Does Regime Change Affect Intergenerational Mobility?

Evidence from German Reunification

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Abstract

This study uses the natural experiment of German reunification and a difference-in-differences approach to test whether the political and economic transition in East Germany in 1990 affected intergenerational occupational and educational mobility. Applying data from the German Socio-Economic Panel Study (SOEP), I show that German reunification did neither strongly affect occupational nor educational mobility. These findings are robust to operationalizing social origin in various ways. Admittedly, reunification may have had small effects on occupational and educational mobility that cannot be uncovered with data currently available. However, my findings rule out that there were large effects of German reunification on intergenerational mobility. These findings are at odds with theories that argue that institutions strongly affect intergenerational mobility.

Keywords

intergenerational mobility; regime change; German reunification; difference-in-differences
Introduction

Children are influenced in their educational and occupational outcomes by their parents’ positions (Blau and Duncan, 1967; Sewell, Haller and Portes, 1969; Jencks et al., 1972; Featherman and Hauser, 1978). Many studies on intergenerational social mobility, that is the association between children’s and parents’ educational and socioeconomic positions, have examined cross-national variation in mobility (Erikson, Goldthorpe and Portocarero, 1979; Grusky and Hauser, 1984; Ganzeboom, Luijkx and Treiman, 1989; Wong, 1990; Erikson and Goldthorpe, 1992; Hout and Hauser, 1992; Ishida, Müller and Ridge, 1995; Breen, 2004; Jonsson et al., 2009; Corak, 2013). However, cross-national comparisons cannot identify the factors that causally affect intergenerational mobility because countries differ in more aspects from each other than any analysis could control for (Torche, 2015). In addition, institutions are not randomly distributed across countries as they are decided upon by governments.

Identifying the effects of political and economic institutions on intergenerational mobility requires exogenous variation in these institutions (Torche, 2015). Such variation is brought about through a rapid change in the institutional setting in one country. For instance, three recently published studies estimated the effects of extending compulsory schooling on intergenerational mobility in England and Wales (Sturgis and Buscha, 2015), Germany (Betthäuser 2017), and the United States (Rauscher, 2016). In addition, Pekkarinen, Uusitalo and Kerr (2009) estimated the effects of a Finnish school reform that extended comprehensive schooling and moved school tracking to a later age on income mobility. My study contributes to this growing body of research that identifies the factors influencing intergenerational mobility by using German reunification as a natural experiment to estimate the effects of regime change on occupational and educational mobility.

Regime change is one of the most radical forms of institutional change a country can experience. Therefore, estimating the effects of regime change on intergenerational mobility...
provides a powerful test of whether institutional change affects social mobility. Arguably, policy reforms within a political and economic system are likely to have smaller effects on social mobility than regime change. This makes the analysis of regime change valuable to research on intergenerational mobility in general.

Previous research analyzed changes in the associations between family socioeconomic background and occupational outcomes during the transition from a state socialist to a free-market economy in Hungary (Bukodi and Goldthorpe, 2010; Lippényi and Gerber, 2016), Russia (Gerber and Hout, 2004), and 13 Central and Eastern European (CEE) countries (Jackson and Evans, 2017). These four studies identified the effects of regime change on occupational mobility by comparing occupational mobility between a cohort preceding and a cohort following the transformation. Causal interpretations of the empirical analyses reported in these studies rested on the assumption that there were no confounding changes occurring in these countries simultaneously to the political and economic transformation. However, there were plenty of possible confounding changes that could have influenced intergenerational mobility, for instance, demographic changes related to the Second Demographic Transition (Lesthaeghe, 2014).

Using the natural experiment of German reunification in 1990, I address this shortcoming of previous research. Under the assumption that West Germany provides a valid control case for East Germany, analyzing this natural experiment allows me to implement a difference-in-differences (DD) approach comparing intergenerational mobility of East Germans before and after reunification to intergenerational mobility of the same cohorts of West Germans. By these means, this study improves on previous research in terms of causal inference and makes an important contribution to our understanding of the factors affecting intergenerational mobility.

Based on theories of social mobility, three opposing hypotheses can be formulated on how regime change may affect intergenerational mobility. First, the combination of market
transition and modernization theory predicts that intergenerational mobility should have increased due to reunification because of a reduction in educational inequality and increasing returns to education (Kerr et al., 1960; Treiman, 1970; Bell, 1973; Nee, 1989; Jackson and Evans, 2017). Second, intergenerational mobility could have decreased because of reunification due to the economic and political uncertainty accompanying the transformation process leading employers to rely more on informal channels and on social origin as a signal of ability (Diewald, 1995; Goldthorpe 1996; Gerber and Hout, 2004; Benton et al., 2015; Jackson and Evans, 2017). Third, some authors argued that intergenerational mobility does not vary across countries with different institutions (Lipset and Zetterberg, 1959; Featherman, Jones and Hauser, 1975; Grusky and Hauser, 1984; Erikson and Goldthorpe, 1992; Clark, 2014). Therefore, this perspective expects reunification not to have had any impact on social mobility. I test these competing theoretical predictions using data from the German Socio-Economic Panel Study (SOEP).

**Background**

**Historical Context**

Between 1949 and 1990 Germany was divided into two states. Whilst the Federal Republic of Germany (FRG) in West Germany became a capitalist society following the Second World War, the German Democratic Republic (GDR) in East Germany was a state-socialist country. In 1990, the GDR joined the FRG, in accordance with the West German constitution (Diewald, Goedicke and Mayer, 2006). Both the education system and the labor market showed institutional differences between the GDR and the FRG with possible consequences for the process of the intergenerational transmission of educational and socioeconomic advantage.

The education system of the GDR had a main school type, the *Polytechnische Oberschule*, which everyone attended up to the age they could leave school with a first degree
after ten years of schooling (Matthes, 2004; Mayer and Schulze, 2009). Contrary to that, West Germany had three different school tracks that led to different educational degrees. Notwithstanding these institutional differences, most children received a similar level of schooling either by leaving school after completing the *Polytechnische Oberschule* in the GDR or by completing one of the lower tracks in the West German education system (Mayer and Schulze, 2009). In both states, a well-developed vocational system facilitated the transition from school into the labor market (Solga and Konietzka, 1999). A major difference between the GDR and the FRG was the lower amount of children who received an *Abitur* degree (a requirement to study at university) in the GDR due to a strict limitation of the admittance of pupils to the track leading to the *Abitur* degree. Even more limited was access to university in the GDR and attending university often required joining the military or the ruling party (Mayer and Schulze, 2009). After reunification, East Germany adopted the West German education system. This resulted in a rapid educational expansion in terms of *Abitur* degrees in East Germany (Kesler, 2003). Given the central role of education in the status attainment process (Blau and Duncan, 1967; Sewell et al., 1969; Ishida et al., 1995) and the role of educational expansion in shaping intergenerational mobility (Breen, 2010; Pfeffer and Hertel, 2015; Sturgis and Buscha, 2015; Rauscher, 2016; Betthäuser, 2017), changes in the education system due to reunification could have affected social mobility.

The education system was not the only institution that was affected by reunification. The labor market situation for East Germans changed immediately following reunification. Their new labor market experience was characterized by a high level of unemployment, a shortage of vocational and internship positions, and a devaluation of the previously important political loyalty to the GDR regime (Kesler, 2003; Matthes, 2004; Solga, 2006; Mayer and Schulze, 2009). Nevertheless, there was a surprising amount of stability in terms of labor market transitions facilitated by the FRG recognizing the educational and vocational degrees obtained
in the GDR (Mayer, Diewald and Solga, 1999). The unemployment rate of East German men born in 1971, most of whom started vocational training before reunification, was only slightly higher than the unemployment rate of their West German counterparts (Mayer and Schulze, 2009). Unemployment of East German women from the same generation was higher than of West German women, although with ten percent still rather low (Mayer and Schulze, 2009). In addition, the large majority of East German men and women who were in employment remained in the same occupation between 1989 and 1993 (Mayer et al., 1999). These findings suggest that the transition to new jobs in the new economic system occurred rather smoothly for most East Germans. However, it is less clear how the entry into the labor market for the generation who made the school-to-work-transition after reunification was affected by the transformation and what role social origin played in this process. This research question is the focus of the present study.

*Theoretical Expectations of the Effects of Reunification on Intergenerational Mobility*

Social scientists argued that institutions had strong effects on educational and occupational mobility (Pfeffer, 2008; van de Werfhorst, 2015). This perspective expects that the changes in the institutional setting of East Germany brought about by reunification described in the previous section led to changes in intergenerational mobility. I distinguish between three competing hypotheses about the direction of these changes.

According to the first hypothesis, occupational and educational mobility increased due to German reunification because a high socioeconomic position of the parents provided less of an advantage after the regime change and under the new economic system. Modernization theory predicts a decline in the association between social origin and education due to the transition from a state-centered to a market economy (Kerr et al., 1960; Treiman, 1970; Bell, 1973). In addition, market transition theory argues that this transition is accompanied by an
increase in the returns to education (Nee, 1989). In combination, these two processes should lead to weaker associations between social origin and occupational outcomes in market transition economies such as East Germany (Jackson and Evans, 2017). Therefore, the combination of market transition and modernization theory predicts that German reunification reduced the intergenerational transmission of educational and socioeconomic advantage, i.e. led to increases in educational and occupational mobility.

The second hypothesis argues that occupational and educational mobility decreased due to German reunification because social origin influences educational and occupational outcomes more in cases in which other information is less valuable. During and after a regime change, other signals, such as educational degrees obtained in the old education system may be valued less by the new employers. The employers may therefore rely more on the information provided by the educational and socioeconomic positions of their parents as signals of applicants’ abilities (Goldthorpe, 1996). In addition, social networks and connections played a particularly important role in the labor market in the GDR (Diewald, 1995). These networks and social connections may also have played an important function in the transition to a new economic system. In line with this expectation, informal channels to find a job have been particularly important after reunification in East Germany (Benton et al., 2015). Moreover, Jackson and Evans (2017) argued that the removal of restrictions in terms of transmitting economic capital across generations and a reduction of efforts to increase the educational attainment of working class children after regime change contributed to a decrease in intergenerational mobility. There are therefore several reasons to expect that intergenerational mobility declined due to German reunification.

Finally, a third possibility is that intergenerational mobility does not vary across advanced, industrialized societies (Lipset and Zetterberg, 1959; Featherman et al., 1975; Grusky and Hauser, 1984; Erikson and Goldthorpe, 1992; Clark, 2014). This perspective
hypothesizes that institutions do not strongly affect social mobility and predicts that German reunification did not alter the intergenerational transmission of educational and socioeconomic advantage. This outcome could also be observed if processes of increasing and decreasing social mobility occurred at the same time. In this case, we will also observe no effect of reunification on intergenerational mobility.

These three competing hypotheses guide the empirical analysis estimating the effect of German reunification on occupational and educational mobility. Previous research, relying on before- and after-comparisons of regime changes in Russia, Hungary, and other CEE countries found a decline in social mobility as a result of regime change (Gerber and Hout, 2004; Bukodi and Goldthorpe, 2010; Jackson and Evans, 2017).¹

There is no study estimating the effect of German reunification on occupational mobility. On the one hand, most studies on intergenerational occupational mobility in Germany included only West Germany (Ishida et al., 1995; Müller and Pollak, 2004; Breen and Luijkkx, 2007; Mayer and Aisenbrey, 2007). On the other hand, research on occupational mobility in East Germany after reunification did not compare social mobility between East and West Germany (Solga, 2006). The few examples of research that included both East and West Germans in the same analysis focused mostly on cohorts who entered the labor market before reunification and did not identify the effect of reunification on occupational mobility (Mayer and Solga, 1994; Pollak and Müller, 2004; Grätz and Pollak, 2016; Hertel, 2017).

There are, however, two studies that compared educational mobility in East and West Germany between pre- and post-reunification cohorts. Kesler (2003) estimated differences in the association between social origin and educational attainment before and after reunification in East and West Germany. She found an increase in educational mobility in East Germany for the post-reunification cohort. Modelling the transmission of education across three generations, Ziefle (2016) found weaker associations between grandparental resources and children’s
education conditional on parental resources for both the pre- and the post-reunification cohort in the GDR than for the same cohorts in the FRG. Her study did not report any estimates of the associations between parental resources and children’s educational outcomes without controlling for grandparental resources. Both Kesler (2003) and Ziefele (2016) distinguished between East and West Germany based on the country of residence at the time of the survey. Contrary to that, I use information on where East and West Germans lived before reunification. This procedure allows me to avoid bias arising from movement between East and West Germany after reunification as these movement decisions were endogenous to reunification.

Data and Methods

Data

The analysis uses data on a sample men and women who were born in Germany between 1966 and 1981 from the German Socio-Economic Panel Study (SOEP; version 33.1, DOI: 10.5684/soep.v33.1) (Wagner, Frick and Schupp, 2007). The SOEP is one of the longest-running panel studies worldwide. The survey is based on random samples of both East and West German households. The sampling of West German households started in 1984. The sampling of East German households started in June 1990, some months ahead of German reunification. For that reason, these data are ideally suited to estimate the effect of reunification on intergenerational mobility. The analysis uses data combining information from the waves covering the years 1999 to 2016.

Variables

Occupation and education. I use two variables to operationalize respondent’s occupation around age 34. For both variables, I use information for each respondent between ages 33 and 35 in order to reduce measurement error. The first measure is the occupational status of the
respondent’s job measured via the International Socio-Economic Index of occupational status (ISEI) (Ganzeboom, de Graaf and Treiman, 1992; Ganzeboom and Treiman, 1996). I use the highest value observed between ages 33 and 35 as the measure of occupational status. I standardize the resulting measure to have a mean of 0 and a standard deviation of 1.³ The second measure is respondent’s highest class position, measured within the same age range as ISEI. I construct a dummy variable which is coded 1 if the highest class position of a respondent between ages 33 and 35 was in the service class as it is defined in the EGP (Erikson Goldthorpe Portocarero) class schema (EGP classes I and II) and zero for all other classes (Breen, 2004; Erikson and Goldthorpe, 1992).⁴ In addition, I use years of education as a measure of educational attainment. In line with the occupational measures, I use the highest value reported between ages 33 and 35.

**Social origin.** Different measures of social origin capture different dimensions of family background that may have different associations with occupational outcomes and educational attainment (Björklund and Jäntti, 2000; Torche, 2011; Bukodi and Goldthorpe, 2013; Hout, 2015; Breen, Mood and Jonsson, 2016; Mood, 2017). Therefore, I employ and compare results for three measures of social origin. First, I use a measure of parental occupational status (Parental ISEI) when the respondent was around 15 years old (Ganzeboom et al., 1992; Ganzeboom and Treiman, 1996). Following the dominance approach, the highest occupational status of one of the parents is used in the analysis (Erikson 1984). Similar to respondent’s occupational status, I standardize this variable to have a mean of 0 and a standard deviation of 1. Second, I employ a measure of parental social class, measured as well when the respondent was 15 years old. I construct a dummy variable which is coded as 1 if one of the parents had an occupation in the service class of the EGP class schema (EGP classes I and II) (Erikson and Goldthorpe, 1992; Breen, 2004) and 0 for all other classes or if both parents were unemployed.⁵ Finally, I use parental education based on the highest educational degree achieved by one of
the parents as a third measure of social origin. This variable is a dummy variable that is coded as 1 if one of the parents obtained the highest German secondary school leaving certificate (Abitur) or an equivalent qualification and 0 for all other educational degrees.

Country of residence in 1989 (Origin country). GDR and FRG origin refer to the state a respondent lived in the year preceding reunification (1989). After 1989 there was considerable movement between East and West Germany. The variable I use is not affected by the endogeneity of these movement decisions. Respondents who lived in the GDR are coded as having a GDR origin (East Germans) and respondents who lived in the FRG are coded as having a FRG origin (West Germans). There are some respondents who lived abroad in 1989; they are dropped from the analysis.

Cohorts. I split the sample used in the analysis into four cohorts. The comparison of these cohorts between East and West Germany allows me to identify the effect of reunification on intergenerational mobility. Ideally, I would calculate separate estimates for each birth year. However, small sample sizes make it necessary to agglomerate several birth years into larger birth cohorts. I define the following four birth cohorts: Cohort 1: 1966–1969, Cohort 2: 1970–1973, Cohort 3: 1974–1977, and Cohort 4: 1978–1981. Table 1 reports the number of respondents in each cohort. In the following, I explain in detail why the cohorts were defined in this way.

[COLUMN 1 ABOUT HERE]

Cohorts 1 and 2 include those respondents who experienced mostly the entry into the labor market before reunification and cohorts 3 and 4 include those respondents who mostly entered the labor market after reunification. This splitting of the sample assumes a crucial age for making the school-to-work transition at age 16, in line with the education systems in the
GDR and in the FRG. Age 16 is the usual age of finishing lower secondary education, the so-called *Hauptschule* in the FRG and the *Polytechnische Oberschule* in the GDR. Certainly parents influence their children’s educational performance before that age but these influences are unlikely to have been affected by German reunification. What can have been affected by reunification, however, is the transition to the labor market that happens at or after age 16. The split of the cohorts in the discussed way allows me to isolate the effect of reunification on intergenerational mobility.

The precise cut-off to define the pre- and the post-reunification cohorts is, and has to be, arbitrarily chosen by the researcher. Every choice is going to misclassify some respondents but a choice has to be made in order to proceed with the analysis and I believe that this definition minimizes the misclassification. In any case, it is crucial to apply a birth year-based approach and not to define cohorts based on their year of labor market entry. The latter would lead to sample selection bias because those who stay longer in education enter the labor market at a later age. In addition, reunification may have affected the timing of labor market entry. The birth year-based approach ensures that the definition of the pre- and the post-reunification cohorts is not affected by reunification. Furthermore, reunification may have affected the decision to stay longer in education (Kesler, 2003). Defining a later point of labor market entry would bias the estimator by conditioning on the endogenous process of continuing education after age 16. Putting the threshold at age 16 ensures that the analysis does not condition on education as everyone attends school until this age.

Cohort 1 is chosen as a second pre-reunification cohort that allows me to provide some indication on the plausibility of the parallel trends assumption of the DD estimator (discussed below) by comparing intergenerational mobility between cohorts 1 and 2. Finally, Cohort 4 is chosen as a second post-reunification cohort allowing me to differentiate between the short-term and the long-term consequences of reunification by comparing cohorts 3 and 4.
Gender. I include gender as a control variable in all models. In additional analyses, I estimated intergenerational mobility separately for men and women. I did not find statistically significant gender differences in the effects of reunification on social mobility although the sample sizes in the older cohorts are quite low. Therefore, it is difficult to draw strong conclusions about gender differences in the impact of German reunification on occupational and educational mobility. I report these estimates in Tables S1 to S6 in the Online Supplement.

Table 2 reports descriptive statistics on all variables used in the analysis. There are missing values on both independent and dependent variables, in particular on the social origin variables. For that reason, I apply a multiple imputation routine using chained equations and 30 imputations. Following recommendations in the literature, I do not regress on imputed values of dependent variables (von Hippel 2007). Therefore, sample sizes differ across models using different dependent variables. As a robustness check, I estimated all models on the non-imputed sample. Results of these models (reported in Tables S7 to S9 in the Online Supplement) are virtually identical to those obtained using the multiple imputation models.

Table 2 also reports descriptive statistics separately for each cohort. These comparisons show that the four cohorts differ very little on observed characteristics. In particular, respondents from the different cohorts are virtually identical in their occupational statuses and educational attainments. This is because the cohorts I look at attended school and entered the labor market after the periods of educational expansion and occupational upgrading. The four cohorts differ more on the social origin variables. Even these differences are, however, small between the cohort immediately preceding (cohort 2) and the cohort immediately following reunification (cohort 3). What is more, the difference-in-differences approach controls for
changes across cohorts by not only comparing across cohorts but also by comparing between East and West Germany. Therefore, any changes across cohorts that occurred simultaneously in East and West Germany are controlled for in this approach.

Research Design

The empirical analysis is motivated by the idea that German reunification provides a natural experiment that can be used to estimate the consequences of regime change for intergenerational mobility. This approach requires that the timing of German reunification was random. The assumption is needed so that respondents who belong to the cohort(s) who entered the labor market immediately before and the cohort(s) who entered the labor market immediately after reunification do not differ on unobserved characteristics (Table 2 shows little differences on observed variables). There is enough historical evidence to support this assumption. The timing of Germany reunification was completely unforeseeable (Diewald et al., 2006). There is no reason why the cohorts used to identify the effects of German reunification should differ in other aspects than their exposure to different institutional regimes.

Under this assumption, the effect of regime change on intergenerational mobility can be identified using a difference-in-differences (DD) approach (Angrist and Pischke, 2009; Morgan and Winship, 2015). The DD estimator compares the two pre- and the two post-reunification cohorts between East and West Germany. For instance, comparing cohorts 2 and 3 the DD estimate of the effect of reunification $\delta$ can be calculated in the following way:

$$
\delta = (\text{Intergenerational Mobility}[\text{Cohort 3, East}] - \text{Intergenerational Mobility}[\text{Cohort 2, East}])
- (\text{Intergenerational Mobility}[\text{Cohort 3, West}] - \text{Intergenerational Mobility}[\text{Cohort 2, West}])
$$

The DD estimator controls for simultaneously occurring events that were shared by East and West Germans. The DD estimator, however, does not control for simultaneously occurring
events which were unique to East Germans (or West Germans); that is, however, also not the aim of the analysis. Different reforms were introduced in the context of reunification that affected the educational and occupational outcomes of East Germans. These reforms are all part of the effect of regime change that this analysis estimates.7

The interpretation of the DD estimator as identifying the causal effect of reunification on intergenerational mobility rests on several strong, untestable assumptions. The first assumption that has to be met is known as the Stable Unit Treatment Value Assumption (SUTVA). SUTVA states that the values of a treated person should not be influenced by the values of all other persons (Morgan and Winship, 2015). This assumption could be violated if the movement of East Germans to West Germany influenced the labor market outcomes of West Germans. However, for the following two reasons the assumption is plausible. First, the occupational attainment of West Germans may not have been affected by the behavior of East Germans if there were enough jobs available for West Germans. The lower unemployment rate in West than in East Germany makes this assumption plausible. Second, West Germans could also move to East Germany after reunification. Even if there had been a scarcity of jobs in West Germany following reunification, there were also new jobs emerging for West Germans in East Germany. For these two reasons, it is not obvious why reunification should have affected intergenerational mobility of West Germans. Nevertheless, it has to be kept in mind that the interpretation of the DD estimator relies on the validity of SUTVA.

In addition, the German case provides a further advantage over previous research precisely because East and West Germans worked in the same labor market after reunification. A major concern in previous research relying on before- and after-comparisons to estimate the effect of regime change on intergenerational mobility was that the estimates of the effect of regime change could have been confounded by economic recessions occurring simultaneously to regime change (Jackson and Evans, 2017). The DD estimate employed in this study controls
for the possible confounding influence of the recession after reunification as both East and West Germans experienced this due to their common economy after reunification.

The second assumption underlying the comparison of cohort differences between East and West Germany is the assumption that intergenerational mobility of East Germans would have experienced the same trend as intergenerational mobility of West Germans in the absence of reunification. This parallel trends assumption is also untestable. However, I provide some check of the plausibility of this assumption by comparing intergenerational mobility for East and West Germans between the two cohorts preceding German reunification (Cohorts 1 and 2). As can be seen from these comparisons (reported as part of the results in Tables 3 to 5), East and West Germany experienced the same trend in social mobility before reunification. In both East and West Germany occupational and educational mobility did not change between these two cohorts. For that reason, the parallel trends assumption is likely to hold.

I distinguish between the short- and long-term consequences of German reunification. Intergenerational mobility may have changed rather gradually than sharply after the transition (Riley, Kahn and Foner, 1994; Rauscher, 2016). For this reason, I compare the estimates of the associations between social origin and occupational and educational outcomes between the two cohorts following reunification (Cohorts 3 and 4).

I use OLS regression models to predict the associations between social origin and occupational status (ISEI) as well as those between social origin and educational attainment (measured through years of education). Linear Probability Models (LPM) are employed to predict the associations between social origin and access to the service class. I employ LPM because of the clear interpretation of the estimates and their comparability across different samples (Angrist and Pischke, 2009; Mood, 2010). For all estimates I report 95% confidence intervals. All analyses were conducted using Stata 15.1.
Results

I present the main results of my analysis in Tables 3 to 5. These tables report the estimates of intergenerational mobility obtained using the three indicators of social origin and the two occupational outcome variables as well as educational attainment (years of education). I discuss the estimates separately for each outcome.

[TABLE 3 ABOUT HERE]

*Occupational status.* Table 3 reports estimates of social mobility based on models regressing respondent’s occupational status, measured by ISEI, on indicators of social origin. All models are estimated separately so that the total association between each indicator of social origin and respondents’ occupational status (ISEI) is estimated. The models are estimated separately for each cohort and country of residence in 1989.

The central finding of the comparisons across cohorts and origin countries before and after reunification is a pattern of general similarity in the association between social origin and occupational status. Within the East German sample, the immediate pre-reunification cohort (cohort 2) has an association between parental and own occupational status of 0.26 meaning that each one standard deviation increase in parental occupational status corresponds to an about one fifth of a standard deviation increase in own occupational status. The association increases only slightly to 0.32 and 0.43 for the post-reunification cohorts. In addition, the confidence intervals of all four cohorts overlap.

These findings suggest that no change in intergenerational mobility occurred across cohorts in East Germany. In West Germany, the association between parental and respondent’s occupational position varies little across all four cohorts. Therefore, the DD estimates are close to zero or, at least, substantively very small. For instance, comparing cohorts 2 and 3 the effect
of reunification on occupational mobility $\delta$ is estimated as $\delta = (0.32 - 0.26) - (0.38 - 0.40) = 0.08$ (standard deviations). These findings imply that German reunification did not affect intergenerational mobility. Results are robust to using parental social class and parental education as measures of social origin and to looking at the long-term consequences of reunification by focusing on cohort 4 instead of on cohort 3.

[TABLE 4 ABOUT HERE]

Social class. Table 4 reports estimates using social class position as the outcome variable. The estimates are taken from LPM predicting an occupation in the service class (EGP classes I and II). Findings for this outcome are very similar to those for occupational status. In East Germany, there was a no change in intergenerational mobility across cohorts. Differences between cohorts are small in size and the confidence intervals of all four cohorts overlap. In addition, there was no change in social mobility across the four cohorts in West Germany. Hence, the DD estimates are virtually zero. For instance, using parental social class as an indicator of social origin and comparing cohorts 2 and 3 gives a DD estimate of $\delta = (0.23 - 0.26) - (0.27 - 0.33) = 0.03$ (percentage points). The finding of virtually no effect of reunification on social mobility is found using all three indicators of social origin and comparing both post-reunification to both pre-reunification cohorts.

[TABLE 5 ABOUT HERE]

Educational attainment. Finally, I analyze years of education as an outcome variable (Table 5). I find no clear trend across cohorts in the associations between social origin and educational attainment in East Germany. The estimates using parental occupational status as a
measure of social origin indicate a small decrease in educational mobility between the two pre-
and the two post-reunification cohorts. However, the result is not robust as it is not found using
the other two measures of social origin. In addition, there is neither a clear indication of change
in educational mobility across West German cohorts. The DD estimate using parental education
as a measure of social origin and comparing cohorts 2 and 3 is \( \delta = (2.39 - 2.34) - (3.20 - 3.17) \)
= 0.02 (years of education) and therefore, very close to zero. For that reason, educational
mobility is unlikely to have been affected by reunification, a result that is supported by looking
at cohort 4 as well as by obtaining the DD estimates using the other measures of social origin.

Robustness Check
Using four instead of two cohorts is appealing for theoretical reasons. However, the precision
of the estimates can be increased by estimating the effects of German reunification using just
two cohorts. In other words, I estimated models that included cohorts 1 and 2 as the pre-
reunification cohort (i.e. respondents born between 1966 and 1973) and models that included
cohorts 3 and 4 as the post-reunification cohort (i.e. respondents born between 1974 and 1981).
These models are reported in Tables S10 to S12 in the Online Supplement. The DD estimates,
which can be derived from these models, are very small in size. Therefore, the comparison
between these two, bigger pre- and post-reunification cohorts between East and West Germany
fully supports the conclusion that German reunification did neither affect occupational nor
educational mobility.

Discussion
This study contributes to a small but growing literature identifying the factors that causally
influence intergenerational mobility. This is the first study to exploit the natural experiment of
German reunification for this purpose. By these means, this study contributes to the literature
analyzing the effects of regime change on social mobility (Gerber and Hout, 2004; Bukodi and Goldthorpe, 2010; Lippényi and Gerber, 2016; Jackson and Evans, 2017). The methodological contribution of my study to this literature is an improvement in terms of the identification of the effect of regime change on intergenerational mobility through employing a difference-in-differences approach.

My analysis revealed that intergenerational occupational and educational mobility were, to a large degree, not affected by the regime change in East Germany in 1990. Previous research only estimated the effect of German reunification on educational but not on occupational mobility. In her study, Kesler (2003) found a slight increase in educational mobility after reunification. However, she did not have an exogenous definition of country of origin. This methodological difference could account for the differences in results between her study and mine.

The interpretation of the DD estimates reported in the analysis rest on the assumptions that SUTVA is not violated and that West Germany provides a valid control case for East Germany. These assumptions are plausible but they cannot be empirically tested. The analysis found mostly no differences between the DD estimates and the estimates based on the naïve before- and after-comparison of East German cohorts as there were no changes in intergenerational mobility across cohorts in West Germany. This result implies that, in the German case, there were no confounding time-varying trends that biased the naïve before- and after-comparison. Whether results are generalizable to other cases remains an open question that is best answered by applying a DD estimator to other case studies.

The question why the findings from my study differ from those of previous research on other countries, which mostly found a decrease in intergenerational mobility due to regime change (Gerber and Hout, 2004; Bukodi and Goldthorpe, 2010; Lippényi and Gerber, 2016; Jackson and Evans, 2017), also calls for applications of the DD estimator to other contexts.
Differences in findings can be due to actual underlying differences across countries. However, without equalizing the methods used to analyze different cases, it cannot be ruled out that the observed variation across countries is due to methodological differences. As discussed above, it is a possibility that my research design controls better for the confounding influence of economic crises than previous research.

Independent of potential cross-country variation in the effects of regime change on intergenerational mobility, findings of the analysis of German reunification are of general importance for research on social mobility. First, most research on social mobility is concerned with describing the variation of social mobility over time and across countries. The findings presented here suggest that the influence of institutions on cross-national variation in social mobility has to be qualified. My study shows that regime change does not always affect social mobility. An implication of this finding is that cross-country differences in intergenerational mobility may not be due to differences in institutions across countries.

Second, this study has provided an important methodological innovation using a natural experiment in social mobility research, a field dominated by descriptive analyses. It adds to other examples of research using quasi-experiments to analyze the effects of policy reforms on social mobility (Pekkarinen et al., 2009; Sturgis and Buscha, 2015; Rauscher, 2016; Betthäuser, 2017). I hope that future research will continue in this direction so that, in combination with the equally important descriptive analyses, we will obtain a picture of the evolution of social mobility from different perspectives.

The main limitation of the present analysis is inherent to the chosen methodology that relies on one natural experiment in one specific institutional context. The results of a single case study may not generalize to other settings (Torche, 2015). The main suggestion for future research is therefore to exploit other natural experiments in order to evaluate their consequences for intergenerational mobility. A larger body of research using these approaches
will allow us to provide a more reliable answer to the question of whether and how institutional change affects intergenerational mobility.

Notwithstanding this limitation, the results of this study question the idea that political and economic transformations necessarily affect social mobility. Even if the results of the present case study were not generalizable to other political and economic transitions, they suggest that political and economic changes do not always lead to changes in intergenerational mobility. These findings provide challenges to institutionalist theories that need to be expanded in order to account for when and under which circumstances social mobility is affected by institutional change.
Notes

1. Previous studies differed in taking a cohort- or a period-approach to estimate the effects of regime change on social mobility. Similar to Bukodi and Goldthorpe (2010), my study takes a cohort approach. Contrary to that, Gerber and Hout (2004), Lippényi and Gerber (2016), and Jackson and Evans (2017) analyzed changes in social mobility across periods, that is to say their analyses focused on cohorts who entered the labor market before regime change took place. Previous research found a strong correlation between the occupational position held before and after reunification in East Germany (Mayer and Schulze, 2009). Therefore, I focus on how German reunification affected intergenerational mobility across cohorts. To my mind, this is the more interesting question for theories of social mobility. This approach is also in line with a previous finding in educational mobility research that changes in educational mobility are driven by changes across cohorts (Breen and Jonsson, 2007).

2. This age bracket was chosen to ensure that for all respondents’ occupational outcomes were measured at the same age. Usually studies of social mobility measure occupational outcomes at later ages. The most recent cohort in my data, however, was not older at the last survey wave. For that reason, only occupational outcomes at this rather young age can be compared. My analysis may overestimate occupational mobility if the influence of social origin on occupation increases over the life course. However, occupation is largely stable over the life course in Germany (Manzoni, Härkönen and Mayer, 2014).

3. I also estimated models in which I standardized the measure of occupational status within each cohort to control for occupational upgrading across cohorts. This standardization within cohorts led to virtually identical results (results are reported in Table S13 in the Online Supplement).
4. Gerber and Hout (2004) argued that it was important to distinguish between a position in EGP class I or II. For that reason, I estimated models predicting a class position in EGP class I. These models led to the same results as the models predicting a class position in EGP classes I or II (estimates are reported in Table S14 in the Online Supplement).

5. I use dummy variables to operationalize parental social class and parental education as the statistical power (due to small sample sizes) is too low to employ more complex measures of social origin.


7. I estimate the effect of reunification on intergenerational mobility. Therefore, it is crucial not to control for variables that are endogenous to this process, i.e. variables that lie on the causal pathways running from social origin to respondents’ occupational and educational outcomes and which could have been affected by reunification. Respondent’s educational attainment and the occupational status (or class position) of their first job are such endogenous variables. Including them as control variables introduces overcontrol bias. For the same reason, I estimate models in which I include only one indicator of social origin. Including several indicators of social origin into the same model leads to overcontrol bias.
Acknowledgements

The data used in this publication were made available to me by the German Socio-Economic Panel Study (SOEP) at the German Institute for Economic Research (DIW), Berlin. Earlier versions of this study were presented at the Department of Social Policy and Intervention and at the Department of Sociology, University of Oxford, at the Annual Meeting of the American Sociological Association in Seattle, at the summer meeting of the Research Committee 28 of the International Sociological Association in Bern (all in 2016), and at the first conference of the Akademie für Soziologie in Munich (2018). I thank participants at these occasions and, in particular, Bastian Betthäuser for their comments.
References


Hertel, F. R. (2017). *Social Mobility in the 20th Century: Class Mobility and Occupational Change in the United States and Germany*. Wiesbaden: Springer VS.


### Table 1. Number of respondents by cohort and country of residence in 1989 (referred to as “origin”)

<table>
<thead>
<tr>
<th>Cohort</th>
<th>GDR origin (East Germany)</th>
<th>FRG origin (West Germany)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1: Born 1966–1969</td>
<td>413</td>
<td>1,273</td>
</tr>
<tr>
<td>Cohort 3: Born 1974–1977</td>
<td>578</td>
<td>1,177</td>
</tr>
<tr>
<td>Cohort 4: Born 1978–1981</td>
<td>621</td>
<td>1,185</td>
</tr>
</tbody>
</table>

*Source:* German Socio-Economic Panel Study (SOEP), version 33.1 (DOI: 10.5684/soep.v33.1).
Table 2. Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Male</td>
<td>0.45</td>
<td>0.50</td>
<td>6,519</td>
<td>0.48</td>
<td>0.50</td>
</tr>
<tr>
<td>GDR (German Democratic Republic) origin</td>
<td>0.30</td>
<td>0.46</td>
<td>6,519</td>
<td>0.24</td>
<td>0.43</td>
</tr>
<tr>
<td>Occupational status around age 34 (ISEI, standardized)</td>
<td>0.00</td>
<td>1.00</td>
<td>5,800</td>
<td>–0.03</td>
<td>0.99</td>
</tr>
<tr>
<td>Service class (EGP class schema) around age 34</td>
<td>0.45</td>
<td>0.50</td>
<td>5,800</td>
<td>0.42</td>
<td>0.49</td>
</tr>
<tr>
<td>Years of education around age 34</td>
<td>12.94</td>
<td>2.74</td>
<td>6,519</td>
<td>12.68</td>
<td>2.60</td>
</tr>
<tr>
<td>Parental occupational status (ISEI, standardized)</td>
<td>0.00</td>
<td>1.00</td>
<td>5,870</td>
<td>–0.11</td>
<td>0.97</td>
</tr>
<tr>
<td>Parent service class (EGP class schema)</td>
<td>0.38</td>
<td>0.49</td>
<td>5,870</td>
<td>0.34</td>
<td>0.47</td>
</tr>
<tr>
<td>Parent Abitur (Completion of the upper track in secondary school)</td>
<td>0.20</td>
<td>0.40</td>
<td>5,988</td>
<td>0.13</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Notes: Parent service class indicates a high level of parental occupation. Parent Abitur indicates a high level of parental education.

Source: German Socio-Economic Panel Study (SOEP), version 33.1 (DOI: 10.5684/soep.v33.1).
Table 3. Estimates of intergenerational mobility from OLS regression models predicting occupational status (ISEI)

<table>
<thead>
<tr>
<th></th>
<th>GDR origin (East Germany)</th>
<th>FRG origin (West Germany)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cohort 1</td>
<td>Cohort 2</td>
</tr>
<tr>
<td>Parental occupational status</td>
<td>0.33*</td>
<td>0.26*</td>
</tr>
<tr>
<td></td>
<td>[0.24, 0.41]</td>
<td>[0.16, 0.37]</td>
</tr>
<tr>
<td>Parent service class</td>
<td>0.60*</td>
<td>0.53*</td>
</tr>
<tr>
<td></td>
<td>[0.40, 0.79]</td>
<td>[0.32, 0.75]</td>
</tr>
<tr>
<td>Parent Abitur</td>
<td>0.53*</td>
<td>0.68*</td>
</tr>
<tr>
<td></td>
<td>[0.26, 0.79]</td>
<td>[0.43, 0.93]</td>
</tr>
<tr>
<td>N</td>
<td>386</td>
<td>346</td>
</tr>
<tr>
<td></td>
<td>1,153</td>
<td>843</td>
</tr>
</tbody>
</table>

Notes: Each cell reports an estimate of the association between an indicator of social origin and the outcome variable estimated on a separate model that includes a control for respondent’s sex (not shown). 95% confidence intervals around the coefficients are reported in square brackets.

Source: German Socio-Economic Panel Study (SOEP), version 33.1 (DOI: 10.5684/soep.v33.1).

† P < .10, * P < .05.
Table 4. Estimates of intergenerational mobility from Linear Probability Models predicting service class position

<table>
<thead>
<tr>
<th></th>
<th>GDR origin (East Germany)</th>
<th>FRG origin (West Germany)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental</td>
<td>0.15*</td>
<td>0.11*</td>
</tr>
<tr>
<td>occupational status</td>
<td>[0.10, 0.19]</td>
<td>[0.06, 0.17]</td>
</tr>
<tr>
<td>Parent service class</td>
<td>0.28*</td>
<td>0.26*</td>
</tr>
<tr>
<td></td>
<td>[0.18, 0.38]</td>
<td>[0.16, 0.37]</td>
</tr>
<tr>
<td>Parent Abitur</td>
<td>0.22*</td>
<td>0.34*</td>
</tr>
<tr>
<td></td>
<td>[0.08, 0.35]</td>
<td>[0.22, 0.46]</td>
</tr>
<tr>
<td>N</td>
<td>386</td>
<td>346</td>
</tr>
</tbody>
</table>

Notes: Each cell reports an estimate of the association between an indicator of social origin and the outcome variable estimated on a separate model that includes a control for respondent’s sex (not shown). 95% confidence intervals around the coefficients are reported in square brackets.

Source: German Socio-Economic Panel Study (SOEP), version 33.1 (DOI: 10.5684/soep.v33.1).

† P < .10, * P < .05.
Table 5. Estimates of intergenerational mobility from OLS regression models predicting years of education

<table>
<thead>
<tr>
<th></th>
<th>GDR origin (East Germany)</th>
<th>FRG origin (West Germany)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental occupational status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent service</td>
<td>1.54*</td>
<td>1.23*</td>
</tr>
<tr>
<td>class</td>
<td>[1.11, 1.98]</td>
<td>[0.76, 1.69]</td>
</tr>
<tr>
<td>Parent Abitur</td>
<td>1.65*</td>
<td>2.34*</td>
</tr>
<tr>
<td></td>
<td>[1.06, 2.24]</td>
<td>[1.83, 2.86]</td>
</tr>
<tr>
<td>N</td>
<td>413</td>
<td>365</td>
</tr>
</tbody>
</table>

Notes: Each cell reports an estimate of the association between an indicator of social origin and the outcome variable estimated on a separate model that includes a control for respondent’s sex (not shown). 95% confidence intervals around the coefficients are reported in square brackets.

Source: German Socio-Economic Panel Study (SOEP), version 33.1 (DOI: 10.5684/soep.v33.1).

† P < .10, * P < .05.