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Settlement Location Shapes Refugee Integration: Evidence from Post-War Germany

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ABSTRACT

Settlement Location Shapes Refugee Integration: Evidence from Post-War Germany*

Following one of the largest displacements in human history, almost eight million forced migrants arrived in West Germany after WWII. We study empirically how the settlement location of migrants affected their economic, social and political integration in West Germany. We first document large differences in integration outcomes across West German counties. We then show that high inflows of migrants and a large agrarian base hampered integration. Religious differences between migrants and natives had no effect on economic integration. Yet, they decreased intermarriage rates and strengthened anti-migrant parties. Based on our estimates, we simulate the regional distribution of migrants that maximizes their labor force participation. Inner-German migration in the 1950s brought the actual distribution closer to its optimum.

JEL Classification: N34, J15, J61

Keywords: forced migration, regional integration, post-war Germany

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1 Introduction

The displacement of Germans from East and Central Europe during and after World War II is one of the largest episodes of forced migration in human history. At least 12 million people fled or were expelled, most of them from the territories that Germany relinquished after the war. The mass inflow of expellees (*Heimatvertriebene*) dramatically increased the West German population. By 1950, every sixth West German resident was an expellee. The integration of the economically impoverished newcomers into the West German economy and society is widely seen as one of the key challenges that the war-ridden country faced after 1945 (Connor 2007, Grosser 2006).

Contemporary observers have long pointed to regional differences in the integration of expellees (Reichling 1958, Pfeil 1958). The 1950 unemployment rate of expellees, for instance, ranged from 4.9 percent in the western state of North Rhine-Westphalia to 27.2 percent in Schleswig Holstein. This paper uses newly digitized administrative data at the county level to provide a comprehensive empirical assessment of the regional conditions that influenced the economic, social, and political integration of expellees–and led to the strong differences in integration outcomes that we document in the first part of the paper.

Our empirical analysis tests the three key hypotheses that have been put forward by historians and social scientists (Connor 2007, Pfeil 1958, Schulze 2002). First, we assess whether high population shares of expellees deteriorated integration outcomes. Second, we check whether agrarian regions were less successful in integrating expellees than industrialized regions. Third, we test whether religious differences between expellees and non-expellees hampered integration. We measure integration by a broad set of economic, social and political outcomes, which include expellees' labor force participation, inter-marriage rates between expellees and native West Germans, and electoral support for expellee and anti-expellee parties. We find that regional conditions were indeed key for integration outcomes.

Three features of our setting are crucial for the empirical analysis. First, integration outcomes varied widely across the 526 West German counties in our data. The expellee labor-force-to-population rate in 1950, for instance, ranged from 31.6% to 59.0%. Second, expellees encountered very different local socioeconomic conditions. West German counties were not only very different in their sectoral employment structure and predominant Christian confession. They also differed strongly in the population share of expellees, which ranged from 1.8% to 44.1% in 1950. Third, our historical setting arguably creates quasi-exogenous variation in the regional distribution of expellees. In particular, the initial distribution was driven by the geographic proximity to expellees' origin regions, not by integration prospects (Connor 2007, Müller and Simon 1959, Nellner 1959). At the end of World War II, Germans from Eastern Europe fled from the approaching Red Army to nearby regions in West Germany. Expellees thus gathered in the eastern parts of West Germany that were most accessible to them.

While expellees did not choose their initial location based on integration prospects, the local housing supply did influence their resettlement location in West Germany. Authorities in West Germany, overwhelmed by the size and pace of the inflow, were unable to distribute expellees according to their religious affiliation or local job prospects. Instead, their prime concern was to provide expellees with a roof over their heads (Nellner 1959). Yet, most of the housing stock laid

in ruins after the war. One key challenge for our empirical analysis is thus that war destructions might have driven both the regional distribution of expellees and their integration outcomes. We ease this concern by controlling for various indicators of war destructions. We then show that conditional on covariates, regional expellee shares do not correlate with pre-war economic development. Likewise, the skill level of expellees did not differ systematically across regions.

The occupying powers imposed severe restrictions on inner-German migration until 1949. The initial regional distribution of expellees thus persisted for several years after the war. Our empirical analysis uses an instrumental variable strategy to address remaining concerns that expellees relocated endogenously within Germany after their initial placement. The instruments isolate the variation in regional expellee shares and religious distance that is due to the initial placement of expellees, not their later movements.

Our key results underline the importance of the socioeconomic conditions at the resettlement location for expellee integration. First, the regional expellee share had strong negative effects on the economic, social and political integration of expellees in 1950, i.e., five years after the war. A one standard deviation increase in the expellee share of a county decreases labor force participation of expellees by 0.4 standard deviations (5%), reduces inter-marriage rates by 0.3 standard deviations (4.3%) and increases the support for anti-expellee parties by 0.4 standard deviations (15%). These findings are in line with the hypothesis that higher expellee shares intensified labor market competition and increased tensions between natives and expellees.

Second, a large agrarian base had an even stronger adverse effect on expellees' labor force participation: A one standard deviation increase in the 1939 agricultural employment share reduces expellees' labor force participation rate by 0.5 standard deviations (7.7%). A large agrarian base also worsened social and political integration outcomes.

Third, regional differences in the expellee share and in pre-war agricultural employment alone account for more than 60% of the variation in expellees' labor force participation. They were thus key determinants of regional integration outcomes.

Fourth, differences in the religious confession between expellees and natives significantly reduced inter-marriage rates and increased the vote share of anti-expellee parties. Yet, they had no effect on expellees' labor market outcomes. These findings are consistent with the notion that shared values and traditions facilitate the social integration of refugees.

Fifth, political integration takes time to complete. We find that throughout the 1950s, religious distance and the share of expellees remain strong predictors of the success of anti-expellee parties. The impact of the share of expellees is receding with time but remains statistically significant until 1970.

Finally, we use our empirical estimates to calculate the regional distribution of expellees that maximizes their labor force participation. The optimal distribution increases expellees' labor force participation rate by almost one standard deviation (11%) relative to the actual distribution, bringing expellee participation to the level of natives. This highlights the importance of location for expellee integration. We also show that expellee movements in the 1950s brought the actual distribution of expellees closer to its optimum.

Related Literature. Our paper contributes to several strands of the literature. First, it advances a small quantitative literature on the effects of the displacement for expellees. Bauer et al.

(2018) document that expellees faced considerably higher mortality risks than nondisplaced West Germans. Only expellees in the top income quintile overcome this adverse displacement effect. In prior work, Bauer et al. (2013) focus on the impact of forced migration on income, wealth, and the occupational position of the displaced and their offspring. They show that in 1971, expellees still earned significantly lower incomes than native West Germans and were over-represented among unqualified workers. Falck et al. (2012) show that the relative occupational position of expellees did not improve after the Federal Expellee Law was enacted in 1953. They thus conclude that the law did not achieve its aim of improving the labor market prospects of expellees. Whereas prior empirical literature provides important insights into the country-wide situation of expellees on the labor market, we consider spatial heterogeneity in integration outcomes.[1] Our paper shows that the initial resettlement location markedly shaped expellee integration.[2]

More generally, our paper contributes to a growing literature on the economic effects of displacement (reviewed in Ruiz and Vargas-Silva 2013, Becker and Ferrara 2019). Sarvimäki et al. (2018) investigate the long-term effects of the displacement of Finns from areas ceded to the Soviet Union after World War II. While they find a positive effect of displacement on the long-term income of farmers, the literature mainly documents negative economic effects of displacement.[3] In post-war Bosnia and Herzegovina, employment rates are lower for displaced Bosnians than for Bosnians who stayed behind (Kondylis 2010). Negative effects of displacement on consumption levels are documented for Colombia (Ibáñez and Vélez 2008) and Northern Uganda (Fiala 2015). None of these papers studies how the displacement effect varies with characteristics of the initial resettlement location.

A number of studies have also exploited the quasi-experimental variation in our setting to study the effect of expellee inflows on receiving regions. In particular, prior work exploits the large variation in expellee inflow rates to study their effect on structural change (Braun and Kvasnicka 2014), native labor market outcomes (Braun and Mahmoud 2014, Braun and Weber 2016), regional population patterns (Schumann 2014, Braun et al. 2017, Wyrwich 2018), local taxes and spending (Chevalier et al. 2018), and native educational outcomes (Semrad 2015). In contrast to these papers, we study how the uneven distribution of expellees–along with religious differences and the economic structure of receiving counties–affected expellee integration outcomes.

Our paper also contributes to a nascent literature that studies the distribution of refugees *across* countries but generally abstracts from integration outcomes.[4] Hatton (2015, 2016) ar-

[1] In a similar spirit, Ruhose and Piopiunik (2017) show that local conditions are an important mediating factor for the effect of immigration on crime. In particular, they show that the inflow of ethnic Germans from the former Soviet Union had larger impact on crime rates in German regions with high pre-existing crime levels and high unemployment rates.

[2] Pfeil (1958) studied already in 1958 whether expellee employment, i.e., one of our outcome variables, varied with the regional expellee share, but did so in a (univariate) correlation analysis. We also extend her work by considering political integration as an additional outcome. We describe evidence from *qualitative* studies when we discuss our hypotheses below.

[3] Becker et al. (2018) document positive effects of forced migration on educational attainment. Exploring the displacement of Poles in the aftermath of World War II, the authors show that descendants of forced migrants are more educated today. They argue that the experience of forced migration shifted preferences away from material consumption and towards human capital investment.

[4] An important recent exception is Bansak et al. (2018). The authors use machine learning techniques to develop an algorithm for assigning refugees to resettlement locations within a country, so as to maximize refugees'

gues that there is a strong case for a common asylum policy in the European Union. Yet, such a policy can only reach the socially optimal number of admitted refugees if some form of financial burden-sharing exists. These arguments rests on the notion that hosting refugees is an international public good, which will be under-provided in the absence of cooperation. Fernández-Huertas Moraga and Rapoport (2014) show that tradeable immigration quotas can reveal country-specific costs of hosting migrants. They combine the tradeable quota system with a matching mechanism, which accounts for migrants' preferences over destinations and countries' preferences over migrants.

Our result that expellee inflows increased the vote share for anti-expellee parties is consistent with recent evidence for Denmark. Dustmann et al. (2019) exploit variation in the timing of refugee allocation, induced by a dispersal policy that randomly distributed refugees across Denmark. They find that outside urban municipalities, allocation of larger refugee shares between elections increases the vote share of anti-immigration and center-right parties. Recent studies also provide evidence that refugee inflows–or immigrant inflows more generally–increase the vote share of right-wing parties in Austria (Halla et al. 2017), Germany (Otto and Steinhardt 2014) and Greece (Vasilakis 2018).

Finally, our finding that higher expellee shares deteriorate economic integration is consistent with findings in Beaman (2012). The author shows that labor market outcomes of newly arrived refugees in the US worsen with the number of recently resettled refugees of the same nationality. *Pre-existing* local ethnic networks, in contrast, might have positive effects on refugees' labor market outcomes (Damm 2009, Edin et al. 2003).

2 The Flight and Expulsion of Germans from Eastern Europe

We begin with describing the flight and expulsion of Germans from Eastern Europe, the regional distribution of expellees in West Germany, and their socio-demographic characteristics relative to the native West German population. Henceforth, we will refer to those territories east of today's German-Polish border that Germany relinquished after World War I or II as eastern territories. Figure 1 depicts the territories that Germany ceded after the two world wars.

Flight and Expulsion. Between 1944 and 1950, 12-14 million Germans were displaced from Eastern Europe. The displacement took place in three phases which we briefly describe in the following (for further details see Connor 2007, Douglas 2012, Schulze 2011).

The first phase of the displacement took place at the final stages of World War II. It began when Soviet troops entered East Prussia in October 1944. The Soviet offensive prompted more than six million refugees from Germany's eastern territories to flee westwards (Oltmer 2010). Since the Nazis often delayed organized evacuations until it was too late, many people fled on their own. They either took the last train or ships out of the territories under attack or fled on foot. As a consequence, refugees' initial destination in the West were largely determined by the available escape routes (Müller and Simon 1959). Many East Prussians, for instance, rushed to the ports on the Baltic Sea and boarded ships that brought them to North Germany.

overall employment rate. In line with our findings, Bansak et al. (2018) find that optimized assignments can significantly improve refugee integration both in the United States and in Switzerland.

Figure 1: Germany's Territorial Losses 1919-45 and its Division in 1945

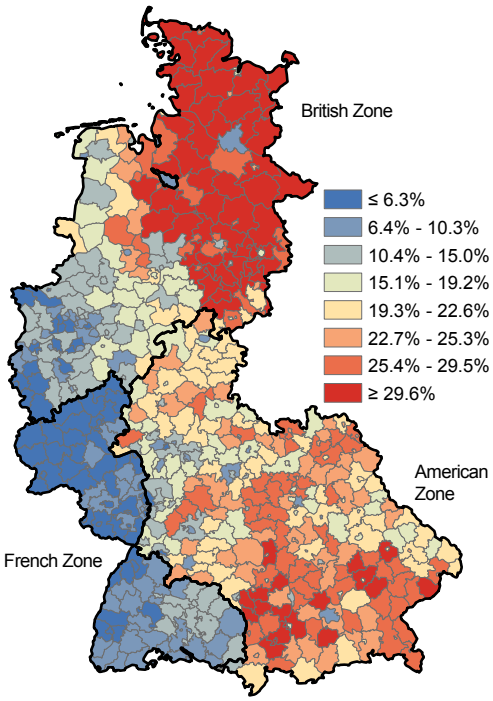
Base maps: MPIDR (2011).

After Nazi Germany's surrender in May 1945, authorities in Poland–soon to be followed by those in Czechoslovakia–began expelling the remaining German population. These so-called 'wild' expulsions, which marked the second phase of the displacement, were not yet sanctioned by an international agreement. Ethnic Germans were forced out of their homes on short notice and gathered in holding camps. They were then either put on trains, or were marched to the border and driven into occupied Germany. The wild expulsions thus increased expellee numbers especially in Germany's eastern border regions. Existing estimates suggests that during the wild expulsions, 800,000 to 1,000,000 people were displaced from Czechoslovakia alone (Douglas 2012).

The third phase of the displacement began in August 1945 when the Soviet Union, the United Kingdom and the United States concluded the Potsdam Agreement. The Agreement shifted the border between Germany and Poland westwards to the Oder-Neisse line (see Figure 1). The eastern parts of Pomerania and Brandenburg, and most of East Prussia, were placed under Polish control. The rest of East Prussia went to the Soviet Union. German territories west of the Oder-Neisse line were divided into four occupation zones: a French zone in the southwest, a British zone in the northwest, an American zone in the south, and a Soviet zone in the east. The three Western zones were later merged into the Federal Republic of Germany (henceforth: West Germany), the focus of our analysis. The Soviet zone became the German Democratic Republic (henceforth: East Germany).

The Potsdam Agreement of August 1945 legalized the expulsions of Germans from Eastern Europe and stipulated 'that the transfer to [postwar] Germany of German populations, or elements thereof, remaining in Poland, Czechoslovakia, and Hungary, will have to be undertaken'. In November 1945, the Allied Control Council approved a timeline for the organized expulsion of the estimated 6.65 million Germans who were still living in Poland, Czechoslovakia, and Hungary

Figure 2: Population Share of Expellees in West German Counties, 9/1950



Notes: The figure shows the population share of expellees on 13 September 1950. The bold line depicts the border of the three occupation zones. The graph divides the population into eight equally numerous subsets (octiles).
Source: Statistisches Bundesamt (1955b). *Basemap*: MPIDR (2011).

at that time. The council also set quotas for the expellee intake of each occupation zone (but did not regulate the distribution of expellees within occupation zones). Most of the organized expulsion transfers took place until 1946, but transfers continued on a smaller scale until 1950. Germans were either brought to holding camps or immediately put on often overloaded trains, which brought them to reception points in occupied Germany.

Regional Distribution. By September 1950, 7.876 million expellees had settled in West Germany where they accounted for 16.5% of the population. The majority of them–around 4.42 million–had lived in the eastern territories that Germany ceded after World War II, namely in Silesia (2.05 million), East Prussia (1.35 million), Pomerania (0.89 million) and Brandenburg (0.13 million). In addition, 1.91 million expellees came from the Sudentenland, the German-speaking part of Czechoslovakia which Nazi Germany annexed in September 1938. The remaining expellees had mostly lived in the eastern territories that Germany ceded after World War I, namely in Posen and West Prussia.

Importantly, expellees were settled very unevenly across West Germany. Figure 2 depicts the county-level population shares of expellees in September 1950. Three main facts stand out. First, the overall population share of expellees was much lower in the French occupation zone (6.6%) than in the American (18.7%) and British (17.2%) zones. This was because the French initially refused to accept any newcomers into their zone. The French had not been invited to the Potsdam conference. Therefore, they did not feel obliged to the commitment of the Potsdam

agreement to secure an 'equitable distribution' of expellees across occupation zones.

Second, the population share of expellees was considerably higher in the eastern parts of the American and British occupation zones than in the western parts. This is particularly evident for the British zone where the expellee share was well above 30% in the north-east but as low as 5% in the far west. During this first phase of the displacement at the final stages of the war, refugees sought shelter in those regions of West Germany that were closest to their former homelands and thus most accessible to them (Müller and Simon 1959). The 'wild expulsions' of the second phase only worsened these imbalances–and over-proportionally increased the expellee share in areas close to West Germany's eastern border. Even the organized transports of the third phase typically brought expellees to reception points in the east of each occupation zone.

Third, on average, the population share of expellees was higher in rural areas than in cities. This was because many cities were in shambles after the war. Since housing was scarce, the military governments in the American and British occupation zones frequently restricted settlings in cities (Müller and Simon 1959). Instead, expellees were often housed in more rural areas where the housing stock had suffered less from bombing (Burchardi and Hassan 2013, Connor 2007). This rural-urban divide added to the regional imbalances, as the rural areas in the north- and southeast of Germany were already overburdened with refugees due to their geographical proximity to the eastern territories and the Sudetenland.

Importantly, local economic conditions were not among the factors that determined the distribution of expellees. Overwhelmed by the pace and the size of the inflow, the military administration was unable to distribute expellees according to their local job prospects. As the contemporary geographer and statistician Werner Nellner put it (Nellner 1959, p. 73): "The entirely confusing political and economic situation and the abruptness of this pouring-in [of the expellees] did not allow for a sensible distribution of the expellees into areas where they could find work." We will back up this conclusion empirically when we describe our empirical strategy.

Another important consequence of the absence of a "sensible distribution" was that expellees were not distributed according to their skills. In particular, the Allied authorities did not account for expellees' previous occupation (Connor 2007). Many Germans from the industrialized Sudetenland, for instance, ended up in the neighboring rural parts of Bavaria, which were heavily dependent on agriculture and tourism. Expellees' skills are thus unlikely to correlate with local characteristics. Appendix F provides supportive evidence for the plausibility of this conclusion.

The very unequal regional distribution of expellees remained largely unchanged in the first few years after the war. The occupying powers severely restricted the ability of Germans to change residence, and initially banned relocation altogether. After the ban was relaxed in 1947, moving still required permission from military authorities (permission was primarily granted for family reunification). It was not until the foundation of West Germany in May 1949 before the general freedom of movement was restored (Müller and Simon 1959, Ziemer 1973).[5]

Socio-demographic Characteristics. Expellees and natives were similar in several important respects. They both spoke German as their mother tongue and had both been educated in German schools. Moreover, the ceded eastern provinces, home to most expellees, had all been

[5]The severe moving restrictions lead to a correlation coefficient between the county-level population shares of expellees in 1946 and 1950 of 0.966.

an integral part of the German Reich since it was formed in 1871. Most expellees and natives had therefore lived in the same country for decades. Expellees were also not a selected sub-group of their home regions, as virtually all Germans living east of the Oder-Neisse line fled or were expelled.

As a result, socio-demographic characteristics of expellees and natives were similar. Table B1 in the Appendix shows that females outnumbered males both in the expellee and the non-expellee population, a legacy of the two world wars. Expellees were slightly younger, somewhat more likely to be single, and slightly better educated than the remainder of the population. Overall, however, differences between expellees and natives were small, especially when compared to other migration episodes.

The shares of Catholics and Protestants were also very similar in the expellee and non-expellee population (see again Table B1). The expellee inflow had nevertheless a significant effect on the denominational structure at a *regional level*. As the expellees could not choose their initial destination based on the predominant confession, many Catholic expellees ended up in predominately Protestant regions and vice versa (Connor 2007). In Bavaria, for instance, the number of exclusively Catholic or Protestant parishes fell from 1,564 in 1939 to just nine in 1950 (Menges 1959). Appendix Section A describes the effect of the expellee inflow on the regional denominational structure in detail.

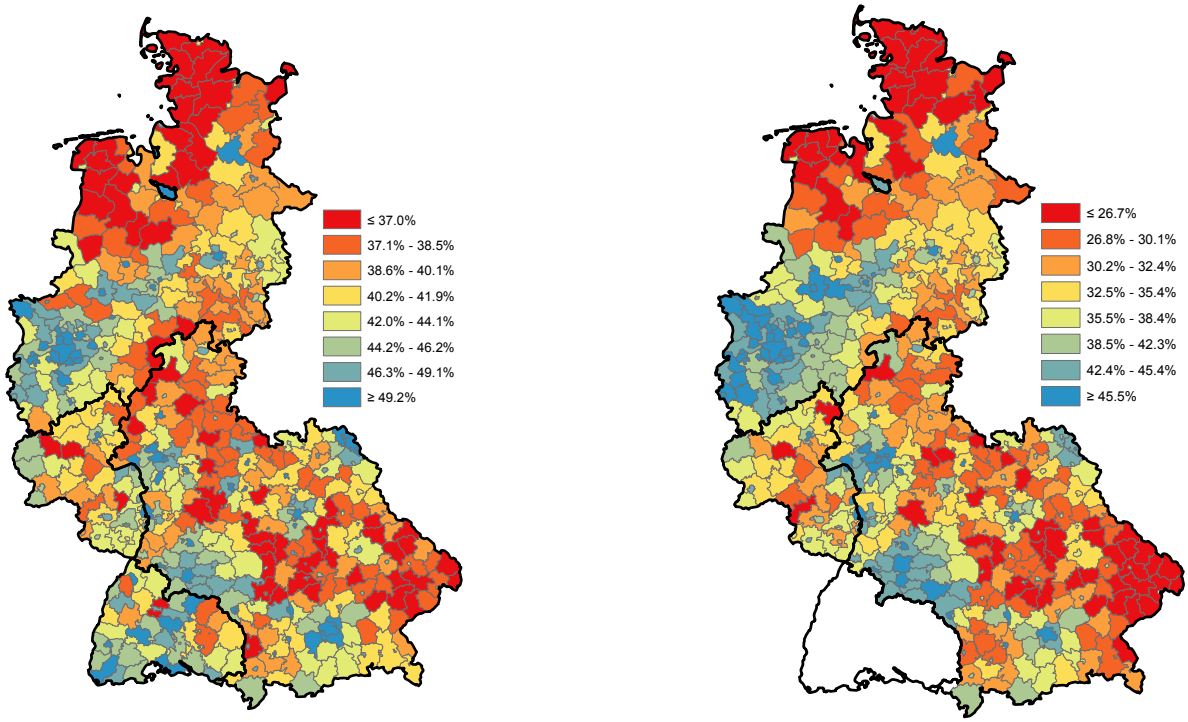
3 The Regional Integration of Expellees in West Germany

The integration of eight million expellees into the West German economy and society posed a paramount challenge to the war-ridden country. This section presents descriptive evidence on the economic, social and political integration of expellees by 1950. We show that the degree of integration varied greatly across West German counties. We then outline the factors that can potentially explain these differences, drawing on previous analyses of historians, sociologists, and contemporary observers.

Economic Integration. We consider the employment situation of expellees as our indicator for the economic integration of expellees, in line with contemporary observers (Connor 2007). We use the share of economically active persons in the expellee population (henceforth, labor force participation rate) as our main indicator and consider the share of employed persons in the population (henceforth, employment rate) as an alternative indicator.[6] Both indicators are based on the population and occupation census of 17 September 1950. While the labor force participation rate is available for all West German counties, the employment rate is not available for counties in the federal states of Südbaden and Württemberg-Hohenzollern. Appendix D.1 discusses the definition and data sources of the two indicators in greater detail.

[6] We cannot calculate the share of economically active or employed expellees in the working-age population, as data on the expellee population by age is only available at the district level, but not at the more disaggregated county level. However, as a robustness check, we calculate a proxy for the county-level expellee population of working age by multiplying the district-level share of expellees aged 18 to 65 with the county-level expellee population. We then use this proxy to calculate the share of economically active persons in the expellee population aged 18 to 65. Our conclusions are unchanged when using this variable as our measure for economic integration. This is to be expected as selection into specific regions was of no concern in our historical context, and regional differences in the age distribution of expellees were therefore small.

Figure 3: Labor Market Integration of Expellees, 9/1950



(a) Labor force participation rate

(b) Employment rate

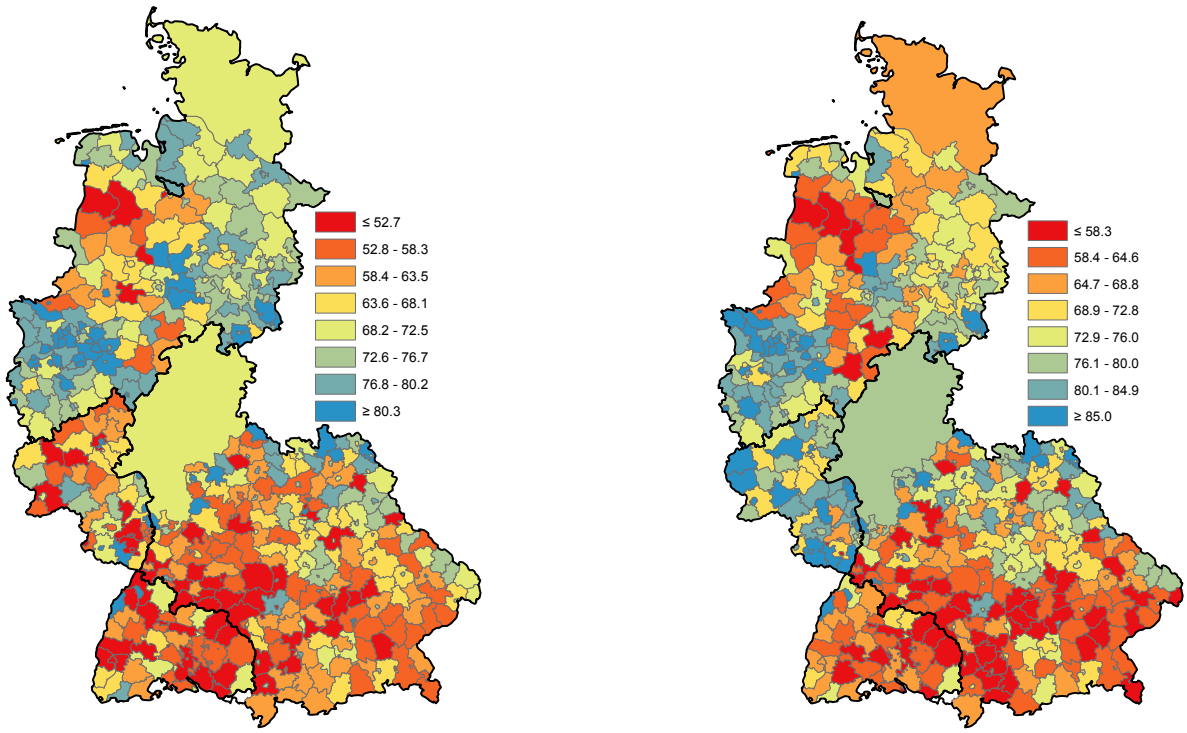
Notes: The figure reveals considerable variation in the labor market integration of expellees. The labor force participation rate is the share of economically active persons in the expellee population (Panel (a)) and the employment rate is the share of employed persons in the population (Panel (b)). See Appendix D.1 for details. The bold line depicts the border of the three occupation zones. The employment rate is not available for counties in the federal states of Südbaden and Württemberg-Hohenzollern. The graphs divide the population into eight equally numerous subsets (octiles).
Sources: Own calculations based on Statistisches Bundesamt (1955b) and Pfeil (1958). *Basemap*: MPIDR (2011).

In West Germany as a whole, the labor force participation rate of expellees was 42.2% in September 1950. This is 4.2 percentage points lower than the participation rate of natives (46.4%). Differences between natives and expellees were even more pronounced with respect to the employment rate: 44.2% of the native population but only 35.9% of the expellee population were employed in September 1950.

Figure 3 illustrates regional variation in the labor market integration of expellees. The left panel shows that the labor force participation rate of expellees varies from 37.0% or less in regions in the lowest octile to 49.2% or more in the highest octile. Labor force participation is particularly low in the north, north-west, and south-east of West Germany and particularly high in the west and south-west of the country. The right panel, which depicts the employment rate of expellees in West German counties, reinforces these observations. The employment rate ranges from 26.7% or less in regions in the lowest octile to 45.5% or more in the highest octile. The correlation between labor force participation and employment rates is 0.928.

Social Integration. Following contemporary sociologists (Müller 1950, Poepelt 1959), we use intermarriage rates between expellees and non-expellees as indicator for the social integration of expellees. Intermarriage rates compare the actual number of marriages between non-expellees and expellees to the hypothetical number expected if the expellee status would not have played any role for the choice of a spouse (see Appendix D.2 for details). The intermarriage rates are based on new marriages (flow variable) and vary between 0 (no marriages between expellees and non-expellees) and 100 (expellee status plays no role for the choice of a spouse). Higher values of intermarriage rates hence reflect better social integration. Importantly, intermarriage rates do not depend mechanically on the relative population size of expellees and non-expellees and are thus a common measure in analyses of the marriage behavior between different social groups.

Figure 4: Inter-Marriage between Expellees and Non-Expellees, 1950



(a) Female expellees (b) Male expellees

Notes: The figure shows substantial variation in the intermarriage rates between expellee women and non-expellee men (Panel (a)) and between expellee men and non-expellee women (Panel (b)). See Appendix D.2 for details on the calculation. The bold line depicts the border of the three occupation zones. The intermarriage rates are only available at the federal state level for the states of Hesse and Schleswig-Holstein. The graphs divide the population into eight equally numerous subsets (octiles).
Source: Poepelt (1959). *Basemap*: MPIDR (2011).

The average intermarriage rates across West German counties are 67.0 for expellee women and 71.9 for expellee men; expellees and non-expellees are significantly less likely to marry each other than what a random match suggests. Again, Figure 4 reveals substantial regional heterogeneity for intermarriage rates of both female and male expellees. For female (male) expellees, the intermarriage rate varies from 52.7 (58.3) or less in regions in the lowest octile to 80.3 (85.0) or more for regions in the highest octile. Intermarriage rates are particularly low in the south and in parts of the north-west of West Germany and particularly high in the west.

Political Integration. The Allies harbored deep fears that the expellees–who had full voting rights–could destabilize the young West German democracy. The Allies thus banned refugee organizations until the beginning of 1950, as they saw them as a potential source for the re-emergence of nationalism in Germany (Connor 2007). Instead, the Allies put the burden of integrating expellees politically on the established parties. The established parties, however, were often reluctant to embrace expellee demands, and some of them even campaigned on an outspoken anti-expellee stance.

Voting patterns can be studied from two perspectives, the electoral success of anti-expellee parties and that of expellee parties. Ideally, we would like to study a national election, in which both an anti-expellee and an expellee party competed for votes. However, expellee parties were still banned when West Germany's first national election was held in August 1949. Moreover, several parties only stood for election in a limited number of federal states, making it difficult to compare voting behavior across federal states.

Instead, we focus on the election for state parliament in Bavaria, the state with the highest number of expellees, in November 1950. The election offers three advantages for our purpose. First, the expellee party *Bund der Heimatvertriebenen* (BHE) stood for election, forming an electoral pact with the right-wing *Deutsche Gemeinschaft* (DG). The BHE primarily represented the interests of the expellees, demanding generous compensation for lost property and the recovery of the territories that Germany ceded after World War II. Second, with the *Bayernpartei* (BP), a fiercely anti-expellee party stood for election which articulated native Bavarian concerns of being swamped by foreign expellees (Connor 2007).[7] Third, the election date was very close to the date of the census, allowing us to relate regional vote shares to regional characteristics elicited in the census.

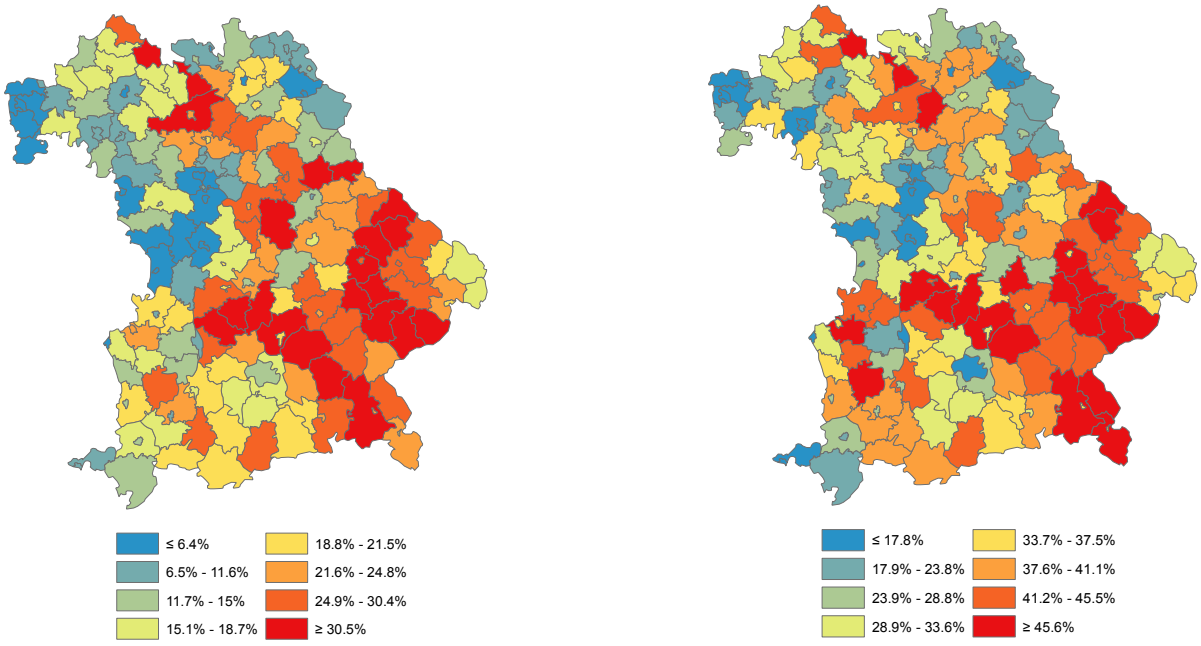
Figure 5 depicts the vote share of BP as an anti-expellee party (Panel (a)) and the combined vote shares of BP and BHE as special interest parties (Panel (b)) in the Bavarian state election of 1950. State-wide, the BP received 17.9% of the vote, making it the third largest party in parliament (after the Social Democratic Party and the Christian Social Union). The BHE came fourth, receiving 12.3% of votes. In 15 out of 186 Bavarian counties, a majority of voters supported either the BP or the BHE.

The figure shows that the vote shares for the two parties differed greatly across Bavaria. The BP was most successful in the south-east of Bavaria, reaching as much as 37.3% in Wasserburg am Inn. It was least successful in the north-west of the country where it frequently fell short of the 5 percent hurdle required to win seats in parliament. Adding the vote share of the BHE does not markedly change the picture.

Explaining Geographic Differences in Integration. Historians and social scientists have formulated three–not mutually exclusive–core hypotheses to explain the stark regional differences in integration outcomes. The *first hypothesis* states that high population shares of expellees were an impediment to local integration. The hypothesis holds that higher expellee shares intensified the competition on the labor market, slowing down the economic integration of expellees (Braun and Weber 2016, Pfeil 1958). Higher expellee shares might also have intensified the tension between

[7] In an infamous speech, Jakob Fischbacher, one of BP's founding members, even called for the expellees to be thrown out of the country (Spiegel 1947).

Figure 5: Vote Shares in Bavarian Federal State Election, 11/1950



(a) Anti-expellee party: BP

(b) Special interest parties: BP and BHE

Notes: The figure shows the vote share of *Bayernpartei* (BP) (Panel (a)) and the combined vote share of BP and *Bund der Heimatvertriebenen* (BHE) (Panel (b)) in the Bavarian state election of 26 November 1950. The graphs divide the population into eight equally numerous subsets (octiles).
Sources: Bayerisches Statistisches Landesamt (1951). *Basemap*: MPIDR (2011).

natives and expellees and made it easier for expellees to keep their own company (Connor 2007). This might have decreased inter-marriage rates. By slowing down economic integration, higher expellee shares might also have increased expellee support for the BHE. Moreover, the perceived threat of expellees to local traditions might have mobilized natives to vote for anti-expellee parties.

The *second hypothesis* states that the integration of expellees was more difficult in rural and agrarian regions. The hypothesis holds that agrarian economies had little capacity to absorb surplus population, rendering the economic integration of expellees difficult (Connor 2007, Pfeil 1958). Moreover, expellees had lost all their land, and although the 'Expellee Land Resettlement Law' of 1949 provided tax incentives for the lease or purchase of farms, there was simply not enough farmland available for the newcomers to start a business in agriculture (Connor 2007). Resentments against expellees might also have been more pronounced in rural areas where especially the relations between farmers and expellees were fraught with problems (Bayerisches Statistisches Landesamt 1950, Connor 2007, Schulze 2002). These tensions between natives and expellees in rural areas might be reflected in lower intermarriage rates and higher support for expellee and anti-expellee parties.

The *third hypothesis* states that religious differences between expellees and natives shaped integration outcomes. Qualitative regional studies indicate that expellees were more readily accepted in the predominantly Protestant state of Lower Saxony if they were Protestants themselves (Brelie-Lewien and Grebing 1997, Schulze 2002). Studies of Catholic Westphalia and

Protestant Northern Hesse reach similar conclusions (Exner 1999, Spiegel-Schmidt 1959). Consequently, religious differences between expellees and natives might have slowed down the social integration of expellees, and might have increased the support for particularist parties. Religious differences might also have been an impediment to economic integration of expellees if they led to discrimination on the labor market.

Summing up the above, we have the following three testable hypotheses:

H1. Higher population shares of expellees deteriorate integration outcomes.

H2. Agrarian regions were less successful in integrating expellees.

H3. Religious differences between expellees and non-expellees hinder integration.

4 Empirical Strategy

To test the three hypotheses, we exploit regional variation across West German counties[8]. We do not focus on larger municipalities as our unit of interest, as many other economic studies of post-war Germany do (see, e.g., Chevalier et al. 2018, Redding and Sturm 2008), as we are explicitly interested in the difference between agrarian and non-agrarian areas. Our data come from various data sources that we have digitized for our analysis. The sources include the population and occupation censuses of 1939, 1946, 1950, and 1961,[9] the housing census of 1950, administrative statistics on the Bavarian state election for 1950, 1954, 1958, 1962, 1966, and 1970, sales tax statistics for 1935, marriage statistics for 1948 to 1952, and the county folder (*Kreismappe*) of the Institut für Raumforschung. Appendix C lists the data source(s) for each variable.

OLS Estimation. Let Y_{it} be a particular indicator for the economic, social, or political integration of expellees (expellee labor force participation, expellee-native intermarriage, vote for anti-expellee party) in county i in year t. Our basic regression specification is:

$$\begin{aligned} Y_{it} = \alpha + \beta_1 ExpelleeShare_{i50} + \beta_2 AgricultureShare_{i39} \\ + \beta_3 ReligiousDistance_{i50} + X_{i39}\gamma + u_{it}, \end{aligned} \tag{1}$$

where X_{i39} is a vector of control variables for 1939 characteristics and u_{it} is an error term. Our three main explanatory variables of interest are the population share of expellees in 1950 ($ExpelleeShare_{i50}$), the agricultural employment share in 1939 ($AgricultureShare_{i39}$), and the Euclidean distance between the religious affiliations of expellees and non-expellees in 1950 ($ReligiousDistance_{i50}$, see also Appendix A). $AgricultureShare_{i39}$ is meant to capture the effect of both economic and non-economic characteristics of agrarian regions on integration outcomes. Hypotheses H1, H2, and H3 suggest that all three explanatory variables have a negative effect on integration outcomes.

Since counties vary widely in population size, we follow Solon et al. (2015)'s recommendations and report results from both population-weighted regressions (as our baseline) and unweighted

[8] While there are 556 of such counties in 1950, a few of them experienced changes in their administrative borders between 1939 and 1950. We account for these border changes by merging counties, so that county borders are comparable over time (see Appendix E for the details). This leaves us with 526 counties.

[9] To the best of our knowledge, there exist no records of the underlying historical micro census data. Instead, we digitized aggregated county-level data published mostly by the German Statistical Office.

regressions (as a robustness check). We use robust standard errors clustered at the level of the 160 local German labor market regions. In additional specifications, we also estimate semi-parametric models that allow for nonlinear effects of the expellee share.

As discussed, we consider three sets of integration indicators Y_{it}. First, we use the labor-force-to-population ratio of expellees in 1950 as our main indicator for economic integration, and consider the employment-to-population ratio as an alternative indicator. Second, we use intermarriage rates between expellees and non-expellees in 1950, also calculated separately for expellee men and women, as indicator for social integration. Third, we use the vote share for the anti-immigrant BP in 1950 as our main indicator for political integration, and consider the sum of the vote share of BP and the expellee party BHE as an alternative indicator. We also study mid- and long-term voting patterns until 1970.

Estimating equation (1) by ordinary least squares (OLS) will yield a consistent estimate of our variables of interest if they are uncorrelated with the error term. That is, the expellee share in 1950, the agricultural employment share in 1939, and the religious distance between expellees and natives in 1950 must not be correlated with any unobserved factor that affects the economic, social or political integration of expellees.

An obvious challenge to this identifying assumption is the potentially endogenous self-selection of expellees into regions. There are two core concerns: (i) Self-selection of expellees into regions with better integration prospects, and (ii) self-selection of expellees with specific skills into specific regions. We discuss both concerns in the following.

First, expellees might have self-selected, based on unobservable characteristics, into West German regions where they saw higher chances of integration. Causality would then run from integration outcomes to the expellee share,[10] and the estimate of the expellee share (β_1) would be upward biased. Endogenous self-selection is arguably most severe with respect to economic integration, since the primary concern of expellees in the post-war period was economic deprivation (Connor 2007) rather than social or political exclusion. In fact, the inner-German migration of expellees in the 1950s were primarily motivated by labor market prospects (Ambrosius 1996, Braun and Weber 2016).

Importantly, however, expellees were unable to strategically choose their initial place of destination, which was determined by the chaos of war and the geographic distance to their homelands. In particular, there was no scope for expellees to choose their destination based on economic integration prospects (Braun and Mahmoud 2014, Nellner 1959). Conditional on our rich set of covariates (which we describe below), the initial distribution of expellees was thus arguably independent of local labor market conditions. Appendix H.1 provides supportive empirical evidence. Appendix Table H1 shows that conditional on covariates, the expellee share in 1950 is uncorrelated with various pre-treatment indicators of economic development. This corroborates our identifying assumption.

Second, expellees with specific skills might have selected into specific regions. For instance, low-skilled agrarian workers might have predominantly moved to agrarian regions, whereas high-skilled workers might have gathered in urban areas. Local economic characteristics would then

[10] Reverse causality is of no concern for the agricultural employment share (as it is measured before the arrival of the expellees) and of little concern for the religious distance (as religious denominations of expellees and natives were pre-determined and changes of confession uncommon at the time).

correlate with the skills of expellees. Our specific historical context again limits such concerns, as expellees could not choose their initial distribution based on their skills or local integration prospects. Appendix F shows that the skill distribution of expellees was indeed similar in regions with high and low expellee inflows as well as in agrarian and non-agrarian regions.

IV Estimation. Expellees remained severely restricted to move elsewhere, once they had arrived in a region. However, moving restrictions were gradually phased out until 1949. Some expellees might therefore have moved to counties with better integration prospects by 1950. Such endogenous moving decision could (upward) bias our OLS estimates of β_1 (coefficient on the expellee share) and β_3 (coefficient on religious distance).[11]

To deal with potential endogenous self-selection in the late 1940s, we use an instrumental variable (IV) strategy and isolate the variation in expellee shares and religious distance which is due to the initial placement of expellees only (and not to subsequent movements). In particular, we use the expellee share in October 1946, when severe restrictions on mobility were still in place, as an instrument for the expellee share in September 1950. The first stage regression for the expellee share in 1950 is:

$$\begin{aligned} ExpelleeShare_{i50} = \eta + \kappa_1 ExpelleeShare_{i46} + \kappa_2 AgricultureShare_{i39} \\ + \kappa_3 ReligiousDistance_{i46} + X_{i39}\kappa_4 + v_{i50}, \end{aligned} \tag{2}$$

where $ExpelleeShare_{i46}$ is the population share of expellees in 1946 and where $ReligiousDistance_{i46}$ is the religious distance between expellees and natives in 1946. The key identifying assumption of the IV regression is $Cov(ExpelleeShare_{i46}, v_{i50}) = 0$. The assumption states that (i) there is no unobserved factor that drives both our integration outcomes in 1950 and the expellee share in 1946, and that (ii) the expellee share in 1946 affects integration in 1950 only through its effect on the expellee share in 1950.

In a similar spirit, we isolate the variation in religious distance that is due to the initial placement of expellees. Our instrument $ReligiousDistance_{i46}$ replaces the 1950 share of expellees belonging to a certain confession with the corresponding 1946 share, and the 1950 share of natives by the corresponding 1939 share (see Appendix D.3 for details).

Control Variables. Our empirical analyses controls for a rich set of regional characteristics that may have affected both expellee integration and our explanatory variables of interest. In particular, we control for characteristics that might have influenced the regional distribution of expellees.

First and foremost, we account for the fact that expellees were overrepresented in rural areas that were less devastated by the war. If less destroyed areas offered better (worse) integration opportunities, this could potentially bias the estimate of the expellee share on integration outcomes upwards (downwards). Following previous work by Brakman et al. (2004), Burchardi and Hassan (2013), and Braun and Kvasnicka (2014), we measure war destructions by the amount of rubble per capita at the end of the war. Data on the amount of rubble, published in Deutscher

[11] Endogenous movements might lead to a positive correlation between religious distance and–potentially unobserved–regional characteristics conducive to integration. After all, Catholic expellees would probably only move to a Protestant region if this region would offer them exceptionally good integration prospects.

Städtetag (1949), is only available for the 199 largest West German cities. We aggregate the data to the county level, implicitly assuming war destructions to be zero in smaller municipalities, and normalize by population in 1939. In a robustness check, we use the share of dwellings that were built before 1945 and were damaged in the war (Statistisches Bundesamt 1956). While this variable is available at the county level, it does not directly measure war destructions, as it relates only to residential housing that survived the war and could accommodate residents in 1950. In a second robustness check, we use the assessed loss in housing space in three categories ('no or minor losses', 'substantial losses', 'very substantial losses'), published by Institut für Raumforschung (1955).

Second, we control for pre-war differences in urbanization. City dwellers may be more open to 'newcomers' compared to inhabitants of rural areas, as they had more contact with people from different backgrounds (Connor 2007). This would lead us to overestimate the negative impact of the expellee share, as urban areas were more likely to be devastated in the Allied bombing campaign and thus received lower expellee inflows after the war. We measure urbanization by the share of a county's population in 1939 that lived in cities with at least 10,000 inhabitants, drawing on data published in Statistisches Reichsamt (1940).

Third, we include a dummy for regions located within 75 kilometers of the post-war inner German border. Redding and Sturm (2008) argue that those regions experienced a disproportionate loss in market access after World War II. At the same time, regions at the inner-German border also received high expellee inflows because of the geographic proximity to the former homelands of the expellees. In a robustness check, we use distance to the inner German border and distance squared as continuous control variables.

Fourth, we add a dummy for whether the majority of a region was Catholic in 1939, using data from Statistisches Reichsamt (1941). Religious affiliation might have influenced voting patterns in Bavaria and might also be more generally correlated with economic outcomes (Becker and Woessmann 2009, Weber 1904/05). Finally, we run specifications with state-level fixed effects to control for unobserved factors that are common to all counties located in a state. State-level fixed effects also purge our regression of unobserved factors at the occupation-zone level (as each state is located in just one occupation zone).

5 Main Results: Explaining Regional Differences in Integration

This section presents our key results on the regional determinants of expellee integration.

Economic Integration. We start with the determinants of expellees' economic integration, where economic integration is measured by success on the labor market. In a first set of regressions, we use the labor force participation rate of expellees in 1950 as the dependent variable. Column (1) of Table 1 presents estimates from an OLS model that includes the variables of interest together with our set of control variables.

Four points are of note. First, the relationship between the share of expellees in the population and the expellee labor force participation rate is negative and statistically significant. In other words, the more expellees settled in a county, the lower the share of those who became economically integrated in the labor market. The estimated coefficient of -0.158 implies that a

Table 1: Economic Integration: Forced Migration and Labor Market Success

Dependent variable:	labor force participation rate 1950				employment rate 1950		labor force participation of expellees relative to natives 1950	
	OLS	OLS	IV	IV	IV	IV	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Expellee share 1950	-0.158***	-0.155***	-0.186***	-0.257***	-0.281***	-0.330***	-0.150***	-0.275***
	(0.040)	(0.056)	(0.037)	(0.059)	(0.054)	(0.072)	(0.053)	(0.088)
Agricultural employment share 1939	-0.191***	-0.149***	-0.184***	-0.141***	-0.259***	-0.217***	-0.671***	-0.522***
	(0.025)	(0.018)	(0.024)	(0.017)	(0.021)	(0.022)	(0.034)	(0.033)
Religious distance 1950	0.000	-0.007	0.004	0.000	0.057***	0.015	-0.004	-0.021
	(0.015)	(0.010)	(0.017)	(0.011)	(0.018)	(0.016)	(0.019)	(0.017)
Population share living in cities with at least 10,000	-0.021	0.011	-0.018	0.008	-0.026***	-0.017	-0.010	0.040**
inhabitants 1939	(0.014)	(0.009)	(0.014)	(0.008)	(0.009)	(0.011)	(0.021)	(0.018)
Rubble per capita 1946	0.704	0.464	0.638	0.335	0.655	0.580*	1.022	0.130
	(0.477)	(0.372)	(0.459)	(0.312)	(0.441)	(0.329)	(0.659)	(0.303)
Distance to inner German border is smaller than 75 km (0/1)	0.003	-0.001	0.005	0.001	-0.011	-0.005	0.021**	0.011
	(0.008)	(0.007)	(0.008)	(0.007)	(0.010)	(0.010)	(0.010)	(0.009)
Majority is Catholic in 1939 (0/1)	0.001	-0.004	0.000	-0.006	0.000	-0.004	0.006	0.003
	(0.008)	(0.005)	(0.008)	(0.005)	(0.009)	(0.007)	(0.008)	(0.008)
R^2	0.687	0.777	.	.	.	.	.	.
Weak identification test (Cragg-Donald Wald F statistic)	.	.	1027.51	759.96	1038.50	766.90	1027.51	759.96
Shea's Partial R^2: expellee share 1946	.	.	0.920	0.842	0.925	0.850	0.920	0.842
Shea's Partial R^2: predicted religious distance	.	.	0.799	0.751	0.813	0.766	0.799	0.751
State dummies	no	yes	no	yes	no	yes	no	yes
Number of observations	526	526	526	526	487	487	526	526

Notes: In columns (1) to (4), the dependent variable is the labor force participation rate of expellees in 1950. In columns (5) and (6), the dependent variable is the employment rate of expellees in 1950. In columns (7) and (8), the dependent variable is the labor force participation rate of expellees relative to that of natives in 1950. The IV regressions in columns (3) to (8) use the expellee share in 1946 and the predicted population-weighted religious distance as instruments for the expellee share 1950 and the religious distance 1950, respectively. First stage results are presented in Table H2. Columns (2), (4), (6) and (8) include dummies for each of the nine West German states. Regressions are weighted with population in 1939. *** and * denote statistical significance at the 1%- and 10%-level, respectively. Standard errors clustered at the labor market region level are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from Stock and Yogo (2005) suggest the instruments to be strong.

one standard deviation increase in the 1950 share of expellees (s.d. 0.089) reduces labor force participation of expellees (s.d. 0.061) by 0.23 standard deviations, or 3.1% relative to the mean labor force participation rate across all counties.

Second, the relationship between pre-war agricultural employment and the labor market integration of expellees is negative and statistically significant (point estimate: -0.191). This is consistent with the idea that agrarian regions had little capacity to absorb expellees. In terms of magnitude, a one standard deviation increase in the agricultural employment share in 1939 (s.d. 0.230) lowers expellees' labor force participation rate by 0.72 standard deviations. The pre-war economic structure of receiving counties was thus more important for economic integration than the population share of expellees, in line with arguments in Connor (2007) and Pfeil (1958).

Third, the results show no significant relationship between religious distance and economic integration. And fourth, regional differences in the expellee share and in pre-war agricultural employment explain a large part of the variation in expellees' labor force participation: the R^2 is 0.687 although all our control variables are statistically insignificant.

In column (2), we add fixed effects for the nine West German states to the set of control variables. These state dummies purge any unobserved factors at the state level which might simultaneously affect our explanatory variables of interest and the integration of expellees into the labor force.[12] That is, we exclusively use the within-state variation to identify the effect of

[12]Note that adding state dummies has the downside of removing a lot of variation from our data: regressing the 1950 share of expellees on state dummies gives an R^2 of 0.67.

the different explanatory variables on economic integration. The coefficient of the expellee share is virtually unchanged at -0.155. Likewise, the coefficient of the agricultural employment share is only slightly smaller than before. We still find no effect of religious distance on the economic integration of expellees in Germany.

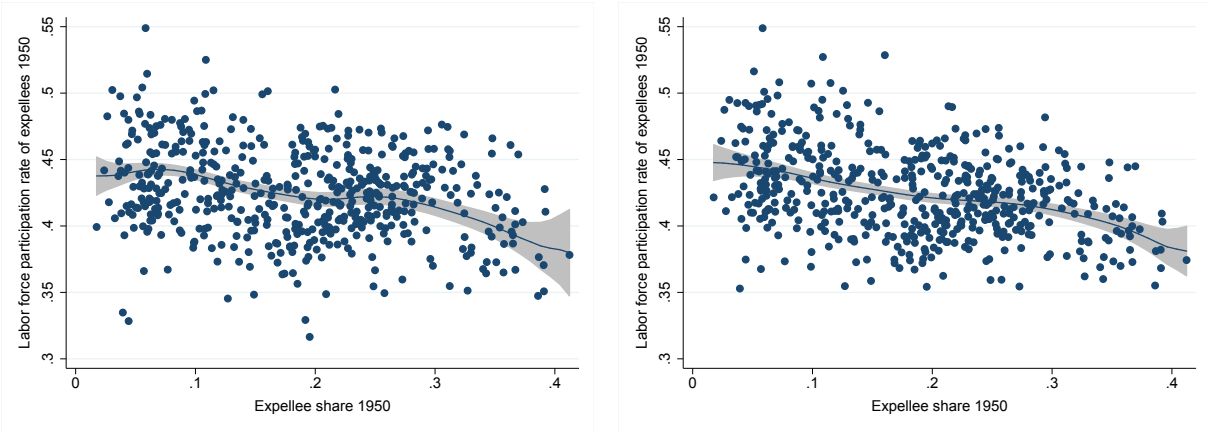
As discussed, moving restrictions were phased out until 1949. To alleviate concerns that some expellees might have endogenously moved by 1950, we estimate IV regressions. Our IV strategy isolates the variation in expellee shares and religious distance that is due to the initial placement of expellees only. Columns (3) and (4) in Table 1 contain the IV regression results for the labor force participation rate as dependent variable (without and with state-fixed effects, respectively). These are our preferred specifications. The lower part of the table presents summary results for the first-stage regressions. The Cragg-Donald Wald F statistic is 759 and 1028, respectively, suggesting that we do not have a weak instrument problem (for critical values see Stock and Yogo 2005). Both of our instruments are relevant as shown by Shea's partial R^2 of above 0.7. The detailed first stage regression results reveal a strong economical and statistical relationship between the expellee share 1946 and the expellee share 1950 as well as between the predicted religious distance and the actual religious distance 1950 (see Table H2 in the Appendix).

The second stage results in columns (3) and (4) of Table 1 confirm that expellee inflows and the 1939 agricultural employment share had a strong negative impact on expellees' labor force participation rates. The coefficient estimates on the share of expellees are -0.186 (s.e. 0.037) and -0.257 (s.e. 0.059) without and with state fixed effects, respectively. We cannot reject the null hypothesis that the two coefficients are equal (p-value of 0.29). The point estimate of -0.257 suggests that a one standard deviation increase in the share of expellees reduces their labor force participation rate by 0.37 standard deviations or 5.0%. An increase in the agricultural employment share by one standard deviation worsens expellees' labor force participation rate by 0.53 standard deviations or 7.1% (point estimate with state fixed effects, column (4)). Interestingly, the IV estimates for the expellee share are more negative than the OLS estimates (two-sided test, p-value < 0.01). We interpret this difference as evidence for (moderate) endogenous relocations: expellees may have counterbalanced their unfavorable initial distribution by moving to regions that offered better economic integration prospects.

To further probe the robustness of our results, we use the employment rate as an alternative dependent variable (columns (5) and (6)). To wit, we focus on active persons with employment only. This information is available for a subset of 487 counties only. Based on the regression without (with) state fixed effects, we find that a one standard deviation increase in the expellee share reduces employment by 0.30 (0.35) standard deviations. The corresponding results for the agricultural employment share are a reduction in employment by 0.71 (without state fixed effects) and 0.59 (with state fixed effects) standard deviations, respectively. These effects are very close to those that we calculated for our baseline regressions in columns (3) and (4).

The considerably poorer labor market outcomes of expellees in rural areas might reflect poorer labor market opportunities in rural areas in general. In additional regression (columns (7) and (8)), we use the labor force participation rate of expellees divided by that of natives as the dependent variable–and thus compare expellee outcomes to those of natives. We find that a one standard deviation increase in the pre-war agricultural employment share reduces the

Figure 6: Effect of Expellee Share on Labor Force Participation: Semi-Parametric Estimates



(a) OLS regression

(b) IV regression

Notes: Both panels show results from Robinson's double residual semi-parametric regression estimator (Robinson 1988) with our usual set of control variables. The dependent variable is the labor force participation rate of expellees in 1950. The expellee share is allowed to affect the labor force participation rate nonlinearly using an Epanechnikov kernel. Panel (a) displays estimates from an OLS regression, and Panel (b) displays estimates from an IV regression. The IV regression uses the expellee share in 1946 as an instrument for the expellee share in 1950. The confidence intervals shown are based on standard errors clustered at the labor market region level.

relative labor force participation rate of expellees by 0.686 standard deviations (estimate with state fixed effects). This effect is comparable to the estimate we obtained when studying the absolute labor force participation of expellees. General differences in labor market opportunities between urban and rural areas are thus not a prime reason for the observed poor economic integration of expellees in rural areas.[13]

Appendix Table H3 presents additional robustness checks to our preferred specifications (columns (3) and (4) from Table 1). First, we run unweighted regressions in columns (1) and (2). Second, we use the loss in housing space in three categories (columns (3) and (4)) as well as the share of damaged dwellings (columns (5) and (6)) as alternative measures of war destruction. Reassuringly, in all of these robustness checks our point estimates hardly change. Finally, in columns (7) and (8), we use the labor force participation rate of expellees calculated over the population of working age, instead of over the population as a whole, as an alternative dependent variable. Since data on the expellee population by age is not available at the county level, we rely on data at the more aggregated district level (see Footnote 6 for details). We again find that the expellee share and agricultural employment have strong negative effects on labor force participation. The same is true when we add the share of female expellees at district level as an additional control.[14]

[13]We also find that a one standard deviation increase in the expellee share reduces the relative labor force participation rate of expellees by 0.140 standard deviations. That is, the expellee share has a weaker effect on the relative labor force participation of expellees than on the absolute labor force participation. This finding is consistent with a negative impact of higher expellee shares on both expellee and native labor market outcomes.

[14]The district level data suggest that there has been little variation in the share of female expellees across space: the standard deviation of the share of female expellees is 0.01 (mean and median share of 0.53). Unfortunately, data at the county level is again not available. Data availability also precludes separate analyses of the economic integration of male and female expellees.

Earlier work by Schelling (1971), Card et al. (2008) and Pan (2015) suggest tipping points in social interactions. Consequently, we estimate the effect of the expellee share on the labor force participation rate semi-parametrically (Robinson 1988). Figure 6 presents the results. Panel (a) is based on an OLS regression and Panel (b) on an IV regression. Both panels illustrate that the relationship between the labor force participation rate of expellees and their population share is roughly linear and does not provide evidence in favor of tipping points. Economic integration prospects worsen with the share of expellees but there is no evidence of a discontinuous decline.[15]

Taken together, the results on the regional determinants of economic integration imply an important trade-off: On the one hand, our estimates for the agricultural employment share suggest that it is beneficial to send migrants to non-agrarian counties with high absorptive capacity. On the other hand, the negative impact of the expellee share underlines the benefits of spacing migrants out evenly–even though there is no evidence for tipping points in the share of expellees received.

Social Integration. Next, we investigate the regional determinants of social integration, which we measure by the intermarriage rate between expellees and natives. Table 2 presents our core results. Column (1) shows an economically and statistically significant negative relationship between the expellee share in 1950 and the intermarriage rate, conditional on covariates. This is consistent with the view that higher expellee shares made it easier for expellees to keep to themselves and intensified animosity between natives and expellees (Connor 2007).[16] We also document a significant negative relationship between the agricultural employment share in 1939 and intermarriage behavior. As hypothesized, more agrarian communities were thus less inclined to socially intermix (Bayerisches Statistisches Landesamt 1950, Connor 2007, Schulze 2002). The point estimate on the effect of religious distance on inter-marriage rates is negative, though not statistically significant.

The specification in column (2) adds state fixed effects and exploits the within-state variation only. The coefficient on religious distance now turns statistically significant (at the 5%-level). The effect of religious distance is moderate: The point estimate suggests that a one standard deviation increase in religious distance reduces intermarriage rates by 0.11 standard deviations. Compared to specification (1), the coefficients for both expellee and agricultural employment shares remain economically and statistically significant. An increase in the 1950 expellee share by one standard deviation (s.d. 0.085) lowers the intermarriage rate (s.d. 0.104) by 0.30 standard deviations or 4.3% (estimate of -0.366, column (2)). A one standard deviation increase in the agricultural employment share (s.d. 0.231) has about two thirds of this effect and decreases the intermarriage rate by 0.18 standard deviations (estimate of -0.079, column (2)).

IV regressions are broadly consistent with the OLS results (see columns (3) and (4)). IV regressions without (with) state fixed effects suggests that a one standard deviation increase in

[15] In Appendix Figure G1, Panel (a), we additionally draw the unconditional linear regression line on the scatter plot between the population share of expellees in 1950 and the labor force participation rate. The relationship between the labor force participation rate of expellees and their population share is approximately linear and not driven by outliers. Panels (b) to (i) present the corresponding figures for our other independent and dependent variables of interest.

[16] Additional semi-parametric regressions reveal that the negative effect of the expellee share on marriage diminishes at higher expellee shares (see Appendix Section H.4 for details).

Table 2: Social Integration: Forced Migration and Marriage Behavior

	all marriages				marriages b/w male expellees and female natives	
	OLS	OLS	IV	IV	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Expellee share 1950	-0.298***	-0.366***	-0.238**	-0.210*	-0.462***	-0.456***
	(0.093)	(0.115)	(0.100)	(0.122)	(0.100)	(0.125)
Agricultural employment share 1939	-0.086*	-0.079**	-0.102**	-0.092***	-0.017	-0.070**
	(0.048)	(0.031)	(0.048)	(0.030)	(0.053)	(0.031)
Religious distance 1950	-0.072	-0.057**	-0.069	-0.058**	-0.068	-0.062**
	(0.052)	(0.024)	(0.057)	(0.026)	(0.046)	(0.024)
Population share living in cities with at least 10,000	0.048*	0.000	0.044*	0.006	0.061*	-0.007
inhabitants 1939	(0.026)	(0.017)	(0.026)	(0.017)	(0.032)	(0.017)
Rubble per capita 1946	0.617	0.675*	0.751	0.864**	0.347	0.787**
	(0.615)	(0.356)	(0.630)	(0.399)	(0.590)	(0.331)
Distance to inner German border is smaller than 75 km	0.038*	0.045**	0.033	0.042**	0.034*	0.052***
(0/1)	(0.020)	(0.018)	(0.020)	(0.017)	(0.019)	(0.016)
Majority is Catholic in 1939 (0/1)	-0.008	-0.032***	-0.006	-0.029***	-0.011	-0.029***
	(0.019)	(0.009)	(0.019)	(0.009)	(0.016)	(0.009)
R^2	0.373	0.609	.	.	.	.
Weak identification test (Cragg-Donald Wald F statistic)			714.167	218.586	714.167	568.557
Shea's Partial R^2: expellee share 1946			0.916	0.847	0.916	0.847
Shea's Partial R^2: predicted religious distance			0.760	0.722	0.760	0.722
State dummies	no	yes	no	yes	no	yes
Number of observations	458	458	458	458	458	458

Notes: In all columns, the dependent variable is an index measuring expellee-native-marriages in 1950. The dependent variable in columns (1) to (4) is the average index for marriages between male expellees and female natives and between female expellees and male natives. The dependent variable in columns (5) and (6) is the index for marriages between male expellees and female natives only. The IV regressions in columns (3) to (6) use the expellee share in 1946 and the predicted population-weighted religious distance as instruments for the expellee share 1950 and the religious distance 1950, respectively. Columns (2), (4) and (6) include dummies for each of the nine West German states. Regressions are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Standard errors clustered at the labor market region level are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from Stock and Yogo (2005) suggest the instruments to be strong.

the expellee share and the agricultural employment share lower the intermarriage rate by 0.19 (0.17) and 0.23 (0.20) standard deviations, respectively. As a robustness check, we again estimate unweighted regressions and use alternative measures of war destruction, taking specification (3) and (4) as our baseline. Table H4 in the Appendix shows that our results are robust to these changes in the specification.

Overall intermarriage rates may mask important differences in social integration between male and female expellees. Columns (5) and (6) of Table 2 thus report OLS and IV estimation results for the intermarriage rate between male expellees and female natives only. The results suggest that the social integration of male expellees is much more susceptible to the environment. In particular, an increase in the share of expellees arriving in a county markedly reduces the probability of male expellees to marry a female native: We find that an increase in the 1950 expellee share by one standard deviation lowers the intermarriage rate of male expellees (s.d. 0.103) by 0.38 standard deviations or 5.2% (IV estimate of -0.462, column (5)) compared to 0.19 standard deviations or 2.8% for all expellees (IV estimate of -0.238, column (3)).

Table 3: Political Integration: Forced Migration and Voting Behavior 1950

Dependent variable: vote share for	Bayernpartei (anti-expellee party)		Bayernpartei (anti-expellee party) among non-expellees		Bayernpartei + BHE (special interest parties)	
	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Expellee share 1950	0.367***	0.509***	0.730***	0.915***	0.920***	1.159***
	(0.116)	(0.129)	(0.147)	(0.163)	(0.130)	(0.141)
Agricultural employment share 1939	0.156***	0.139***	0.204***	0.182***	0.191***	0.162***
	(0.036)	(0.036)	(0.047)	(0.047)	(0.044)	(0.044)
Religious distance 1950	0.105***	0.121***	0.125***	0.149***	0.082**	0.117**
	(0.035)	(0.041)	(0.046)	(0.052)	(0.039)	(0.047)
Population share living in cities with at least	0.055**	0.056***	0.068**	0.070**	0.030	0.033
10,000 inhabitants 1939	(0.022)	(0.021)	(0.028)	(0.027)	(0.027)	(0.026)
Rubble per capita 1946	0.342	1.073	1.429	2.410	1.369	2.666*
	(1.111)	(1.314)	(1.601)	(1.878)	(1.031)	(1.381)
Distance to inner German border is smaller	-0.020*	-0.018	-0.029*	-0.027*	-0.005	-0.002
than 75 km (0/1)	(0.011)	(0.012)	(0.015)	(0.015)	(0.012)	(0.013)
Majority is Catholic in 1939 (0/1)	0.129***	0.138***	0.163***	0.176***	0.128***	0.146***
	(0.018)	(0.021)	(0.025)	(0.029)	(0.020)	(0.023)
R^2	0.580	.	0.626	.	0.718	.
Weak identification test						
(Cragg-Donald Wald F statistic)		250.45		250.45		250.45
Shea's Partial R^2: expellee share 1946		0.754		0.754		0.754
Shea's Partial R^2: predicted religious distance		0.775		0.775		0.775
Number of observations	186	186	186	186	186	186

Notes: The IV regressions in columns (2), (4), and (6) use the expellee share in 1946 and the predicted population-weighted religious distance as instrument for the expellee share 1950 and the religious distance 1950, respectively. Regressions are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Robust standard errors are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from (Stock and Yogo 2005) suggest the instruments to be strong.

Political Integration. In a third set of regressions, we consider expellees' political integration. Our main indicator for (slow) political integration is the vote share of the anti-expellee party BP in the Bavarian federal state election in 1950. Results are reported in Table 3, columns (1) and (2).

The vote share for the anti-expellee party increases with the population share of expellees, with the pre-war agricultural employment share of the county and with the religious distance between expellees and natives. The OLS (IV) regression suggests that a one standard deviation increase in the share of expellees (s.d. 0.055) adds as much as 2 percentage points (2.8 percentage points) to the vote share of the BP. Given that the average vote share of the BP was 18.7%, this corresponds to an increase of 11% (15%).[17]

The effects of the agricultural employment share and of religious distance are also positive and statistically significant: A one standard deviation increase in the agricultural employment share (in religious distance) raises the vote share by about 4 percentage points (2 percentage points). Prior literature suggests that a larger share of immigrants may lead to more negative attitudes towards immigrants (Dustmann and Preston 2001) and to conflicts over resources (Chevalier et al. 2018, Tabellini 2018). Either interpretation is consistent with the documented positive relationship between the expellees share and the vote share of the anti-expellee party.

So far we have considered the vote share of the BP in the overall population. If we assume that expellees did not vote for BP and its anti-expellee election program, we can also derive

[17] Additional semi-parametric IV regressions suggest that the negative effect of the expellee share diminishes at very high levels (see Appendix H.4 for details).

the vote share of the BP among the native population.[18] The results from using this share as dependent variable are shown in Columns (3) and (4) of Table 3. The estimated effect of the expellee share on the propensity to vote for the BP is about twice as high for the native population than for the overall population. According to the OLS regression, a one standard deviation increase in the share of expellees adds 4 percentage points (IV regression: 5 percentage points) to the BP vote share in the native population.

As an alternative dependent variable, we consider the combined vote share for special interest parties, namely the sum of the vote share of the BP and of the expellee party BHE. Columns (5) and (6) of Table 3 show that the larger the share of expellees, the larger the agricultural employment share and the larger the religious distance between expellees and natives, the more are election outcomes driven by vested interests. In terms of magnitude, we find that a one standard deviation increase in the share of expellees leads to a 6.4 percentage points higher vote share for special interest parties (IV results from column (6)).[19] The corresponding effects for the agricultural employment share and religious distance are somewhat smaller.

We complete our analysis by studying the political integration of expellees in the medium and long run. State elections in Germany took place every four years and we collected information on state election outcomes until 1970. For each of the elections, we again consider the vote share for BP and the combined vote share for BP and BHE. To provide conservative estimates, we focus on the BP vote share in the overall population (instead of among non-expellees) as dependent variable. Figure 7 shows the effects of the expellee share from instrumental variable regressions on voting patterns in 1950–70.

Two points are of note. First, in particular for the anti-expellee party, point estimates of the expellee share *increase* between 1950 and 1954 (even though confidence bands overlap). Second, point estimates taper off after 1954 and turn (close to) zero at the end of our observation period. These findings document that the integration process of expellees is nonlinear: While the coexistence between natives and expellees appear more and more difficult in the first years after expellees' arrival (when it became evident that expellees were to stay and when expellees were redressed based on the Equalization of War Burdens Act (*Lastenausgleichsgesetz*)), the expellee share again loses explanatory power with time as expellees become more integrated. Our results suggest that it takes almost a full generation until the expellee share has no effect any more on voting behavior. Figure H3 in the Appendix shows a qualitatively similar pattern for religious distance.

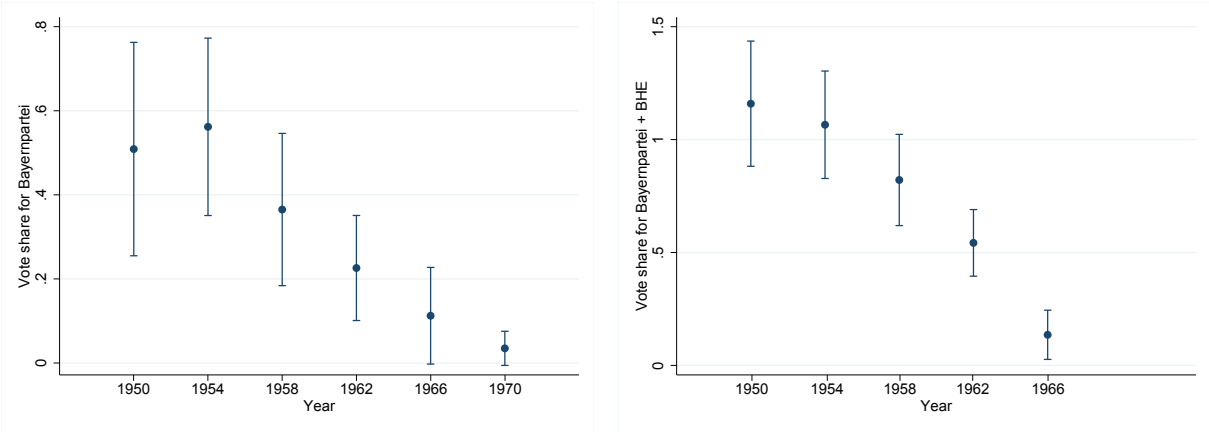
6 Optimal Distribution and Expellee Migration in 1950–61

Our empirical results suggest that the local environment played an important role for the integration of expellees. But how much better would integration outcomes have been if the authorities had distributed expellees based on local characteristics conducive to integration? We use our

[18] Let v_i^{pop} be the number of votes for the BP in county i divided by the total number of votes in that county. If no expellee voted for the BP, v_i^{pop} equals the vote share of BP among the native population, v_i^{nat}, multiplied by the share of natives in the population: $v_i^{pop} = (1 - ExpelleeShare_{i50})v_i^{nat}$. Re-arranging yields: $v_i^{nat} = v_i^{pop}/(1 - ExpelleeShare_{i50})$.

[19] The results are consistent with recent findings in Chevalier et al. (2018) who document a positive effect of the expellee share on the vote share of the BHE in municipal elections.

Figure 7: Effect of Expellee Share on Voting Behavior: Dynamics



(a) BP: anti-expellee party

(b) BHE and BP: special interest parties

Notes: Both panels show the dynamics in the effect of the expellees share on voting behavior with 95% confidence intervals. In Panel (a) the dependent variable is the vote share for BP (anti-expellee party). In Panel (b) the dependent variable is the vote share for BP and BHE (special interest parties). Both panels display estimates from IV regressions, which follow the specification in Table 3, columns (2) and (6), respectively. In 1966 (1970), BP did no longer run for office in 23 (26) out of 186 districts; in these districts the vote share of BP is set to 0. There are no estimates for the vote share for BP + BHE/GDP in 1970 as the BHE/GDP did no longer stand for election in 1970. Tables H5 and H5 in the Appendix report the full set of results.

empirical estimates from Table 1 (column (3)) to gauge the distribution of expellees that would have maximized the Germany-wide labor force participation rate of expellees. The maximization problem, which we describe in Appendix I, solves a trade-off between the benefits of allocating expellees evenly across space[20] and sending them to non-agrarian counties with high absorptive capacity. Our back-of-the-envelope calculation suggests that moving from the actual to the optimal distribution of expellees would have increased the labor force participation rate of expellees from 42.2% to 47.0%–or by almost one standard deviation.[21] In fact, the 'optimal' participation rate of expellees is roughly comparable to the actual participation rate of natives, which in September 1950 stood at 46.4%.

Expellees responded in the 1950s–when moving restrictions were lifted–by emigrating from agrarian regions to other parts of West Germany (see Appendix H.6 for a detailed econometric analysis of migratory responses in the 1950s). The West German government actively supported the re-location of expellees from the refugee states of Bavaria, Lower-Saxony, and Schleswig-Holstein to other West German states. In particular, the "Expellee Resettlement Law" (*Gesetz zur Umsiedlung von Heimatvertriebenens*) covered the transport costs and subsidized the construction of housing in the destination. However, moving remained voluntary and the law did

[20]It may seem counter-intuitive at first that there are benefits from an even distribution of expellees, despite the *linear* effect that the expellee share has on local labor force participation. The distribution of expellees would indeed play no role if we were to maximize the average labor force participation rate across counties. However, an uneven distribution of expellees is detrimental for the *aggregate* labor force participation rate. Intuitively, all expellees would end up in a labor market with an extremely low participation rate if they were all concentrated in one region.

[21]Clearly, our optimization abstracts from important constraints that the German post-war administration faced in practice, such as local housing shortages.

not incentivize movements within states. Even between states, many expellees moved without government intervention.[22] Nevertheless, expellee migration in the 1950s closed part of the gap between the actual and the optimal distribution of expellees. In fact, the correlation coefficient between the–largely migration-induced–actual change in expellee shares in 1950–61 and the hypothetical change in expellee shares required to fully close the gap between the actual and optimal allocation of expellees is as high as 0.83 (see Appendix H.6 for the corresponding scatter plot and further details).

7 Conclusion

The regional allocation of refugees rank high on today's policy agenda, with redistribution mechanisms being the subject of heated discussions within the European Union (Fernández-Huertas Moraga and Rapoport 2015). Surprisingly, however, we know relatively little about the effect of resettlement location on refugee integration. This paper's aim was to fill this gap for one of the largest forced population movements in history, the displacement of Germans from East and Central Europe after World War II.

Using newly digitized data at the county level, we show that local socioeconomic conditions strongly affected the economic, social and political integration of expellees in West Germany. We find that high inflows of expellees deteriorated integration outcomes, underlining the potential importance of policies to disperse refugees across regions. Moreover, integration outcomes were considerable worse in agrarian regions. This cautions against the belief that today's refugees should be mainly sent to rural areas, thereby fostering rural revival (Bloem 2014, Martínez Juan 2017). Confessional differences between expellees and natives had no effect on economic integration, but decreased intermarriage rates and strengthened anti-migrant parties.

Simulation results confirm the potential importance of the initial resettlement location. Moving from the actual to the optimal spatial distribution of expellees would have brought the expellee labor force participation rate at par with that of natives. Importantly, expellees indeed moved away from agrarian regions with high expellee shares once they were allowed to do so in the 1950s. They thus closed the gap between the actual and the optimal distribution of expellees. This finding highlights the potentially high costs of restricting the movement of refugees, especially in the absence of efficient allocation policies.

We conclude by highlighting the need for future work on the effect of resettlement location on refugee integration. In particular, our results are specific to an episode of mass immigration, in which natives and refugees were very similar in many respects, including their mother tongue and cultural background. An important task for future work is thus to assess the effect of local conditions for the integration of refugees who are resettled into culturally more distant locations. Such work could be important for designing resettlement policies that are conducive to refugee integration.

[22] Around 45% of the expellees who moved from one of the refugee states to the rest of Germany in the 1950s did not fell under the "Expellee Resettlement Law", and many more were counted only after they had moved on their own (Reichling 1958, Reichling 1989).

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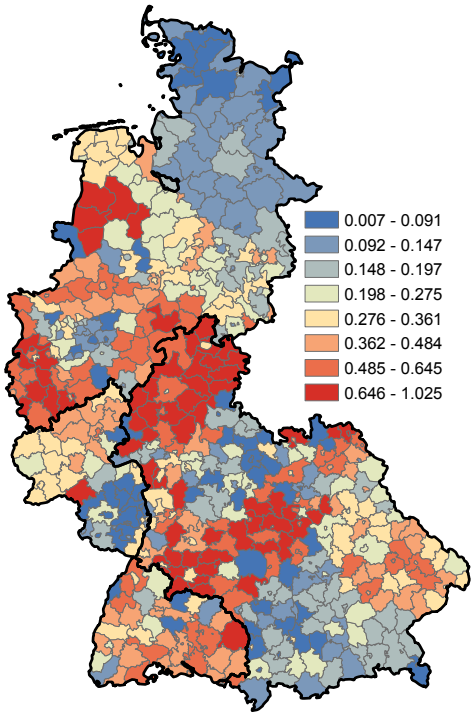
APPENDIX

A Measuring Religious Distance

Figure A1: Expellee Inflows and the Religious Profile of West German Counties, 9/1950



Notes: The figure depicts the Euclidean distance between the denominational structure of expellees and non-expellees (equation (A.1)). The bold line depicts the border of the three occupation zones. The graphs divide the population into eight equally numerous subsets (octiles).
Sources: Own calculations based on Statistisches Bundesamt (1952). *Basemap*: MPIDR (2011).

Figure A1 illustrates differences in the religious affiliation of expellees and non-expellees at county level in September 1950. It depicts the Euclidean distance between the religious affiliations of expellees and non-expellees in county i:

$$ReligiousDistance_{i50} = \sqrt{\sum_j \left(share^{nat}_{ij50} - share^{exp}_{ij50} \right)^2}, \tag{A.1}$$

where $share^{nat}_{ij50}$ ($share^{exp}_{ij50}$) is the share of natives (expellees) in county i belonging to confession j. We distinguish between Catholic, Protestant, and other religious affiliations.

Figure A1 shows that the denominational structure of expellees and natives was relatively similar in the Protestant north of Germany, where mainly Protestant East Prussians arrived, and in the Catholic south-east, where many Catholic Sudeten Germans arrived. Differences were larger in the western, middle and eastern parts of the country. Many Catholic Sudeten Germans, for instance, were brought to the mainly Protestant areas of North-Hesse and Franconia.

As a consequence, the expellee inflow changed the denominational structure of West Germany, particularly in Lower Saxony, Northern Hesse, and Franconia. In the North-Hessian county of Gießen, for instance, 94% of the native population but only 22% of the expellee population were Protestants. Since expellees made up a quarter of the total population, the overall share of Protestants in the county was 'only' 76%, down from 96.5% before the war.

B Socio-Demographic Characteristics of Expellees and Non-Expellees

Table B1: Socio-Demographic Characteristics of Expellees vs. Non-Expellees in West Germany, September 1950

	Expellees[a]	Remainder of population[b]
% females	52.9	53.2
Age structure		
% aged 0-17	29.7	27.7
% aged 18-24	11.3	10.1
% aged 25-44	30.0	27.9
% aged 45-64	21.8	24.6
% aged 65 and above	7.2	8.6
Marital status (aged 18 and above)		
% single	25.7	23.4
% married	60.4	64.0
% widowed or divorced	14.0	12.5
Education (born 1885-1927)[c]		
Years of schooling[d]	8.5	8.4
% vocational training	37.3	37.6
% university degree	3.5	2.9
Religious confession		
% Catholic	45.4	45.4
% Protestant	52.8	50.7
% Other	1.8	3.9

Notes: [a] Expellees are defined as German nationals or ethnic Germans who on 1 September 1939 lived (i) in the former German territories east of the Oder-Neisse line, (ii) in Saarland or (iii) abroad, but only if their mother tongue was German. [b] The education statistics distinguish between expellees and native West Germans (excluding non-German foreigners). All other statistics distinguish between expellees and the remainder of the population. [c] The education statistics are for those who were born between 1885 and 1927 (aged 23 to 65 in 1950). The overwhelming majority of these persons should have completed their education by 1950. [d] We only have data on the highest school degree. Years of schooling are inferred from the minimum years of schooling required to obtain a particular degree.
Sources: All data except for educational attainment are from the census of 13 September 1950, as published by Statistisches Bundesamt (1952). Figures on education are from our own calculations based on a 10% sample of the census of 27 May 1970 (FDZ 2008). Parts of the table are reproduced from Braun and Kvasnicka (2014).

C Data Sources

Table C2: Overview of Data Sources

	Explanatory remarks and data source
Dependent variables	
Expellee labor force participation rate 1950	The share of economically active persons in the total expellee population in 1950, data from Statistisches Bundesamt (1955b).
Expellee employment rate 1950	Calculated as (100 − Expellee unemployment rate) × Expellee labor force participation rate. Data on expellee unemployment rate comes from Pfeil (1958).
Intermarriage rates 1950	Index for intermarriage rates between expellees and non-expellees in 1950, taken from Poepelt (1959).
Vote shares of Bayernpartei (and BHE) 1950, 1954, 1958, 1962, 1966, 1970	Bavarian state elections, various volumes of *Beiträge zur Statistik Bayerns*.
Main explanatory variables	
Expellee share in 1950	The share of expellees in the 1950 population, based on data from Statistisches Bundesamt (1952) and Statistisches Bundesamt (1955b).
Expellee share in 1946	The share of expellees in the 1946 population, based on Statistisches Bundesamt (1950).
Agricultural employment share in 1939	The share of the workforce in agriculture in 1939, as published in Statistisches Reichsamt (1943)
Religious distance 1950	The Euclidean distance between the religious affiliations of expellees and non-expellees in 1950, based on data from Statistisches Bundesamt (1952). Data on religious affiliations in 1939 required for the instrument taken from Statistisches Reichsamt (1941).
Control variables	
Population share living in cities with at least 10,000 inhabitants 1939	Based on data from Statistisches Reichsamt (1940).
Rubble per capita 1946	Untreated rubble at the end of the war over the population in 1939, as taken from Deutscher Städtetag (1949).
Damaged dwellings 1945	Share of dwellings built before 1945 damaged in the war, based on data from Statistisches Bundesamt (1956).
Distance to inner German border $<$ 75 km (0/1)	Dummy for whether a county is located within 75 kilometers from the inner-German border.
Majority is Catholic in 1939 (0/1)	Dummy for whether the majority of a county was Catholic in 1939, based on data from Statistisches Reichsamt (1941).
1935 turnover per worker in the labor force	Turnover in 1935, taken from Statistisches Reichsamt (1939), over the workforce in 1939, taken from Statistisches Reichsamt (1943).

D Variable Definitions

D.1 Labor Force Participation and Employment Rates

The employment data, on which the labor force participation and employment rates are based, come from the census of 17 September 1950. The census distinguished between economically active persons (*Erwerbspersonen*), independent economically inactive persons (*Selbständige Beruflose*), and dependent economically inactive persons (*Angehörige ohne Beruf*) (Statistisches Bundesamt 1955a).[23] We calculate the labor force participation rate as the share of economically active persons in the total expellee population of a county. Importantly, there are many contemporary accounts that expellees, discouraged by dismal employment prospects, withdraw from the labor market and either retired early or returned to the fold (Pfeil 1958). The labor force participation rate captures this discouragement effect and can be precisely calculated for all West German counties.

The main drawback of the labor force participation rate is that it does not distinguish between economically active persons with and without employment. Although the census distinguished between the two groups,[24] the German Statistical Office never published the corresponding data at the county level and the original census records are, to the best of our knowledge, no longer available today. Fortunately, Pfeil (1958) drew on the original census records to calculate the share of economically active persons without employment (henceforth, unemployment rate), distinguishing also between expellees and non-expellees. We use the data in Pfeil (1958) to calculate the employment rate, i.e., the share of employed persons in the population, as (100 − unemployment rate) × Labor force participation rate. Pfeil only reports the unemployment rate in nine ranked categories, ranging from 0-4% to above 32%. We use midpoints of these categories to calculate the employment rate. Moreover, the unemployment rate is not available for the federal states of Südbaden and Württemberg-Hohenzollern, so that we can not calculate the employment rate for the 39 counties located in these two states. This is why we use the labor force participation rate rather than the employment rate as our main indicator of economic integration.

D.2 Inter-Marriage Rates

Let a be the number of marriages between non-expellee men and non-expellee women in a region, b the number of marriages between non-expellee men and expellee women, c the number of marriages between expellee men and non-expellee women, and d the number of marriages between expellee men and expellee women (see Table D1). Intermarriage rates then compare the actual number of marriages between non-expellees and expellees, as given in Table D1, to the hypothetical number expected if the expellee status would not play any role for the choice of a spouse.

Consider marriages between non-expellee men and expellee women. The actual number of marriages between non-expellee men and expellee women is b. The expected number is given by the probability of a randomly drawn men-women pair being a non-expellee man and an expellee woman, $(a+b)/(a+b+c+d) \times (b+d)/(a+b+c+d)$, times the total number of marriages in the region, $a+b+c+d$. The intermarriage rate between non-expellee men and expellee women

[23] Economically active persons are those who were in full-time employment at the time of the census or were looking for full-time employment. Part-time workers were not counted as economically active. Independent economically inactive persons were economically inactive but supported themselves through, in particular, retirement pensions or disability benefits. Dependent economically inactive persons were economically inactive and depended economically on another household member.

[24] The census counted all persons as unemployed who usually carried out a full-time job but did not have employment at the time of the census. This includes persons not registered as unemployed at an employment office.

Table D1: Marriage Behavior in a Region

	Non-expellee women	Expellee women	Sum
Non-expellee men	a	b	$a+b$
Expellee men	c	d	$c+d$
Sum	$a+c$	$b+d$	$a+b+c+d$

Notes: Each entry gives the number of marriages in a cell.

is then calculated by relating the actual to the expected number of marriages:

$$\frac{100 \times b}{\frac{a+b}{a+b+c+d} \times \frac{b+d}{a+b+c+d}} \times (a+b+c+d) = \frac{100 \times b}{\frac{(a+b)\times(b+d)}{a+b+c+d}}. \tag{D.2}$$

Likewise, the intermarriage rate between expellee men and non-expellee women is:

$$\frac{100 \times c}{\frac{c+d}{a+b+c+d} \times \frac{a+c}{a+b+c+d}} \times (a+b+c+d) = \frac{100 \times c}{\frac{(c+d)\times(a+c)}{a+b+c+d}}. \tag{D.3}$$

D.3 Instrument for Religious Distance

Religious distance is measured as:

$$\begin{aligned} ReligiousDistance_{i50} &= \Bigg[\left(share_{i50}^{cath,nat} - share_{i50}^{cath,exp}\right)^2 + \left(share_{i50}^{prot,nat} - share_{i50}^{prot,exp}\right)^2 \\ &\quad + \left(share_{i50}^{other,nat} - share_{i50}^{other,exp}\right)^2\Bigg]^{0.5}. \end{aligned} \tag{D.4}$$

Our instrument replaces the 1950 share of expellees belonging to a certain confession with the correspondent 1946 share. Unfortunately, we do not have regional data on the religious mark-up of expellees who lived in West Germany in 1946. Instead, we use data on the origin regions of expellees and the pre-war shares of the different confessions in these origin regions. The data allow us to distinguish seven origin regions (Silesia, East Brandenburg, Pomerania, East Prussia, CSSR (Sudetenland), Poland, Danzig). Let $ExpelleeShare_{i46}^{s}$ be the 1946 share of expellees from origin region s among all expellees in region i and let $share_{39}^{s,j}$ be the 1939 share of the population in origin region s belonging to confession $j = \{cath, prot, other\}$. We then approximate the predicted share of expellees in region i belonging to confession j in 1946 as:

$$share_{i46}^{j} = \sum_{s} ExpelleeShare_{i46}^{s} \times share_{i39}^{s,j}. \tag{D.5}$$

In principle, non-expellees might also have moved endogenously after moving restrictions were abolished. To address this potential problem, we replace the 1950 share of natives in region i belonging to confession j, $share_{i50}^{j,nat}$, by the corresponding 1939 share, $share_{i39}^{j,nat}$.

Our instrument is then given by

$$\begin{aligned} ReligiousDistance_{i46} &= \Bigg[\left(share_{i39}^{cath,nat} - share_{i46}^{cath,exp}\right)^2 + \left(share_{i39}^{prot,nat} - share_{i46}^{prot,exp}\right)^2 \\ &\quad + \left(share_{i39}^{other,nat} - share_{i46}^{other,exp}\right)^2\Bigg]^{0.5}. \end{aligned} \tag{D.6}$$

E Time-Consistent Administrative County Borders

The administrative borders of some West German counties changed between 1939 and 1950. In order to make county borders comparable over time, we first merge counties which, at any time between 1939 and 1950, formed one county. The counties of Hildesheim and Marienburg, for instance, were separate entities in 1939, but were merged to join the new county of Hildesheim-Marienburg in 1946. Consequently, the 1946 and 1950 censuses only contain data on Hildesheim-Marienburg. We thus merge Hildesheim and Marienburg already in the 1939 census. We proceed analogously for the counties of Bremerhaven and Wesermünde; city and rural districts of Bremen; Rhein-Wupper Kreis and Leverkusen; Kreis der Eder, Kreis des Eisenberges and Kreis der Twiste; city and rural districts of Konstanz; Coburg and Rodach bei Coburg; city and rural districts of Dinkelsbühl; city and rural districts of Donauwörth, city and rural districts of Lüneburg.

In addition, there were some smaller border changes, in which municipalities were moved from one county to another. To deal with these border changes, we first compare the 1939 population of each county in its 1950 borders to the 1939 population of the same county in its 1939 borders. Since the majority of administrative borders remained unchanged between 1939 and 1950, the 1939 population figure is usually the same regardless of whether we use 1939 or 1950 borders. We do not take any action if the difference between the two population figures is less than 5%. If the difference is 5% or more, we merge the counties that exchanged municipalities. This applies to the counties of Osterholz, Verden and Bremen; Bergstraße, city and rural districts of Worms; Goslar, Wolfenbüttel and Salzgitter; Mainz, Groß-Gerau and Wiesbaden; Böblingen, Eßlingen and Stuttgart; city and rural districts of Osnabrück; city and rural districts of München; city and rural districts of Kulmbach; Lörrach and Neustadt; Norden and Emden; Braunschweig and Peine.

Finally, we drop counties that have lost or gained at least 5% of its 1939 population to regions outside West Germany, in particular to counties in the Soviet Occupation Zone. These counties include Blankenburg (Rest); Helmstedt; Birkenfeld; Zweibrücken; Saarburg; Trier; Mellrichstadt; Osterode; Lüneburg.

F Expellee Skills Are Similar Across Regions

This section shows that skill levels of expellees were similar across regions. In particular, the skill distribution of expellees was similar in regions with high and low expellee inflows as well as in agrarian and non-agrarian regions. Since the census of 1950 did not record schooling levels, individuals' pre-war occupation or other skill measures, we instead draw on individual-level data from the German Life History Study (Deutsche Lebensverlaufsstudie, LVS).

The LVS is a retrospective survey of eight birth cohorts born between 1919 and 1971 (see Mayer (2007) for an overview). It collects life history data from German citizens living in West Germany or West Berlin at the time of the interview. As expellees were nationalized, they were part of the survey. We use data from the first two waves of the LVS. The first wave (LVS-1) surveys 1412 Germans born in 1919-21, and the second wave (LVS-2) surveys 1438 Germans born in 1929-31 and 1939-41. The first wave was conducted in 1985-88, the second in 1981-83. Importantly for our purposes, the LVS records the complete residential history of respondents, along with the education and occupation of respondents and their parents. We restrict the sample to expellees[25] who lived in West Germany in September 1950.

Table F1 reports, separately for LVS-1 and LVS-2 as well as for both waves pooled, mean values for various skill measures. To test whether skill levels are similar across regions, we split the sample at the median of our key explanatory variables: the 1950 population share of expellees and the 1939 agricultural employment share. Panel (a) compares skill levels in counties with expellee shares above the median (columns (1), (5), (9)) and below the median (columns (2), (6), (10)), and presents the differences in the means between the two groups (columns (3), (7), (11)). Panel (b) repeats the exercise but distinguishes between expellees who lived in counties with pre-war agricultural employment shares above and below the median.

We measure skills by the years of schooling of respondents (only for LVS-1) and their parents, parents' years of education including time spent in tertiary education and vocational training, and the occupational prestige score[26] of the respondent's father. We do not report respondents' schooling in the LVS-2, and their education and occupational trajectory in both the LVS-1 and LVS-2, as all these skill measures are potentially endogenous to the local environment in West Germany. In particular, respondents in the LVS-2 were between four and 16 years old at the end of World War II, and had thus not completed their schooling when the expulsions began.

Differences between the skills of expellees are generally small and mostly statistically insignificant.[27] In the LVS-1, for instance, respondents who live in high-inflow regions have only slightly lower years of schooling than expellees in low-inflow regions (8.87 versus 8.97)–and the differences are reversed for their parents. In the LVS-2, the parents of respondents living in less agrarian regions appear to be somewhat higher educated than their counterparts in agrarian regions. However, these differences disappear once we pool data from the two waves (see columns (9) to (12)). Overall, these results are in line with historical accounts suggesting that expellees were not systematically allocated to specific regions according to their skills (Connor 2007).

[25] We define expellees as individuals who on 1 September 1939 lived in the Eastern territories of the German Reich or in Eastern Europe.

[26] The prestige score is measured on the Magnitude-Prestige-Scale (MPS) (Wegener, 1985), which ranges from 20 points (unskilled laborers) to 186.8 points (medical doctors). The MPS is among the most commonly used prestige measures for Germany.

[27] A downside of the LVS is its relatively small sample size which may prevent us from detecting smaller cross-regional differences in expellee skills. We are not aware of any data set with a larger sample size that would allow us to identify individuals' place of residence in 1950 and their skill level.

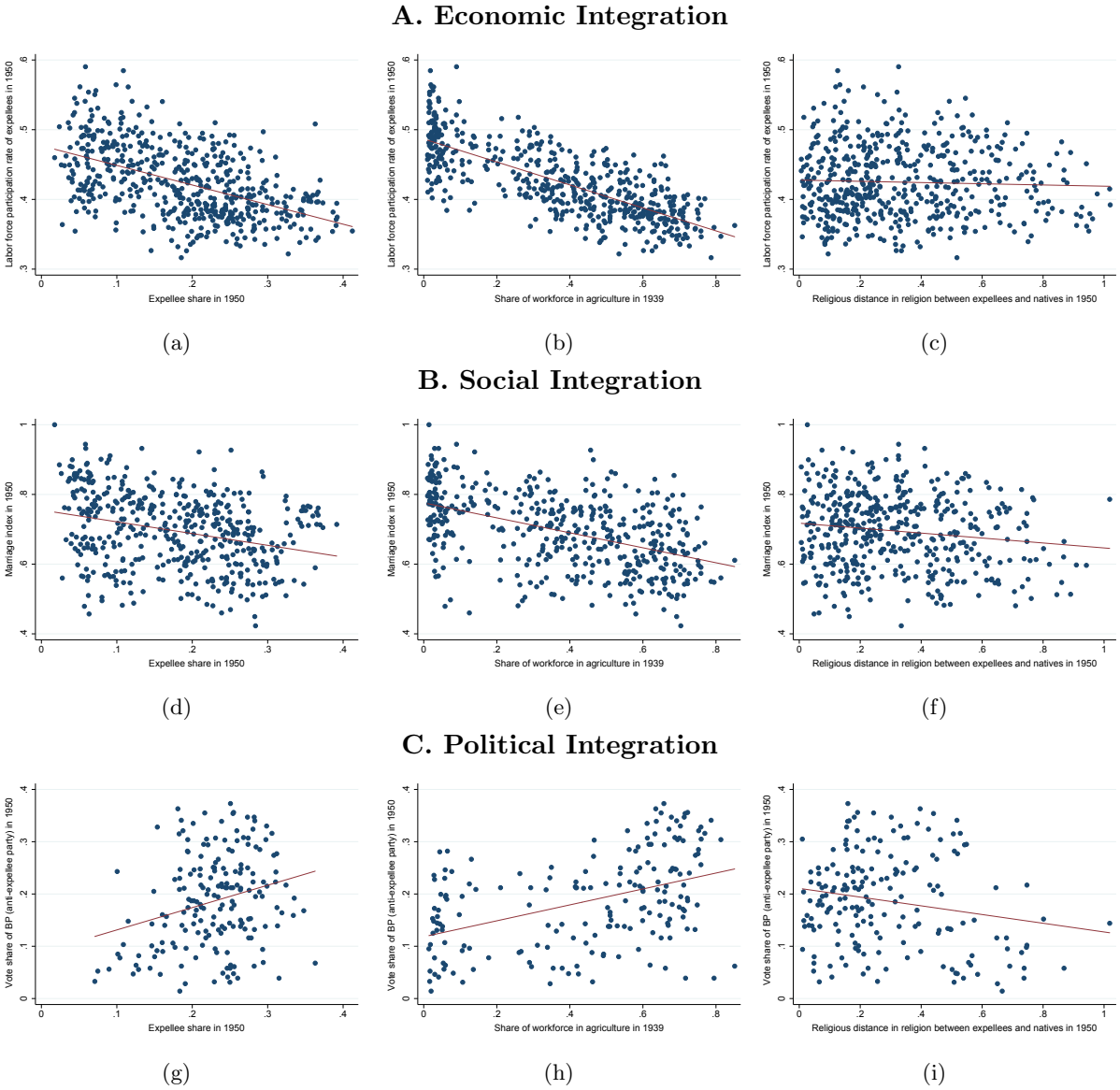
Table F1: Skills of Expellees by Place of Residence in September 1950

	LVS-1 (Cohort 1919-21)				LVS-2 (Cohorts 1929-31, 1939-41)				Pooled: LVS-1/LVS-2 (Cohorts 1919-21, 1929-31, 1939-41)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel (a) Expellees in high-inflow vs low-inflow regions												
	high inflow	low inflow	difference	obs.	high inflow	low inflow	difference	obs.	high inflow	low inflow	difference	obs.
Respondent												
Years of schooling	8,866	8,970	-0,104	259	-	-	-	-	-	-	-	-
	(1,416)	(1,543)	[0.184]									
Father												
Years of schooling	8,479	8,298	0,180	231	8,618	8,718	-0,100	174	8,546	8,474	0,072	405
	(1,229)	(1,021)	[0.149]		(1,466)	(1,571)	[0.230]		(1,331)	(1,303)	[0.131]	
Years of education	10,817	10,340	0,477	193	10,535	10,807	-0,272	169	10,667	10,571	0,096	362
	(2,202)	(1,860)	[0.293]		(2,486)	(2,643)	[0.395]		(2,314)	(2,284)	[0.242]	
Prestige of occupation learned	32,128	34,603	-2,475	243	30,012	32,756	-2,744	169	31,242	33,699	-2,457	412
	(17,335)	(13,683)	[1.996]		(16,400)	(17,940)	[2.647]		(16,858)	(15,715)	[1.608]	
Mother												
Years of schooling	8,257	8,157	0,100	224	8,330	8,402	-0,072	186	8,297	8,261	0,035	410
	(0,854)	(0,540)	[0.095]		(1,061)	(0,902)	[0.145]		(0,971)	(0,725)	[0.084]	
Years of education	8,626	8,559	0,067	209	8,816	9,023	-0,207	175	8,743	8,741	0,002	384
	(1,248)	(1,086)	[0.162]		(1,667)	(1,524)	[0.241]		(1,481)	(1,301)	[0.142]	
Panel (b) Expellees in agarian vs non-agrarian regions												
	agrarian	non-agrarian	difference	obs.	agrarian	non-agrarian	difference	obs.	agrarian	non-agrarian	difference	obs.
Respondent												
Years of schooling	8,876	8,969	-0,093	258	-	-	-	-	-	-	-	-
	(1,452)	(1,515)	[0.185]									
Father												
Years of schooling	8,391	8,391	0,000	230	8,495	8,873	-0,379	174	8,460	8,565	-0,105	404
	(1,137)	(1,137)	[0.150]		(1,312)	(1,712)	[0.229]		(1,254)	(1,383)	[0.131]	
Years of education	10,656	10,495	0,161	192	10,319	11,077	-0.758*	169	10,527	10,714	-0,187	361
	(2,008)	(2,087)	[0.296]		(2,361)	(2,734)	[0.392]		(2,209)	(2,392)	[0.242]	
Prestige of occupation learned	32,008	34,779	-2,770	242	30,770	32,085	-1,315	169	31,168	34,034	-2.866*	411
	(15,628)	(15,508)	[2.002]		(16,117)	(18,365)	[2.654]		(15,821)	(16,665)	[1.603]	
Mother												
Years of schooling	8,171	8,241	-0,070	223	8,247	8,494	-0.247*	186	8,230	8,330	-0,100	409
	(0,672)	(0,750)	[0.095]		(0,913)	(1,046)	[0.144]		(0,858)	(0,839)	[0.084]	
Years of education	8,528	8,667	-0,138	208	8,793	9,060	-0,267	175	8,665	8,831	-0,166	383
	(1,053)	(1,285)	[0.163]		(1,661)	(1,517)	[0.241]		(1,405)	(1,370)	[0.142]	

Notes: The table compares the skills of expellees who in September 1950 lived in regions with expellees shares above and below the sample mean (Panel (a)) and the skills of expellees who lived in regions with pre-war agricultural employment shares above and below the median. Standard deviations are in parentheses, standard errors in squared brackets. * denotes statistical significance at the 10%-level.

G Additional Descriptives

Figure G1: Raw Correlations of Main Variables of Interest with Various Integration Measures



Notes: The scatter plots show the correlations between our main variables of interest and measures of integration. Panels (a)-(c) focus on economic integration, as measured by the labor-force-to-population rate of expellees in 1950. Panels (d)-(f) focus on social integration, as measured by the inter-marriage rates of expellees and native West Germans. Panels (g)-(i) focus on political integration, as measured by the vote share of the *Bayernpartei* (BP).

H Additional Regression Results

H.1 Placebo Regressions

We provide evidence that expellee inflows are uncorrelated with pre-war economic prospects, once we control for our set of covariates. Table H1 shows the results of regressing various pre-treatment indicators of economic development on the expellee share in 1950 and our standard set of control variables.

Table H1: Expellee Share and Pre-Treatment Economic Development: Placebo Regressions

		State dummies		Number of
		no	yes	observations
	Dependent variable:	(1)	(2)	(3)
	Annual population growth			
(1a)	1871–1939	-0.015	-0.025	526
		(0.014)	(0.033)	
(1b)	1910–1939	0.000	-0.003	526
		(0.005)	(0.008)	
(1c)	1925–1939	0.009	-0.006	482
		(0.009)	(0.011)	
(2)	Turnover per worker 1939	-0.255	0.725	526
		(1.906)	(3.186)	
(3)	Self-employment rate 1939	-0.029	-0.012	526
		(0.019)	(0.027)	

Notes: The table provides supportive evidence for our identifying assumption that the expellee share is uncorrelated with economic prospects. Each cell represents the coefficient estimated in a separate regression with the expellee share as explanatory variable. The rows differ in the dependent variable we use. In rows (1a) to (1c) the dependent variable is the annual population growth rate in various time periods. In row (2) the dependent variable is turnover per worker in 1939 and in row (3) the self-employment rate in 1939. All regressions include our standard set of explanatory variables: the agricultural employment share in 1939, religious distance between natives and expellees in 1950, the population share living in cities with at least 10000 inhabitants, rubble per capita in 1939, a dummy for counties within 75 km of the inner-German border, and a dummy for counties with a Catholic majority. Column (2) includes dummies for each of the nine West German states. Regressions are weighted with population in 1939. Standard errors clustered at the labor market region level are in parentheses.

County-level GDP data is not available before 1957. Following common practice in economic history,[28] we instead use population growth in 1871–1939, 1910–1939, and 1925–1939 as our main proxy for economic growth and development. We use turnover per worker in the labor force (first suggested by Vonyò 2012), and the self-employment rate, which generally correlates negatively with economic development (see, e.g., Henrekson and Sanandaji (2014)), as alternative proxies. In all regressions the coefficient on the expellee share in 1950 is statistically insignificant. Taken together, the regressions support our identifying assumption that a county's expellee share is uncorrelated with its (pre-war) economic development.

H.2 First Stage Results

[28]See, e.g., Cantoni (2015) and Hornung (2015) for applications in the German context.

Table H2: Forced Migration and Labor Force Participation: First Stage Results

	(1)	(2)
Dependent variable: Expellee share 1950		
Expellee share 1946	0.879***	0.895***
	(0.017)	(0.027)
Agricultural employment share 1939	-0.001	-0.025***
	(0.008)	(0.009)
Predicted religious distance 1939/1946	-0.002	-0.004
	(0.003)	(0.004)
Population share living in cities with at least 10,000	0.006	-0.007
inhabitants 1939	(0.005)	(0.005)
Rubble per capita 1946	-0.570***	-0.362**
	(0.165)	(0.150)
Distance to inner German border is smaller than 75 km (0/1)	0.007**	0.006*
	(0.003)	(0.003)
Majority is Catholic in 1939 (0/1)	-0.001	-0.001
	(0.002)	(0.002)
Dependent variable: Religious distance 1950		
Expellee share 1946	0.044	0.104
	(0.076)	(0.157)
Agricultural employment share 1939	-0.111**	-0.082*
	(0.044)	(0.043)
Predicted religious distance 1939/1946	0.776***	0.767***
	(0.030)	(0.032)
Population share living in cities with at least 10,000	-0.022	-0.005
inhabitants 1939	(0.015)	(0.022)
Rubble per capita 1946	-1.354*	-1.237*
	(0.694)	(0.729)
Distance to inner German border is smaller than 75 km (0/1)	-0.027*	-0.021
	(0.014)	(0.014)
Majority is Catholic in 1939 (0/1)	0.062***	0.053***
	(0.013)	(0.015)
State dummies	no	yes
Number of observations	526	526

Notes: The table presents the first stage regression results pertaining to Table 1, columns (3) to (6), to Table 2, columns (3) to (6), as well as to Table H3 and Table H4. The first stage regressions use the expellee share in 1946 and the predicted population-weighted religious distance as instrument for the expellee share 1950 and the religious distance 1950, respectively. Column (2) includes dummies for each of the nine West German states. Regressions are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Standard errors clustered at the labor market region level are in parentheses.

H.3 Robustness Checks

Table H3: Economic Integration: Robustness Checks

Dependent variable: labor force participation rate 1950	calculated over overall population						calculated over population of working age	
	unweighted		with alternative measure for damage I		with alternative measure for damage II			
	IV	IV	IV	IV	IV	IV	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Expellee share 1950	-0.142***	-0.164***	-0.169***	-0.212***	-0.186***	-0.240***	-0.232***	-0.377***
	(0.029)	(0.047)	(0.035)	(0.059)	(0.034)	(0.073)	(0.049)	(0.081)
Agricultural employment share 1939	-0.134***	-0.131***	-0.180***	-0.143***	-0.201***	-0.139***	-0.153***	-0.198***
	(0.012)	(0.011)	(0.019)	(0.017)	(0.031)	(0.017)	(0.027)	(0.024)
Religious distance 1950	0.011	0.003	0.005	0.001	0.003	0.001	0.004	0.009
	(0.010)	(0.009)	(0.014)	(0.011)	(0.016)	(0.011)	(0.022)	(0.015)
Population share living in cities with at least 10,000	0.004	0.005	-0.024*	0.003	-0.020	0.009	0.036***	0.018
inhabitants 1939	(0.007)	(0.007)	(0.013)	(0.009)	(0.019)	(0.009)	(0.010)	(0.012)
Rubble per capita 1946	0.338	0.394					0.206	0.499
	(0.402)	(0.331)					(0.480)	(0.440)
Distance to inner German border is smaller than 75 km (0/1)	0.001	0.003					0.014	0.008
	(0.005)	(0.004)					(0.011)	(0.009)
Majority is Catholic in 1939 (0/1)	0.003	-0.008**	0.001	-0.007	-0.001	-0.007	-0.003	-0.013*
	(0.004)	(0.003)	(0.008)	(0.005)	(0.008)	(0.005)	(0.012)	(0.007)
Loss in housing space, 3 categories								
[reference category: minor losses]								
substantial losses			-0.007	-0.004				
			(0.005)	(0.005)				
very substantial losses			0.025***	0.017**				
			(0.009)	(0.008)				
Damaged dwellings 1945					0.003	0.014		
					(0.018)	(0.018)		
Weak identification test (Cragg-Donald Wald F statistic)	1103.24	711.82	1005.04	751.37	289.30	291.42	1027.51	759.96
Shea's Partial R^2: expellee share 1946	0.890	0.754	0.928	0.812	0.923	0.800	0.920	0.842
Shea's Partial R^2: predicted religious distance	0.814	0.778	0.795	0.749	0.795	0.749	0.799	0.751
State dummies	no	yes	no	yes	no	yes	no	yes
Number of observations	526	526	526	526	526	526	526	526

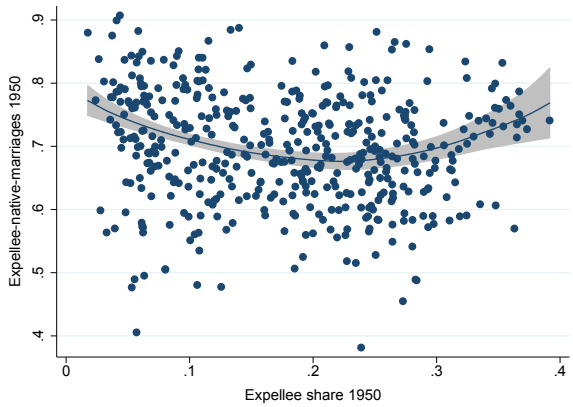
Notes: The dependent variable in columns (1) to (6) is the labor force participation rate of expellees in 1950 calculated over the overall population. The dependent variable in columns (7) and (8) is the labor force participation rate of expellees in 1950 calculated over the population of working age (aged 18 to 65 years). All regressions are IV regressions using the expellee share in 1946 and the predicted population-weighted religious distance as instruments for the expellee share 1950 and the religious distance 1950, respectively. Columns (2), (4), (6), and (8) include dummies for each of the nine West German states. Regressions in columns (3) to (8) are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Standard errors clustered at the labor market region level are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from Stock and Yogo (2005) suggest the instruments to be strong.

Table H4: Social Integration: Robustness Checks

	unweighted		with alternative measure for damage I		with alternative measure for damage II	
	IV	IV	IV	IV	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Expellee share 1950	-0.219***	-0.360***	-0.354***	-0.345***	-0.246***	-0.262**
	(0.074)	(0.096)	(0.091)	(0.123)	(0.094)	(0.118)
Agricultural employment share 1939	-0.125***	-0.094***	-0.054	-0.093***	-0.013	-0.086***
	(0.031)	(0.029)	(0.042)	(0.033)	(0.052)	(0.032)
Religious distance 1950	-0.038	-0.036*	-0.078*	-0.051*	-0.087*	-0.055**
	(0.031)	(0.020)	(0.047)	(0.027)	(0.046)	(0.025)
Population share living in cities with at least 10,000	0.027	0.009	0.037	-0.018	0.004	-0.027
inhabitants 1939	(0.018)	(0.016)	(0.024)	(0.018)	(0.030)	(0.018)
Rubble per capita 1946	0.973	0.728				
	(0.671)	(0.481)				
Distance to inner German border is smaller than	0.065***	0.055***				
75 km (0/1)	(0.011)	(0.010)				
Majority is Catholic in 1939 (0/1)	-0.026**	-0.042***	-0.014	-0.034***	-0.020	-0.038***
	(0.011)	(0.010)	(0.016)	(0.010)	(0.016)	(0.010)
Loss in housing space, 3 categories						
[reference category: minor losses]						
substantial losses			0.044***	0.015		
			(0.016)	(0.011)		
very substantial losses			0.017	0.027**		
			(0.018)	(0.013)		
Damaged dwellings 1945					0.168***	0.094***
					(0.038)	(0.030)
Weak identification test						
(Cragg-Donald Wald F statistic)	321.023	560.839	697.032	546.218	699.581	550.516
Shea's Partial R^2: expellee share 1946	0.889	0.745	0.926	0.819	0.917	0.812
Shea's Partial R^2: predicted religious distance	0.780	0.755	0.756	0.715	0.756	0.715
State dummies	no	yes	no	yes	no	yes
Number of observations	458	458	458	458	458	458

Notes: In all columns, the dependent variable is an index measuring expellee-native-marriages in 1950. All regressions are IV regressions which use the expellee share in 1946 and the predicted population-weighted religious distance as instruments for the expellee share 1950 and the religious distance 1950, respectively. Columns (2), (4) and (6) include dummies for each of the nine West German states. Regressions in columns (3) to (6) are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Standard errors clustered at the labor market region level are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from Stock and Yogo (2005) suggest the instruments to be strong.

Figure H1: Effect of Expellee Share on Marriage Behavior: Semi-Parametric Estimates



Notes: The figure shows results from Robinson's double residual semi-parametric regression estimator (Robinson 1988) with our usual set of control variables. The dependent variable is an index for marriages between expellee and native in 1950. The expellee share is allowed to affect the marriage index nonlinearly using an Epanechnikov kernel. The expellee share is considered endogenous. We use the expellee share in 1946 as an instrument for the expellee share in 1950. The confidence interval shown is based on standard errors clustered at the labor market region level.

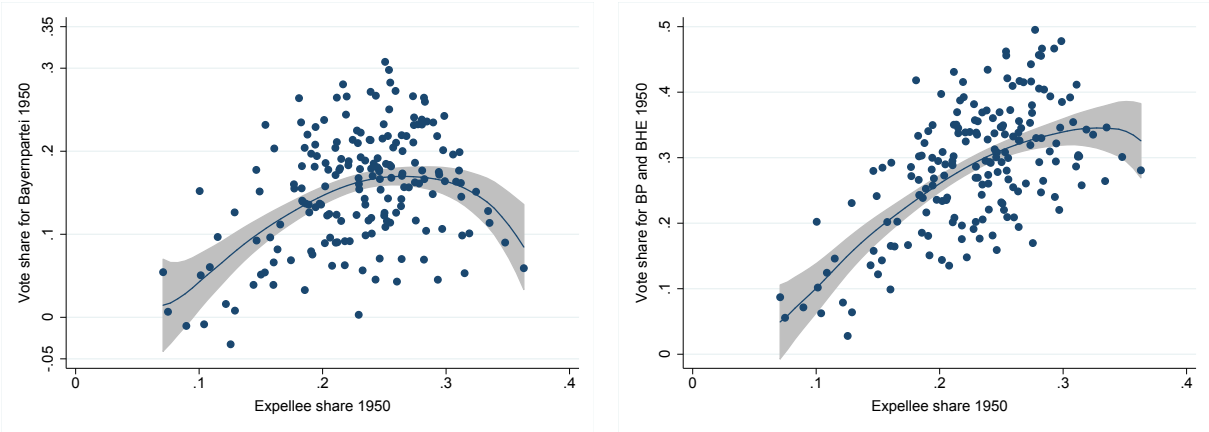
H.4 Semi-Parametric Estimates for Social and Political Integration

This sub-section explores potential nonlinearities in the effect of the expellee share on marriage and voting behavior. Figure H1 presents the results from a semi-parametric IV regression of inter-marriages rates between expellees and natives on the expellee share; estimates from a semi-parametric OLS regression look very similar. The figure reveals a negative effect of the expellee share on inter-marriage rates, which is diminishing in the expellee share. Intermarriage rates are close to 80 for counties with small expellee inflows; expellees in these counties may simply had to marry a native for want of other expellees at marriageable age. The mean expellee share of 17.8% in our marriage estimation sample implies an intermarriage rate of below 70. For expellee shares of about 30% and larger, inter-marriage rates increase again in the expellee share. This finding is consistent with the notion that a relatively equal mix of newcomers and natives fosters inter-group contact and strengthens the incentives to integrate (Bazzi et al. 2018).[29] We caution, however, that the increasing part of the relationship is estimated with relatively large standard errors.

Figure H2 reveal a hump-shaped effect of the expellee share on our vote shares of interest (see Figure H2). Results from semi-parametric OLS regressions look very similar. Both the vote share for the anti-expellee party and the overall vote share for special interest parties increase in the expellee share up to an expellee share of 0.25; for larger expellee shares, the estimated vote share for BP decreases again. This finding can again be couched in the notion that a sufficiently large share of expellees fosters intergroup contact, which may promote integration (Bazzi et al. 2018) and reduce misperceptions about the characteristics of immigrants (Alesina et al. 2018).

[29]Bazzi et al. (2018) demonstrate that diversity has an inverse U-shaped effect on the integration of diverse group in Indonesia, as reflected in language use and intergroup marriage. Integration is weak in areas with a clear majority, but strong in areas with an equal mix of groups.

Figure H2: Effect of Expellee Share on Voting Behavior: Semi-Parametric Estimates



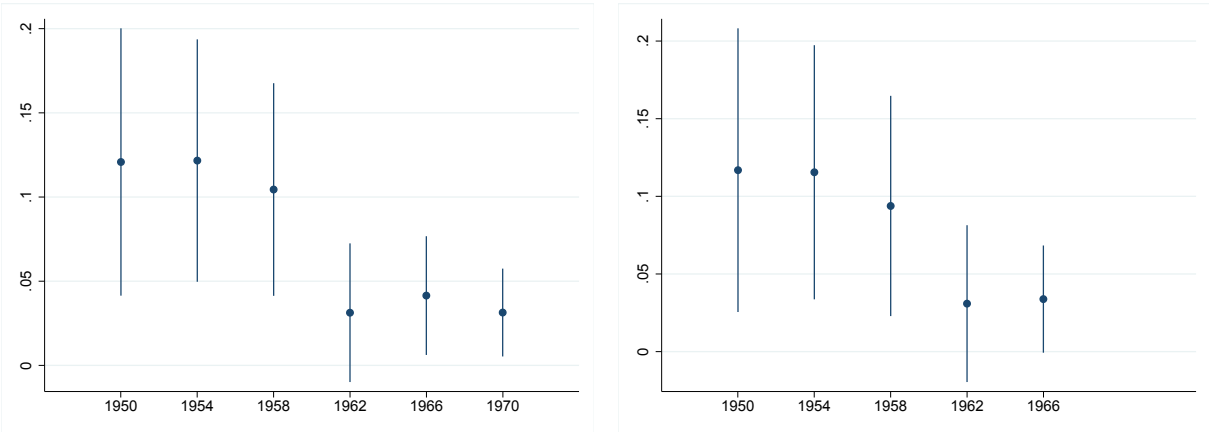
(a) BP: anti-expellee party

(b) BHE and BP: special interest parties

Notes: The figure shows results from Robinson's double residual semi-parametric regression estimator (Robinson 1988) with our usual set of control variables. The dependent variable in Panel (a) is the vote share for BP (anti-expellee party) in 1950; the dependent variable in Panel (b) is the vote share for BP and BHE (special interest parties). The expellee share is allowed to affect the vote share nonlinearly using an Epanechnikov kernel. The expellee share is considered endogenous. We use the expellee share in 1946 as an instrument for the expellee share in 1950. The confidence intervals shown are based on standard errors clustered at the labor market region level.

H.5 Political Integration: Dynamics

Figure H3: Effect of Religious Distance on Voting Behavior: Dynamics



(a) Anti-expellee party, IV

(b) Special interest parties, IV

Notes: All panels show the dynamics in the effect of the religious distance on voting behavior with 95% confidence intervals. In Panel (a) the dependent variable is the vote share for BP (anti-expellee party). In Panel (b) the dependent variable is the vote share for BP + BHE/GDP (special interest parties). Both panels display estimates from IV regressions, which follow the specification in Table 5, columns (2) and (4). In 1966 (1970), BP did no longer run for office in 23 (26) out of 186 districts; in these districts the vote share of BP is set to 0. There are no estimates for the vote share for BP + BHE/GDP in 1970 as the BHE/GDP did no longer stand for election in 1970. The full set of results is displayed in Appendix Tables H5 and H6.

Table H5: Political Integration: Dynamics of Forced Migration and Voting Behavior for Anti-Expellee Party

Dependent variable: vote share for	Bayernpartei (anti-expellee party)									
	in 1954		in 1958		in 1962		in 1966		in 1970	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Expellee share 1950	0.489***	0.562***	0.297***	0.365***	0.228***	0.226***	0.121**	0.112*	0.018	0.035*
	(0.100)	(0.108)	(0.086)	(0.092)	(0.055)	(0.064)	(0.051)	(0.059)	(0.026)	(0.021)
Agricultural employment share 1939	0.024	0.017	0.047*	0.042	0.036*	0.037*	0.004	0.005	0.006	0.004
	(0.032)	(0.032)	(0.028)	(0.027)	(0.021)	(0.021)	(0.018)	(0.018)	(0.007)	(0.006)
Religious distance 1950	0.119***	0.122***	0.111***	0.104***	0.037*	0.031	0.043**	0.041**	0.028***	0.031**
	(0.034)	(0.037)	(0.031)	(0.032)	(0.020)	(0.021)	(0.016)	(0.018)	(0.009)	(0.013)
Population share living in cities with at least 10,000	0.012	0.013	0.018	0.020	0.008	0.009	-0.001	-0.001	-0.001	-0.001
inhabitants 1939	(0.019)	(0.018)	(0.015)	(0.014)	(0.010)	(0.010)	(0.008)	(0.008)	(0.004)	(0.004)
Rubble per capita 1946	1.773	2.101*	1.671*	1.894**	1.271***	1.204***	0.563*	0.519	0.294	0.390
	(1.145)	(1.228)	(0.910)	(0.954)	(0.406)	(0.410)	(0.303)	(0.326)	(0.183)	(0.246)
Distance to inner German border is smaller than 75	-0.053***	-0.052***	-0.043***	-0.043***	-0.031***	-0.032***	-0.030***	-0.030***	-0.014***	-0.013***
km (0/1)	(0.010)	(0.010)	(0.008)	(0.008)	(0.005)	(0.005)	(0.004)	(0.004)	(0.002)	(0.002)
Majority is Catholic in 1939 (0/1)	0.117***	0.120***	0.093***	0.092***	0.051***	0.049***	0.047***	0.047***	0.017***	0.019***
	(0.018)	(0.020)	(0.015)	(0.015)	(0.008)	(0.009)	(0.006)	(0.007)	(0.004)	(0.006)
R^2	0.529	.	0.427	.	0.360	.	0.325	.	0.218	.
Weak identification test (Cragg-Donald Wald F statistic)		250.45		250.45		250.45		250.45		250.45
Shea's Partial R^2: expellee share 1946		0.754		0.754		0.754		0.754		0.754
Shea's Partial R^2: predicted religious distance		0.775		0.775		0.775		0.775		0.775
Number of observations	186	186	186	186	186	186	186	186	186	186

Notes: The IV regressions in columns (2), (4), (6) and (8) use the expellee share in 1946 and the predicted population-weighted religious distance as instrument for the expellee share 1950 and the religious distance 1950, respectively. In 1966 (1970), Bayernpartei did no longer run for office in 23 (26) out of 186 districts; in these districts the vote share of BP is set to 0. Regressions are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Robust standard errors are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from Stock and Yogo (2005) suggest the instruments to be strong.

Table H6: Political Integration: Dynamics of Forced Migration and Voting Behavior for Special Interest Parties

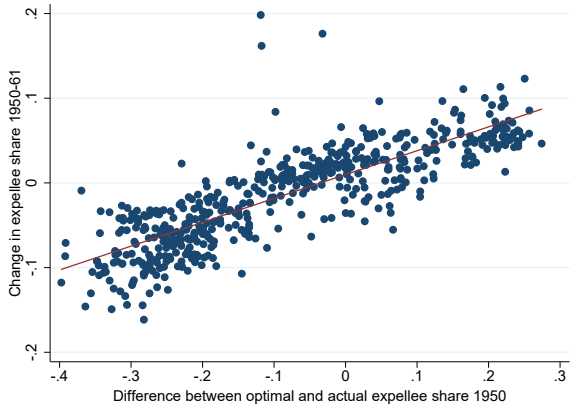
Dependent variable: vote share for	Bayernpartei + BHE/GDP (special interest parties)							
	in 1954		in 1958		in 1962		in 1966	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Expellee share 1950	0.966***	1.066***	0.730***	0.821***	0.502***	0.543***	0.145***	0.136**
	(0.119)	(0.121)	(0.095)	(0.103)	(0.066)	(0.075)	(0.048)	(0.056)
Agricultural employment share 1939	0.024	0.012	0.019	0.011	0.006	0.002	0.004	0.005
	(0.038)	(0.037)	(0.032)	(0.031)	(0.026)	(0.025)	(0.018)	(0.018)
Religious distance 1950	0.104***	0.116***	0.098***	0.094***	0.031	0.031	0.034**	0.034*
	(0.037)	(0.042)	(0.033)	(0.036)	(0.023)	(0.026)	(0.016)	(0.018)
Population share living in cities with at least	0.004	0.005	0.011	0.013	-0.003	-0.002	0.000	-0.000
10,000 inhabitants 1939	(0.022)	(0.021)	(0.018)	(0.017)	(0.013)	(0.013)	(0.008)	(0.008)
Rubble per capita 1946	2.395**	2.913**	1.987**	2.320**	1.821***	1.991***	0.554*	0.513*
	(1.124)	(1.267)	(0.838)	(0.919)	(0.483)	(0.532)	(0.291)	(0.311)
Distance to inner German border is smaller than 75	-0.044***	-0.043***	-0.039***	-0.038***	-0.034***	-0.033***	-0.032***	-0.032***
km (0/1)	(0.012)	(0.012)	(0.009)	(0.009)	(0.006)	(0.006)	(0.004)	(0.004)
Majority is Catholic in 1939 (0/1)	0.119***	0.126***	0.102***	0.103***	0.056***	0.057***	0.046***	0.045***
	(0.020)	(0.022)	(0.016)	(0.017)	(0.010)	(0.011)	(0.006)	(0.007)
R^2	0.614	.	.	.	0.445	.	0.347	.
Weak identification test (Cragg-Donald Wald F statistic)		250.45		250.45		250.45		250.45
Shea's Partial R^2: expellee share 1946		0.754		0.754		0.754		0.754
Shea's Partial R^2: predicted religious distance		0.775		0.775		0.775		0.775
Number of observations	186	186	186	186	186	186	186	186

Notes: The IV regressions in columns (2), (4), (6) and (8) use the expellee share in 1946 and the predicted population-weighted religious distance as instrument for the expellee share 1950 and the religious distance 1950, respectively. In 1966 (1970), BP did no longer run for office in 23 (26) out of 186 districts; in these districts the vote share of BP is set to 0. Regressions are weighted with population in 1939. $***$, $**$ and $*$ denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Robust standard errors are in parentheses. The weak identification test refers to the Cragg-Donald F statistic; critical values from Stock and Yogo (2005) suggest the instruments to be strong.

H.6 Expellee Migration in 1950-61

Figure H4 shows that the–largely migration-induced–actual change in expellee shares in 1950–61 is strongly positively associated with the hypothetical change in expellee shares required to fully close the gap between the actual and optimal allocation of expellees. In fact, the correlation coefficient between the two variables is as high as 0.83.

Figure H4: Actual vs. Optimal Change in Expellee Share



Notes: The figure plots the actual change in expellee shares in 1950–61 (in percentage points) against the hypothetical change in expellee shares required to close the gap between the actual and optimal allocation of expellees, along with the linear regression line.
Sources: Own calculations, Statistisches Bundesamt (1966).

The migratory response of expellees in the 1950s also support the main results of our analysis. If integration prospects are indeed bad in agrarian regions with high expellee inflows, we would expect expellees to emigrate from those regions to other parts of West Germany once they were able to do so. Table H7 provides evidence in favour of this hypothesis.[30] It relates the percent change in the expellee population in 1950–61 to our three main variables of interest and our standard covariates. The table reports the results of OLS and IV regressions with and without state fixed effects.

As expected, the 1950 population share of expellees and the 1939 agricultural employment share both have a statistically significant negative effect on the change in expellee population. The OLS regression without fixed effects in column (1) suggests that a one standard deviation increase in the 1950 share of expellees led to a subsequent decrease in the expellee population in 1950–61 by 0.493 standard deviation or as much as 40%. Likewise, a one standard deviation in the agricultural employment share decreases the expellee population in 1950–61 by 0.127 standard deviation or 10.2%. The effects are somewhat smaller–but still statistically significant–when we add state dummies to the regression. There is also some evidence that religious differences between natives and expellees led to a decrease in the expellee population in the 1950s–but only when we exploit variation within federal states.

[30] This result is consistent with previous evidence in Braun and Weber (2016) and Braun et al. (2017). Braun and Weber (2016) show that internal migration from high- to low-inflow regions was one important channel through which regional labor markets adjusted to the inflow of expellees. Expellee-induced population growth in 1939–50 reduced subsequent population growth in 1950–70 (Braun et al. 2017).

Table H7: Local Environment and Changes in the Expellee Population 1950–61

Dependent variable:	Change in the expellees population 1950-61 (in %)			
	OLS	OLS	IV	IV
	(1)	(2)	(3)	(4)
Expellee share 1950	-4.436***	-3.116***	-4.396***	-2.590***
	(0.487)	(0.857)	(0.452)	(0.915)
Agricultural employment share 1939	-0.443**	-0.613***	-0.453**	-0.660***
	(0.209)	(0.151)	(0.202)	(0.149)
Religious distance 1950	-0.068	-0.208*	-0.066	-0.183
	(0.125)	(0.112)	(0.153)	(0.142)
Population share living in cities with at least 10,000	0.409***	0.359**	0.407***	0.383***
inhabitants 1939	(0.102)	(0.142)	(0.098)	(0.144)
Rubble per capita 1946	8.282	11.892	8.380	12.544
	(6.872)	(9.218)	(6.853)	(9.383)
Distance to inner German border is smaller than 75 km (0/1)	-0.092*	-0.009	-0.095*	-0.020
	(0.054)	(0.049)	(0.056)	(0.048)
Majority is Catholic in 1939 (0/1)	-0.083	-0.064	-0.081	-0.056
	(0.075)	(0.071)	(0.073)	(0.071)
R^2	0.648	0.676	.	.
State dummies	no	yes	no	yes
Number of observations	526	526	526	526

Notes: The dependent variable is the change in the number of expellees between 1950 and 1961 in percent of the expellee population in 1950. Columns (2) and (4) include dummies for each of the nine West German states. Regressions are weighted with population in 1939. ***, ** and * denote statistical significance at the 1%-, 5%- and 10%-level, respectively. Standard errors clustered at the labor market region level are in parentheses.

I Optimizing the Distribution of Expellees

This section describes the problem that we solve to obtain the optimal regional distribution of expellees. Let E_i be the number of expellees in county i. There are 526 counties in our data. The sum of expellees over all these counties has to equal the total number of expellees residing in West Germany in September 1950, i.e.:

$$\sum_{i=1}^{526} E_i = 7876000. \tag{I.1}$$

Let R_i be the county-specific labor force participation rate of expellees. Following our empirical analysis, this rate depends negatively on the expellee share, $ExpelleeShare_i$, and the pre-war agricultural employment share, $AgricultureShare_i$. In particular, we use the regression results from Column (3) of Table 1 to specify R_i as follows:[31]

$$\begin{aligned} R_i &= 0.532 - 0.186 \times ExpelleeShare_i - 0.184 \times AgricultureShare_i \\ &= 0.532 - 0.186 \times E_i/(E_i + N_i) - 0.184 \times AgricultureShare_i, \end{aligned} \tag{I.2}$$

where N_i is the county-specific number of natives in September 1950. We take both N_i and $AgricultureShare_i$ as exogenously given and set them to their historical values (as reported in the censuses of 1939 and 1950).

The total (Germany-wide) number of expellees in the labor force, $L(E_1, E_2, ..., E_n)$, is then given by:

$$\begin{aligned} L(E_1, E_2, ..., E_{526}) &= E_1 \times R_1(E_1) + E_2 \times R_2(E_2) + ... + E_{526} \times L_{526}(E_{526}) \\ &= \sum_{i=1}^{526} E_i \times R_i(E_i). \end{aligned} \tag{I.3}$$

[31] 0.532 is the estimated constant of the regression. We abstract from other regional determinants of the labor force participation rate, as none of them is statistically significant in the regression.

The optimization problem is to choose county-specific numbers of expellees, $E_1, E_2, ..., E_{526}$, so as to maximize the total number of expellees in the labor force, $L(E_1, E_2, ..., E_n)$,[32] subject to the constraints (I.1) and (I.2) as well as the non-negativity constraints $E_i \geq 0$.

We solve this problem in `GAMS 25.1`, using the solver `IPOPT`. Note that in the absence of county-specific differences in $AgricultureShare_i$, the optimal solution would equalize the expellee share across counties. However, with differences in the agricultural employment share, agrarian regions will receive less expellees. In fact, the optimal distribution indicates that the 171 regions with a pre-war agricultural employment share of 52% or more should receive no expellees at all.

[32] Maximising the total number of expellees in the labor force is equivalent to maximizing the country-wide labor force participation rate of expellees (as this rate is given by dividing equation (I.3) by the exogenous number of expellees).

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