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# Forced Migration and the Educational Attainment of Second and Third Generations <sup>\*</sup>

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*Preliminary and incomplete draft - please neither cite, nor circulate!*

**Abstract.** This paper studies the effects of forced migration on the educational attainment of second and third generations. Exploring the re-allocation of 8 million expellees to West Germany after World War II using German panel data, the results show that the educational outcomes of the second generation were negatively affected by the displacement of the parental generation. However, the results are driven by individuals whose both parents were expellees and by the higher end of the education distribution. The findings for third-generation expellees are, in fact, on a par with those of natives. Overall, the results of this paper imply that the social and economic costs of displacement are long lasting and go beyond the first, initially displaced generation.

Keywords: Forced migration, Economic integration, World War II, West Germany

JEL Classification: J61, O15, R23

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# 1 Introduction

Throughout human history, conflicts and disasters have forced people to flee from their homes. With approximately 21.3 million refugees and 40 million individuals internally displaced, the year 2015 had one of the highest levels of displacement ever recorded (UNHCR, 2016). Surprisingly little is known on the economic integration of forced migrants and their offspring. Previous research has been largely confined to the analysis of those displaced, i.e. of first-generation forced migrants. Evidence for European countries,<sup>1</sup> which stems mostly from World War II and its aftermath, shows that displaced individuals still exhibited lower incomes and home-ownership-rates a full 25 years after displacement, but also high rates of occupational, sectoral and regional mobility (see for Germany and Finland Bauer et al., 2013; Sarvimäki et al., 2009). While this high mobility is likely to have alleviated the harmful economic effects of displacement, it also indicates that forced migrants had to bear a great burden of adjustment.

Research on the economic integration of first-generation forced migrants, while still small, has been growing in recent years. This is not true for their descendants, i.e. second- and third-generation forced migrants, although their performance is of no less interest. First, first-generation forced migrants may not be able to return to their countries of origin if the causes that made them go, such as war or civil conflicts, are ongoing or only slow to change. In this case, migrant children will be born and raised in the countries that had received their parents, and continue to live in the same when reaching adulthood. Second, failed integration of second- or third generation forced migrants may entail significant social costs for both, their country of origin and their country of reception that go exceed the immediate costs of displacement. Finally, according to Eder (2014), policy interventions tailored towards these groups might be easier to implement than solving the various reasons of displacement in the country of origin or designing adequate labor market policies for first-generation forced migrants in the receiving country.

In this paper, I analyze whether the adverse effects of forced migration transmit to subsequent generations. I do so by investigating differences in educational outcomes and in the intergenerational transmission of human capital between natives and forced migrants of three generations. The educational attainment of second- and third generation forced migrants is highly relevant for their economic integration. Educational attainment is a strong predictor of occupational choices, labor market attachment, and ultimately income (see e.g. Heckman et al., 2006). Furthermore, for descendants of forced migrants, education is likely to be an important tool to respond and adjust to the loss of capital (physical and monetary), land, and social networks suffered by their parent generation.

This paper relates to two strands in the literature, the literature on the economic integration of forced migrants and to the literature on the intergenerational transmission of human capital. As mentioned, the empirical evidence on the effects of displacement for the subsequent generations is scarce. An exception is the study by Bauer et al. (2013) on the economic integration of first- and second-generation German expellees 25 years after the first generation had been forcefully displaced from ceded territories of the German Reich and Eastern Europe in the last years of World War II and its aftermath. The study finds that outcomes for the second generation resemble those of the first generation: Despite educational attainment comparable to that

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<sup>1</sup>See Ruiz and Vargas-Silva (2013) for a detailed summary of the empirical evidence on the impact and integration of forced migrants in developing and developed countries.

of natives, second-generation forced migrants suffer from worse labor market outcomes. Sons of expellees exhibit incomes that are on average 6 percentage points lower than the incomes of their native peers. In an earlier version of the paper Bauer et al. (2011) show that the intergenerational transmission rate of human capital from the first to the second generation was lower for expellees than for natives. A more recent exception is provided by Becker et al. (2018), who exploit the forced population movements that occurred in Poland due to World War II. The authors find that descendants of forced migrants achieve higher levels of education, which they do explain by a shift in preferences towards transferable goods, such as education. Another exception is the study by Eder (2014), who studies refugees in Bosnia and Herzegovina who fled during the early 1990s. Employing household data, he first shows that individuals of native and displaced background have equal enrollment rates in primary and secondary schools. Conditioned on this, he secondly finds that displaced households invest about 20 to 30 percent less in the education of their children (e.g. for textbooks or tuition fees). Lacking information on completed schooling, Eder (2014) is not able to quantify differences in the educational attainment between natives and refugees.

The second strand in the literature to which this paper relates is concerned with the intergenerational transmission of human capital. Points of contact are manifold. First, it relates to the growing literature that considers three- or higher-order generation models and shows that two-generation models tend to underestimate the intergenerational persistence in education and occupation (Lindahl et al., 2015).<sup>2</sup> Closely related to this is the strand of literature which is concerned with the persistence of disadvantages across generations. For instance, Sacerdote (2005) analyzes differences in educational outcomes of descendants of former slaves to those of free blacks in the US. His results document that it took two generations to yield comparable outcomes between both groups. Marriages between both groups facilitated the catching up process. Second, this paper is related to studies on the intergenerational transmission of human capital for migrants. This literature predominantly investigates two generations of economic immigrants and points towards lower transmission rates for migrants (see e.g. Gang and Zimmermann (2000) or Bauer and Gang (2001) for Germany, Aydemir et al. (2008) for Canada and Dustmann et al. (2011) for a survey of the empirical findings). Lower intergenerational transmission rates are not necessarily harmful for the individual of the subsequent generation and for a society as a whole, as it points to a higher degree of equalities of opportunity. However, parental education is an important input of child education and lower transmission rates might be an important explanation for the lower educational achievement of second generation immigrants.<sup>3</sup> The analysis of three or more generations of immigrants has received much lower attention. An important exception to this is Borjas (1994)<sup>4</sup>, who investigates whether ethnic differentials persist over the generations of immigrants, who came to the US during the Great migration of 1880 and 1910. His results show that it took about four generations for immigrants to catch up with natives.

In the empirical analysis, I exploit the natural experiment provided by the large and unexpected inflow of over 8 million forced migrants into West Germany after World War II. Using data from the National

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<sup>2</sup>See Solon (2015) for a survey on the recent trends in this literature.

<sup>3</sup>See Algan et al. (2010) for a survey on the educational achievement of second generation immigrants in Germany, France and the UK. Other determinants of the educational achievement of second generation immigrants are, for instance, return migration of the parents (Dustmann, 2008) or the ethnic capital of the immigrant community (Borjas, 1992).

<sup>4</sup>Other exceptions are Deutsch et al. (2005), Hammarstedt (2009) and Borjas (2006), who analyze three generations, too. However, the respective analysis are concerned with intergenerational earnings mobility.

Educational Panel Study (NEPS) allows me to study the educational attainment of three consecutive generations: the expellees themselves, their children, and their grandchildren. Displacement of the first generation may negatively affect the educational achievement of their descendants, because loss in physical capital and lower incomes of first generation males, as found by Bauer et al. (2013), may harm the human capital accumulation of their children, and possibly even of grandchildren. This potentially harmful effect, however, may have been attenuated by a number of factors. First, because of the loss of immobile physical and financial capital, as well as land families of forced migrants may have shifted more resources into education, a transferable good. Second, as suggested by Bauer et al. (2013) and closely related to the first point, the loss of property and especially farms may have forced second-generation expellees to start a job outside the agricultural sector, which are in turn more human capital intensive. To analyze potential differences in educational outcomes between expellees and natives of different generations, I run regressions of their respective educational attainment on a binary variable that indicates the displacement status of families of second- and third-generation individuals. Furthermore, I explore potential heterogeneous effects by the employment status of parents, birth cohorts, educational degrees, the initial scale of the regional inflow of expellees into post-war Germany and by displacement status of both parents. Finally, to assess differences in the intergenerational transmission in human capital, I estimate correlations between years of education acquired by different generations, both for native and expellee families.

The results of this paper show that second generation expellees, and in detail sons, had on average 0.3 fewer years of education compared to their native counter-parts, which is a sizeable effect. However, tests for heterogeneous effects reveal that this finding is driven by the higher end of the education distribution. Whereby second generation expellees do not show any differences in the likelihood to complete a vocational training degree, they are less likely to obtain a university degree. This finding can potentially be explained by higher (perceived) opportunity costs of higher education. Further, the results indicate that children whose both parents are expellees were hit most. Concurrently, descriptive statistics do not point to any pronounced differences in the labor market attachment of second generation expellees compared to those of natives. The analysis of the intergenerational transmission of human capital does not indicate any pronounced differences. If any, the transmission of human capital is weakened between the first and second generation expellees.<sup>5</sup> In contrast to the second generation, the third generation has comparable levels of education compared to the native population.

This paper contributes to the existing literature in the following way. First, I add to the paper by Bauer et al. (2013) by investigating the economic integration of expellees beyond 1971. This allows me to study the economic integration of the second generation over the life cycle and to include their children, the third generation of expellees. Second, this paper complements the paper of Becker et al. (2018), by investigating Germany as a free-market economy compared to socialist Poland, in which individuals have different adjustment mechanisms in terms of capital accumulation and different incentives to invest in human capital. Third, this paper is one of the rare studies that is able to follow three generations of immigrants and employs more rich micro-data that goes beyond linking different cross-sections of immigrant cohorts (see e.g. Bor-

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<sup>5</sup>This finding is in line with the results of Bauer et al. (2013), as the analysis by birth cohorts do not show any differences for the birth cohort 1944 to 1949, which is the sample of Bauer et al. (2013). Thus, the results of this paper are not in contrast to those of Bauer et al. (2013) and add to them.

jas, 1994). By exploiting a natural experiment, I am able to examine the whole skill distribution of parental education. Due to the closeness of the expellees, who were ethnic Germans, and the native population in terms of culture, language, and knowledge of the education system, this paper is able to isolate the effect of (forced) migration on the educational achievements of their children. Third, this paper contributes to the recent literature on the intergenerational persistence in education, occupation and income. The empirical evidence on this issue for Germany so far is limited to the findings of Braun and Stuhler (2016) as well as Neidhöfer and Stockhausen (2016).

The remainder of this paper is structured as follows. Section 2 provides an overview of the historical setting, in particular the flight and expulsion of first-generation forced migrants, and discusses several factors that may have caused human capital attainment to differ between second-generations of natives and forced migrants. Section 3 describes the data and presents descriptive statistics for the different generations considered. Section 4 outlines the empirical strategy, Section 5 summarizes the main findings and section 6 concludes.

## 2 Historical background

Starting in 1944, one of the largest forced population transfers in history took place. Over 12 million ethnic Germans, who lived in the former Eastern territories of the German Reich (Fig. 1, shaded areas) had to flee from their homeland due to the approaching Red army and the defeat of Germany in World War II. Previously, ethnic Germans had lived in these regions for generations. As part of the former *German Reich*, the institutional setting (e.g. the education system) of this region was similar to that of other parts of Germany. In addition, the majority of these people spoke German. The most pronounced difference to other parts of Germany was a higher share of employees working in the agricultural sector (Lüttinger, 1989).

The inflow into West Germany was sudden, unexpected and large: About 8 million people re-settled until 1950.<sup>6</sup> The allocation of expellees was regionally very uneven. Expellees have been settled primarily into rural and less destroyed regions. These regions provided more housing possibilities than the heavily destroyed cities. Further, expellees tended to cluster at the inner-German border and concentrated in the US and British zone of occupation.<sup>7</sup> As a result, expellees were very unevenly distributed. Fig. 1 displays the share of expellees over the population in 1950 on the county level. Whereas the share of expellees was extremely high in the Northern (around 30%) and South-Eastern part (around 20 to 25%), regions in the South-West (under 5%) or Western part (10 to 15%) were confronted with a much lower share of expellees.

Upon arrival, expellees "lacked many of the basic necessities of daily life" (Connor, 2007, p. 24) as clothing, food and employment opportunities. Moreover, they had to cope with the loss of their property left home and the loss of physical capital in general. The provision of housing and basic goods as well as the social and economic integration was especially challenging because of the situation in West Germany in the aftermath of World War II.<sup>8</sup> The influx of expellees was often viewed as an economic and social burden. The

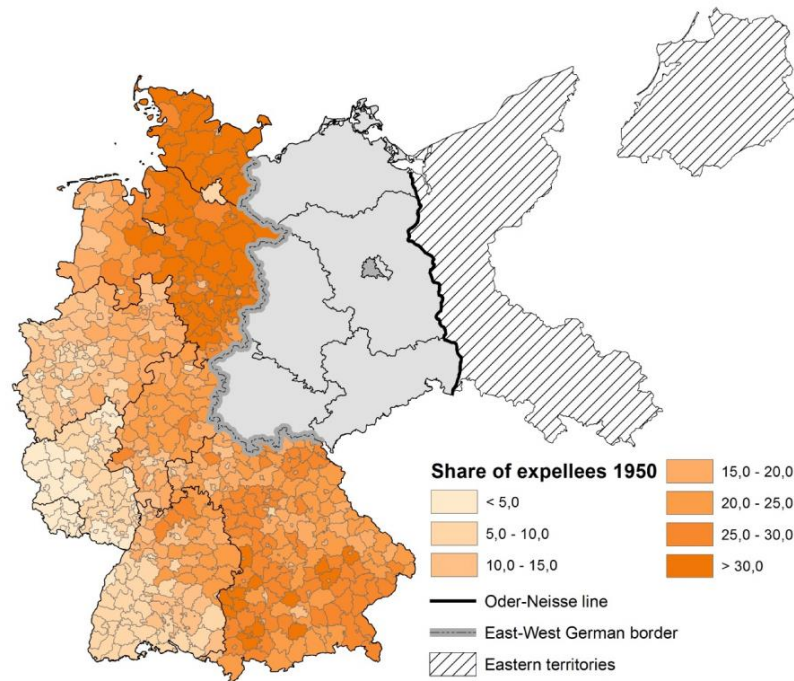
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<sup>6</sup> Approximately 4 million expellees resettled in the German Democratic Republic (GDR).

<sup>7</sup> Initially, no expellees have been settled into the French zone of occupation as France refused to accept any expellees.

<sup>8</sup> Therefore, several laws have been implemented to support the economic integration of expellees, e.g. the Lastenausgleichsgesetz (Falck et al., 2012).

FIGURE 1: Former German Eastern Territories and the inflow of Expellees (1950)



*Base maps:* MPIDR (2011). Data on the basis of Statistisches Bundesamt (1952).

resulting conflicts calmed down due to the economic progress in West Germany in the 1950s and 1960s and the integration of expellees in the labor market. In addition, expellees started to form political and cultural organizations, giving a voice to their concerns in the West German society.

Much earlier, the Bundesvertriebenengesetz of 1953 defined the legal status of expellees (Strassmann, 1962). The principle goal of this law was to guarantee that expellees receive the legal claim to return back to their home regions, to promote the chances in life for expellees and to compensate for the losses due to the expulsion. Under the premise that the personal and physical losses suffered by expellees had a long-term impact, the legal expellee status was not only granted to the first generation, i.e. the actual displaced, but also to their children and grandchildren. In case of the second and third generation, it was sufficient that one parent or grandparent had been displaced from the former Eastern territories.

Apart from this legal status there were, however, no important policy measures in order to facilitate the integration of expellee descendants. This also applies to the integration into the education system, where despite of exemptions on fees at universities and technical universities<sup>9</sup> no specific measures were implemented.

Why would we expect that the harmful effects of displacement spill over to the next generation, and in particular to their educational attainment? The income shock due to displacement may affect the educational attainment of expellee children negatively, for instance because of lower inputs (i.e. textbooks or learning activities outside the education system) or substitution effects of time in favor of working time. Expellees

<sup>9</sup>See University of Wisconsin Digital Collections (2017) for details.

suffered from income losses in several ways. On the one hand, by the permanent asset and property loss immediately after displacement and on the other hand, by lower labor income after displacement. The results of Bauer et al. (2013) show that expellees of the first generation suffered from lower income even 25 years after displacement. The negative effect of displacement via income may even hold for the third generation, as Bauer et al. (2013) show that second generation men of the age groups 22 to 27 years had significantly lower incomes. Eder (2014) finds that displacement reduces the expenditure on educational inputs and that the loss in income and wealth explains the total difference by one third.

Further, the displacement may lead to a lower intergenerational transmission of human capital. The intergenerational transmission rate is defined as the correlation of parental outcomes and offspring's outcomes, such as the years of education. A series of papers documents lower transmission rates for migrants (see e.g. Borjas, 1992; Gang and Zimmermann, 2000; Algan et al., 2010). Bauer et al. (2011) prove that this pattern applies to forced migrants in post-war Germany as well and show that the intergenerational transmission rate in human capital between the first and second generation in terms of years of education is lower for expellees if compared to natives. Possible explanations for these lower transmission rates are language problems and lack of institutional knowledge on the education system of the parents (Dustmann et al., 2011) or that migrant children are differently affected by the institutional setting of the schooling system (i.e. school starting age or tracking, Bauer and Riphahn, 2006).

While Caponi (2011) argues that migrants may have difficulties to pass their human capital to the next generation due to differences between the home and host country (language problems or cultural differences), the ability to pass traits like intelligence, motivation or work ethic is less affected by migration. While cultural and language barriers should have played no significant role in the discussed historical setting, the hypothesis of Gang and Zimmermann (2000) is likely to apply, namely that migration is a shock to the immigrant family, which has also consequences in the intergenerational transmission of human capital.

However, the loss of physical capital and social network of the first, displaced generation may induce expellees and their offsprings to higher investments in education. In this sense, investment in education could serve as a coping strategy. For instance, Bauer et al. (2013) show that the educational achievement of the second generation is comparable to that of natives. They argue that due to the loss of property and assets, the next generation of expellees was not able to inherit the farm of their parents and thus was forced to seek for jobs outside of the agricultural sector. A similar argument has been made by Chiswick (1983). He discusses the reasons for higher income and education of Jews in the US and argues that Jews may have higher preferences for more transferable goods, such as education.

Overall, the (permanent) income loss and lower intergenerational transmission rates of human capital predict a negative effect of displacement on the educational achievements of their descendants. However, this negative effect can either be mitigated or out-weighted by increased investments in human capital. The latter can be regarded as a potential strategy to cope with the loss in physical capital and a higher preference for (more) transferable goods.



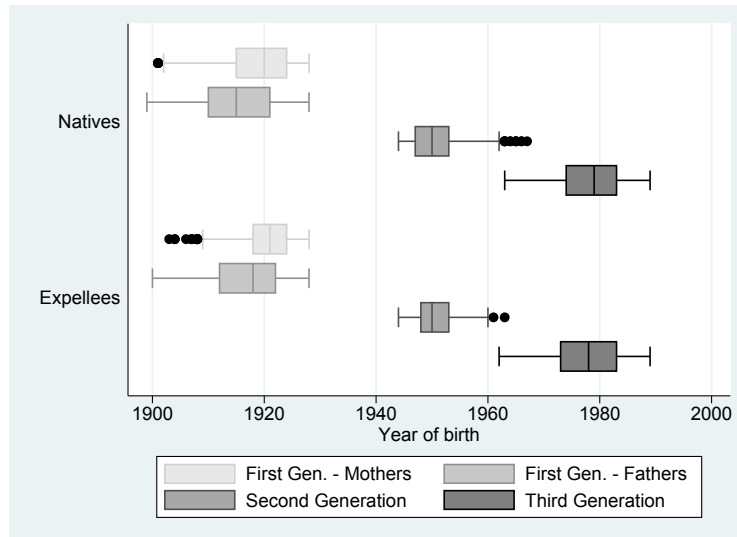
### 3 Data and Descriptive Statistics

For the empirical analysis, I make use of all available waves of the adult sample of the National Educational Panel Study (NEPS-SC6).<sup>10</sup> The NEPS data are based on annual survey interviews between 2009/2010 (wave 1) and 2014/2015 (wave 6). The adult sample consists of individuals who have been born in 1944 or later and includes information on the educational attainment, labor market attachment and family formation of respondents over their life cycle (Blossfeld et al. 2011). Moreover, and of particular importance for the analysis, surveyed individuals also provided information on their parents and children during the NEPS interviews.<sup>11</sup>

Figure 2 displays the respective birth cohorts of the generations that are analyzed. The focal point of this empirical analysis is the second generation. This generation is the so-called index generation, i.e. the generation which has been actually interviewed during the NEPS data collection process and therefore provided all information (including that on other generations) collected in the NEPS data.

For the analysis, I restrict this NEPS sample in several ways. First, I restrict the sample to individuals who have been born between 1944 (the first birth cohort in the NEPS data) and 1969, i.e. to birth cohorts in the more recent aftermath of displacement. Furthermore, I restrict the second-generation sample to individuals who were born in West Germany. Thereby, I exclude those individuals who either had been expelled themselves in early childhood, or had migrated from other regions to West Germany.

FIGURE 2: Data structure



*Note:* Based on NEPS.

With respect to the first generation, i.e. the parents of my index generation, I distinguish between those

<sup>10</sup>This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort Adults, doi:10.5157/NEPS:SC6:7.0.0. From 2008 to 2013, NEPS data was collected as part of the Framework Program for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, NEPS is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network.

<sup>11</sup>Recall bias, of course, may be a problem. However, Braun and Stuhler (2016) argue that this problem is likely to be of greater relevance for income than for education.

who were born in the territory of what later became West Germany and those who were born in the former Eastern territories of the German Reich (see Figure 1) from which they were expelled after World War II.<sup>12</sup> Unfortunately, information on whether the parents of my index generation were born in East (German Democratic Republic) or West Germany is only available for one wave. I use this information whenever possible and minimize the potential mix-up of East and West German parents by conditioning on their offspring generation to have been born in West Germany. I further restrict the first-generation sample to those who have been born between 1899 and 1928 and hence were aged 16 to 45 in 1944, the year the displacement started.

The reasons for focusing on these cohorts are as follows. Their lower bound (cohorts born until 1928) has been set because of the consequences of World War II for educational outcomes. In general, cohorts born between 1920 and 1939 tend to have significantly fewer years of education (Ichino and Winter-Ebmer, 2004), in particular cohorts born between 1929 and 1932 (Lüttinger, 1989). Therefore, I exclude those cohorts which have been hit heavily by the circumstances of the war. The upper bound (cohorts born from 1899 onwards) implies that the oldest individuals in my estimation sample are aged 45 in 1944, the age conventionally regarded in empirical analysis as the maximum age of relevance for family formation. I further restrict the baseline-sample of the first-generation to those who have completed their highest degree of education by 1944. Technically, I define the year of finishing education by using information on year of birth and years of education that are connected with the respective highest degree an individual has obtained. I assume that individuals start school at the age of 6. I apply this restriction in order to avoid that the displacement itself interrupted the educational acquisition of individuals in my sample.<sup>13</sup>

My main variable of interest is whether a person belongs to an expellee household. For the second or index generation, this variable takes value 0 for all individuals when both parents are natives and value 1 if at least one parent was born in the former Eastern territories of the German Reich. In total, 309 individuals (14.6 % of all second generation individuals interviewed) have an expellee background. Of these, 114 individuals have two parents that are expellees, 94 have an expellee mother, and 101 have an expellee father.

The sons and daughters of the index generation surveyed in the NEPS data constitute the third generation in my sample. Individuals in this third generation have been born between 1960 and 1989. I restrict the sample of third-generation individuals to those who have completed their education and have reached the age of 25 in the latest interview. Again, it is not possible to differentiate between individuals born in East or West Germany. However, as I condition the sample to those born until 1989, and under the restriction that their parents (the second generation) had been born in West Germany, this should be a minor problem. As for the parental generation, I define an indicator variable for whether the children belong to an expellee household. This binary variable takes the value 1 if at least one grandparent is an expellee, and value 0

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<sup>12</sup>I exclude individuals who were born abroad. Note that the NEPS data only include expellees of the first generation who had become parents in 1944 or later. This data restriction is not problematic for my analysis of spillover effects of displacement for the next generations. The same holds true for the birth cohort restriction, mass displacement started in 1944.

<sup>13</sup>Trimming the data in this way may lead to be highly-educated to be under-represented, i.e. that a significant part of the population could not finish education and especially higher education, by 1944. However, this should be a minor problem, as the mean of year birth for natives is 1919 and for expellees 1920 (first generation) and thus, by 1944, had the chance to had finished education. Furthermore, Figure 2 reveals that those who are younger than the mean year of birth are predominantly women, who had low participation rates in higher education in those days.

if both grandparents were born in the later territory of West Germany. The NEPS data would in principle allow to include all four grandparents of the third generation in the analysis. However, as information on the region of origin of the father-in-law and the mother-in-law of the interviewed individuals is not available, I restrict the analysis to the observed lineage. Note that this also implies that I do not use the available information on the partner of the interviewed individual. 359 individuals of the third generation have an expellee background (13.8 % of all individuals of this generation), of which 128 have grandparents that are both expellees. In a last step, I restrict the sample to those family dynasties for which all relevant information is available (year of birth, years of education) for all three generations considered. Throughout the analysis, I focus on years of education as the outcome. Whereas years of schooling only measure the years invested for the highest school degree obtained, years of education additionally include years spent in vocational training or years spent in higher education to obtain a university degree. By taking into account all educational degrees typically obtained before entering the labor market, years of education hence provides a more suitable measure of individual total human capital acquisition.

Table 1 presents descriptive statistics on the main variables of interest for the first, second and third generations. Columns (1) and (2) display the mean of the respective variable for individuals belonging to a native (column 1) or expellee household (column 2). Column (3) shows the difference of these means. The top of Table 1 presents these descriptive statistics for the first generation. As is evident, basic individual characteristics for the first generation, such as year of birth and years of education, are quite comparable for both groups. Given the way I restricted the sample, these individual characteristics are measured pre-treatment, i.e. prior to the displacement which set in in 1944. Furthermore, women and men in expellee households tend to be somewhat younger than their native peers, but no significant difference is discernable in terms of their respective years of education. The slightly lower years of education of men in an expellee household might be explained by the higher share of expellees working in the agricultural sector prior to displacement.

Table 1 also provides information on the labor market status of the first generation. This information refers to the point in time when an individual of the index (second) generation was 15 years old, which, on average, was the case in 1965 (see lower part of the table). Thus, the sampling date of the labor market status information is comparable to the point considered in the analysis of Bauer et al. (2013). For the group of expellees, the labor market status information collected hence provides a measure of their labor market integration long after the displacement. Women in expellee households tend to be employed more often than women in native households, which may be explained by the desire of these households to cushion the losses in household income after displacement. The employment type of "self-employment and helping family members" are exclusively taken up by women in native households. This again may be explained by the consequences of displacement. Women in expellee households, however, have higher shares of employment as white collar workers. Figures for males resemble those for women.<sup>14</sup>

The lower part of Table 1 provides descriptive statistics for the second and third generations. The second generation shows roughly 0.35 fewer years of education than their native counter-parts. This picture changes

<sup>14</sup>Note that the information on employment type is only available for the sub-group of individuals who have been employed at the time their child was 15 years old. Therefore, this information is not available for all individuals (observations) in the sample. The employment type "other employment types" includes civil servants, soldiers, and independent workers.

TABLE 1: Descriptive statistics on First, Second and Third Generation

	(1) Native Household	(2) Expellee Household	(3) Diff. (2-1)
<i>First Generation - (Grand) Mother</i>			
Year of birth	1919.87	1920.60	0.7213*
Years of education	10.53	10.49	-0.0395
0/1 employed (child aged 15)	0.32	0.41	0.0920**
White-collar worker	0.34	0.52	0.1768***
Blue-collar worker	0.31	0.33	0.0233
Self-empl. & helping family members	0.33	0.14	-0.1878***
Others (civil servants, soldiers, ind. working)	0.02	0.01	-0.0123
<i>First Generation - (Grand) Father</i>			
Year of birth	1915.81	1917.10	1.2902**
Years of education	12.07	11.97	-0.1003
0/1 employed (child aged 15)	0.93	0.94	0.0037
White-collar worker	0.33	0.39	0.0591*
Blue-collar worker	0.27	0.36	0.0878**
Self-empl. & helping family members	0.29	0.12	-0.1676***
Others (civil servants, soldiers, ind. working)	0.12	0.14	0.0207
<i>Second Generation</i>			
Year of birth	1952.09	1951.35	-0.7393*
Years of education	13.70	13.35	-0.3470*
0/1 female	0.48	0.53	0.0468
0/1 children	0.81	0.77	-0.0411
White-collar worker	0.31	0.30	-0.0117
Blue-collar worker	0.56	0.60	0.0383
Self-empl. & helping family members	0.05	0.02	-0.0232
Others (civil servants, soldiers, ind. working)	0.08	0.08	-0.0034
Employed in agriculture	0.04	0.02	-0.0216
Employed in industry	0.36	0.36	0.0030
Employed in services	0.60	0.62	0.0186
Observations	1812	309	2121
<i>Third Generation</i>			
Year of birth	1978.51	1977.89	-0.6151
Years of Education	14.96	14.99	0.0366
0/1 female	0.48	0.52	0.0383
Observations	2249	359	2608

Notes: Notes: \* (\*\*, \*\*\*) Significant at 10% (5%, 1%). Labor status information on the second generation refer to the first employment spell in the data.

for labor market status. Here, no statistically significant mean differences show up for the labor market status of the second generation concerning the first job they held when entering the labor market after completing their education. Specifically, the pronounced differences in employment type for the first generation are not visible for the second generation. Furthermore, there are no differences in terms of sector of employment (agriculture, industry or service sector) between second-generation individuals with a native and expellee

background. Two explanations may account for this finding. First, second-generation expellees successfully integrated into the West German labor market. And second, among the birth cohorts considered in the analysis (i.e. 1944 to 1969), second-generation expellees of early birth cohorts made the transition out of agriculture earlier than their native peers (see Lüttinger (1989)). For the third generation, no significant differences appear with respect to family background.

## 4 Empirical Strategy

To investigate more carefully if the adverse effects of displacement spill over to the next generations and to account for potentially confounding influences, I now turn to regression analysis. In a first step, I will investigate potential differences in the human capital acquisition of individuals who have a native or expellee family background. For this purpose, I estimate regression models of the following type:

$$\text{Second generation: } Y_{i,g} = \alpha + \beta D_{i,g-1} + \gamma X_{i,g} + \delta X_{i,g-1} + \phi X_{I,R} + \varepsilon_{i,g}, \quad (1)$$

$$\text{Third generation: } Y_{i,g} = \alpha + \beta D_{i,g-2} + \gamma Z_{i,g} + \phi Z_{i,g-1} + \delta Z_{i,g-2} + \varepsilon_{i,g}, \quad (2)$$

where  $Y_{i,g}$  is the human capital attainment of individual  $i$  of generation  $g$ , which is either the second or the third generation.  $D_{i,g-1}$  is an indicator for second-generation individuals and  $D_{i,g-2}$  an indicator for third-generation individuals that take value 0 for natives and 1 for individuals with an expellee background. Throughout the analysis, the human capital attainment of an individual  $i$  is measured in years of education, which includes all years spent in school, and further achievements in vocational training and tertiary education (e.g. university degree). The regressions are estimated by OLS.

Vectors of covariates considered in the regression analysis differ for the second and third generation. For the second generation, control variables include various characteristics of individuals (vector  $X_{i,g}$ ) and their parents (vector  $X_{i,g-1}$ ). Characteristics of individuals of generation  $g$  considered include year of birth, gender, number of siblings and a dummy variable of having children. The latter is of importance as the sample includes second generation immigrants independently of having children or not and thus, which individuals are taken into account when outcomes are measured for the third generation. Note that due to the sample restrictions, parental education is exogenous to displacement. In addition, the regression model controls for state fixed effects, which are summed up in vector  $X_{I,R}$ . State fixed effects take reference to the federal state where the individual of the second generation was born.

The vectors of covariates for the third generation mimic in structure those for the second generation.  $Z_{i,g}$  includes information on individual characteristics (gender and year of birth) and  $Z_{i,g-1}$  contains parental information (which now is the second generation) on their years of education, year of birth, and gender. Finally,  $Z_{i,g-2}$  contains grand-parental information (year of birth and years of education). Note that years of education of grandparents are exogenous to displacement, while those of parents (second generation) may have been affected by displacement. Regressions are again estimated by OLS, however, without accounting for state fixed effects as the federal state of birth is not directly observable for the third generation. During the NEPS interview, the second or index generation provided information on all their children (whereas the information on potential siblings of the second generation is limited to the number of siblings). Against this background, standard errors are clustered at the family level while estimating the outcomes for the third generation.

In a second step, I analyze whether the intergenerational transmission of human capital differs between

descendants of natives and expellees. For this purpose, I augment the formerly presented specifications (1) and (2) with interaction effects of expellee background and grand-parental education. Note that the years of education of the first generation are already included in vector  $X_{i,g-1}$  in case of the second generation and  $Z_{i,g-2}$  in case of the third generation.

I estimate regression models of the following type (here for first and second generation):

$$Y_{i,g} = \alpha + \beta_1 D_{i,g-1} + \beta_2 ED_{i,g-1,M} + \beta_3 ED_{i,g-1,M} \times D_{i,g-1} + \beta_4 ED_{i,g-1,F} + \beta_5 ED_{i,g-1,F} \times D_{i,g-1} + \gamma X_{i,g} + \delta X_{i,g-1} + \phi X_{I,R} + \varepsilon_{i,g}, \quad (3)$$

where  $Y_{i,g}$  measures years of education of individual  $i$  of generation  $g$ . The two sets of covariates  $X_{i,g}$  and  $X_{i,g-t}$  contain the same information as in specifications (1), however, parental education is now covered by  $ED_{i,g-1,M}$  in case of mothers and  $ED_{i,g-1,F}$  in case of fathers. The coefficients of interest are  $\beta_3$  and  $\beta_5$ , which display potential differences in the intergenerational transmission of education between individuals of native and expellee background. Estimations for the intergenerational transmission between the first and third generation follow this procedure, that is, re-estimating specifications (2) and augmenting this equation with the respective interaction effects of grand-parental education and expellee background.

I am primarily interested in the transmission rates between the first and second generation, and the first and third generation. The reason is that years of education of the first generation are exogenous to displacement. However, in a further step of the analysis, I will add years of education of the second generation, when estimating the correlation for the first and third generation, to test whether there is an independent effect of grand-parental education on the educational attainment of grandchildren, independently of its effect on the education of the latter's parents, i.e. the second generation.

In the course of the analysis, I will also investigate directly the transmission rate between the second and third generation. This rate is of interest as it may reveal different patterns in the transmission rates over the different generations.

## 5 Results

### 5.1 Displacement and the educational outcomes of the next generations

The baseline estimates of the effect of displacement on the human capital accumulation of the second generation are shown in Table 2. The upper part of Table 2 shows the effect of displacement on the years of education for all second-generation children. Specification (1) controls only for year of birth, having children and number of siblings. As can be seen, the coefficient of displacement status has a negative sign, and is statistically significant at the 5 percent level. Coming from an expellee background, i.e. having at least one parent who is an expellee, is associated with 0.378 less years of education, which is a sizeable effect. In specification (2), I add parental covariates (years of birth and years of education of mothers and fathers), which causes the displacement effect to decrease in absolute magnitude. In this preferred specification, expellee status is associated with 0.306 fewer years of education. The middle and lower parts of Table 2

present the respective results of separate regressions for sons and daughters. Apparently, the harmful effect of displacement is driven by sons. Expellee families may have given sons more responsibilities than daughters for contributing to household income, which may have made them quit education earlier to enter the labor market. Unfortunately, the NEPS data do not include any income or wealth measure, in particular for the time an individual was in childhood. In the analysis, I therefore rely on employment measures (see Table 1). Specifically, I add to specification (2) of Table 2 covariates on whether parents have been employed when the individual (in childhood) was aged 15 (column 3) and the employment type of both parents (i.e. being blue collar worker, column (4)). As is evident, the results remain virtually unchanged. In the following, I will conduct several tests to assess potential heterogeneous effects.

TABLE 2: Results for Second Generation - Years of Education

	(1)	(2)	(3)	(4)
<i>All</i>	-0.378** (0.147)	-0.306** (0.139)	-0.309** (0.139)	-0.276** (0.137)
N	2062	2062	2062	2062
<i>Sons</i>	-0.474** (0.199)	-0.408** (0.189)	-0.400** (0.190)	-0.379* (0.202)
N	1065	1065	1065	1065
<i>Daughters</i>	-0.317* (0.187)	-0.236 (0.185)	-0.249 (0.187)	-0.209 (0.187)
N	997	997	997	997
Controls	Individual	Parental	0/1 Employment	Employment status

*Notes:* \* (\*\*, \*\*\*) Significant at 10% (5%, 1%). Regression models (1) includes the individual covariates year of birth, gender, number of siblings and a dummy variable whether the individual has children. Regression models (2) adds year of birth and years of education of the mother and father. Regression models (3) further includes information on whether the father and mother were employed at the age of 15 of the individual. Model (4) additional accounts for a full set of dummy variables on employment status (See Table 1). Regression models (1) to (4) additionally control for the federal state of birth.

The sample of individuals of the second generation covers birth cohorts from 1944 to 1969. The results presented in Table 3 provide evidence on whether there are important differences across these different birth cohorts. The earliest birth cohorts of descendants of expellees may have suffered the most because circumstances in early post-war Germany were more adverse. However, early birth cohorts of natives, which constitute the comparison group for these descendants of forced migrants, were also raised in the harsh environment of the early post-war period with possibly negative repercussions for them. To explore potential effect heterogeneity of displacement across different birth cohorts of the second generation, I first re-estimate the main specification, replacing the covariate year of birth with cohort dummies (Panel B.2). Birth cohorts are grouped in the following way: born between 1944 and 1949, born between 1950 and 1959 and finally 1960 and 1969. In a further specification (Panel B.3), I interact the cohort dummies with the displacement indicator. Birth cohorts from 1950 to 1959 serve as the reference group. As is evident, estimated coefficients on the interaction terms lack statistical significance. If any pattern is discernable at all, it seems that the early birth cohort does indeed suffer the most, and that the youngest group (those born



between 1960 and 1969) could catch up with their native peers.

As discussed in Section 3, the dependent variable years of education is the total years of education of an individual and thus, includes all educational activities from schooling to university. In Panel C. of Table 3, I test whether the harmful effect of displacement found in Table 2 is more pronounced for specific parts of the education distribution. In doing so, I re-estimate specification (1) and replace the dependent variable years of education with the bivariate variable of whether an individual holds a vocational training degree (Panel C.1) and whether an individual holds a university degree (Panel C.2). The results clearly show that the differences in the educational attainment between second generation individuals belonging to a native or expellee background are driven by the higher end of the education distribution. For obtaining a vocational training degree, no differences between both groups are visible.

Throughout the analysis so far, I considered an individual as a descendant of expellees if at least one parent (second generation) was displaced from the former Eastern territories of the German Reich. However, displacement effects may differ across these family types. For this reason, Panel D. of Table 3 presents results where I account for the different family types, and where I decompose the general expellee status measure in i) both parents are expellees, ii) the mother is expellee and the father is native and iii) the mother is native and the father is an expellee. The results indicate that the family type where both parents are expellees, and who arguably were hit most by displacement, drive the results. However, this effect is only statistically significant at the 10 percent level.

Summing up, the analysis so far reveals that displacement had a harmful effect on the educational attainment of the second generation. However, this effect is most prominently driven by the higher end of the skill distribution, namely higher education, and by those whose parents were both expelled. So far, the analysis concentrated on the first generation that completed education in the former Eastern territories and on the second generation that was born in West Germany and thus, was not alive during the flight and expulsion. Displacement may have the most harmful effects for those whose education was interrupted and/or who had to flee. Table 4 presents regression results which account for this. In the respective regressions, I stepwise add second generation individuals to the sample who either have been born in the Eastern territories (Panel B.), or first generation individuals who potentially did not complete education prior 1944 (Panel C.).<sup>15</sup> Please note that as such, the educational achievement of the first generation is now potentially endogenous to displacement and the second generation of expellees is now less comparable to the native population. Yet, this has not to be a drawback as it captures a likely scenario of forced migration processes where the individual is not able to select into migration or not. Overall, the results do not point to any specific patterns.

We now turn to the results for the third generation (Table 5). Displacement may have affected the educational attainment of the third generation through its effect on the educational attainment and the subsequent labor market career of the second generation. The descriptive statistics presented in Table 1 speak against this. Table 5 reveals that there are no effects of displacement on the educational attainment of the third generation, neither in specifications that solely condition on individual covariates (specification 1), parental

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<sup>15</sup>However, I still apply the same age restrictions. This implies that potentially interrupted educational careers are not driven by any other factors than displacement, assuming that individuals did not anticipate displacement, which is very unlikely.

TABLE 3: Results- Second Generation - Years of Education - Heterogeneous Effects

A. Baseline, including parental controls	
Expellee status	-0.306** (0.139)
B Cohort Effects	
B.1 Baseline without year of birth	
Expellee status	-0.404*** (0.146)
B.2 Baseline with cohort dummies	
Expellee status	-0.395*** (0.146)
I, Cohort 44-49	-0.241** (0.110)
I, Cohort 60-69	0.343* (0.190)
B.3 Baseline with cohort dummies & interaction	
Expellee status	-0.405** (0.190)
I, Cohort 44-49	-0.232* (0.119)
I, Cohort 60-69	0.290 (0.198)
Expellee status x I, Cohort 44-49	-0.069 (0.306)
Expellee status x I, Cohort 60-69	0.747 (0.703)
C Skill level	
C.1 0/1 Vocational training (dep. variable)	
Expellee status	0.030 (0.029)
C.2 0/1 University degree (dep. variable)	
Expellee status	-0.054** (0.025)
D. Family composition	
Both parents expellees	-0.399* (0.216)
Mother Expellee, Father Native	-0.208 (0.236)
Mother Native, Father Expellee	-0.291 (0.227)
N	2062

Notes: \* (\*\*, \*\*\*) Significant at 10% (5%, 1%). Panel A. - Panel D. are estimated separately and replicate model (2) of Table (2).

TABLE 4: Results - Second Generation - Years of Education - Different Samples

A. Baseline, including parental controls	
Expellee Status	-0.306** (0.139)
N	2062
B. Including born in Eastern Territories (N==76)	
Expellee Status	-0.260** (0.124)
N	2138
C. Without restriction on completed education (N==407)	
Expellee Status	-0.246** (0.124)
N	2469
D. Without restriction on completed education & born in Eastern Territories (N==483)	
Expellee Status	-0.215* (0.116)
N	2545

Notes: \* (\*\*, \*\*\*) Significant at 10% (5%, 1%). Panel A. - Panel D. are estimated separately and replicate model (2) of Table (2). Panel B. adds 76, Panel C. 407 and Panel D. 483 individuals to the baseline sample.

education (specification 2) nor by further adding grand-parental information on education (specification 3). For this generation, the grandsons and granddaughters of potentially displaced grandparents, no difference in the educational attainment appears. Therefore, neither the lower years of education of their parents (Table 2) nor the lower incomes measured in 1971 by Bauer et al. (2013) relate to lower educational levels of this generation. Put differently, the negative effects of displacement hit the second generation, however, the third generation recovered from the consequences of the displacement.

TABLE 5: Results - Third Generation - Years of Education

	(1)	(2)	(3)
Expellee Status	0.041 (0.171)	0.032 (0.155)	0.072 (0.154)
N	2608	2608	2608
Controls	Individual	Parental	Grand-parental

Notes: \* (\*\*, \*\*\*) Significant at 10% (5%, 1%). Regression Model (1) includes the individual controls gender and year of birth. Model (2) additional controls for year of birth, gender and years of education of the parental generation, model (3) adds the corresponding information for the grand-parental generation. Standard errors are clustered at the family level.

## 5.2 Intergenerational transmission of human capital

The intergenerational transmission of human capital, or correlation of parental and offspring education, is potentially weakened due to displacement. I therefore re-estimate specification (3), which includes interaction terms on the years of education of the ancestor generations and displacement status. Table 6 presents the corresponding results. Panel A. shows the results for the transmission rates for the first and second generation. Regressions are run separately for all second generation individuals (column 1), only sons (column 2) and only daughters (column 3). The correlation of fathers and offspring's education for natives is 0.29 and for mothers of 0.19, which is a rate below those typically found in the literature (see e.g. Lindahl et al. (2015)), which can potentially be explained by the birth cohorts (1899-1928) of this sample. Most importantly, the coefficients of interest - those of the interactions of expellee background and parental education - are insignificant. As such, the results do not point to any differences in the transmission rates. However, education of fathers is of less importance for expellee children, albeit not statistically significant. In general, by including the respective interaction terms, the displacement coefficient itself is no longer statistically significant. With respect to differences in the results by gender, fathers education is more important for daughters, but is less important for expellee-household daughters than for native-household daughters, however, this does not hold for sons. This might be explained by the higher participation rates of females of the birth cohorts of 1944 to 1969.

Panel B. presents the results on the transmission rates from the first to the third generation. In Panel B.1 I consider only the educational attainment of the first generation as controls, whereas in Panel B.2 I include the years of education of the second generation as well. The latter will display whether there is an independent effect of grand-parental education on their grandchildren, independently of their effect on the years of education of the second generation. Panel B.1 reveals a correlation of 0.09 for grandfathers and 0.12 for grandmothers, however, this correlation turns to be insignificant for grandfathers as soon as I control for the educational attainment of the second-generation (see Panel B.2). For grandmothers, the correlation remains weakly significant at the 10 percent level, but decreased in magnitude to 0.06. Overall, there are no significant differences for grandparents with respect to whether they belong to a native or expellee background.

As discussed in Section 4, the years of education of the second generation is endogenous to displacement. However, the question on how the transmission rate differs between native and expellee descendants for the second to the third generation is of interest: It displays whether the modestly weakened transmission rate for the first and second generation (Panel A.) continues for expellee families or whether they catch up to the levels of natives. Panel C. presents the respective findings, whereby Panel C.1 shows the results for fathers and Panel C.2 for mothers. The transmission rates are 0.34 for fathers and 0.30 for mothers. In contrast to the first generation (Panel A.), no significant differences are displayed, including the education of the father for daughters.

Setting these results into context, the transmission rates presented here are a little bit lower compared to other findings in the literature, which again might be due to the included (younger) birth cohorts. Braun and Stuhler (2016) use two waves of the NEPS sample. The first sample consists of individuals born between 1944 and 1949, the second of the cohorts born between 1950 and 1954. They find transmission rates for

TABLE 6: Results - Intergenerational transmission of human capital

	(1) All	(2) Sons	(3) Daughters
A. First to second generation			
Expellee Status	0.594 (0.965)	-0.820 (1.516)	1.559 (1.259)
Father Education	0.289*** (0.028)	0.232*** (0.040)	0.348*** (0.040)
Expellee Status x Father Education	-0.081 (0.068)	0.079 (0.098)	-0.239** (0.096)
Mother Education	0.189*** (0.032)	0.252*** (0.046)	0.119** (0.046)
Expellee Status x Mother Education	0.007 (0.082)	-0.051 (0.124)	0.102 (0.111)
N	2062	1065	997
B.1 First to third generation without Education of index generation			
Expellee Status	-0.976 (1.233)	-0.505 (1.747)	-1.309 (1.574)
Grandfather Education	0.092*** (0.033)	0.089* (0.046)	0.096** (0.041)
Expellee Status x Grandfather Education	0.013 (0.083)	-0.030 (0.121)	0.045 (0.092)
Grandmother Education	0.120*** (0.038)	0.118** (0.050)	0.121*** (0.046)
Expellee Status x Grandmother Education	0.087 (0.097)	0.093 (0.129)	0.081 (0.125)
N	2608	1343	1265
B.2 First to third generation with Education of index generation			
Expellee Status	-1.029 (1.173)	-0.442 (1.627)	-1.447 (1.561)
Education Index Person	0.310*** (0.025)	0.302*** (0.033)	0.323*** (0.031)
Grandfather Education	-0.006 (0.032)	-0.021 (0.044)	0.010 (0.040)
Expellee Status x Grandfather Education	0.042 (0.071)	-0.007 (0.106)	0.075 (0.085)
Grandmother Education	0.063* (0.036)	0.069 (0.048)	0.055 (0.046)
Expellee Status x Grandmother Education	0.058 (0.091)	0.064 (0.121)	0.056 (0.122)
N	2608	1343	1265
C.1 Second to third generation - Index Person is Father			
Expellee Status	-0.396 (1.224)	-0.081 (1.722)	-0.868 (1.747)
Education Index Person	0.344*** (0.030)	0.337*** (0.042)	0.352*** (0.042)
Expellee Status x Education Index Person	0.033 (0.088)	0.006 (0.122)	0.071 (0.126)
N	1223	639	584
C.2 Second to third generation - Index Person is Mother			
Expellee Status	-0.155 (1.054)	1.262 (1.475)	-1.516 (1.506)
Education Index Person	0.298*** (0.030)	0.298*** (0.041)	0.308*** (0.043)
Expellee Status x Education Index Person	0.019 (0.080)	-0.081 (0.113)	0.116 (0.114)
N	1385	704	681

Notes: \* (\*\*, \*\*\*) Significant at 10% (5%, 1%). The model presented in Panel A. is equivalent to model (2) of Table (2), Panel B.2 is equivalent to Model (3) in Table (??), Panel B.1. as well, however, without controlling for parental education. Panel C.1 and C.2 follow Model (3) of Table (??). Standard errors are clustered at the family level in all Panels except Panel A. Additionally, all models include the respective interaction term(s) and are estimated separately for the sample of all individuals, sons and daughters.

the first to second generation of 0.41 (sample 1) and 0.47 (sample 2). The average year of birth for the first generation is 1916 and 1922, respectively. For the transmission rates from the second to third, the sample consists of second generation individuals of the birth cohorts 1947 and 1952 (sample 1 and 2, again, the mean of the birth cohorts is given). Lastly, the third generation covers individuals of the cohorts 1975 (sample 1) and 1981 (sample 2). They find transmission rates from the second to third generation of 0.36 to 0.38.

## 6 Conclusion

The world currently faces huge flows of refugees. Against this background, our knowledge of the economic integration of forced migration is scarce. The existing literature focuses on the first, displaced generation and finds economically harmful effects, such as lower incomes even a quarter of a century after displacement. Far less attention has been devoted to the economic integration of the subsequent generations. However, a large part of forced migrants is likely to stay in the receiving country and thus influence the receiving country permanently.

This paper investigates whether the economically harmful effects of displacement of the first generation, which have been found in the literature, spill over to their descendants. Employing the inflow of 8 million expellees to West Germany in the last years of World War II, this paper investigates the educational achievement and intergenerational transmission of human capital of two subsequent generations. The educational achievement of second and third generation expellees is an important predictor for their labor market integration. The results of this paper show that second generation expellees have 0.3 fewer years of education. This result is driven by sons. Further tests for heterogeneous effects show that this finding is driven by the higher end of the education distribution. Whereby second generation expellees do not show any differences in the likelihood to complete a vocational training degree, they are less likely to obtain a university degree. This finding can potentially be explained by higher (perceived) opportunity costs of higher education. Further, the results indicate that children whose parents are both expellees were hit the hardest. The descriptive evidence does not point to any pronounced differences in the labor market attachment of second generation expellees compared to those of natives. The latter may also explain why the third generation of expellees does not show any differences in the educational attainment compared to natives of the same generation. In addition, the results on the intergenerational transmission of human capital do not show any major different patterns for expellee and native families. If significant differences appear, they relate to the transmission of education between the first and second generation.

Overall, the results of this paper suggest that the social and economic costs of displacement are long lasting and go beyond the first, initially displaced generation. In detail, the harmful effects of displacement were found for individuals who were born in the receiving country and in part 25 years after the displacement of their parents. Taking the specific context of this study into consideration, the results of this paper may represent a lower bound with respect to the consequences of forced migration. Predominantly with respect to the first generation, who were close substitutes to native Germans, i.e. spoke German and knew the institutional setting even before displacement. However, the results of this paper imply that the economic

integration of the first generation should be as successful as possible in order to avoid that the harmful effects of displacement multiply through future generations.

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