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Fostering Equality of Opportunity? Compulsory Schooling Reform and Social Mobility in Germany

Bastian Betthäuser*

Department of Social Policy and Intervention, Barnett House, 32 Wellington Square, Oxford OX1 2ER, UK

*Corresponding author. Email: bastian.betthaeuser@spi.ox.ac.uk

Abstract

There is an ongoing debate in the field of social mobility research about whether intergenerational social mobility can be increased by way of education policy. However, evidence on the effects of specific education policies on social mobility continues to be scarce. This article analyses the effect of one specific policy reform, the extension of compulsory schooling in Germany, which has been argued to have led to a decrease in educational inequality and an increase in social mobility. Using a difference-in-difference design, the article exploits the variation in the timing of the reform across German states to estimate the reform effect on the educational attainment and labour market chances of individuals from different social class backgrounds. We find that the reform resulted in a substantial narrowing of the gap in educational attainment between different social origin groups. This decline in educational inequality further translated into a reduction in the inequality in labour market chances between people from different social class backgrounds, thus increasing intergenerational social mobility. Our findings suggest that educational policy can lead to substantial increases in intergenerational social mobility, which may have been overlooked in past research on societal-level, long-run trends in social mobility.

Introduction

It is well known that, across all European societies, children from low social class backgrounds have substantially lower chances of obtaining a position in the middle or upper classes than is the case for people from higher social class backgrounds (Erikson and Goldthorpe, 1992; Breen, 2004). As a result, social class inequalities and associated inequalities in economic security, health, and well-being tend to be reproduced across generations. This is highly problematic both from a normative as well as from an efficiency perspective. Normatively, it can be argued that in a fair society all people should have the same life chances, irrespective of their parental class backgrounds (Rawls, 1971). From

an efficiency perspective, it is desirable that an individual's labour market position should be solely determined by her talent and true ability, and not depend on her parents' financial resources, network, or social capital (Gray and Moshinsky, 1935). Tackling the inequality of opportunity between people from different social class backgrounds remains a fundamental challenge for all European governments. But still very little is known about the effectiveness of different social policies in achieving this aim.

In academic and policy circles, as well as in public discourse, education policy is widely seen as the most effective policy tool to increase intergenerational social mobility (OECD, 2010: p. 183; HM Government, 2011;

Saunders, 2012). This belief is based on the observation that a substantial part of the inequality in the labour market prospects of people from different social class backgrounds can be attributed to an inequality in the educational attainment between these groups (Ishida et al., 1995; Erikson and Jonsson, 1996; Breen and Karlson, 2014). However, some scholars of social stratification have argued that education policies may in fact not be the most effective means to increase intergenerational social mobility (Goldthorpe, 2007, 2016; Sturgis and Buscha, 2015). These scholars highlight that despite considerable educational reforms in European societies over the past decades, there has been little improvement in intergenerational social mobility in these societies. Yet, as much as one should not assume that educational policy is an effective tool for increasing intergenerational social mobility, one also should not rely on evidence of long-term, societal-level trends in social mobility to conclude that past educational reforms have failed to achieve this aim. Instead, what is needed are detailed analyses of specific educational policy reforms and their effects on educational and labour market inequalities between different societal groups.

One specific educational policy reform that has been put forward as a potential means of reducing educational inequality between people from different social class backgrounds is the extension of compulsory schooling (Müller and Haun, 1994: p. 7; Müller and Pollak, 2004: p. 84). As discussed in further detail below, increasing the length of compulsory schooling is thought to reduce the relative cost of attaining an educational qualification above the most basic school-leaving qualification (ibid.). This in turn is thought to incentivize particularly the most disadvantaged individuals—who face considerable financial constraints as they complete their education—to stay in school longer and to attain a mid- or upper-secondary qualification. The resulting decrease in educational inequality may further be expected to equalize the labour market prospects of people from different social class backgrounds, thus increasing intergenerational social mobility.

While these arguments are theoretically plausible, they have thus far not been subject to rigorous empirical testing. As noted above, existing research on over-time change in social mobility in European societies has generally focused on long-term trends at the national level, which has prevented it from drawing conclusions on specific reform effects (Erikson and Goldthorpe, 1992; Breen, 2004; Müller and Pollak, 2004). An exception is the evaluation of the 1972 extension of compulsory schooling in Britain by Sturgis and Buscha (2015), who find that the reform decreased educational inequality, but did not lead to an increase in intergenerational social mobility. However, this study is limited by a lack of within-country variation in the implementation of the compulsory schooling reform, which prevents it from disentangling the effects of the reform from the effects of other structural and institutional changes that occurred around the same time.

Our article overcomes these problems of estimating the effect of compulsory schooling reform on educational inequality and social mobility by exploiting the variation in the timing of compulsory schooling reform across different West German states (*Bundesländer*). As discussed in further detail below, West German *Bundesländer* extended the period of compulsory schooling from 8 to 9 years at different times during the three decades following World War II. This within-country variation constitutes a quasi-experimental setting which allows for the use of a *difference-in-difference* design and robust estimates of the reform effects on educational and labour market inequalities (Angrist and Pischke, 2009; Gangl, 2010).

The first aim of this article is to empirically examine whether the extension of compulsory schooling has led to a narrowing in the educational attainment gap between people from different social class backgrounds. Secondly, we seek to examine whether a potential decline in educational inequality further translated into a decrease in the inequality in labour market chances of different social origin groups. Given the expectation of the existing literature that the extension of compulsory schooling mainly affected the most disadvantaged youth, we pay particular attention to examining the reform effect on this group relative to individuals from more advantaged backgrounds. We define the most disadvantaged youth as people who were born into families with parents in unskilled working-class positions. Individuals in this group are particularly disadvantaged in terms of the low level of parental economic resources they rely on during their early development and schooling and, given the strong link between parental class background and children's educational attainment, they are likely to leave school earlier than people from more advantaged backgrounds (Blossfeld, 1993). It follows that the reduction in the relative cost of different secondary-level qualifications that resulted from the extension of compulsory schooling may be expected to have had a particularly pronounced effect on the educational attainment and labour market position of children from unskilled working-class families.

The German Education System and the Compulsory Schooling Reform

The German system of ability tracking allocates students to different school types after they complete 4 years of

primary education at around age 10 years. Pupils deemed to be of low ability are sent to the basic secondary track (*Hauptschule*) and generally leave full-time education after 8 or 9 years of schooling with a lower-secondary qualification. Pupils of intermediary ability are placed into the middle track (*Realschule*) and generally leave full-time education after 10 years of schooling with a mid-secondary qualification. High-ability pupils are allocated to the highest track (*Gymnasium*) and typically leave school after 12 or 13 years of schooling with an upper-secondary qualification, which allows them to enrol in university. The secondary track placement of children is based on the recommendation of primary school teachers and on the preference of parents (Jähnen and Helbig, 2015).[1]

The transition to secondary education is a crucial point in the educational trajectory of German youth. The type of secondary school that pupils attend generally exerts a strong influence on the type of further training they can receive and on their future labour market prospects (Müller *et al.*, 1998). Attending the *Hauptschule* and leaving school with a lower-secondary qualification constitutes a substantial disadvantage when applying for apprenticeships or further school-based training, as compared to leaving school with a mid-secondary qualification or an upper-secondary qualification (ibid.). It is well documented that children from low social class backgrounds are substantially more likely than children from higher social class backgrounds to attend the *Hauptschule* and to leave school with a lower-secondary qualification (Blossfeld, 1993).

After World War II, the compulsory schooling period was 8 years, after which pupils were awarded the lower-secondary qualification. However, in the three decades following World War II the West German *Bundesländer* increased the length of compulsory schooling and the time required to obtain a lower-secondary qualification to 9 years (LeSchinsky, 1981; Petzold, 1981; von Friedeburg, 1992; Geißler, 2011). Hamburg and Berlin were the first *Bundesländer* to implement this reform in 1949 (see Supplementary Table A1). Any child who entered school in this year or later was obliged to attend school for 9 years, while children who entered school before this year were required to receive only 8 years of schooling. During the immediate post-war period the high level of unemployment and the lack of apprenticeship positions were important concerns which the state-level governments sought to address by delaying the labour market entry of young people (Petzold, 1981; Pischke and von Wachter, 2008).[2] Almost a decade later, Schleswig-Holstein and Bremen also implemented the reform in 1956 and 1958, respectively, and

Niedersachsen and Saarland followed suit in 1962 and 1964. At this time, labour market conditions had improved as a result of the 'economic miracle' (*Wirtschaftswunder*), and the main motivations for the reform centred on the perceived importance of the school environment for the development of 15-year-old adolescents and the need for them to attain further theoretical training before beginning an apprenticeship (LeSchinsky, 1981; Petzold, 1981; Pischke and von Wachter, 2008). The *Bundesländer* that had not already extended compulsory schooling by the early 1960 s did so following the *1964 Hamburg Accord*, an agreement between the ministers of education of all *Bundesländer* which sought to harmonize the length of compulsory schooling across the *Bundesländer* (von Friedeburg 1992; Geißler 2011). In line with the *1964 Hamburg Accord*, Nordrhein-Westfalen, Hessen, Rheinland-Pfalz, and Baden Württemberg extended compulsory schooling to 9 years in 1967 and Bayern did so in 1969.

Why Expect an Effect on Educational and Labour Market Inequality?

Leading scholars of social stratification have argued that the extension of compulsory schooling in Germany is likely to have led to a decrease in educational inequality between people from different social class backgrounds (Müller and Haun, 1994: p. 7; Müller and Pollak, 2004: p. 84). The proponents of this argument contend that the extension of compulsory schooling effectively reduced the relative cost of attaining a mid-secondary or upper-secondary qualification as opposed to obtaining a lower-secondary qualification. While before the reform attaining a mid-secondary qualification in the *Realschule* instead of a lower-secondary qualification in the *Hauptschule* required two more years of schooling, after the reform only one additional year of schooling was required to obtain this qualification. Similarly, the additional schooling required to attain an upper-secondary qualification in the *Gymnasium* instead of a lower-secondary qualification decreased from 5 to 4 years. As a result, parents in low social class positions who before the reform would have chosen to send their children to the *Hauptschule* instead of a higher track due to financial considerations may have become more inclined to invest in the additional schooling required for their children to attain a mid- or upper-secondary qualification in the *Realschule* or *Gymnasium* after the reform.

One can arrive at different expectations as to which social origin group has been most affected by the

extension of compulsory schooling. Given the low economic resources of parents in unskilled working-class positions, the effect of the reduction in the relative cost of the mid- and upper-secondary qualification that resulted from the reform may be expected to have been most pronounced for the children of this group. Since parents in skilled working-class or intermediate-class positions have lower economic constraints, one can expect the reform effect on the preferences of this group to be less pronounced. Parents in salariat positions are unlikely to have been affected by the reform at all, as financial concerns are likely to play a minimal role in shaping their preference for their child's secondary track placement. Consequently, one may expect the extension of compulsory schooling to have led to a decrease in the educational inequality between children from salariat backgrounds and children from lower social class backgrounds, while the effect can be expected to be most pronounced for children from unskilled working-class backgrounds.

However, the change in the relative cost of secondary-level qualifications may have been too small to affect the preference of parents in unskilled working-class positions. Parents in this group may find it to be too costly to send their children to the middle or highest school track even after the relative cost of doing so declined as a result of the compulsory schooling reform. In contrast, given the lower economic constraints of parents in skilled working-class and intermediate positions, the preferences of this group may be more sensitive to a change in the relative cost of secondary-level qualifications. This would suggest that the reform effect on children from skilled working-class or intermediate-class backgrounds may have been as strong or even stronger than on children from unskilled working-class backgrounds. Such difference in the reform effect between children from unskilled working-class backgrounds, on the one hand, and children from skilled working-class and intermediate-class backgrounds, on the other hand, may also reflect the higher importance that parents in higher class positions tend to attach to the level of their children's educational qualification to ensure that their children maintain their own social status (Breen and Goldthorpe, 1997). This difference in educational preferences may lead parents from skilled working-class and intermediate-class backgrounds to be more responsive to a change in the relative cost of mid-secondary and upper-secondary qualifications than is the case for parents in unskilled working-class backgrounds.

In addition to the potential effect of the extension of compulsory schooling on educational inequality, there are two reasons why one might expect the reform to further have led to an equalization of the labour market

prospects of people from different social class backgrounds. First, given the close link between individuals' educational qualification and their labour market position in Germany (Müller and Gangl, 2003; Shavit and Müller, 1998), one could expect a potential decrease in educational inequality between people from different social class backgrounds to further have translated into an equalization of the labour market prospects of these groups. Secondly, this dynamic may be reinforced by the fact that people with lower-secondary qualifications receive one additional year of schooling after the reform. This change may be expected to result in an increase of the labour market value of lower-secondary qualifications and a corresponding improvement of the labour market prospects of people from low social class backgrounds, who are more likely to leave school with a lower-secondary qualification than people from more advantaged backgrounds (Blossfeld, 1993).

However, a potential increase in the educational attainment of individuals form lower parental class backgrounds resulting from the compulsory schooling reform does not necessarily translate into a narrowing in the labour market chances between this group and people from more advantaged backgrounds. Children from parents in higher social class positions may compensate for a reduction in their educational advantage by capitalizing on other sources of social advantage, such as their parents' professional networks or their 'soft-skills' and cultural resources (Bukodi and Goldthorpe, 2013; Goldthorpe, 2016) or by pursuing further post-secondary education during their early career (Bukodi, 2016; Gugushvili et al., 2017). In fact, such dynamic may account for the finding of Sturgis and Buscha (2015) that the extension of compulsory schooling in Britain appears to have led to a decrease in educational inequality, but left labour market inequalities between different social origin groups unchanged. We test whether a similar pattern can be observed in Germany.

Method, Data, and Variables

As noted above, we use a *difference-in-difference* design to identify the effect of the extension of compulsory schooling on the educational and labour market inequality between children from different social class backgrounds (Angrist and Pischke, 2009; Gangl, 2010). We identify the reform effect by comparing the extent of educational and labour market inequality amongst pupils who started school under different compulsory schooling regimes. We use a binary independent variable to indicate whether a given child attended school under the old regime of 8 years of compulsory schooling or

under the new 9-year regulation. Children were allocated to either of these two groups based on their year of birth and the *Bundesland* in which they lived during their childhood.[3] The substantial variation in the timing of the compulsory schooling reform in different *Bundesländer* across two decades (see Supplementary Table A1) provides a quasi-experimental setting which minimizes the risk that other events confound the reform effect we identify (see Meyer, 1995: p. 151 on 'government randomization'). We exploit this over-time variation in the implementation of the reform across states by way of a two-way interaction between parental background and the reform dummy that identifies individuals' treatment status based on their birth year and the state in which they received their schooling.[4] To avoid any confounding effect of over-time trends, such as the educational expansion or changes in the occupational structure, we control for state-specific linear trends by including an interaction between respondents' birth year and the *Bundesland* they lived in during their childhood in all our models.[5] As a result, our research design is very similar to the *difference-in-difference* design used by Pischke and von Wachter (2008), who evaluate the effect of compulsory schooling reform on labour market returns to education in Germany. A similar design is also employed by Acemoglu and Angrist (2000), who assess the effect of compulsory schooling reform on returns to education in the United States and by Oreopoulos (2007), who focuses on the United States, Canada, and the United Kingdom.

We use the German Socio-Economic Panel Study (SOEP) as the primary data set for our analyses (Wagner *et al.*, 2007).[6] To avoid any potential bias due to survey specificities, we verify the robustness of our results by running all our models on a secondary data set. For this purpose we use the German General Social Survey (ALLBUS/GGSS) (Wasmer *et al.*, 2014).[7] Both the SOEP and the ALLBUS provide detailed information on the social class position and education of respondents and their parents, and the two data sets have been widely used for the analysis of intergenerational social mobility in Germany (Pollak, 2000; Pollak and Müller, 2004; Hertel, 2017). While most previous research on educational and labour market inequalities in Germany uses the 'complete case analysis' approach and thus relies on the assumption that missingness in the data is completely at random (White *et al.*, 2010), we impute missing data points using multiple imputation by chained equations and thereby limit the risk of potential bias related to systematic item missingness in our data.[8]

The main dependent variables of our analyses are two sets of binary variables. The first set of variables indicates individuals' educational attainment and the second set of variables indicates their labour market position. We measure an individuals' educational attainment by way of two educational threshold variables. The first threshold variable indicates whether individuals have attained a school qualification at the mid-secondary level or above, and the second threshold variable indicates whether they have attained a school qualification at the upper-secondary level. As noted above, whether German pupils cross these educational thresholds substantially affects their future educational and labour market prospects.

We measure individuals' labour market position in terms of their social class position. More specifically, we use two binary measures indicating, first, whether they have attained a position in the skilled working class or above, and, secondly, whether they have attained a position in the intermediate class or above. Individuals' position with respect to these two 'labour market thresholds' can be expected to carry substantial implications for their economic security (Leibfried and Tenntstedt, 1985; Emmenegger *et al*, 2012). Individuals' and parents' social class position is operationalized using the European Socio-Economic Classification (ESeC), which has been validated for Germany (Rose and Harrison 2010; Wirth *et al.*, 2010). Parental class position is measured using a four-category version of the ESeC schema, differentiating between (i) the unskilled working class, (ii) the skilled working class, (iii) the intermediate class, and (iv) the salariat. We derive the parental class position from fathers' and mothers' class positions using the dominance approach. This approach allocates parents to a social class position according to the higher social class position of the two spouses (Erikson, 1984). Parents' social class position is measured at age 15 years of the cohort members. Individuals' social class position is measured at age 34 years, i.e. at the age of 'occupational maturity' after which individuals' labour market position tends to stabilize (Bukodi and Goldthorpe, 2009, 2011). For respondents for whom occupational information was not recorded at age 34 years, we rely on information from older ages up to age 64 years. We control for the specific age at which individuals were interviewed (i.e. the age when their occupation was observed), as well as individuals' birth year, gender, state of residence during childhood, and state-specific linear trends in all our models.

Table 1. Educational attainment of different social origin groups, binomial logit, odds ratios

Independent variables	Attaining a qualification at the mid-secondary level or above		Attaining a qualification at the upper-secondary level	
	M1	*M2*	*M3*	*M4*
Parental class				
1. Unskilled working class	0.096***	0.080***	0.092***	0.084***
2. Skilled working class	0.135***	0.095***	0.129***	0.093***
3. Intermediate class	0.314***	0.225***	0.334***	0.252***
4. Salariat (ref.)				
Reform	1.199**	0.800	1.182*	0.919
Parental class * reform				
1. Unskilled working class		1.350		1.135
2. Skilled working class		1.653***		1.532**
3. Intermediate class		1.671***		1.460***
4. Salariat (ref.)				

*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$; $N = 22,812$.

Notes: Control variables are age, gender, birth year, state of residence during childhood, and state-specific trends (not shown).
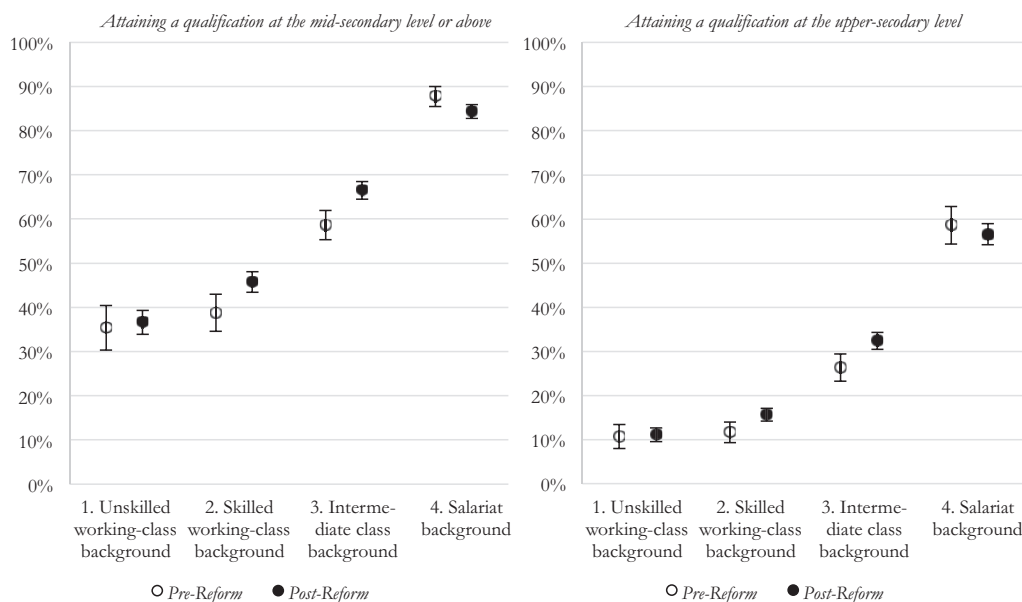
Results 1: Inequality in Educational Attainment

The first main aim of this article is to examine whether the extension of compulsory schooling in Germany has led to a narrowing in the educational attainment gap between people from different social class backgrounds. Moreover, we seek to assess whether the reform effect—if any such effect can be observed—was felt most strongly by people from unskilled working-class backgrounds, or whether the reform mainly affected people from skilled working-class or intermediate-class backgrounds. To address these questions, we run a series of binary logit models with the two educational thresholds discussed above as our dependent variables. We first include as focal independent variables our four-category measure of the parental class position and the reform dummy indicating the compulsory schooling regime under which a given respondent started school (Table 1, M1 and M3). Secondly, we add an interaction between parental class and the reform dummy to identify the effect of the reform on the association between individuals' parental class background and their educational attainment (M2 and M4). We take children from salariat backgrounds as our reference category, since, as noted above, they are unlikely to have changed their educational preferences due to the reform. The reference category for our dependent variables is not having crossed the respective threshold.

The main effect of parental class shown in M1 and M3 confirms the known class gradient in children's educational attainment (Blossfeld, 1993). Moreover, the main effect of the reform dummy in M1 and M3 suggests that the reform increased the overall share of German pupils who attained a middle- or upper-secondary qualification. The positive and statistically significant interaction terms in M2 and M4 suggest that this increase in educational attainment mainly occurred for children with parents in skilled working-class and intermediate-class positions, thus leading to a *decrease in the educational inequality* between these social origin groups, on the one hand, and children from salariat backgrounds, on the other hand. However, we do not find any evidence of an increase in the relative educational attainment of people from unskilled working-class backgrounds.[9]

To examine the size of the reform effect on the different social origin groups, we plot the predicted probabilities of each of these groups to attain a qualification above the two educational thresholds before and after the reform. Figure 1 suggests that also in absolute terms the reform effect was more pronounced for individuals from skilled working-class and intermediate-class backgrounds than for people from unskilled working-class backgrounds. For people from skilled working-class and intermediate-class backgrounds, the probability to exceed the first educational threshold increased by about 9 percentage points, and the probability to exceed the second threshold increased by about 6 percentage points. Again, we find no evidence for any change in the probability of people from unskilled working-class backgrounds to exceed either of the two educational thresholds.

Figure 1. Predicted probabilities of obtaining an educational qualification above threshold one and two, pre- and post-reform

Notes: 95% confidence intervals; predicted probabilities based on M2 and M4 of Table 1.

Results 2: Inequality in Labour Market Chances

Our second aim is to examine whether, further to its effects on educational inequality, the extension of compulsory schooling also led to an equalization in the labour market prospects of children from different social class backgrounds. Moreover, we seek to assess whether this reform effect on labour market inequality—if observed—can be accounted for by the reform effect on educational inequality or by a potential increase in the labour market value of lower-secondary qualifications. As discussed above, we investigate the effect of the compulsory schooling reform on individuals' chances to attain a position (i) in the skilled working class or above and (ii) in the intermediate class or above. To this end we run a set of binary logit models with these two labour market thresholds as the dependent variables and with parental class and the reform dummy as the focal independent variables (Table 2, M1 and M5). We then add the interaction between parental class and the reform dummy to identify the effect of the extension of compulsory schooling on the inequality in labour market chances between different social origin groups (M2 and M6). To assess whether this reform effect can be accounted for by the reform effect on educational inequality, we add a variable measuring whether individuals attained a lower-, mid-, or upper-secondary school leaving qualification (M3 and M7). Last, we add an interaction between this variable

and the reform dummy to examine the potential role of an increase in the labour market value of lower-secondary qualifications (M4 and M8).

The main effect of parental class shown in M1 and M5 confirms the known class gradient in individuals' labour market chances (Erikson and Goldthorpe, 1992; Breen, 2004). Importantly, the interaction between parental class and the reform dummy in M2 indicates that the extension of compulsory schooling, further to its effect of reducing educational inequality, also lead to a *decrease in labour market inequality*. More specifically, the inequality between people from skilled working-class backgrounds and people in salariat backgrounds in obtaining a position in the skilled working class or above declined as a result of the reform. Similarly, with regard to the second threshold, the interaction terms in M6 suggest that the reform led to a narrowing of the gap between individuals from salariat backgrounds, on the one hand, and individuals from skilled working-class and intermediate-class backgrounds, on the other hand. In contrast, we find no evidence of a reform effect on the relative labour market chances of people from unskilled working-class backgrounds.[10]

To examine the size of the reform effect on the different social origin groups, we calculate the predicted probabilities of each of these groups to attain a position above the two labour market thresholds before and after the reform. Figure 2 shows a very similar pattern for the

Table 2. Social class attainment of different social origin groups, binomial logit, odds ratios

	Attaining a position in the skilled working class or above				Attaining a position in the intermediate class or above			
Independent variables	*M1*	*M2*	*M3*	*M4*	*M5*	*M6*	*M7*	*M8*
Parental class								
1. Unskilled working class	0.193***	0.173***	0.406***	0.460***	0.164***	0.141***	0.366***	0.416***
2. Skilled working class	0.288***	0.210***	0.478***	0.540**	0.225***	0.167***	0.419***	0.475***
3. Intermediate class	0.547***	0.413***	0.762	0.843	0.494***	0.376***	0.737*	0.820
4. Salariat (ref.)								
Reform	1.065	0.782	0.760	0.679	1.041	0.774	0.768	0.709
Parental class * reform								
1. Unskilled working class		1.149	1.203	1.014		1.213	1.222	1.029
2. Skilled working class		1.548*	1.517	1.286		1.487**	1.368	1.161
3. Intermediate class		1.488	1.279	1.124		1.455*	1.206	1.057
4. Salariat (ref.)								
School qualification								
1. Lower-sec. or less			0.300***	0.230***			0.286***	0.217***
2. Mid-secondary (ref.)								
3. Upper-secondary			3.293***	4.417***			4.449***	5.553***
School qualification * Reform								
1. Lower-secondary or less				1.426***				1.477***
2. Mid-secondary (ref.)								
3. Upper-secondary				0.705				0.771

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$, $N = 22,812$.

Notes: Control variables are age, gender, birth year, state of residence during childhood, and state-specific trends (not shown).
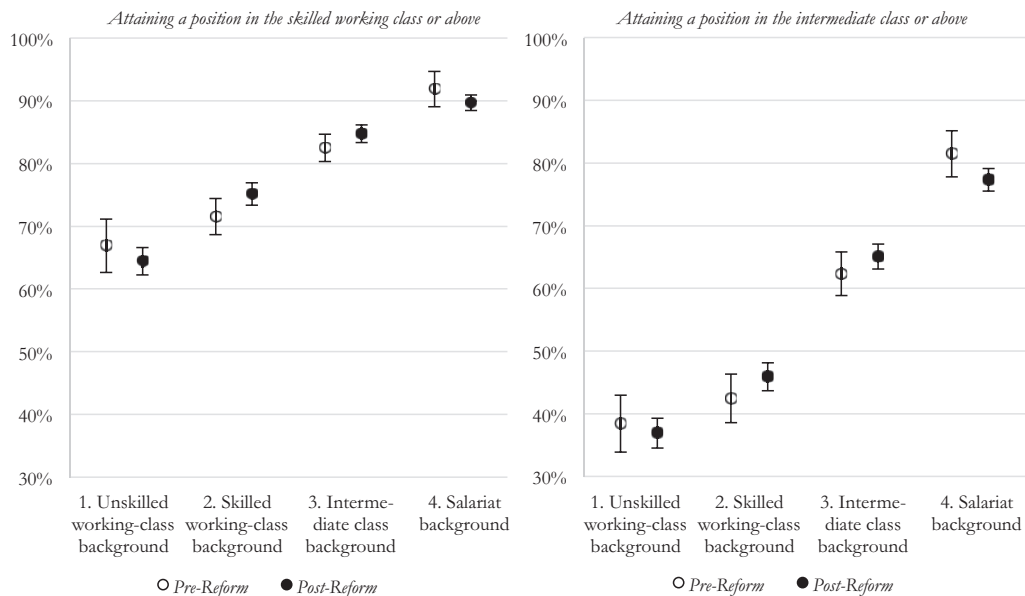
Figure 2. Predicted probabilities of attaining a labour market position above threshold one and two, pre- and post-reform

Notes: 95% confidence intervals; predicted probabilities based on M2 and M6 of Table 2.

reform effect on the labour market chances of different origin groups, as Figure 1 showed for the reform effect on the educational attainment of these groups. In absolute terms, the effect on individuals' labour market chances appears to have been most pronounced for individuals from skilled working-class and intermediate-class backgrounds, while there has been no change in the labour market chances of people from unskilled working-class backgrounds.

In light of the overarching aim of this article, one key question is to what extent the observed reform effect on the labour market inequality between people from different social class origins can be attributed, first, to the observed reform effect on the educational inequality between these groups, and secondly, to a potential reform effect on the labour market value of lower-secondary qualifications. Once we include the main effect of school qualification in M3 and M7, the interaction between parental class and the reform dummy weakens considerably. This suggests that the decline in educational inequality between individuals from different parental class backgrounds accounts, at least in part, for the equalization of labour market chances across these groups. Furthermore, when we add an interaction between school qualification and the reform dummy in M4 and M8, we observe that the labour market value of the lower-secondary qualification relative to the mid-secondary qualification appears to have increased as a result of the reform. We also observe a further weakening of the interaction between parental class and the reform dummy, which suggests that the increase in the relative value of the lower-secondary qualification constitutes a further mechanism that contributed to the observed decrease in labour market inequality between people from different social class backgrounds.

Conclusion

Our article has sought to contribute to the ongoing debate about the potential of education policy to increase intergenerational social mobility (Ishida *et al.*, 1995; Goldthorpe, 2007, 2016; Saunders, 2012). While this debate has thus far largely relied on indirect evidence concerning the mediating role of education in the intergenerational transmission of disadvantage and long-term trends in intergenerational social mobility, we use a quasi-experimental approach to directly evaluate the effect of one specific education policy reform—the extension of compulsory schooling in Germany—on the educational and labour market chances of people from different social backgrounds.

Our first key finding is that the extension of compulsory schooling in Germany has led to a substantial decrease in the educational inequality. Relative to people from salariat backgrounds, the reform has increased the chances of people from skilled working-class backgrounds and intermediate-class backgrounds to obtain a mid- or upper-secondary qualification. This finding is in line with the expectation of Müller and Haun (1994) and Müller and Pollak (2004) of an equalizing effect of the reform. It also parallels the finding of Sturgis and Buscha (2015) who observe a decline in educational inequality as a result of the extension of compulsory schooling in Britain. Surprisingly however, we find no reform effect on the educational attainment of children from unskilled working-class backgrounds. This finding contradicts the expectation by Müller and Haun (1994) that the extension of compulsory schooling most strongly affected the educational attainment of pupils who face the most severe constraints in terms of their parents' economic resources. Instead it may be the case that the comparatively higher economic resources of parents in skilled working-class and intermediate-class positions render their preferences regarding the secondary track placement of their child more susceptible to changes in the relative cost of the different secondary qualifications that resulted from the reform. This finding may also reflect the higher importance that parents in skilled working-class and intermediate-class positions attach to their children attaining a mid-secondary or upper-secondary qualifications, as these qualifications are more instrumental in ensuring that their children maintain their own social status, than is the case for parents in lower social class backgrounds (Breen and Goldthorpe, 1997).

Our second key finding is that, further to decreasing educational inequality, the extension of compulsory schooling in Germany also led to a substantial narrowing of the gap in labour market chances between people from salariat backgrounds, on the one hand, and people from skilled working-class and intermediate-class backgrounds, on the other hand. Importantly, we show that this equalizing effect of the extension of compulsory schooling on individuals' labour market chances resulted from the observed reduction of educational inequality and from an increase in the labour market value of lower-secondary qualifications. As one would expect, given the lack of a reform effect on the educational attainment of children from unskilled working-class background, we also find no reform effect on the labour market attainment of this group.

Our finding of an equalizing reform effect on individuals' labour market chances contrasts with the

observation by Sturgis and Buscha (2015), who do not observe an effect of the extension of compulsory schooling in Britain on individuals' labour market chances. These contrasting findings may reflect the known fact that individuals' labour market position in Germany is more closely linked to their educational qualification than is the case in Britain (Shavit and Müller, 1998; Müller and Gangl, 2003).

Importantly, our results demonstrate that education policy can have a substantial equalizing effect on both the educational and labour market chances of people from different social class backgrounds, and thus increase intergenerational social mobility. This finding underscores the need for social stratification research to evaluate specific policy reforms—preferably using research designs that licence causal inference—to understand how educational policies, and social policies more widely, affect social inequality and its intergenerational reproduction. As the findings of this article suggest, evidence on long-run structural trends in intergenerational social mobility (Breen 2004; Müller and Pollak, 2004) may mask changes in social mobility resulting from specific reforms that may be implemented at the subnational level and at differing points in time.

Supplementary Data

Supplementary data are available at *ESR* online.

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Notes

1. The relative importance of teacher recommendations and parental preferences for the secondary track placement of children varies across German states (Jähnen and Helbig, 2015).
2. In Germany, education policy is in the hands of the individual Bundesländer, which generally coordinate their activities through framework agreements made by the Ministers of Culture Conference (Kultusministerkonferenz) (Müller *et al.*, 1998).
3. Unfortunately, the data we use do not allow us to account for grade repetition when allocating pupils into the pre- and post-reform groups. This may lead us to somewhat underestimate the reform effect on educational and labour market inequality.
4. It is important to note that we exploit the over-time variation in the reform of compulsory schooling across *Bundesländer* to identify the reform effect on educational and labour market inequality. In contrast to classical difference-in-difference designs, there is no 'pure' control unit of states that did not implement the compulsory schooling reform in Germany. Hence using a three-way interaction as per the difference-in-difference-in-difference approach (Gangl, 2010) is not practicable for the purposes of our study.
5. We ran robustness checks using quadratic state-specific trends. This does not change our results.
6. The SOEP data can be accessed via the website of the DIW (https://www.diw.de/en/soep).
7. The ALLBUS data can be accessed via the website of GESIS (http://www.gesis.org/en/allbus/download/).
8. For a detailed discussion of the advantages of multiple imputation using chained equations in research on social stratification, see Kuha (2013).
9. We have tested the robustness of these results by running all models on our secondary data set, the ALLBUS data set, which yields the same conclusions (see Supplementary Table A3). However, one difference is that the results from the ALLBUS data also show a decrease in the educational attainment gap between individuals from unskilled working-class backgrounds and individuals from salariat backgrounds for the first educational threshold. However, the reform effect on this group is smaller than the effect on individuals from skilled working-class and intermediate-class backgrounds, and it is not statistically significant at the second educational threshold. Moreover, we find that the main effect of the reform in M1 is not statistically significant in the ALLBUS data. However, given that the effect is of a similar size in the ALLBUS and the SOEP, the difference in the statistical significance of this effect

can be attributed to the smaller sample size in the ALLBUS, as compared to the SOEP.

10. As in our analysis of the reform effect on educational inequality, we have tested the robustness of the results presented in this section by running our models on our secondary data set, the ALLBUS data set, which again leads us to the same conclusions (see Supplementary Table A4).

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Bastian Betthaeuser is a DPhil Candidate at the University of Oxford, Department of Social Policy and Intervention. His research focuses on education and labour market policy and its implications for social inequality from a life course and intergenerational perspective. This research is funded by the UK Economic and Social Research Council (ESRC). Alongside his doctoral research, Bastian is working on a research project examining the role of parental attributes and children's cognitive ability in intergenerational social mobility, funded by the Nuffield Foundation.