evidence on longitudinal variation in both dependent and independent variable. Table 1b clearly shows that the 4 *single-country studies* investigating the US (Hilger 2015; Jackson and Holzman 2020; Mayer 2001) and Brazil (Leone 2022) converge in providing supporting for the GGC.

Despite this consistent finding, this evidence still suffers from the drawback that the positive association between economic inequality and intergenerational transmission education may be a specific characteristic of the country under study, but that it is impossible to infer whether the GGC pattern may be universal or related to the specific institutional, cultural, and historical context of particular single-country studies.

The bottom panel of Table 1b lists the *within multi-country studies* whose research design offer the advantage of investigating changes in economic inequality and intergenerational transmission of education not only over time but also across contexts (Chmielewski 2019; Cingano 2014; Kourtellos 2021; Lee and Lee 2021; Neidhöfer 2019; Ortiz-Gervasi and Palomo Lario 2024; Van Der Weide et al. 2024). By conditioning on other time-varying features of the institutional set-up of each specific country, these studies allow us to judge whether the positive association that has emerged so far in the literature is sensitive to the specific institutional context that has produced the positive association in the first place or not. A quick glance at the bottom panel of Table 1b makes it clear that when the studies focus on early birth cohorts (from the 1950s until ca. the early 1980s) the GGC is fully supported by the empirical evidence (Kourtellos 2021; Van Der Weide et al. 2024). In contrast, the results regarding its statistical significance (Lee and Lee 2021; Neidhöfer 2019; Ortiz-Gervasi and Palomo Lario 2024) and even its direction (Chmielewski 2019; Cingano 2014) are put into question by those studies that also focus on younger birth cohorts (i.e., those born after the 1980s). Unfortunately, given the inconsistency in the model specifications applied by these studies, we cannot speculate further on the reasons behind these different findings. Following up on this rather inconclusive state of the literature, we seek to provide further comparative and within-design-based evidence on the question of whether *we still see an effect of economic inequality on the intergenerational transmission of education once we control for relevant institutional time-varying characteristics and once we isolate and control for the country trend in educational attainment in a broad sample of affluent countries?*

Theoretical background

Although there is certainly no shortage of theories of social reproduction in the social sciences, the Great Gatsby curve prediction that increasing economic inequality is likely to facilitate the intergenerational transmission of advantages is usually derived directly from standard human capital theory. As an economic model of parental investment in offspring's education and earnings capacity, the core assumption is that children's educational attainment is dependent on the input of **parental (financial) resources** (e.g., Becker and Tomes 1986; Solon 2004). Inequality of educational opportunity then is first and foremost a direct consequence of families' unequal financial means, because inequality of input (capabilities) will imply inequality of (educational) outcomes in the input-output mechanics of the educational production function at the heart of the human capital model. From this simple baseline alone, a Great Gatsby-type association between economic inequality and the level of intergenerational reproduction mechanically results in the aggregate when either the microlevel relationship between family income and offspring educational attainment is exhibiting nonlinearities, e.g. due to credit constraints or as a consequence of residential segregation (see Durlauf et al. 2022: 575ff.), or whenever nonlinear transformations of family income –such as income rank or income correlates like social class or parental education– are being used as the operational measure of social origins in empirical work (see DiPrete 2020: 382f.; Durlauf et al. 2022: 574, fn. 5). Solon (2004) further emphasized **higher (monetary) returns to education**, and thus stronger economic incentives to acquire educational credentials, as a second channel through which aggregate economic inequality can be expected to affect cost-benefit based family decisions on children's educational trajectories.

In sum, these straightforward economic considerations suggest that

H1: Rising levels of aggregate economic inequality ceteris paribus tend to increase the degree of intergenerational reproduction of family (socio-economic) advantage,

and this prediction may certainly also be maintained against the background of standard sociological models of intergenerational reproduction –Blau and Duncan's (1967) classical status attainment model or the rational choice model of Breen and Goldthorpe (1997), for example– that typically employ a broader notion of relevant family resources, but otherwise share the principal behavioral logic of the human capital model. Importantly, economic as well as sociological models of parental investment imply that intergenerational reproduction will primarily increase because

H2a: when aggregate inequality is rising, privileged families may ceteris paribus be expected to increase their investment in their offspring's educational attainment,

whereas

H2b: when aggregate inequality is rising, the educational attainment of children from less privileged families may ceteris paribus be expected to stagnate or even decline.

For privileged families, higher levels of income inequality imply relatively larger (financial) resource advantages over families at the middle or at the bottom of the societal income distribution, while (economic) benefits to acquiring formal education are increasing and families are not being bound by credit constraints or cost considerations when deciding about what educational trajectories may be pursued by their children (Becker and Tomes 1986; Kearney and Levine 2016; Vergolini and Vlach 2024). The prediction that privileged families will respond to rising inequality by increasing investment in their children's economic potential is also underscored by logic of the Breen-Goldthorpe (1997) model, because rising inequality will exacerbate **the relative risk aversion** (or status maintenance) motive for families in the upper ranges of society as the economic cost of downward social mobility is increasing. In contrast, less privileged families may well be aware of rising (economic) returns to education, but are likely to lack the additional financial means to increase their investment into children's education, especially when the cost of (tertiary) education may increase alongside rising demand. Empirically, available research certainly supports the relevance of the status maintenance motive in the reproduction of social inequality at the top (Bernardi 2012; Triventi et al. 2020), the small or insignificant role played by increasing costs of tertiary education among these families (Coelli 2009; Declercq and Verboven 2015), and the role played by financial constraints as well as economic insecurity in limiting educational opportunity for children from less privileged background (Becker and Tomes 1986; Kearney and Levine 2016; Vergolini and Vlach 2024).

Relative to the standard human capital model and its close sociological cousins like the classical Blau-Duncan OED model and the Breen-Goldthorpe model of class inequality in educational attainment that may be utilized to derive the prediction of a Great Gatsby-type association between aggregate inequality and inequality of educational opportunity, sociologists have produced a range of other models to explain intergenerational educational and

status persistence. In comparison to the logic of the human capital model that rests on families' absolute investment calculus and the Breen-Goldthorpe model that introduces preferences over offspring educational investment that are relative to social origins, the main extension of models like the Maximally Maintained Inequality (Raftery and Hout 1993), the Effectively Maintained Inequality model (Lucas 2001), or also of Bourdieusian theory (e.g., Bourdieu and Passeron 1977) is to assume that intergenerational reproduction is driven by **(parents') relative motivation to secure status advantages for their children** (also see Bukodi and Goldthorpe 2022 for a broader argument). Mainly developed as models to understand the resilience of intergenerational reproduction in the wake of educational expansion and other progressive institutional shifts, this sociological tradition is also much less likely to yield a prediction of a Great Gatsby-type association between inequality and mobility when aggregate conditions turn less favorable, i.e., when aggregate inequality is rising. Though perhaps appearing somewhat counterintuitive, privileged parents' relative motivation to invest in their offspring's education can be expected to be equally undisturbed, if not even declining in times of rising aggregate inequality: when lower-class families are unable to expand, if not forced to attenuate educational investment under high economic inequality and the rising cost of (higher) education that is likely to come with it, then privileged families may equally well respond by simply maintaining, if not slightly decreasing investment in their children's educational attainment – and still be able to maintain relative educational and attainment distance between their children and the children of less privileged origins. It goes without saying that these sociological models of intergenerational reproduction differ from, especially, economic human capital models in many other respects, e.g. by considering a broader set of parental resources than merely income or earnings, but all these further aspects are either not material to the argument here or are beyond the data that is available to us to evaluate whether there is evidence to support the hypothesis of a Great Gatsby-type association between inequality and reproduction in affluent Western countries.

Data & sample selection

To answer this research question, we pool several international cross-sectional survey data. The surveys are the Adult Literacy and Life Skills Program (ALL, one round: collected in 2003, 2004 and 2008), the European Social Survey (ESS, 11 rounds: biannual from 2002 to 2020 and 2023), the European-Statistics on Income and Living Conditions (EU-SILC, three cross-sectional rounds: 2005, 2011 and 2019), the European Value Study (EVS, two rounds: 2008

and 2017), the International Adult Literacy Survey (IALS, one round collected in 1998), the International Social Survey Programme (ISSP, the social inequality module i.e., the 1999 round), and the Programme for the International Assessment of Adult Competencies (PIAAC, three rounds: 2012, 2015 and 2017).

To make sure to select only those respondents whose information on the timing of tracking is available, the analytical sample excludes those born before 1970. To make sure that the sample focuses on those who finished their study at the moment of the interview, we select only the respondents aged at least 25. After applying listwise deletion on key variables, the analytical sample amounts to 338,479 respondents, who were interviewed between 1998 and 2023 in 32 countries[1].

Operationalization

The dependent variable is years of schooling and registers the years of full-time education that respondents needed to attain their highest educational certificate[2]. Respondents were asked this question directly in all the surveys except for the EU-SILC and EVS. These surveys asked a slightly different question as they both inquire about the age when respondents obtained their highest educational certificates. To retrieve the number of years each respondent studied, we exploited the entrance age to primary education collected by the UNESCO Institute for Statistics (UIS). Since the surveys capped years of education at different points, we applied 20 as upper limit.

We measure social origin through parental education. Except for the EVS[3], all the surveys collected parental education for mother and father and we applied the traditional dominance approach by using the highest level of education of either parent. The variable takes three categories: 1) primary and lower secondary education (ISCED 1–2) (the reference category), 2) upper secondary and post-secondary non-tertiary education (ISCED III+IV) and 3) tertiary education (ISCED>=V).

[1] Austria, Australia, Belgium, Bulgaria, Canada, Switzerland, Cyprus, Czech Republic, Germany, Estonia, Denmark, Spain, Finland, France, Greece, Hungary, Croatia, Ireland, Israel, Iceland, Italy, Lithuania, Luxembourg, Latvia, Netherlands, Norway, Poland, Portugal, Sweden, Slovenia, Slovakia, and the United Kingdom.

[2] Years of education is the only measure of respondent's education that we could confidently harmonize across surveys. Given the different questions asked in each survey (and, in some cases, within the same survey over the different rounds), creating a more detailed categorical classification like CASMIN or even ISCED would have inevitably implied additional noise in the measurement of our dependent variable.

[3] The EVS only collected father's parental education when both parents were present and mothers when the father was absent. This discrepancy does not affect our results which do not change when we repeat our analyses by excluding this survey (see the sensitivity checks section).

Economic inequality is measured through the Gini coefficient of household disposable post-tax, post-transfer income (Solt 2020). We used the Standardized World Income Inequality Database (SWIID) because it is widely used in comparative research on economic inequality as it provides harmonized and cross-nationally comparable estimates of the Gini coefficient for a large number of countries and years. We opted for employing an inter-individual measure of inequality instead of an inter-class inequality measure because, as noted by Hertel and Groh-Samberg (2019), the available international surveys measure household disposable income at the time in which the interview took place while we want to measure the level of economic inequality when respondents were about to choose among different educational tracks. In addition, as our theoretical framework shows, our aim is to measure the influence of economic inequality at the contextual level rather than "only" capture the amount of resources social classes are endowed with. Instead of using contemporary data and assume that the inter-class inequality observed at the moment of the interview is what we would have observed when respondents grew up, we prefer to use inter-individual income inequality, like the previous comparable studies have done (Chmielewski 2019; Cingano 2014; Daude and Robano 2015; DeBacker and Routon 2021; Gioacchino et al. 2023; Jerrim and Macmillan 2015; Kearney and Levine 2016; Lee and Lee 2021; Mayer 2001; Munoz 2021; Neidhöfer 2019; Ortiz-Gervasi and Palomo Lario 2024; Valentini 2024; Van Der Weide et al. 2024; Workman 2022). Additionally, this empirical choice also makes it possible to exploit real over time variation. An advantage that should not be easily disregarded when the interest lies in exploiting within country variation to identify average pattern across countries.

Another interesting aspect of the previous literature concerns the confusion regarding the timing when income inequality is supposed to impact the outcome. As mentioned by Jackson and Holzman "*there is not yet adequate guidance in the literature as to the age at which income inequality most influences outcomes*" (2020: 19113). The majority of the studies has measured economic inequality when individuals were 14. However, since our aim is to understand the effect of economic inequality when educational decisions are made, the previous methodological decision of measuring income inequality at the same time for all the respondents seems questionable. A long tradition in comparative sociology of education has indeed shown that educational decisions are taken at different points within the educational career depending on the specific structure of education systems. Drawing on the tracking literature, we argue that the level of economic inequality should be measured in proximity of these crucial differentiation points as they are consequential for the final educational degree attained by individuals (Brunello and Checchi 2007; name delated to maintain the integrity of

the review process; Van De Werfhorst 2019). We therefore contribute to the literature by providing empirical evidence that for the first time considers the level of economic inequality our respondents were exposed to one year before choosing which track to attend.

In contrast to previous studies that group respondents into 5- or 10-year birth cohorts and average the contextual indicators over these wider intervals, we were able to exploit the contextual indicator more precisely by matching it to each individual birth year (from 1970 to 1998). As is customary in this field of research, we decomposed the indicator into its between-country and within-country components (Fairbrother 2014). The between-country component captures the average level of economic inequality across birth cohorts within each country, whereas the within-country component reflects deviations from this average. In our case this mirrors the difference between the economic inequality value for a given birth cohort and its country mean. By centering the data within each country, we isolate within country changes in economic inequality over time. Figure 1 illustrates the within country variation in the Gini coefficient, which ranges from -3 to 5. The zero line represents the country specific average level of economic inequality. In addition to marking the minimum and maximum values, the figure includes dashed lines denoting the first, second, and third quartiles that serve as key reference points for subsequent analyses.

[Figure 1 about here]

The other within-country contextual measures included in the analyses allow our analyses to identify the moderating effect of economic inequality on social background inequality of educational opportunity while conditioning on the moderating effect of public expenditures on education, economic prosperity and educational expansion on the same outcome (Giesselmann and Schmidt-Catran 2019; Moehring 2021). In the theory section, we have focused on how economic inequality impacts educational decision-making within families. However, it is important to clarify that another institutional factor needs to be accounted for at the macro level in order to properly identify the moderating effect of economic inequality on intergenerational transmission of educational advantages. Following Solon's (2004) and Corak's (2013) theoretical argumentations, we need to consider the moderating role of the state. The first candidate is public investment in education (Neidhöfer 2019; Ortiz-Gervasi and Palomo Lario 2024). Educational policy helps equalizing opportunities through investments that compensate for the gap in private investments between children of different social backgrounds. Specifically, we employ Government expenditure on tertiary education as

a percentage of the GDP retrieved from the UNESCO Institute for Statistics (UIS). This indicator factors in costs for teaching staff, buildings and teaching materials together with ancillary services such as general administration capturing the level of public investment into the higher education system (name deleted to maintain the integrity of the review process). Apart from educational spending, another important factor to be consider is educational expansion (Cingano 2014; Kourtellos 2021; Lee and Lee 2021). It is indeed plausible to expect families to consider the competition their children will face once they enter the labour market while evaluating the benefits of acquiring additional education. Moreover, given the socially stratified risk-averse educational decisions (Breen and Goldthorpe 1997), we can expect the educational composition of the labour market to have different effects across social background groups. We make use of the indicator collected by the Varieties of Democracy (V-Dem) Project that registers the total number of Higher Education Institutions (HEI) i.e., the degree-granting tertiary institutions that award at least a degree equivalent to ISCED 6-8. This indicator appears more suitable for our research question than the traditional indicators previously used to measure educational expansion (such as the proportion of tertiary educated individuals). Indeed, by recording the institutional supply of HEI, this indicator is not affected by the educational decisions of the parental generation (that is going to decide how much to invest in their offspring's education) and it excludes short-cycle tertiary degrees providing a more nuanced perspective on the institutional landscape of higher education institutions.

Complementing the role of the state, it is also important to condition our analyses on the moderating effect of economic prosperity on intergenerational transmission of education (Cingano 2014; Kourtellos 2021; Lee and Lee 2021; Neidhöfer 2019). Also in this case, we rely on the V-Dem Project and employ the (natural logarithm of the) GDP per capita. As for economic inequality, we decomposed these indicators into between and within components and matched them one year before tracking sets in.

Modelling strategy

By pooling together repeated cross-sectional surveys and running hybrid multilevel models, we are able to compare individuals born in different years who experienced different levels of economic inequality within the same country (Fairbrother 2014; Giesselmann and Schmidt-Catran 2019; Schmidt-Catran et al. 2019). The multilevel structure of our data entails three

levels: 338,479 individuals (level 1) nested into 687 combinations of country*birth year (level 2) nested into 32 country (level 3).

The aim of this paper is to identify the moderating effect of economic inequality on the association between parental and offspring education. Consequently, our main interest focuses on the cross-level interactions between parental education (measured at level 1) and economic inequality (measured at level 2). We included a random slope for the individual level variable in order to allow the effect of parental education to vary within the level at which the higher variable is measured (Heisig and Schaeffer 2019). In our case the latter corresponds to the country*birth year combinations. However, since our model account for a third level (i.e., the country) we need to make sure that the time varying effects of parental education that the model is going to estimate at the second level does not capture the changing effects of parental education that lies at the third and higher levels. To this end, we also included a random slope for parental education at the country level.

The first model specification (M1) includes parental education, income inequality (between and within), and the interactions between income inequality and parental education. The model also controls for survey and round fixed effects. These fixed effects allow us to capture systematical difference among the 7 surveys and 11 rounds we have pooled together. If one survey has a slightly different sample design, or mode of data collection, this would be captured by the survey fixed effects. Besides, since the interviews took place from 1998 until 2023, introducing round fixed effects also permits our multilevel models to net out common shocks that have affected all respondents like the financial crisis in 2009, the implementation of the European university reform (Bologna process) as well as secular trends in the dependent variable. By doing so, we ensure that our estimates of the relationship between inequality and intergenerational persistence reflect variation beyond general historical trends, period effects (round fixed effects) and methodological artifacts (survey fixed effects).

The first model specification is reported below. For simplicity, we did not differentiate between the two dummies measuring parental education.

$$y_{ijk} = \beta 0_{jk} + \beta_{1jk}\, PEDUC_{ijk} + \beta_2\, Gini\ BE_k + \beta_3\, (PEDUC_{ijk} * Gini\ BE_k) + \beta_4\, Gini\ WE_{jk} + \beta_5\, (PEDUC_{ijk} * Gini\ WE_{jk}) + \beta_6\, FE_{jk} + u_{jk} + u_k + e_{ijk}$$

The equation estimates years of education y_{ijk} of individual *i* in combination country*birth year *j* in country *k* to be a function of parental education (β1), the time constant component of economic inequality -Gini BE- (β2) plus its cross-level interaction with parental education (β3),

and the time-varying component of economic inequality -Gini WE- (β4) plus its cross-level interaction with parental education (β4).

The following model specifications allow us to condition on the moderating effect of the contextual confounders. Specifically, the second model specification (M2) introduces government expenditure on tertiary education and economic prosperity, together with their interactions with parental education. Because of the two categorical random slopes at each higher level, we were not able to also control for educational expansion. An alternative way to condition on this confounder is offered by slightly changing the specification of the multilevel structure. Specifically, we simplify our model by eliminating the random slope at the country level and introducing country fixed effects. This allows us to get rid of the between country variance while netting out the time constant characteristics of each country. The best practice would also require including country slopes for parental education. Unfortunately, this last set of interactions caused the model to not converge. To test whether the lack of these controls biases our main interactions, we simplified our model step by step. Specifically, we estimated M2b by eliminating the random slopes for parental education at the country level and then M2c by introducing country fixed effects. As illustrated in the Appendix (Table A4) and in Tables 2 and 3, if we compare model 2 (M2) with these two alternative specifications (M2b and M2c) the main findings hold. This step by step procedure allows us to proceed and add educational expansion in model three (M3).

To avoid conflating within-country trends in educational attainment with the effect of economic inequality, we implemented interactive fixed effects (Callaway and Karami 2023; Ludwig and Brüderl 2018; Wooldridge 2005). This specification (M4) allows us to isolate the moderating effect of economic inequality on intergenerational transmission of education from country specific trends in the dependent variable. In other words, if a country experienced a rise or fall in average years of schooling, possibly due to national education reforms, this model accounts for it. Thus, our estimates in M4 avoid the risk of misattributing shifts in regression coefficients driven by generational changes in educational attainment to actual changes in the strength of intergenerational transmission. M4 can be seen as a very conservative test where we treat the time trend as a potential confounder. To readers who consider inequality to be the historically most relevant factor, this model might arguably represent a case of overcontrolling. Nevertheless, our substantive interpretation does not change substantially between Model 3 and Model 4. Readers may therefore consider either M3 or M4 as the "final" model, depending on how much weight they place on controlling for secular trends as potential confounders of inequality effects.

Based on the evidence that emerged in our review of the previous studies that point to a possible change across birth cohorts, we included two additional and final model specifications, M5 and M6, each of which incorporates a three-way interaction between birth year, parental education, and economic inequality. Specifically, M5 differentiates between respondents born before and after 1980 (included in the latter category), while M6 distinguishes between respondents born before and after 1975 (included in the latter category).

Results

Our main focus lies on the interaction terms between parental education and economic inequality. Since interpreting interaction terms involving a nominal variable is not straightforward due to the constant comparisons with the reference category, instead of discussing the regression models (that are reported in Table A4 in the Appendix) we computed additional estimates and focus on these more intuitive results. Specifically, we computed a Wald test to test the null hypothesis that the two coefficients associated with the interactions are jointly equal to 0 for each model specification (M1 to M6). Results of these tests are reported in Table 2. To investigate the substantive effects, Table 3 presents the simple slopes for each parental education group along with their 95% confidence interval. These values illustrate how the effect of belonging to a given parental education group on respondents' years of schooling changes as within country economic inequality increases. For example, the value -0.1 for individuals from higher educated families in M1 indicates that, for each unit increase in within-country economic inequality (that ranges from -3.4 to 5.1), these respondents attained 0.1 fewer years of schooling.

[Tables 2 and 3 about here]

To better compare the different slopes and visualize how big the effect sizes are, in Figure 2 we plotted the predicted years of education (vertical axis) at different levels of within country economic inequality (on the horizontal axis). The different lines or slopes correspond to the different parental education groups. The green lines represent families with at least one tertiary educated parent, the pink lines correspond to families with medium levels of education, and the blue lines show the predicted years of schooling for offspring born to lower educated families.

[Figure 2 about here]

Our first model specification (M1) that only includes economic inequality indicates that as within country economic inequality increases, years of education decrease across all social background groups. This means that economic inequality negatively impacts educational investment. However, Tables 2 and 3 together with Figure 2 show that the negative effect varies by parental education. Specifically, the lower educated group is the least affected (slope of -0.04), followed by the middle educated group (slope -0.05), while individuals from higher educated families are the most affected, with a slope equal to -0.11. In substantive terms, Figure 2 shows that among individuals from highly educated families, the predicted years of education decline from 16.5 years when economic inequality is at its minimum to 15.6 years when it is at its maximum, a difference of approximately 11 months. For those from middle educated families, the difference between the highest and lowest levels of inequality is smaller and corresponds to a reduction of about 5 months. Among individuals from lower educated families, the decline amount to approximately 4 months. However, as shown in Figure 1, it is important to note that only one country experienced a raise in economic inequality that almost covers the observed total range of variation in economic inequality. This is the case of Slovakia whose economic inequality levels raised from -3.4 to 4.4.

The first model specification (M1), that controls only for economic inequality, points to the existence of a moderating effects of economic inequality on social background inequality of educational opportunity. Surprisingly, the effect concerning the higher educated families contradicts our initial hypothesis (H2a) since it is negative and the strongest in our sample.

When the model specification includes economic prosperity and public educational spending on tertiary education (M2), our results change considerably. Figure 2 now shows almost parallel slopes. These range from -0.06 to -0.03 (see Table 3). Figure 2 also displays that the substantive difference in terms of how many fewer months respondents are studying is negligible. Among individuals from highly educated families, the predicted years of education decline from 16.4 years when economic inequality is at its minimum to 15.9 years when it is at its maximum, a difference of approximately 6 months. Among the individuals from lower-educated families the difference is the same -the starting point is obviously different. For those belonging to middle educated families, the difference between the highest and lowest levels of inequality corresponds to a reduction of 4 months (i.e., from 14.7 to 14.4 years). Further models, not shown here, illustrates that between the two contextual confounders it is economic prosperity that alters the results. This means that as soon as we keep the effect of economic

prosperity constant, the moderating effect shown in M1 disappears (see Table 2).

Results slightly change with Model 3 (M3). As shown in Figure 2 and Table 3, accounting for the moderating effect of educational expansion slightly alters the effect of within-country economic inequality for the middle and lower educated groups, whose slopes decrease respectively from -0.03 to -0.02 and from -0.06 to -0.05. Because the slope for the middle educated group becomes nearly flat, its difference compared to the higher-educated group reaches statistical significance (Table 4A in the Appendix). However, in substantive terms (see Figure 2), these differences translate into approximately 5 months of education loss for lower educated families (13.3 years at the minimum level of economic inequality vs. 12.9 at its maximum value), 1 month for middle educated families (14.7 vs. 14.6 years), and 6 months for higher educated families (16.5 vs. 16.0 years).

In the next model specification (M4), we isolate the moderating effect of economic inequality from country-specific trends in educational attainment. The simple slopes reported in Table 3 are now very close to zero across all parental education groups. Figure 2 further shows that the slopes for individuals belonging to the groups at the extremes of the parental education distribution are flat, suggesting that respondents from both lower and higher educated families did not change their attained years of education in response to rising economic inequality. Regardless of the level of within country economic inequality, respondents born to lower educated families studied for 13 years while those born to higher educated families studied for 16 years. These findings contradict our first two initial hypotheses (H1 and H2a) but support the expectation of stagnation formulated in H2b.

The graphical results from this final model suggest that the offspring of middle educated families may have increased their investment in education as within country economic inequality rose. However, if we look at the predicted years of attained education at the maximum and minimum observed level of within country economic inequality, the difference is negligible (see Figure 2). The predicted probability varies from 14.6 years of education when economic inequality is at its lowest to 14.8 years of education when economic inequality is at its highest. It is also important to note that the confidence interval around the slope estimates for this model specification include both positive and negative values. This implies that, once we account for specific country trend in educational attainment, the effect of within country economic inequality diminishes substantially approaching zero.

Interestingly, one of our initial hypotheses (H2b) is partially supported by the empirical evidence throughout the model specifications. From M1 to M3 the direction of the effects indicates a declining educational attainment for children from less privileged backgrounds as

economic inequality raised while the results of M4 point to a stagnation in educational attainment.

The model specifications including a three-way interaction among birth year, parental education, and economic inequality are labeled M5 and M6. In M5 we classified among older cohorts the respondents born up to 1979 included, whereas in M6 we grouped the respondents born before 1975 under the same label. Because of this interaction, the estimates reported in Table 2 and 3 for M5 and M6 refer to the reference category of the birth cohort dummy included in this model specification i.e., those respondents born before 1975 for M5 and before 1980 for M5. Focusing on the main interaction of interest (among parental education and the Gini coefficient), Table 3 shows that for M5 the three slopes are now positive although Table 2 clearly shows that the differences among these slopes do not reach statistical significance providing no support for the existence of heterogenous effects among social background groups. In contrast, M6 shows a statistically significant moderating effect for the interaction parameters (see Table 2). Table 3 further illustrates that among these older cohorts, as economic inequality increased the investment in education increased among the middle and advantaged educational background (slopes are respectively 0.03 and 0.01) while it decreased among the disadvantaged background (-0.02). Despite the slope estimates' confidence intervals including positive and negative values, this evidence supports our initial hypotheses (H1, H2a and H2b) among the respondents born between 1970 and 1974.

[Figure 3 about here]

To compare the slopes of the two cohort groups within each parental education group, Figure 3 plots the predicted years of schooling differentiating the respondents born in 1975 or later (whose lines are dashed) from the respondents born before 1975 (whose lines are solid). Figure 3 clearly corroborates the pattern observed in Table 3, providing evidence in support of a GGC among the older cohorts. At the same time Figure 3 illustrates the absence of any moderating effect by economic inequality on IEO for the younger cohorts.

For the readers who consider inequality to be the historically most relevant factor and conceive M3 as the "final" model, the right panel in Figure A3 in the Appendix plots the predicted years of schooling across the two different cohort groups (the regression estimates are reported in Tables A23 in the Online Appendix). Even if they are more attenuated among the advantaged families, the differentiated patterns emerge even with this new model specification that does not condition on time trends in the dependent variable.

Our measure of respondents' education, years of schooling, is relatively coarse. It is subject to bunching at certain educational categories and most importantly it does not account for differences in education quality. To address some of these limitations, we replicated our analyses using a more discrete indicator: **the probability of obtaining a tertiary degree**. The findings are broadly consistent with those based on years of schooling, with three notable exceptions. First, we observe no moderating effect of economic inequality across social backgrounds even in Model 1 (see Tables A5 to A7 and Figure A2 in the Appendix). Second, once the model specification considers time trend as a potential confounder (M4), the negative slopes observed in the previous model specification (M3) flatten out. Third, in M6 we do not see different patterns across cohort groups among respondents from disadvantaged backgrounds. Regardless of the birth cohort, the probabilities of obtaining a tertiary degree appear constant regardless of rising income inequality. To check whether considering time trends in the probability of achieving a tertiary degree as independent from economic inequality affects this last discrepancy between the two outcomes, we added the 3-way interaction to the third model specification (the regression estimates are reported in Table A23 in the Online Appendix). The right panel in Figure A3 in the Appendix shows different patterns between the two cohort groups also among disadvantaged families. This means that the absence of differences among the disadvantaged cohorts in M6 is likely due to the implementation of different tertiary policies that have impacted the completion rates among the older cohorts in our sample.

Sensitivity checks

We graphically inspected the existence of a nonlinear effect of economic inequality. Figure A1 in the Appendix shows the quadratic fit for the association between years of schooling and Gini for each parental education group. Already at the bivariate level, we see that the assumption of linearity is reasonable.

To test the generalizability of our conclusions, we repeated our analyses varying the sample and the model specifications. In the former case, we repeated our analyses with two different samples. In the first replication we included the US while in the second we excluded the EVS. The United States are missing on the indicator measuring government expenditure on tertiary education as a percentage of GDP. In order to include this country in our sample, we extrapolated the available UNESCO values (2010–2020) to generate annual estimates for the missing years (1980–2010). The Online Appendix includes all the Tables concerning this

robustness check (see Tables A8–A10), while the graphical predictions from Model 6 (M6) are reported in Figure 3 next to the main results. Figure 3 clearly shows that the inclusion of the US does not alter our main findings. Since the EVS collected fathers' educational attainment only when both parents were present, and mothers' attainment only in the absence of the father, we repeated our analyses excluding this survey. Tables A14–A16 in the Online Appendix reports the estimates while the predicted years of education based on the sixth model specification are plotted in Figure 3. Also in this case our main conclusions hold.

Besides checking the repeatability of our findings, we checked the robustness of our results against different model specifications. First, we did not condition on round fixed effects (see Tables A11–A13 in the Online Appendix and Figure 3) and these analyses confirm our initial results. Second, we approximated the ideological orientation of governments -an important determinant of labour market regulation and economic incentives- using the Government Coalition Left-Right Index (GCLRI) from the V-Dem project. This variable captures the overall economic policy stance of the governing coalition and we matched it in our data 10 years before our measure of economic inequality. The GCLRI ranges from -4 to 4, where lower(higher) values are associated with more left-(right-)leaning government coalitions. By including the index (see Tables A17–A19 in the Online Appendix) we confirm our findings. This robustness check further suggests a slight convergence pattern among younger cohorts, primarily driven by children from advantaged families (see Figure 3). It should be noted, however, that these results are based on a reduced sample, as Lithuania was excluded due to the absence of data on this indicator (see Figure A5 in the Online Appendix).

Third, we controlled for the changing size of the tertiary sector by including the share of tertiary educated people from the V-Dem Project (see Tables A20–A22 in the Online Appendix). As shown in Figure 3, our initial conclusions remain robust.

Conclusions

> *Yet, a longitudinal study, investigating whether change in income inequality across countries is associated with change in rates of social mobility, would provide stronger evidence as to whether there is indeed a causal relationship between the two. However, although these are clearly important directions for future research, they will become possible only when new data are made available.*
>
> (Jerrim and Macmillan 2015: 529)

In their landmark study, Jerrim and Macmillan (2015) have not just provided a pioneering study of the Great Gatsby association between economic inequality and social reproduction in affluent

countries, but, as illustrated in the above quotation, they have also shown the intellectual magnanimity of transparently acknowledging the inferential limitations of their own work, and of cautioning their readers against any overly confident causal reading of the empirical evidence they reported. When responding to Jerrim and Macmillan's (2015) call and re-examining the intergenerational transmission of educational advantage, the central mechanism to create the Great Gatsby relationship according to Jerrim and Macmillan's study, with repeated cross-sectional data from 32 Western countries, we fail to find any evidence for an association between *changes* in economic inequality and *changes* in the social stratification of educational opportunity in our sample of more than 330,000 respondents born between 1970 and 1998.

Given that longitudinal evidence is widely considered superior to cross-sectional estimates when causal inference is being concerned, our distinctly null findings evidently call into question the causal nature of the Great Gatsby curve as reported in Jerrim and Macmillan (2015) and in the earlier works of, for example, Björklund and Jäntti (2009) and Corak (2013), as well as of any presumedly causal role of economic inequality for IEO more specifically. Our null findings are indeed thought-provoking, because they have been obtained against the backdrop of a longitudinal research design that should have provided extensive contextual variation –we empirically observe a maximum change of 8 Gini points over the observation window among the countries in our sample– to establish the association between aggregate inequality and intergenerational educational reproduction, and within a research setup that should principally have yielded some positive association between the two for the purely mechanical reason that we have not been able to measure family income directly, but have been restricted to capturing respondents' social origins via a categorical (and quite broad) measure of parental education (see e.g. DiPrete 2020 382-83 on this point) in our data. Our null finding that the aggregate level of economic inequality does not seem to be associated systematically with the strength of intergenerational educational transmission from parents to children does fall in line with other recent research based on within-designs (e.g., Chmielewski 2019; Cingano 2014; Lee and Lee 2021; Neidhöfer 2019; Ortiz-Gervasi and Palomo Lario 2024), but clearly should find further replication in future work, given the theoretical and political importance of the debate around the Great Gatsby curve hypothesis.

To help guide such replication efforts as well as further theoretical reflection, we feel we may offer three distinct considerations to potentially help reconcile our null findings with existing social science theory on the mechanisms that create inequality of educational opportunity and a transmission of socio-economic advantage across generations. To begin with, the observation that rising levels of economic inequality have –on average– not altered the

degree of intergenerational educational transmission in Western countries could be an indication that income resources might be far less consequential at the microlevel of families' investment decisions on their offspring's education than presumed in either human capital models in economics in general or in the Great Gatsby literature more specifically. Relative to economists, sociologists employ a broader conception of family resources and regularly find parental education to dominate parental earnings or occupational status in the determination of offspring's educational attainment (e.g., Bukodi et al. 2018; Erikson 2016). In this case, the correlation between parental education and earnings will still imply growing disparities in families' levels of economic resources when aggregate inequality is rising, but when parental education actually is the key resource in status maintenance, then rising economic inequality will not result in a Great Gatsby-type association with status transmission. Importantly, this interpretation may gain further plausibility when considering the educational expansion of recent decades. It is plausible that, among more recent parental cohorts, the association between educational attainment and income has weakened compared to earlier generations. If so, parental education may have increasingly emerged as the decisive resource for the intergenerational transmission of advantage, whereas parental financial resources may have become more secondary. In this sense, educational expansion could have partly reduced financial barriers to higher education, thereby amplifying the relative role of parental education over parental income. Seen in this light, one may even speculate whether the null findings obtained here as well as in other studies reflect a principal misspecification of the Great Gatsby curve and in the economic discussion surrounding it: if parental education is indeed key, then a –causally spurious– Great Gatsby curve as originally conceived may follow because parental earnings or income are becoming an increasingly predictive proxy of parental education under conditions of high inequality, and not because parental income itself would assume any ever more pivotal role in intergenerational transmission processes.

In another train of thought, one may speculate that the null findings that we obtain may be a historically specific observation of status transmission processes in relatively recent cohorts of respondents born during, roughly, the last third of the 20th century. This reading could be in accordance with evidence from the U.S. study of Jackson and Holzman (2020), who confirm the Great Gatsby association between changes in inequality and changes in the socio-economic stratification of offspring's educational attainment for their sample of male respondents spanning almost the whole of the 20th century, but who, similar to our findings, can no longer confirm a relationship between aggregate inequality and inequality of educational opportunity when the sample is restricted to (male or female) respondents born during and after

the 1950s. In substantive terms, this pattern could be an indication that economic inequality is affecting intergenerational mobility and reproduction only when accompanied by institutional changes in schooling and higher education systems. Our own evidence confirms that strongly public higher education systems limit the degree of intergenerational transmission, as does van de Werfhorst's (2024) recent evidence on the effects of various policies and institutional reforms to foster access to higher education. Along these lines, one may note that a Great Gatsby-type association between aggregate inequality and socio-economic reproduction may well have been present over much of the 20th century, because falling inequality and improved access to secondary schooling and to higher education have been (causally or historically) concomitant. In contrast, the birth cohorts under study here have entered and have seen their educational trajectories unfold in mature (higher) education systems that have continued to expand in quantitative terms, but that also have, perhaps especially so in Europe, maintained their predominantly public character. In that type of context, aggregate inequality may have been rising, but may also not have affected socio-economic reproduction in our sample dominated by European countries much (yet), because the institutional structure of these countries' (higher) education systems has not (yet) become more socially exclusive in response to or in conjunction with rising inequality.

Yet while this reading would certainly fit with current institutional scholarship and while it could provide a point of departure for further studies that may, for example, seek to explore heterogeneity across countries more systematically, there is one aspect in our own findings that is casting immediate doubts on this interpretation. Conspicuously, the reason why we do not observe a relationship between inequality and reproduction is that inequality is leading to declining educational attainment (or at least to no further increases in educational attainment, depending on the exact model specification) also among children from the most privileged family backgrounds. Exactly as predicted theoretically, educational attainment declines among children from the least privileged families when inequality is rising, but, more surprisingly, we observe that the same has been true among children from academic backgrounds (on average across all countries in our sample) as well, thus leaving inequality of educational opportunity unchanged. Although observed in earlier research as well (cf. Cingano 2014; Kearney and Levine 2016), this important observation evidently needs replication, as it runs counter to conventional theories of stratification as well as to earlier U.S. studies like Mayer (2001). If supported from further research, this would suggest that standard micro models of differential parental investment like either human capital theory or the Breen-Goldthorpe model –that both imply a Great Gatsby-type association between inequality and

intergenerational transmission– provide insufficient footing to understand how contextual factors like inequality may shape intergenerational reproduction (or not).

On the other hand, the observation that educational attainment remains constant or even decreases among children from academic backgrounds while inequality is rising is also suggesting that upper-class families generally may not engage as much in opportunity-hoarding behavior as expected by sociological gut instinct. But upon closer examination, our null finding on the role of aggregate inequality may in fact be seen as an indirect confirmation of sociological models of intergenerational transmission that incorporate relative investment motivations. Maximally respectively effectively maintained inequality models (see Lucas 2001; Raftery and Hout 1993) as well as Bourdieusian theory (e.g., Bourdieu and Passeron 1977) emphasize the motivation of advantaged families to take the necessary (educational and other) means to preserve relative status across generations, and this motivation is often considered as the prime obstacle to achieving greater equality of opportunity even under otherwise favorable structural or institutional conditions (see Bukodi and Goldthorpe 2022). Somewhat counterintuitively perhaps, these models that have originally been developed to explain the persistence of intergenerational reproduction in the wake of massive educational expansion and institutional reforms to increase the accessibility of (higher) education, may now also hold the clue to understanding why rising inequality does not seem to cause any stronger intergenerational reproduction of educational advantage: when, as we find, rising inequality – and perhaps factors like rising costs of higher education that may come with it– limits educational attainment among children from less advantaged backgrounds, then privileged families may likewise reduce their (educational) investment effort and still be able to maintain any desired distance between the human capital and earnings capacity of their offspring relative to children from lower-class backgrounds. In this sense, rising inequality may be taken as a signal that social hierarchies may have become increasingly solidified, and that socio-economic reproduction may hence require less educational investment and effort than under conditions of low inequality. That being said, however, we should also note that our null evidence on the role of aggregate inequality does not at all imply the intertemporal persistence of educational stratification in general. Instead, sociological models designed to explain any unconditional resilience of intergenerational transmission processes also seem to miss an important aspect of social reality insofar as we obtain strong confirmation of a positive modernization effect: it is a very consistent finding from our statistical models and from our database of respondents born between 1970 and 1998 in more than 30 affluent Western countries that rising levels of

economic prosperity have lowered the level of intergenerational reproduction of educational advantages.

Data Availability Statement

The data used in this study are sourced from publicly available repositories and are cited below

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Figures:

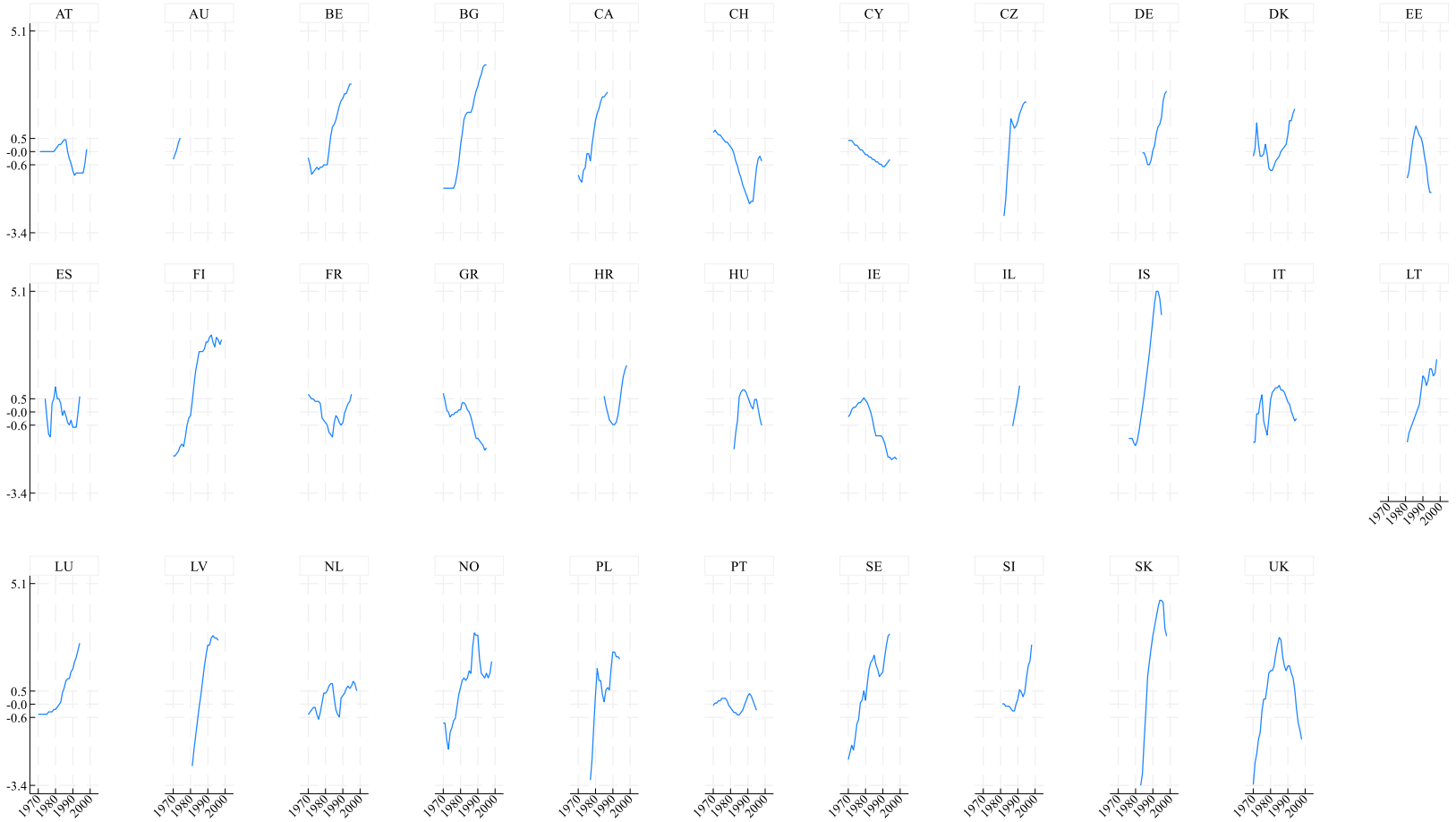

Figure 1: Within country change in economic inequality (Y) by birth cohorts (X)

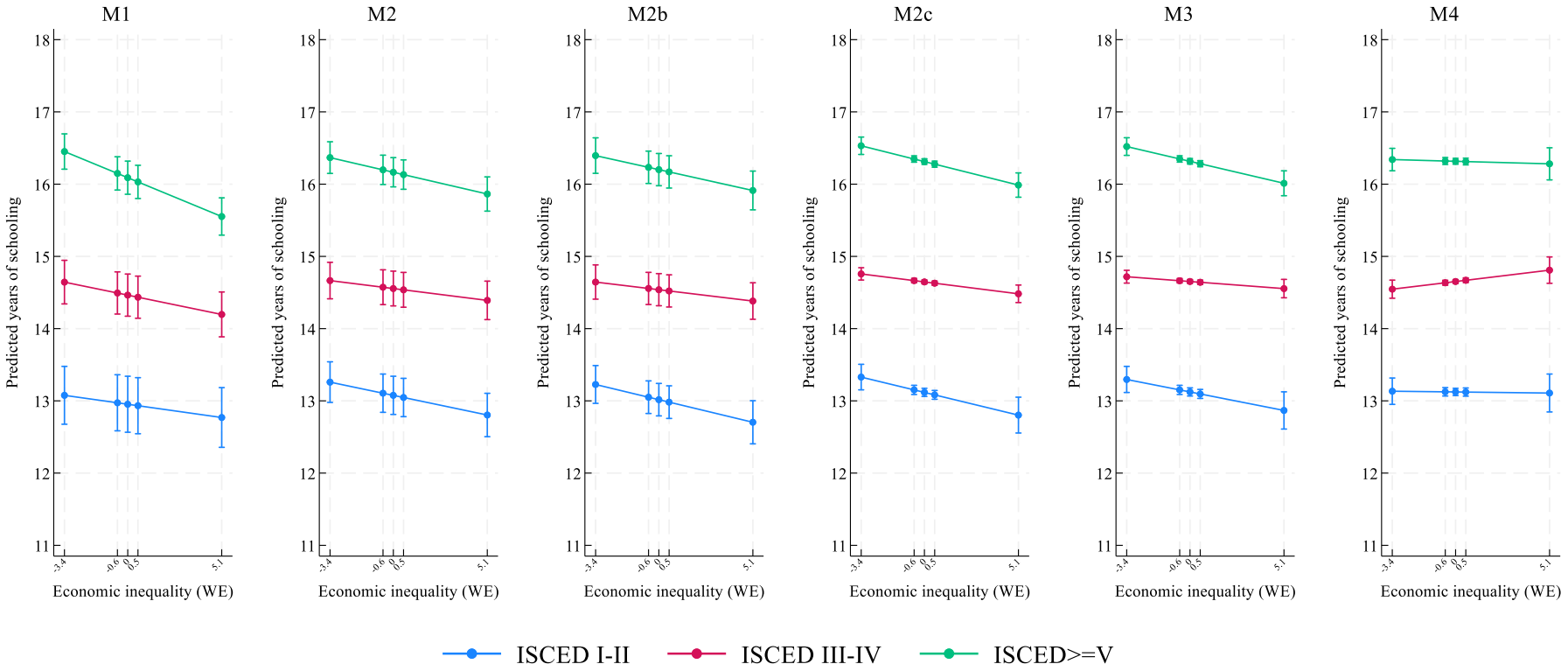

Figure 2: Predicted years of education by parental education at different within country economic inequality levels (X)
Notes: The within country Gini values here estimated represent its minimum (-3.4), first (-0.6), second (0) and third quartile (0.5) and its maximum (5.1).

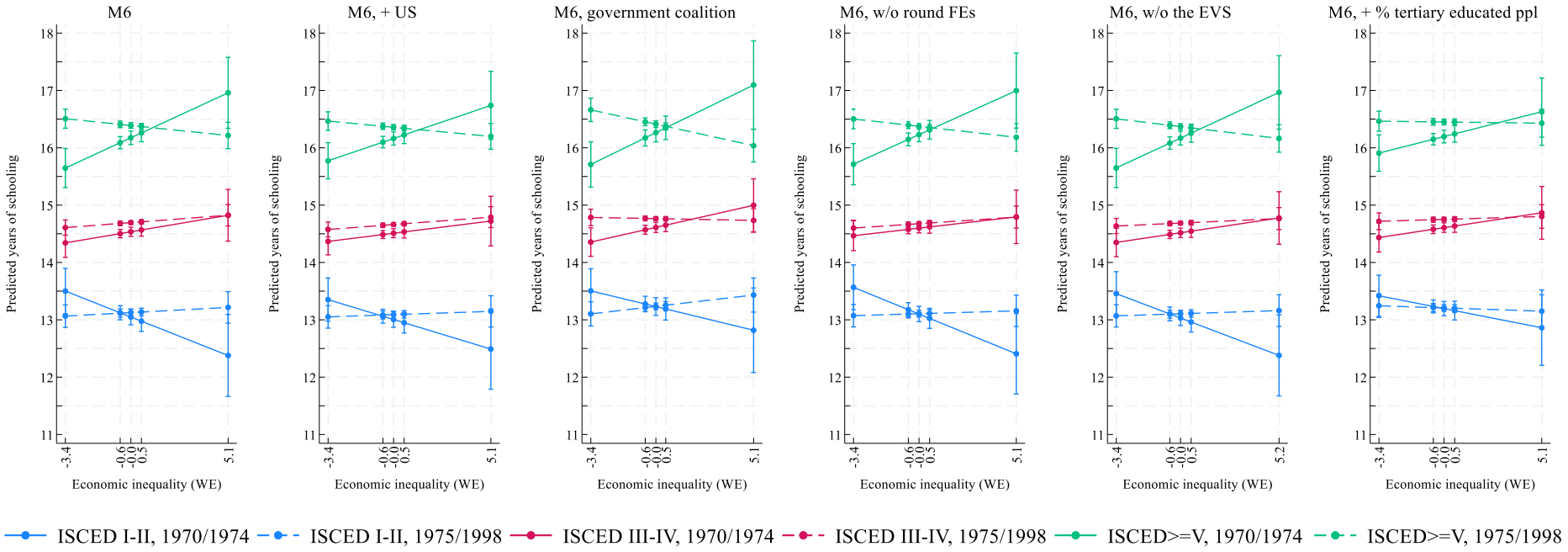

Figure 3: Predicted years of education by parental education and cohort (born before or after 1975) at different within country economic inequality levels (X).

Notes: The within country Gini values here estimated represent its minimum (-3.4), first (-0.6), second (0) and third quartile (0.5) and its maximum (5.1).

Table 1a: Recent Empirical Research on the Great Gatsby Curve Hypothesis, Studies Using Cross-sectional/Between-Designs Only

Study	Data & country	Cohorts observed	Inequality measure	GGC hypothesis	
				Direction	Stat sign
Multi-country studies					
Jerrim and Macmillan (2015)	PIAAC 19 countries	Only men 1950 - 1985	Gini coef. (averaged across all the LIS waves)	✓	✓
Daude and Robano (2015)	Latinobarometro (2008) 18 countries	1952 - 1973	Gini coef. (mid-1990s = at age 20-44)	β ✓	✓
				ρ ✓	✗
Wang and Wu (2023)	PISA 2018 32 countries	2002 - 2003	Gini coef. (2017 = at age 14)	✗	✗
Multi-region studies					
DeBacker and Routon (2021)	NLSY97 US 3,523 commuting zones	1980 - 1984	Gini coef. & top 1% share (1997 = at birth)	✓	✗
				Aspirations ✓	✓
Kearney and Levine (2016)	NELS, HSB, ELS, NLSY79 NLSY97 US 51 states	1957- 1986	50/10 income ratio (averaged 1980, 1990, & 2000)	*For men* lower backgr. ✓	✓
				higher backgr. ✗	✗
				For women lower backgr. ✓	✗
				higher backgr. ✗	✗
Munoz (2021)	Census (2017) Chile 346 communes	1992 - 1996	Gini coef., 90th & 95th quantile, ratio 90-10 & 90-50 quantile (2010 = at age 14-18)	✓	✓
Gioacchino, Sabani, and Usai (2023)	Survey on HH Income and Wealth (SHIW) Italy, 16 regions	1980	Gini coef. (averaged between 2002 - 2010 = at age 22 -30)	✓	✗
Workman (2022)	Early Childhood Longitudinal Study, Kindergarten Class of 2011 United States, 100 counties	2005 - 2006	Gini coef. (averaged 2009 – 2013 = 2<birth>2)	Reading ✓	✓
				Mathematics 0	

Table 1b: Recent Empirical Research on the Great Gatsby Curve Hypothesis, Studies Using Within-Designs Only

Study	Data & country	Cohorts observed	Inequality measure	N of macro units	GGC hypothesis	
					Direction	Stat sign
Single-country studies						
Jackson and Holzman (2020)	Harmonized from 13 nationally representative surveys United States	1908-1995	Top 10% wage share (at birth)	For men 25-37 For women 15-27	✓(not robust to controls)	✓(not robust to controls)
Leone (2022)	Brazilian National Household Sample Survey Brazil	1965 - 1989	75/10 ratio (at age 14)	5 birth cohorts	✓(only for the 1980-1984 cohort)	✓(only for the 1980-1984 cohort)
Mayer (2001)	PSID + census data Public Use Microdata Sample (PUMS) United States	1956 - 1970	Gini coef. (at age 14)		✓(analyses are split by income groups)	✓(analyses are split by income groups)
Hilger (2015)	Census data United States	1940 - 2000	p75-p25 of HH earnings (teenage years or 20s)	OLS & FE 248 for Whites, 159 for Blacks FD 191 for Whites, 104 for Blacks	OLS & FE ✓	✓
					FD (only for Blacks) ✓	(only for Blacks) ✓

Table 1b: Continued

Study	Data & country	Cohorts observed	Inequality measure	N of macro units	GGC hypothesis	
					Direction	Stat sign
Multi-country studies						
Kourtellos (2021)	Global Database on Intergenerational Mobility (GDIM) 150 countries	1960 - 1980	Gini coef. Education (parental generation, averaged over the 10-year cohorts)	199- 364	✓	✓
van der Weide et al. (2024)	GDIM 153 countries	1950 - 1980	Gini coef. when children were of school age	?	✓	✓
Ortiz-Gervasi and Palomo Lario (2024)	PIAAC 24 & 16 countries	1966-75 vs. 1976-85 For 16 countries 1969-78 vs. 1979-88	Gini coef. & 80/20 share ratio (averaged between ages 26-45)	For 24 countries 41-45 For 16 countries 32	Gini ✓	✗
					80/20 ✓	✗
					16 countries Gini ✓	✗
					16 countries 80/20 ✓	✓
Neidhöfer (2019)	Latinobarómetro & Harmonized Household Surveys 18 & 9 countries	1970-1995	Gini coef. • 0<age>6, • 6<age>12, • 12<age> 18	Latinobarómetro 182-283 HHS 54-134	✓	✓ (not robust to controls)
Chmielewski (2019)	30 international large-scale assessments 78 countries	1949 – 2005 1989 – 2005	Gini coef. (averaged from birth to test year)	855	In high-income country ✗	✗
					In low-income country ✓	✗

Table 1b: Continued

Study	Data & country	Cohorts observed	Inequality measure	N of macro units	GGC hypothesis	
					Direction	Stat sign
Lee & Lee (2020)	PIAAC 32 countries	1947 - 1990	Gini coef. (averaged over the 5-year cohort span when 15)	150, 110 & 92	✓	✗
Cingano (2014)	PIAAC 24 countries	1970 - 1995	Gini coef. (at age 10-14)		Low PEB ✓	✗
					Others ✗	✗

Table 2: Test of overall significance of the interaction terms between parental education and within country economic inequality

	M1	M2	M2b	M2c	M3	M4	M5	M6
Chi2(2)	21.000	4.460	3.760	4.510	6.000	5.400	3.030	8.230
p-value	*0.000*	*0.108*	*0.153*	*0.105*	*0.050*	*0.067*	*0.220*	*0.016*

Table 3: Simple slops with corresponding lower and upper bounds (95% conf. interval)

	M1	M2	M2b	M2c	M3	M4	M5	M6
ISCED I-II	-0.036	-0.054	-0.061	-0.062	-0.050	-0.003	0.007	-0.019
95% conf. interval	*-0.065*	*-0.082*	*-0.100*	*-0.110*	*-0.100*	*-0.054*	*-0.053*	*-0.071*
	-0.008	*-0.026*	*-0.023*	*-0.014*	*-0.001*	*0.048*	*0.067*	*0.033*
ISCED III-IV	-0.053	-0.032	-0.031	-0.032	-0.019	0.031	0.056	0.033
95% conf. interval	*-0.074*	*-0.055*	*-0.055*	*-0.056*	*-0.044*	*-0.004*	*0.017*	*-0.003*
	-0.031	*-0.010*	*-0.008*	*-0.009*	*0.005*	*0.067*	*0.096*	*0.070*
ISCED>=V	-0.106	-0.059	-0.057	-0.064	-0.060	-0.007	0.019	0.012
95% conf. interval	*-0.130*	*-0.084*	*-0.086*	*-0.096*	*-0.093*	*-0.050*	*-0.034*	*-0.033*
	-0.082	*-0.035*	*-0.027*	*-0.031*	*-0.026*	*0.036*	*0.071*	*0.057*

Appendix

Figures

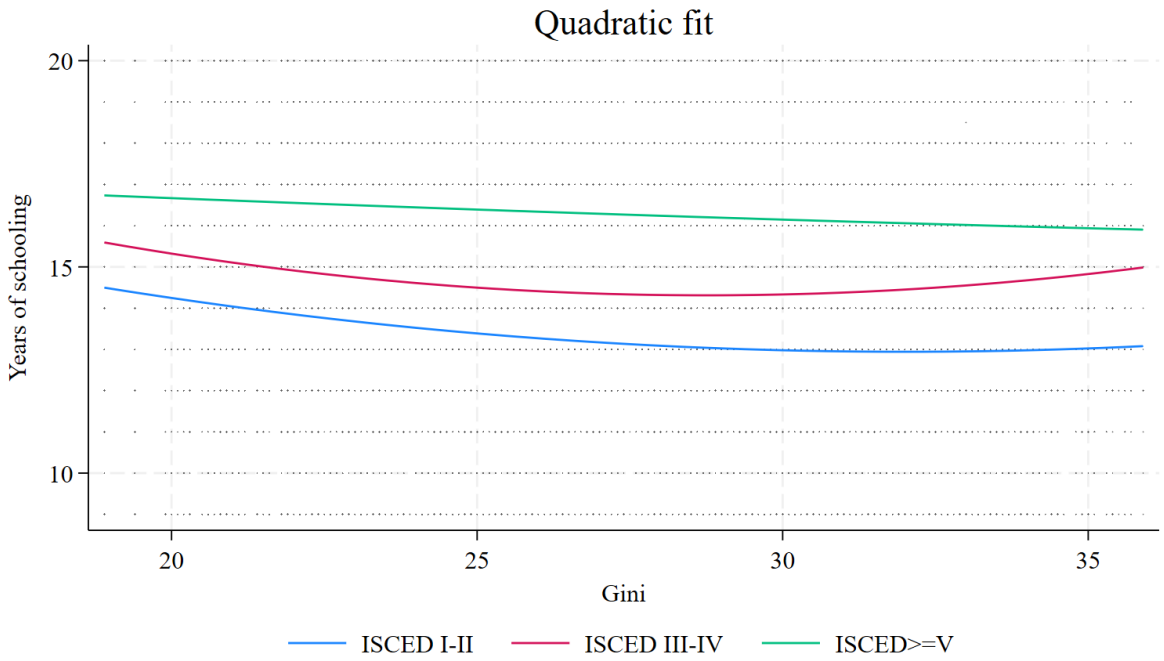

Figure A1: Bivariate association

Notes: For simplicity the Gini coefficient for this analysis has not been decomposed into its between and within components.

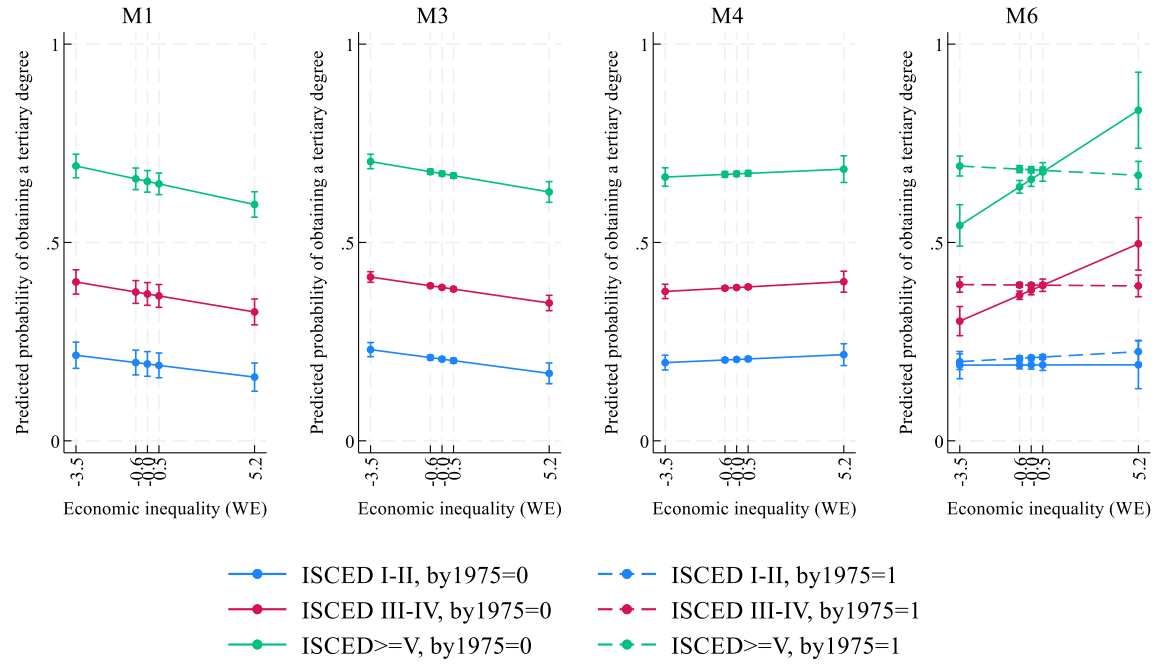

Figure A2: Predicted probability of obtaining a tertiary degree by parental education at different within country economic inequality levels (X)

Notes: The within country Gini values here estimated represent its minimum (-3.5), first (-0.6), second (0) and third quartile (0.5) and its maximum (5.2).

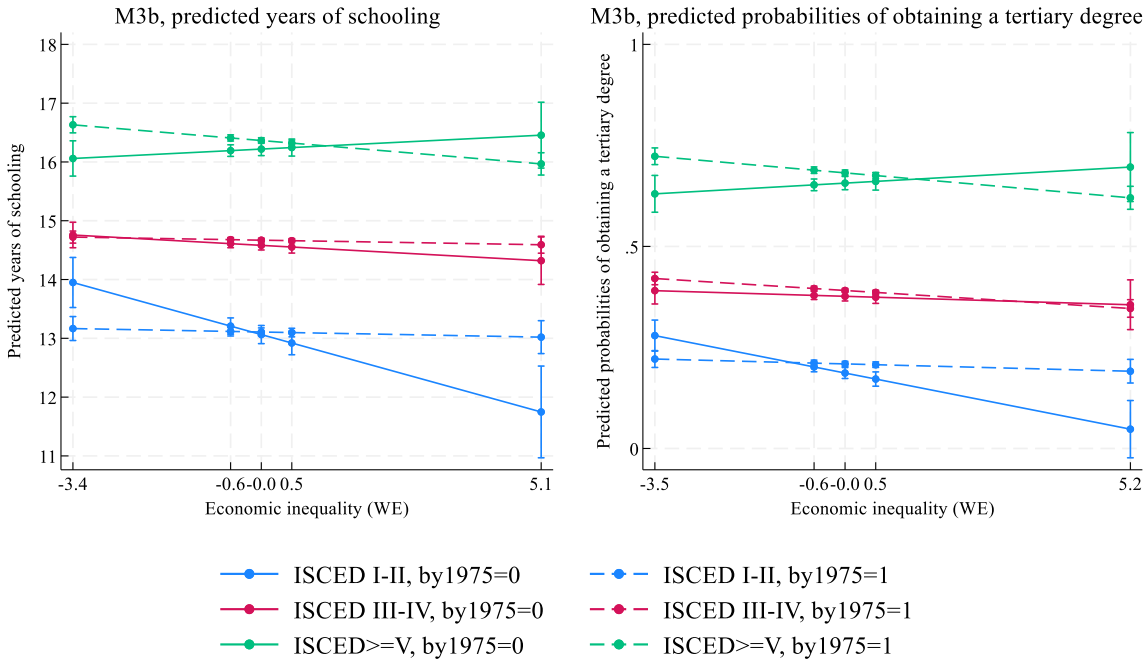

Figure A3: Predicted years of schooling and probability of obtaining a tertiary degree by parental education at different within country economic inequality levels (X) estimated from M3 with the addiction of the 3-way interaction between parental education, Gini and birth cohort (1980).

Notes: The within country Gini values here estimated represent the minimum, first, second and third quartile and maximum of each analytical sample.

Tables

Table A1: Sample sizes across survey and country

Countries	ALL	ESS	EU-SILC	EVS	IALS	ISSP	PIAAC	TOTAL
Austria (AT)	0	4,655	7,231	870	0	0	1,652	14,408
Australia (AU)	0	0	0	0	0	49	0	49
Belgium (BE)	0	4,116	8,300	282	0	0	1,603	14,301
Bulgaria (BG)	0	3,105	7,027	714	0	0	0	10,846
Canada (CA)	7,015	0	0	0	0	127	8,539	15,681
Switzerland (CH)	718	4,750	6,096	1,319	92	0	0	12,975
Cyprus (CY)	0	1,428	6,713	323	0	146	0	8,610
Czech Republic (CZ)	0	1,790	3,123	265	0	0	872	6,050
Germany (DE)	0	1,496	2,325	263	0	0	0	4,084
Denmark (DK)	0	2,580	3,297	1,267	257	0	2,069	9,470
Estonia (EE)	0	1,748	2,890	257	0	0	980	5,875
Spain (ES)	0	3,254	17,432	586	0	21	1,758	23,051
Finland (FI)	0	5,097	6,454	494	217	0	1,813	14,075
France (FR)	0	4,550	12,923	847	0	74	2,142	20,536
Greece (GR)	0	3,171	1,961	296	0	0	2,342	7,770
Croatia (HR)	0	720	1,740	201	0	0	0	2,661
Hungary (HU)	202	1,527	2,679	266	0	0	1,161	5,835
Ireland (IE)	0	6,748	5,171	212	0	0	2,671	14,802
Israel (IL)	0	395	0	0	0	0	494	889
Iceland (IS)	0	830	766	522	0	0	0	2,118
Italy (IT)	1,286	2,919	27,138	1,071	255	0	1,764	34,433
Lithuania (LT)	0	1,665	1,678	278	0	0	899	4,520
Luxembourg (LU)	0	429	7,893	356	0	0	0	8,678
Latvia (LV)	0	201	2,179	355	0	0	0	2,735
The Netherlands (NL)	1,486	4,923	6,633	900	0	0	1,588	15,530
Norway (NO)	961	4,724	3,258	635	268	121	1,775	11,742
Poland (PL)	0	2,248	14,181	482	0	0	2,189	19,100
Portugal (PT)	0	3,871	12,172	593	0	73	0	16,709
Sweden (SE)	0	2,894	3,638	541	0	93	1,458	8,624
Slovenia (SI)	0	1,398	2,312	241	0	0	998	4,949
Slovakia (SK)	0	753	2,839	192	0	0	616	4,400
The United Kingdom (UK)	0	5,097	4,844	0	0	0	3,032	12,973
Total	11,668	83,082	184,893	14,628	1,089	704	42,415	338,479

Table A2: Descriptive statistics

	Mean	Std. Dev.	Min	Max
Parental education				
ISCED I-II	0.379			
ISCED III-IV	0.383			
ISCED>=V	0.239			
Year of schooling	14.40	3.430	9.000	20.000
Gini BE	28.759	3.813	21.329	34.807
Gini WE	0.000	1.066	-3.436	5.071
LogGDP BE	3.174	0.361	2.314	3.734
LogGDP WE	0.000	0.171	-0.436	0.728
Public investment BE	0.996	0.404	0.151	1.966
Public investment WE	0.000	0.216	-0.771	1.290
HEI BE	58.368	54.373	0.047	277.743
HEI WE	0.000	8.028	-24.137	35.074

Table A3: Correlation matrix between the contextual indicators

	Public investment	Gini	LogGDP
Within (WE)			
Gini	0.169		
LogGDP	0.481	0.357	
HEI	0.449	0.423	0.706
Between (BE)			
Gini	-0.429		
LogGDP	0.352	-0.304	
HEI	-0.062	0.241	0.036

Table A4: Random slope linear regression models, DV: years of completed full time education

	M1	M2	M2b	M2c	M3	M4	M5 (1980)	M6 (1975)
ISCED III-IV	0.761	3.976***	3.481***	1.530***	1.529***	1.529***	1.451***	1.488***
	(0.670)	(0.906)	(0.328)	(0.030)	(0.030)	(0.030)	(0.054)	(0.081)
ISCED=>V	2.664**	8.096***	7.044***	3.195***	3.192***	3.193***	3.013***	3.129***
	(1.026)	(1.260)	(0.427)	(0.042)	(0.042)	(0.041)	(0.076)	(0.116)
Gini BE	-0.076	0.002	-0.015					
	(0.048)	(0.034)	(0.029)					
Gini WE	-0.036*	-0.054***	-0.061**	-0.062*	-0.050*	-0.003	0.027	-0.132*
	(0.015)	(0.014)	(0.020)	(0.025)	(0.025)	(0.026)	(0.051)	(0.065)
ISCED III-IV*Gini BE	0.026	-0.008	0.007					
	(0.024)	(0.018)	(0.007)					
ISCED=>V*Gini BE	0.016	-0.040	-0.013					
	(0.036)	(0.025)	(0.008)					
ISCED III-IV*Gini WE	-0.017	0.021	0.031	0.029	0.031	0.034	0.080	0.189**
	(0.015)	(0.015)	(0.022)	(0.026)	(0.027)	(0.027)	(0.056)	(0.071)
ISCED=>V*Gini WE	-0.070***	-0.006	0.005	-0.002	-0.009	-0.004	0.055	0.286**
	(0.017)	(0.017)	(0.027)	(0.034)	(0.036)	(0.035)	(0.080)	(0.101)
Public investment BE		0.904*	0.883**					
		(0.361)	(0.307)					
Public investment WE		-0.046	0.008	0.016	0.054	0.132	0.131	0.114
		(0.076)	(0.103)	(0.128)	(0.130)	(0.125)	(0.125)	(0.127)
ISCED III-IV* Public investment BE		-0.874***	-0.816***					
		(0.190)	(0.063)					
ISCED=>V* Public investment BE		-1.339***	-1.332***					
		(0.265)	(0.079)					
ISCED III-IV* Public investment WE		-0.083	-0.165	-0.168	-0.166	-0.170	-0.218	-0.239
		(0.079)	(0.113)	(0.135)	(0.138)	(0.136)	(0.137)	(0.139)
ISCED=>V* Public investment WE		-0.100	-0.205	-0.247	-0.274	-0.247	-0.338	-0.385*
		(0.085)	(0.137)	(0.179)	(0.182)	(0.180)	(0.181)	(0.183)
LogGDP BE		1.778***	1.744***					
		(0.373)	(0.317)					
LogGDP WE		0.443***	0.371**	0.295	0.461*	0.533*	0.861**	0.617*
		(0.093)	(0.132)	(0.165)	(0.192)	(0.260)	(0.268)	(0.262)

Table A4: Continued

	M1	M2	M2b	M2c	M3	M4	M5 (1980)	M6 (1975)
ISCED III-IV*LogGDP BE		-0.436*	-0.427***					
		(0.195)	(0.068)					
ISCED=>V*LogGDP BE		-0.790**	-0.679***					
		(0.271)	(0.088)					
ISCED III-IV*LogGDP WE		-0.733***	-0.663***	-0.578**	-0.571**	-0.543**	-0.704**	-0.562**
		(0.099)	(0.146)	(0.176)	(0.205)	(0.203)	(0.219)	(0.212)
ISCED=>V*LogGDP WE		-1.080***	-1.089***	-1.017***	-1.115***	-1.068***	-1.413***	-1.094***
		(0.113)	(0.182)	(0.236)	(0.272)	(0.271)	(0.291)	(0.280)
HEI WE					-0.008	0.005	0.007	0.006
					(0.005)	(0.005)	(0.005)	(0.005)
ISCED III-IV*HEI WE					-0.001	-0.001	-0.004	-0.001
					(0.005)	(0.005)	(0.005)	(0.005)
ISCED=>V*HEI WE					0.005	0.004	-0.002	0.003
					(0.007)	(0.007)	(0.007)	(0.007)
ISCED III-IV*Birth year*Gini WE							-0.064	-0.181*
							(0.063)	(0.077)
ISCED=>V*Birth year*Gini WE							-0.090	-0.338**
							(0.088)	(0.109)
ISCED III-IV*Birth year							0.169*	0.081
							(0.080)	(0.095)
ISCED=>V*Birth year							0.366**	0.134
							(0.111)	(0.134)
Birth year*Gini WE							-0.042	0.150*
							(0.058)	(0.069)
Birth year							-0.219**	0.078
							(0.072)	(0.082)
Constant	14.499***	5.819***	6.355***	11.735***	11.746***	78.285***	77.934***	90.545***
	(1.354)	(1.721)	(1.465)	(0.064)	(0.064)	(17.234)	(17.292)	(16.864)
Var(3rd level, country)	1.207	0.537*	0.381***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.310)	(0.139)	(0.099)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Var(ISCED III-IV)	0.282***	0.136***						
	(0.077)	(0.038)						

Table A4: Continued

	M1	M2	M2b	M2c	M3	M4	M5 (1980)	M6 (1975)
Var(ISCED=>V)	0.679	0.272***						
	(0.182)	(0.074)						
Cov(ISCED III-IV, ISCED=>V)	0.401	0.157						
	(0.114)	(0.048)						
Cov(ISCED III-IV, Constant)	-0.404***	-0.114***						
	(0.134)	(0.056)						
Cov(ISCED=>V, Constant)	-0.735***	-0.249***						
	(0.217)	(0.086)						
Var(2nd level, country*birth year)	0.062***	0.050***	0.172***	0.344***	0.343***	0.258***	0.322***	0.319***
	(0.008)	(0.007)	(0.018)	(0.035)	(0.034)	(0.031)	(0.027)	(0.027)
Var(ISCED III-IV)	0.028***	0.011***	0.331***	0.338***	0.340***	0.327***	0.705***	0.700***
	(0.008)	(0.007)	(0.029)	(0.029)	(0.029)	(0.028)	(0.052)	(0.052)
Var(ISCED=>V)	0.059***	0.024***	0.167***	0.744***	0.744***	0.726***	0.242***	0.244***
	(0.013)	(0.010)	(0.019)	(0.055)	(0.055)	(0.053)	(0.029)	(0.029)
Cov(ISCED III-IV, ISCED=>V)	0.038	0.012	0.203***	0.464***	0.465***	0.450***	0.440***	0.435***
	(0.009)	(0.007)	(0.020)	(0.036)	(0.037)	(0.035)	(0.035)	(0.034)
Cov(ISCED III-IV, Constant)	-0.022***	-0.009	-0.144***	-0.317***	-0.317***	-0.269***	-0.259***	-0.258***
	(0.007)	(0.006)	(0.016)	(0.028)	(0.028)	(0.026)	(0.025)	(0.025)
Cov(ISCED=>V, Constant)	-0.040***	-0.024***	-0.209***	-0.480***	-0.481***	-0.420***	-0.400***	-0.402***
	(0.009)	(0.007)	(0.021)	(0.039)	(0.039)	(0.037)	(0.036)	(0.036)
Var(Residual)	9.440***	9.440***	9.439***	9.439***	9.439***	9.439***	9.439***	9.439***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
N	338479	338479	338479	338479	338479	338479	338479	338479
Country	32	32	32	32	32	32	32	32
Country*birth year	687	687	687	687	687	687	687	687
AIC	1721766	1721599	1722167	1722403	1722393	1722300	1722286	1722265
BIC	1722174	1722136	1722650	1723122	1723144	1723395	1723445	1723424

Notes: all the models control for survey and round fixed effects. From M2c the models include country fixed effects (this is why the between components and their interactions are not estimated). M4 adds interactions between country and birth year. M5 adds 3-way interactions between parental education, Gini WE and the dummy identifying those born in and after 1980 (1975 for M6).

Table A5: Test of overall significance of the interaction terms between parental education and within country economic inequality, DV: ***probability of obtaining a tertiary degree***

	M1	M3	M4	M6
Chi2(2)	5.24	0.26	0.06	11.35
p-value	*0.073*	*0.879*	*0.971*	*0.003*

Table A6: Simple slops with corresponding lower and upper bounds (95% conf. interval), DV: ***probability of obtaining a tertiary degree***

	M1	M3	M4	M6
ISCED I-II	-0.006	-0.006	0.002	0.002
95% conf. interval	*-0.010*	*-0.012*	*-0.003*	*-0.003*
	-0.003	*-0.002*	*0.008*	*0.007*
ISCED III-IV	-0.009	-0.008	0.003	0.006
95% conf. interval	*-0.012*	*-0.010*	*-0.002*	*0.000*
	-0.006	*-0.003*	*0.008*	*0.011*
ISCED>=V	-0.011	-0.008	0.002	0.007
95% conf. interval	*-0.015*	*-0.014*	*-0.004*	*0.000*
	-0.008	*-0.004*	*0.009*	*0.014*

Table A7: Random slope linear regression models, DV: ***probability of obtaining a tertiary degree***

	M1	M3	M4	M6
ISCED III-IV	0.041	0.181***	0.181***	0.189***
	(0.073)	(0.003)	(0.003)	(0.008)
ISCED=>V	0.368**	0.467***	0.468***	0.468***
	(0.118)	(0.005)	(0.005)	(0.012)
Gini BE	-0.006***	-0.007**	0.002	0.000
	(0.002)	(0.003)	(0.003)	(0.005)
Gini WE	-0.003			
	(0.004)			
ISCED III-IV*Gini BE	-0.006***	-0.007**	0.002	0.000
	(0.002)	(0.003)	(0.003)	(0.005)
ISCED=>V*Gini BE	0.003			
	(0.004)			
ISCED III-IV*Gini WE	-0.002	-0.001	0.001	0.022**
	(0.002)	(0.003)	(0.003)	(0.007)
ISCED=>V*Gini WE	-0.005*	-0.002	-0.000	0.033**
	(0.002)	(0.004)	(0.004)	(0.011)
Public investment WE		0.024	0.038**	0.024
		(0.013)	(0.013)	(0.013)
ISCED III-IV* Public investment WE		-0.030*	-0.031*	-0.036*
		(0.015)	(0.015)	(0.015)
ISCED=>V* Public investment WE		-0.055**	-0.051**	-0.062**
		(0.020)	(0.020)	(0.020)
LogGDP WE		-0.040*	-0.044	-0.034
		(0.019)	(0.031)	(0.030)
ISCED III-IV*LogGDP WE		0.041	0.051*	0.063**
		(0.023)	(0.023)	(0.024)
ISCED=>V*LogGDP WE		0.003	0.015	0.022
		(0.031)	(0.030)	(0.032)

Table A7: Continued

	M1	M3	M4	M6
HEI WE		0.000	0.001	0.001*
		(0.000)	(0.001)	(0.000)
ISCED III-IV*HEI WE		-0.001	-0.001*	-0.001
		(0.001)	(0.001)	(0.001)
ISCED=>V*HEI WE		-0.001	-0.001	-0.001
		(0.001)	(0.001)	(0.001)
ISCED III-IV*Birth year*Gini WE				-0.026**
				(0.008)
ISCED=>V*Birth year*Gini WE				-0.039***
				(0.012)
ISCED III-IV*Birth year				-0.006
				(0.010)
ISCED=>V*Birth year				0.005
				(0.014)
Birth year*Gini WE				0.003
				(0.006)
Birth year				0.018**
				(0.006)
Constant	0.269*	0.085***	3.084	4.979*
	(0.108)	(0.009)	(2.395)	(2.340)
Var(3rd level, country)	0.003***	0.000***	0.000**	0.000***
	(0.001)	(0.000)	(0.000)	(0.000)
Var(ISCED III-IV)	0.009***			
	(0.002)			
Var(ISCED=>V)	0.008***			
	(0.002)			
Cov(ISCED III-IV, ISCED=>V)	0.004			
	(0.001)			
Cov(ISCED III-IV, Constant)	-0.002			
	(0.001)			
Cov(ISCED=>V, Constant)	-0.005			
	(0.002)			
Var(2nd level, country*birth year)	0.000***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Var(ISCED III-IV)	0.000***	0.008***	0.008***	0.007***
	(0.000)	(0.001)	(0.001)	(0.001)
Var(ISCED=>V)	0.000***	0.002***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Cov(ISCED III-IV, ISCED=>V)	0.000***	0.004	0.004	0.003
	(0.000)	(0.000)	(0.000)	(0.000)
Cov(ISCED III-IV, Constant)	0.000***	-0.002	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)
Cov(ISCED=>V, Constant)	0.000***	-0.004	-0.003	-0.002
	(0.000)	(0.000)	(0.000)	(0.000)
Var(Residual)	0.196***	0.196***	0.196***	0.196***
	(0.000)	(0.000)	(0.000)	(0.000)
N	353551	353551	353551	353551
Country	32	32	32	32
*Country*birth year*	714	714	714	714

AIC	428087.5	428725.7	428587.2	428540.3
BIC	428497	429480	429686.3	429704.1

Notes: all the models control for survey and round fixed effects. Country fixed effects are included from M3. From M4 the model controls control for within country time trends in the dependent variable

Online appendix

Including the US

Table A8: Test of overall significance of the interaction terms between parental education and within country economic inequality

	M1	M3	M4	M6
Chi2(2)	*18.42*	*6.00*	5.860	5.080
p-value	*0.000*	*0.005*	*0.054*	*0.079*

Table A9: Simple slops with corresponding lower and upper bounds (95% conf. interval)

	M1	M3	M4	M6
ISCED I-II	0.000	-0.047	-0.003	-0.017
95% conf. interval	*-0.029*	*-0.095*	*-0.053*	*-0.069*
	0.030	*0.001*	*0.048*	*0.035*
ISCED III-IV	-0.011	-0.015	0.031	0.029
95% conf. interval	*-0.032*	*-0.039*	*-0.004*	*-0.006*
	0.008	*0.009*	*0.066*	*0.065*
ISCED>=V	-0.061	-0.054	-0.006	0.005
95% conf. interval	*-0.082*	*-0.087*	*-0.048*	*-0.039*
	-0.039	*-0.020*	*0.036*	*0.048*

Table A10: Random slope linear regression models

	M1	M3	M4	M6
ISCED III-IV	0.684	1.544***	1.540***	1.507***
	(0.615)	(0.029)	(0.029)	(0.080)
ISCED=>V	2.562**	3.212***	3.209***	3.160***
	(0.965)	(0.041)	(0.040)	(0.114)
Gini BE	-0.073			
	(0.043)			
Gini WE	0.001	-0.047	-0.003	-0.101
	(0.015)	(0.025)	(0.026)	(0.063)
ISCED III-IV*Gini BE	0.029			
	(0.021)			
ISCED=>V*Gini BE	0.021			
	(0.034)			
ISCED III-IV*Gini WE	-0.012	0.032	0.034	0.143*
	(0.015)	(0.026)	(0.026)	(0.068)
ISCED=>V*Gini WE	-0.062***	-0.007	-0.003	0.215*
	(0.017)	(0.035)	(0.035)	(0.097)
Public investment WE		0.052	0.059	-0.004
		(0.093)	(0.099)	(0.100)
ISCED III-IV* Public investment WE		-0.073	-0.085	-0.104
		(0.099)	(0.098)	(0.098)
ISCED=>V* Public investment WE		-0.132	-0.127	-0.162
		(0.129)	(0.127)	(0.127)
LogGDP WE		0.970***	0.601*	0.696**
		(0.183)	(0.256)	(0.259)
ISCED III-IV*LogGDP WE		-0.672***	-0.588**	-0.615**
		(0.198)	(0.198)	(0.208)

Table A10: Continued

	M1	M3	M4	M6
ISCED=>V*LogGDP WE		-1.227***	-1.136***	-1.182***
		(0.265)	(0.263)	(0.275)
HEI WE		-0.004	0.007	0.007
		(0.004)	(0.005)	(0.005)
ISCED III-IV*HEI WE		-0.001	-0.002	-0.002
		(0.005)	(0.005)	(0.005)
ISCED=>V*HEI WE		0.003	0.002	0.001
		(0.007)	(0.006)	(0.006)
ISCED III-IV*Birth year*Gini WE				-0.129
				(0.074)
ISCED=>V*Birth year*Gini WE				-0.258*
				(0.104)
ISCED III-IV*Birth year				0.065
				(0.093)
ISCED=>V*Birth year				0.108
				(0.132)
Birth year*Gini WE				0.113
				(0.067)
Birth year				0.086
				(0.081)
Constant	14.473***	11.748***	79.453***	91.449***
	(1.227)	(0.062)	(16.997)	(16.706)
Var(3rd level, country)	0.258***	0.000***	0.000**	0.000***
	(0.070)	(0.000)	(0.000)	(0.000)
Var(ISCED III-IV)	0.656			
	(0.172)			
Var(ISCED=>V)	1.077			
	(0.272)			
Cov(ISCED III-IV, ISCED=>V)	0.376			
	(0.104)			
Cov(ISCED III-IV, Constant)	-0.366			
	(0.119)			
Cov(ISCED=>V, Constant)	-0.681			
	(0.197)			
Var(2nd level, country*birth year)	0.031***	0.323***	0.317***	0.312***
	(0.009)	(0.027)	(0.027)	(0.026)
Var(ISCED III-IV)	0.063***	0.730***	0.706***	0.688***
	(0.014)	(0.053)	(0.051)	(0.050)
Var(ISCED=>V)	0.086***	0.319***	0.256***	0.246***
	(0.010)	(0.032)	(0.030)	(0.028)
Cov(ISCED III-IV, ISCED=>V)	0.040***	0.448***	0.438***	0.429***
	(0.009)	(0.034)	(0.034)	(0.033)
Cov(ISCED III-IV, Constant)	-0.037***	-0.297***	-0.264***	-0.257***
	(0.008)	(0.026)	(0.025)	(0.024)
Cov(ISCED=>V, Constant)	-0.059***	-0.458***	-0.412***	-0.401***
	(0.010)	(0.037)	(0.036)	(0.035)
Var(Residual)	9.381***	9.381***	9.325***	9.325***
	(0.022)	(0.022)	(0.022)	(0.022)

Table A10: Continued

	M1	M3	M4	M6
N	*349589*	*349589*	*349589*	*349589*
Country	*33*	*33*	*33*	*33*
*Country*birth year*	*711*	*711*	*711*	*711*
AIC	*1776040*	*1776722*	*1774590*	*1774561*
BIC	*1776353*	*1777390*	*1775839*	*1775874*

Notes: all the models control for survey and round fixed effects. From M3 the models include country fixed effects (this is why the between components and their interactions are not estimated). M4 adds interactions between country and birth year.

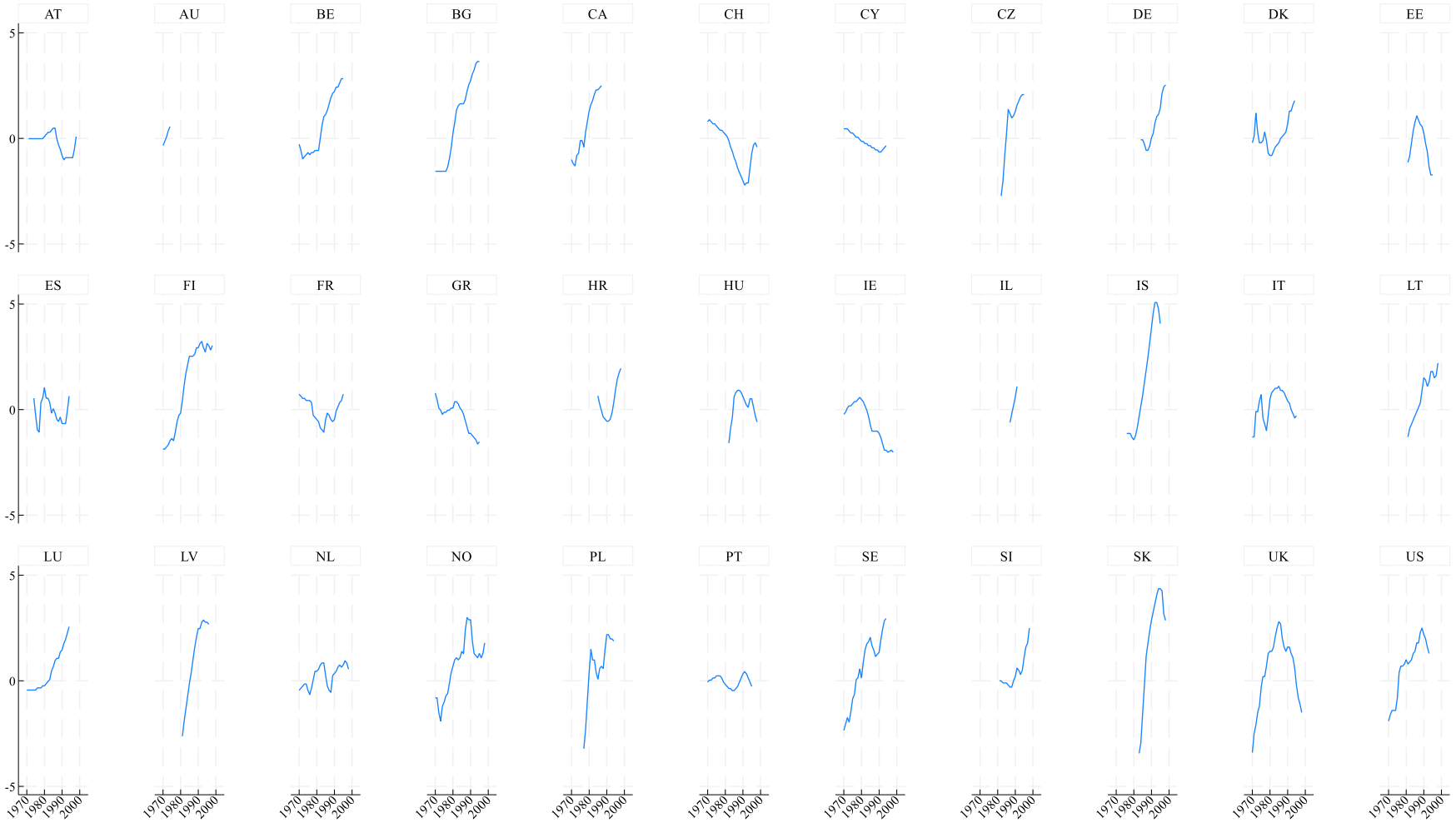

Figure A4: Within country change in economic inequality (Y) by birth cohorts (X), including the US

Excluding round fixed effects

Table A11: Test of overall significance of the interaction terms between parental education and within country economic inequality

	M1	M3	M4	M6
Chi2(2)	16.80	5.59	5.38	7.99
p-value	*0.000*	*0.061*	*0.067*	*0.018*

Table A12: Simple slops with corresponding lower and upper bounds (95% conf. interval)

	M1	M3	M4	M6
ISCED I-II	0.002	-0.045	-0.010	-0.025
95% conf. interval	*-0.028*	*-0.094*	*-0.060*	*-0.077*
	0.033	*0.003*	*0.039*	*0.025*
ISCED III-IV	-0.009	-0.014	0.025	0.026
95% conf. interval	*-0.031*	*-0.038*	*-0.010*	*-0.011*
	0.011	*0.010*	*0.061*	*0.063*
ISCED>=V	-0.059	-0.052	-0.010	0.008
95% conf. interval	*-0.081*	*-0.087*	*-0.054*	*-0.038*
	-0.036	*-0.018*	*0.034*	*0.055*

Table A13: Random slope linear regression models

	M1	M3	M4	M6
ISCED III-IV	0.733	1.534***	1.535***	1.501***
	(0.653)	(0.030)	(0.029)	(0.081)
ISCED=>V	2.710**	3.197***	3.197***	3.134***
	(1.021)	(0.042)	(0.042)	(0.116)
Gini BE	-0.075			
	(0.046)			
Gini WE	0.002	-0.045	-0.010	-0.136*
	(0.016)	(0.025)	(0.026)	(0.064)
ISCED III-IV*Gini BE	0.027			
	(0.023)			
ISCED=>V*Gini BE	0.015			
	(0.036)			
ISCED III-IV*Gini WE	-0.012	0.031	0.035	0.175*
	(0.015)	(0.027)	(0.026)	(0.071)
ISCED=>V*Gini WE	-0.062***	-0.007	0.000	0.287**
	(0.018)	(0.036)	(0.035)	(0.102)
Public investment WE		0.074	0.086	0.105
		(0.128)	(0.123)	(0.126)
ISCED III-IV* Public investment WE		-0.150	-0.156	-0.218
		(0.137)	(0.135)	(0.138)
ISCED=>V* Public investment WE		-0.257	-0.232	-0.371*
		(0.182)	(0.181)	(0.183)
LogGDP WE		0.951***	0.571*	0.627*
		(0.188)	(0.259)	(0.264)
ISCED III-IV*LogGDP WE		-0.628**	-0.563**	-0.583**
		(0.203)	(0.202)	(0.211)
ISCED=>V*LogGDP WE		-1.155***	-1.076***	-1.106***
		(0.272)	(0.272)	(0.281)

Table A13: Continued

	M1	M3	M4	M6
HEI WE		-0.004	0.004	0.005
		(0.005)	(0.005)	(0.005)
ISCED III-IV*HEI WE		-0.000	-0.001	-0.001
		(0.005)	(0.005)	(0.005)
ISCED=>V*HEI WE		0.005	0.004	0.003
		(0.007)	(0.007)	(0.007)
ISCED III-IV*Birth year*Gini WE				-0.162*
				(0.077)
ISCED=>V*Birth year*Gini WE				-0.335**
				(0.109)
ISCED III-IV*Birth year				0.070
				(0.094)
ISCED=>V*Birth year				0.134
				(0.135)
Birth year*Gini WE				0.146*
				(0.068)
Birth year				0.008
				(0.080)
Constant	14.578***	11.810***	40.186*	46.199**
	(1.302)	(0.064)	(17.497)	(17.475)
Var(3rd level, country)	0.266***	0.000***	0.000***	0.000***
	(0.073)	(0.000)	(0.000)	(0.000)
Var(ISCED III-IV)	0.671			
	(0.179)			
Var(ISCED=>V)	1.111			
	(0.286)			
Cov(ISCED III-IV, ISCED=>V)	0.386			
	(0.109)			
Cov(ISCED III-IV, Constant)	-0.379			
	(0.125)			
Cov(ISCED=>V, Constant)	-0.705			
	(0.206)			
Var(2nd level, country*birth year)	0.033***	0.333***	0.319***	0.313***
	(0.009)	(0.029)	(0.027)	(0.027)
Var(ISCED III-IV)	0.065***	0.749***	0.731***	0.706***
	(0.015)	(0.055)	(0.053)	(0.052)
Var(ISCED=>V)	0.088***	0.325***	0.237***	0.229***
	(0.011)	(0.033)	(0.029)	(0.028)
Cov(ISCED III-IV, ISCED=>V)	0.041	0.459	0.443	0.431
	(.010)	(0.036)	(0.035)	(0.034)
Cov(ISCED III-IV, Constant)	-0.037	-0.303	-0.252	-0.245
	(.008)	(0.027)	(0.025)	(0.024)
Cov(ISCED=>V, Constant)	-0.061	-0.468	-0.400	-0.386
	(.011)	(0.038)	(0.036)	(0.035)
Var(Residual)	9.496***	9.496***	9.496***	9.496***
	(0.023)	(0.023)	(0.023)	(0.023)

Table A13: Continued

	M1	M3	M4	M6
N	338,479	338,479	338,479	338,479
Country	32	32	32	32
*Country*birth year*	687	687	687	687
AIC	1723760	1724418	1724341	1724329
BIC	1724061	1725062	1725329	1725381

Notes: all the models control for survey fixed effects. From M3 the models include country fixed effects (this is why the between components and their interactions are not estimated). M4 adds interactions between country and birth year.

Excluding the EVS

Table A14: Test of overall significance of the interaction terms between parental education and within country economic inequality

	M1	M3	M4	M6
Chi2(2)	15.56	4.900	4.480	7.69
p-value	*0.000*	*0.086*	*0.106*	*0.021*

Table A15: Simple slops with corresponding lower and upper bounds (95% conf. interval)

	M1	M3	M4	M6
ISCED I-II	0.000	-0.054	-0.010	-0.022
95% conf. Interval	*-0.030*	*-0.103*	*-0.059*	*-0.074*
	0.031	*-0.005*	*0.041*	*0.028*
ISCED III-IV	-0.015	-0.027	0.021	0.023
95% conf. interval	*-0.036*	*-0.052*	*-0.014*	*-0.012*
	0.006	*-0.002*	*0.057*	*0.059*
ISCED>=V	-0.063	-0.064	-0.012	0.007
95% conf. interval	*-0.086*	*-0.098*	*-0.056*	*-0.037*
	-0.040	*-0.030*	*0.032*	*0.053*

Table A16: Random slope linear regression models

	M1	M3	M4	M6
ISCED III-IV	0.754	1.539***	1.540***	1.490***
	(0.644)	(0.030)	(0.029)	(0.080)
ISCED=>V	2.732**	3.195***	3.197***	3.142***
	(1.014)	(0.042)	(0.042)	(0.116)
Gini BE	-0.069			
	(0.046)			
Gini WE	0.000	-0.055*	-0.009	-0.125*
	(0.016)	(0.025)	(0.026)	(0.063)
ISCED III-IV*Gini BE	0.027			
	(0.023)			
ISCED=>V*Gini BE	0.014			
	(0.036)			
ISCED III-IV*Gini WE	-0.015	0.027	0.030	0.175*
	(0.015)	(0.027)	(0.026)	(0.070)
ISCED=>V*Gini WE	-0.063***	-0.010	-0.003	0.279**
	(0.018)	(0.036)	(0.036)	(0.101)
Public investment WE		-0.003	0.084	0.060
		(0.128)	(0.123)	(0.125)
ISCED III-IV* Public investment WE		-0.099	-0.097	-0.167
		(0.137)	(0.135)	(0.138)
ISCED=>V* Public investment WE		-0.240	-0.202	-0.333
		(0.183)	(0.181)	(0.184)
LogGDP WE		0.437*	0.518*	0.605*
		(0.187)	(0.257)	(0.258)
ISCED III-IV*LogGDP WE		-0.566**	-0.540**	-0.568**
		(0.203)	(0.201)	(0.210)
ISCED=>V*LogGDP WE		-1.108***	-1.060***	-1.082***
		(0.272)	(0.271)	(0.281)

Table A16: Continued

	M1	M3	M4	M6
HEI WE		-0.007	0.006	0.007
		(0.005)	(0.005)	(0.005)
ISCED III-IV*HEI WE		-0.001	-0.001	-0.001
		(0.005)	(0.005)	(0.005)
ISCED=>V*HEI WE		0.004	0.002	0.002
		(0.007)	(0.007)	(0.007)
ISCED III-IV*Birth year*Gini WE				-0.171*
				(0.076)
ISCED=>V*Birth year*Gini WE				-0.330**
				(0.109)
ISCED III-IV*Birth year				0.092
				(0.093)
ISCED=>V*Birth year				0.122
				(0.134)
Birth year*Gini WE				0.136*
				(0.067)
Birth year				0.076
				(0.080)
Constant	14.384***	11.771***	73.070***	85.495***
	(1.300)	(0.064)	(17.141)	(16.759)
Var(3rd level, country)	0.258***	0.000***	0.000	0.000***
	(0.070)	(0.000)	(0.000)	(0.000)
Var(ISCED III-IV)	0.661			
	(0.175)			
Var(ISCED=>V)	1.110			
	(0.284)			
Cov(ISCED III-IV, ISCED=>V)	0.376			
	0.105			
Cov(ISCED III-IV, Constant)	-0.384			
	0.122			
Cov(ISCED=>V, Constant)	-0.687			
	0.201			
Var(2nd level, country*birth year)	0.031***	0.323***	0.310***	0.302***
	(0.009)	(0.028)	(0.027)	(0.026)
Var(ISCED III-IV)	0.073***	0.739***	0.718***	0.694***
	(0.015)	(0.055)	(0.053)	(0.052)
Var(ISCED=>V)	0.086***	0.317***	0.240***	0.226***
	(0.010)	(0.032)	(0.029)	(0.027)
Cov(ISCED III-IV, ISCED=>V)	0.043	0.452***	0.436***	0.422
	0.010	0.036	0.035	0.033
Cov(ISCED III-IV, Constant)	-0.035	-0.300***	-0.251***	-0.241
	0.008	0.027	0.025	0.023
Cov(ISCED=>V, Constant)	-0.063	-0.462***	-0.403***	-0.386
	0.011	0.038	0.036	0.034
Var(Residual)	9.409***	9.350***	9.350***	9.350***
	(0.023)	(0.023)	(0.023)	(0.023)

Table A16: Continued

	M1	M3	M4	M6
N	323851	323851	323851	323851
Country	32	32	32	32
Country*birth year	685	685	685	685
AIC	1646311	1644894	1644797	1644762
BIC	1646600	1645631	1645876	1645906

Notes: all the models control for survey and round fixed effects. From M3 the models include country fixed effects (this is why the between components and their interactions are not estimated). M4 adds interactions between country and birth year.

Including ideological orientation of the government coalition

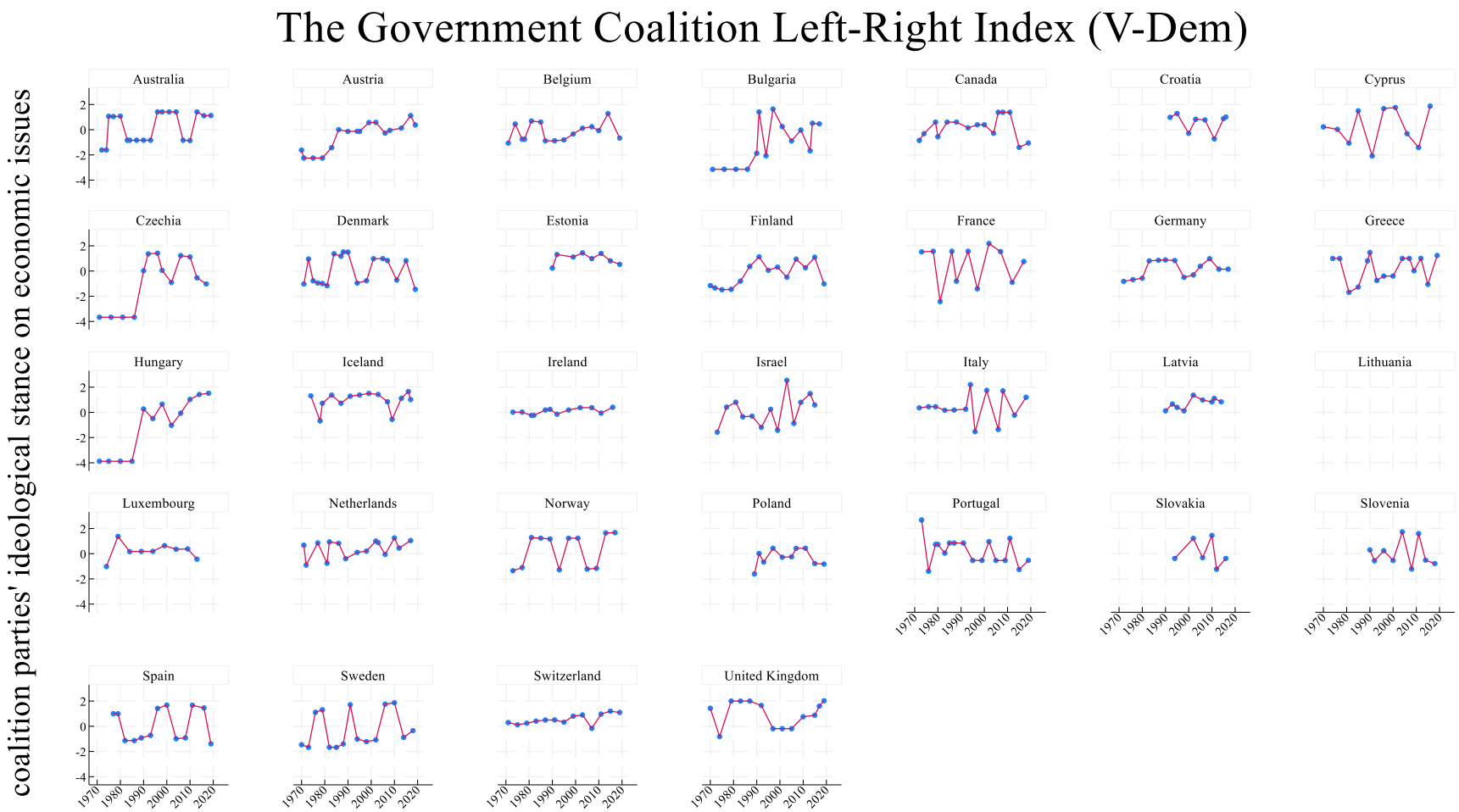

Figure A5: Country change in ideological orientation of the government coalition (Y) by years (X)

Table A17: Test of overall significance of the interaction terms between parental education and within country economic inequality

	M4	M6
Chi2(2)	3.690	4.64
p-value	*0.158*	*0.098*

Table A18: Simple slops with corresponding lower and upper bounds (95% conf. interval)

	M4	M6
ISCED I-II	0.016	0.013
95% conf. interval	*-0.038*	*-0.041*
	0.072	*0.069*
ISCED III-IV	0.008	0.010
95% conf. interval	*-0.030*	*-0.028*
	0.047	*0.050*
ISCED>=V	-0.038	-0.024
95% conf. interval	*-0.092*	*-0.078*
	0.015	*0.030*

Table A19: Random slope linear regression models

	M4	M6
ISCED III-IV	1.475***	1.383***
	(0.033)	(0.101)
ISCED=>V	3.103***	3.036***
	(0.046)	(0.146)
Gini WE	0.017	-0.081
	(0.029)	(0.065)
ISCED III-IV*Gini WE	-0.008	0.157*
	(0.032)	(0.079)
ISCED=>V*Gini WE	-0.055	0.245*
	(0.043)	(0.115)
Public investment WE	0.184	0.170
	(0.125)	(0.126)
ISCED III-IV* Public investment WE	-0.169	-0.271
	(0.147)	(0.150)
ISCED=>V* Public investment WE	-0.224	-0.369
	(0.199)	(0.201)
LogGDP WE	0.599*	0.740**
	(0.271)	(0.273)
ISCED III-IV*LogGDP WE	-0.715**	-0.755**
	(0.252)	(0.259)
ISCED=>V*LogGDP WE	-1.350***	-1.341***
	(0.346)	(0.353)
HEI WE	-0.006	-0.004
	(0.005)	(0.005)
ISCED III-IV*HEI WE	0.006	0.005
	(0.006)	(0.006)
ISCED=>V*HEI WE	0.012	0.011
	(0.008)	(0.008)

Table A19: Continued

	M4	M6
ISCED III-IV*Birth year*Gini WE		-0.202*
		(0.085)
ISCED=>V*Birth year*Gini WE		-0.357**
		(0.122)
ISCED III-IV*Birth year		0.146
		(0.113)
ISCED=>V*Birth year		0.140
		(0.164)
Birth year*Gini WE		0.120
		(0.069)
Birth year		0.006
		(0.088)
Pol. Orientation WE	-0.092**	-0.089**
	(0.030)	(0.029)
ISCED III-IV* Pol. Orientation WE	0.091*	0.088*
	(0.037)	(0.036)
ISCED=>V* Pol. Orientation WE	0.144**	0.136**
	(0.051)	(0.050)
Constant	63.356***	75.713***
	(16.473)	(16.302)
Var(3rd level, country)	0.000***	0.000***
	(0.000)	(0.000)
Var(2nd level, country*birth year)	0.326***	0.314***
	(0.031)	(0.030)
Var(ISCED III-IV)	0.751***	0.721***
	(0.060)	(0.058)
Var(ISCED=>V)	0.206***	0.191***
	(0.030)	(0.028)
Cov(ISCED III-IV, ISCED=>V)	0.459***	.440
	0.039	0.038
Cov(ISCED III-IV, Constant)	-0.248***	-0.235
	0.027	0.026
Cov(ISCED=>V, Constant)	-0.378***	-0.359
	0.039	0.037
Var(Residual)	9.434***	9.434***
	(0.026)	(0.026)
N	268862	268862
Country	31	31
*Country*birth year*	578	578
AIC	1367900	1367875
BIC	1368982	1369019

Notes: all the models control for survey, round and country fixed effects. M4 adds interactions between country and birth year.

Including tertiary educated people

Table A20: Test of overall significance of the interaction terms between parental education and within country economic inequality

	M3	M4	M6
Chi2(2)	2.26	2.45	3.09
p-value	*0.322*	*0.294*	*0.213*

Table A21: Simple slops with corresponding lower and upper bounds (95% conf. interval)

	M3	M4	M6
ISCED I-II	-0.058	-0.025	-0.025
95% conf. interval	*-0.107*	*-0.077*	*-0.077*
	-0.008	*0.025*	*0.026*
ISCED III-IV	-0.016	0.018	0.020
95% conf. interval	*-0.044*	*-0.020*	*-0.018*
	0.011	*0.056*	*0.059*
ISCED>=V	-0.023	0.015	0.019
95% conf. interval	*-0.058*	*-0.029*	*-0.026*
	0.011	*0.060*	*0.065*

Table A22: Random slope linear regression models

	M3	M4	M6
ISCED III-IV	2.180***	2.136***	2.033***
	(0.078)	(0.077)	(0.103)
ISCED=>V	4.345***	4.301***	4.108***
	(0.102)	(0.102)	(0.137)
Gini WE	-0.058*	-0.026	-0.066
	(0.025)	(0.026)	(0.060)
ISCED III-IV*Gini WE	0.042	0.044	0.117
	(0.028)	(0.028)	(0.068)
ISCED=>V*Gini WE	0.035	0.041	0.151
	(0.036)	(0.036)	(0.092)
Public investment WE	-0.109	-0.054	-0.077
	(0.124)	(0.123)	(0.125)
ISCED III-IV* Public investment WE	0.087	0.057	-0.008
	(0.138)	(0.136)	(0.140)
ISCED=>V* Public investment WE	0.218	0.206	0.087
	(0.174)	(0.173)	(0.178)
LogGDP WE	0.310	0.203	0.361
	(0.194)	(0.262)	(0.265)
ISCED III-IV*LogGDP WE	-0.304	-0.260	-0.345
	(0.217)	(0.215)	(0.226)
ISCED=>V*LogGDP WE	-0.569*	-0.493	-0.661*
	(0.279)	(0.279)	(0.292)
HEI WE	-0.016***	-0.004	-0.003
	(0.005)	(0.005)	(0.005)
ISCED III-IV*HEI WE	0.012*	0.011*	0.010*
	(0.005)	(0.005)	(0.005)
ISCED=>V*HEI WE	0.023***	0.021**	0.020**
	(0.006)	(0.006)	(0.006)

Table A22: Continued

	M3	M4	M6
% Tertiary educated people WE	0.011***	0.010**	0.010**
	(0.002)	(0.003)	(0.003)
ISCED III-IV* % Tertiary educated people WE	-0.017***	-0.016***	-0.016***
	(0.002)	(0.002)	(0.002)
ISCED=>V* % Tertiary educated people WE	-0.030***	-0.029***	-0.028***
	(0.002)	(0.002)	(0.002)
ISCED III-IV*Birth year*Gini WE			-0.096
			(0.076)
ISCED=>V*Birth year*Gini WE			-0.144
			(0.102)
ISCED III-IV*Birth year			0.132
			(0.094)
ISCED=>V*Birth year			0.241
			(0.126)
Birth year*Gini WE			0.055
			(0.065)
Birth year			0.012
			(0.077)
Constant	11.321***	64.327***	75.335***
	(0.104)	(18.395)	(18.017)
Var(3rd level, country)	0.000***	0.000***	0.000*
	(0.000)	(0.000)	(0.000)
Var(2nd level, country*birth year)	0.291***	0.283***	0.278***
	(0.027)	(0.026)	(0.026)
Var(ISCED III-IV)	0.567***	0.560***	0.548***
	(0.046)	(0.046)	(0.045)
Var(ISCED=>V)	0.251***	0.200***	0.190***
	(0.029)	(0.026)	(0.025)
Cov(ISCED III-IV, ISCED=>V)	0.367	0.361	0.353
	0.032	0.031	0.030
Cov(ISCED III-IV, Constant)	-0.246	-0.215	-0.209
	0.024	0.023	0.022
Cov(ISCED=>V, Constant)	-0.357	-0.323	-0.313
	0.033	0.031	0.030
Var(Residual)	9.556***	9.556***	9.557***
	(0.024)	(0.024)	(0.024)
N	312450	312450	312450
Country	25	25	25
Country*birth year	585	585	585
AIC	1593616	1593547	1593523
BIC	1594319	1594516	1594556

Notes: all the models control for survey, round and country fixed effects. M4 adds interactions between country and birth year.

Considering M3 as "final model specification"

Table A23: Adding the 3-way interaction in M3

	Years of schooling	Probability of obtaining a tertiary degree
ISCED III-IV	1.521***	0.190***
	(0.083)	(0.009)
ISCED=>V	3.159***	0.471***
	(0.117)	(0.013)
Gini WE	-0.259***	-0.027***
	(0.070)	(0.006)
ISCED III-IV*Gini WE	0.207**	0.023**
	(0.072)	(0.008)
ISCED=>V*Gini WE	0.305**	0.034**
	(0.102)	(0.011)
Public investment WE	0.116	0.023
	(0.132)	(0.013)
ISCED III-IV* Public investment WE	-0.247	-0.037*
	(0.141)	(0.016)
ISCED=>V* Public investment WE	-0.423*	-0.068***
	(0.184)	(0.021)
LogGDP WE	0.394*	-0.062**
	(0.200)	(0.020)
ISCED III-IV*LogGDP WE	-0.563**	0.055*
	(0.214)	(0.024)
ISCED=>V*LogGDP WE	-1.119***	0.011
	(0.281)	(0.032)
HEI WE	-0.008	0.000
	(0.005)	(0.000)
ISCED III-IV*HEI WE	-0.001	-0.001
	(0.005)	(0.001)
ISCED=>V*HEI WE	0.004	-0.001
	(0.007)	(0.001)
ISCED III-IV*Birth year*Gini WE	-0.206**	-0.028***
	(0.079)	(0.008)
ISCED=>V*Birth year*Gini WE	-0.366***	-0.043***
	(0.110)	(0.012)
ISCED III-IV*Birth year	0.042	-0.009
	(0.096)	(0.010)
ISCED=>V*Birth year	0.097	0.002
	(0.136)	(0.015)
Birth year*Gini WE	0.242**	0.023**
	(0.077)	(0.007)
Birth year	0.047	0.023**
	(0.093)	(0.008)
Constant	11.693***	0.067***
	(0.097)	(0.011)
Var(3rd level, country)	0.000***	0.000***
	(0.000)	(0.000)

Table A23: Adding the 3-way interaction in M3

	Years of schooling	Probability of obtaining a tertiary degree
Var(2nd level, country*birth year)	0.332***	0.003***
	(0.028)	(0.000)
Var(ISCED III-IV)	0.718***	0.008***
	(0.053)	(0.001)
Var(ISCED=>V)	0.331***	0.002***
	(0.033)	(0.000)
Cov(ISCED III-IV, ISCED=>V)	0.450	0.003
	(0.035)	(0.000)
Cov(ISCED III-IV, Constant)	-0.307	-0.001
	(0.027)	(0.000)
Cov(ISCED=>V, Constant)	-0.464	-0.003
	(0.038)	(0.000)
Var(Residual)	9.439***	0.196***
	(0.023)	(0.000)
N	338479	353551
Country	32	32
Country*birth year	687	714
AIC	1722380	428695.4
BIC	1723195	429514.4

Notes: all the models control for survey, round and country fixed effects.