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JEL classification: J61, J21, C36

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1. Introduction

Whether immigrants worsen the labor market prospects of natives is a hotly debated and divisive question in academic and policy circles alike. In the standard textbook model of a competitive labor market, immigration shifts the labor supply curve outwards. Provided that labor supply and demand curves are not perfectly elastic, both equilibrium wages and equilibrium employment of natives will fall. If wages are sticky, immigrants may also push natives into unemployment. However, empirical evidence in favor of these theoretical predictions is scant. In fact, most estimates of the wage and employment effects of immigration cluster around zero.[1]

Yet, identifying the labor market effects of immigration remains a grave challenge for empirical research. The most common approach in the literature is to analyze the correlation between labor market outcomes of natives and levels of immigration across local labor markets.[2] However, the spatial correlation approach will underestimate the true effect of immigration on natives if migrants choose to locate in thriving local labor markets or if natives move out to less crowded labor markets in response to immigrant arrivals (Borjas, 2003).[3] The problem of self-selection of immigrants and natives into regions is addressed by studies at the national level that stratify the labor market by skill groups, not regions, and use variation in migrant inflows across these skill groups.[4] However, the problem remains that exactly those individuals might decide to migrate that belong to a skill group which is in high demand in the host economy (Dustmann et al., 2008). Moreover, within a labor market segment, be it defined by region or by skill, immigrants and natives are usually assumed to be perfect substitutes. However, this assumption is likely to be violated in practice, as job training and schooling in the origin countries of immigrants often differ from domestic standards. Indeed, firms typically attach different values to training and experience that was acquired abroad (Borjas, 2003). Cultural and language barriers can further reduce the degree of substitutability between immigrants and natives; and selective emigration might cause immigrants to differ systematically in their ability from observationally equivalent natives. Recent evidence indeed suggests that immigrants and natives may only be imperfect substitutes within age-education groups (Manacorda et al., forthcoming; Ottaviano and Peri, forthcoming).

This study takes a new empirical strategy to identify the causal effect of immigration and analyzes the effects of forced migrants that were displaced within (former) national boundaries on employment of pre-existing native workers. Our specific historical setting is the flight and expulsion of millions of Germans from Eastern Europe, most of them from the former Eastern territories of the German Reich, to West Germany at the final stages and in the aftermath of

[1] Friedberg and Hunt (1995), Okkerse (2008), Longhi et al. (2010a), Longhi et al. (2010b), and Kerr and Kerr (2011) provide comprehensive literature reviews or meta-analyses.

[2] Examples of the spatial correlation approach are Altonji and Card (1991), Card (2001) for the US, Frank (2009) and Pischke and Velling (1997) for Germany, and Dustmann et al. (2005) for the UK.

[3] To address the problem of endogenous location, some papers resort to instrumental variable estimation (e.g. Card, 2001) or natural experiments (e.g. Card, 1990) for identification.

[4] Using variation at the national level in immigration inflows across schooling-experience cells and over time, Borjas (2003) documents that labor market outcomes of US workers are significantly worsened by immigrant arrivals. His finding has, however, been contested by Ottaviano and Peri (forthcoming) for the US and by Bonin (2005) for Germany.

World War II. By considering forced rather than voluntary migration, we overcome problems related to selective outmigration, as all individuals, and not only those with a specific set of (observed or unobserved) skills, were forced to migrate. And by considering internal rather than external forced migration, we ensure that migrant and native workers were close to perfect substitutes. The expellees (*Heimatvertriebene*) were German nationals or ethnic Germans. They all spoke German as their mother tongue and had been educated in German schools. It thus seems reasonable that within a labor market segment, which we define by occupation and state (*Bundesland*), expellees and native West Germans were very close substitutes on the West German labor market. The analysis of forced internal migration thus allows us to measure the degree of competition between natives and truly comparable immigrants. Given the close substitutability between natives and immigrants and the sheer size of the expellee inflow, one may consider our historical setting as close to a worst-case scenario for the receiving economy.

The mass exodus of Germans from Eastern Europe involved at least 12 million people and constitutes one of the largest population movements in modern history.[5] Already towards the end of World War II, hundreds of thousands of Germans fled westwards to escape the advance of the Red Army. After the final defeat of Nazi Germany, the Potsdam Treaty of 1945 shifted Germany's border westwards and placed former German territories east to the Oder-Neisse line under Polish and Russian control. Germans remaining east to this line were expelled and transferred to post-war Germany. The enormous inflow of expellees prompted a drastic increase in the West German population from 39 million in 1939 to 48 million in 1950. At that time, one out of six residents of West Germany was an expellee. Deficient administrative structures and the French refusal to admit any expellees into their zone of occupation led to a very uneven initial distribution of expellees across West German states. Most expellees initially crowded in Bavaria, Lower Saxony, and Schleswig-Holstein – states that were close to their homelands. In September 1950, expellee shares ranged from five percent in Rhineland-Palatine to 33 percent in Schleswig-Holstein.

We exploit this massive, sudden, and highly unequal increase in the labor force to study the effects on the employment-to-labor-force-rate of natives (henceforth *employment rate*), using census data from September 1950. To improve on a purely geographic measure of immigrant competition, we follow Card (2001) and stratify the national labor market not only by states but also by occupations. As the entire German population east to the Oder-Neisse line was forced to migrate, the skill composition of immigrants was unusually rich. Natives in every occupation had to compete with expellees, but to drastically varying degrees. As inflow rates differed so much across labor market segments, we test for both a linear and a non-linear relationship between native employment and expellee inflows.

We expect endogenous location choices into labor market segments to be of little importance in our specific setting. Expellees were forced to relocate to West Germany and did not do so because labor market conditions looked promising. Once they had arrived in the West, their geographic mobility was severely restricted by law. Moreover, their occupational choices were limited by existing skills, which the expellees had acquired before the war. Our setting is thus close to a natural experiment, in which immigrant inflows are independent of local labor market

[5] See Connor (2007) for a detailed account of the exodus and the integration of expellees in post-war Germany.

conditions. To address remaining endogeneity concerns, we complement simple OLS estimates with an instrumental variable strategy. Our instrument exploits regional variation in the pre-war distribution of occupations and uses geographic proximity to predict expellee flows from the sending regions in the former Eastern territories of the German Reich to destination regions in West Germany.

We find that the inflow of expellees considerably reduced employment rates of native West Germans. A ten percentage point increase in the expellee share in a state-occupation cell decreased the employment rate of natives in the same cell by around three percentage points. IV estimates are only slightly larger than OLS estimates, supporting our conjecture that endogenous selection into labor market segments only plays a minor role in our specific setting. We also provide evidence for a non-linear relation between native employment and expellee shares. The relation is essentially flat at low to medium levels of expellee inflows but becomes increasingly negative at high levels of inflows. This finding suggests that the labor market could absorb expellee inflows without adverse employment effects on natives, but that absorption capacity was limited. To the best of our knowledge, this is the first study to show that the size of an immigration influx determines whether the influx displaces natives or not.

Our analysis bears some resemblance to recent contributions by Glitz (forthcoming) and Boustan et al. (2010). Glitz (forthcoming) investigates the labor market effects of immigration of ethnic Germans to Germany after the fall of the Berlin wall. He finds that immigration of ethnic Germans had adverse effects on native employment but not on native wages. The majority of these ethnic Germans originated from territories in Eastern Europe, mostly in today's Russia, which, in contrast to our setting, had never belonged to Germany (Bundesministerium des Innern, 2005). These German migrants differed considerably from the native German population, as they had lived in the former Soviet Union or other Warsaw Pact countries for decades (Bauer and Zimmermann, 1997). Boustan et al. (2010) study the labor market effects of internal migration to major US cities at the time of the Great Depression. They document negative effects of immigration on local labor market outcomes of natives (though not on wages). The main conceptual difference between our study and the analyses by Glitz (forthcoming) and Boustan et al. (2010) is our focus on forced rather than voluntary migration. We study a historical setting in which a full cross-section of society was forced to relocate to a different part of the country. We are thus able to address problems related to endogenous migration decisions and the imperfect substitutability between immigrants and natives.

The remainder of this paper is organized as follows. Section 2 discusses the historical background. Section 3 introduces the econometric methods and the empirical data we use. Section 4 presents the results, Section 5 concludes.

2. Historical Background

The mass exodus of Germans from Eastern Europe began in autumn 1944 when hundreds of thousands of Germans left their homes in the face of advancing Soviet troops and flew westwards. As the defeat of Nazi Germany became imminent, Germans also left their homes for fear that the local non-German population would, once liberated, take revenge for their long-standing suffering under German occupation. After Nazi Germany's defeat in May 1945, so-

called wild expulsions of Germans followed, mainly from Poland and Czechoslovakia. Exile Poles and Czechs had advocated the expulsions of German minorities from their territories already in the early 1940s, after Hitler had used these minorities to attack the sovereignty of their host countries.

FIGURE 1: GERMANY'S TERRITORIAL LOSSES, 1919-1945

The expulsions of Germans from Eastern Europe were legalized and sanctioned in the Potsdam Treaty of August 1945. The treaty was concluded by the principal Allies in World War II, the United States, the United Kingdom, and the Soviet Union. The Allies agreed to shift the border between Poland and Germany westwards to the Oder-Neisse line. The German territory west to the Oder-Neisse line was divided into a British, French, American and Soviet zone of occupation. The three Western zones were merged to form the Federal Republic of Germany on 23 May 1949. The Soviet zone became the German Democratic Republic on 7 October 1949.

The ceded territories east to the new border comprised East Prussia, Silesia, and two thirds of Pomerania (see Figure 1 for an overview of Germany's territorial losses between 1919 and 1945). They accounted for approximately 24 percent of Germany's land size in 1937 and accommodated almost ten million residents in 1939. Parts of East Prussia were placed under Russian control. All other ceded provinces fell to Poland. The Potsdam Treaty affirmed 'that the transfer to [post-war] Germany of German populations, or elements thereof, remaining in Poland, Czechoslovakia and Hungary, will have to be undertaken'. Most of these transfers took place in the course of 1946 but continued, though on a much smaller scale, in the years thereafter. By 1950, the mass expulsions of Germans from their former homelands in Eastern Europe were essentially complete.

German expellees were very unevenly distributed across West German states (see Table 1). The regional distribution of expellees was initially determined by the spontaneous and largely undirected flight of Germans at the final stages of World War II. With the Soviet troops pushing

westwards, the civilian population was forced to seek shelter further inland and crowded in the most accessible West German states of Bavaria, Lower Saxony, and Schleswig Holstein (Chablani, 1957). Many expellees initially planned to return home after the end of the war and therefore gathered in areas close to their homelands. After the end of the war, the Allies attempted to manage the expellee flows that poured into post-war Germany. The attempt, however, was doomed to failure, as the German administration had collapsed in May 1945. The Allies' plan to secure an equitable distribution of expellees across occupation zones was also frustrated by the French who refused to accept any expellees into their occupation zone until 1947. France had not been invited to the Potsdam conference and did thus not feel obliged to the Potsdam Treaty. Consequently, expellees were initially transferred to the American and British occupation zone only. Yet, even within these two occupation zones, expellees were very unevenly distributed. Their distribution was primarily driven by the availability of housing, not jobs (Nellner, 1959). The heavy bombing campaigns during the war had destroyed major German cities, thereby aggravating the already existing housing shortages in urban areas. Expellees were therefore predominately transferred to the countryside, where much of the housing stock had remained intact (Connor, 2007).

TABLE 1: EXPELLEES AND OVERALL UNEMPLOYMENT IN WEST GERMAN STATES[6], SEPTEMBER 1950

	Total population	Expellees	Expellee share (in %)	Unemployment rate (in %)
American occupation zone				
Bavaria	9,184,466	1,937,297	21.1	10.6
Bremen	558,619	48,183	8.6	10.1
Hesse	4,323,801	720,583	16.7	7.1
Württemberg-Baden	3,907,848	649,597	16.6	3.7
French occupation zone				
Baden	1,338,629	98,375	7.3	2.6
Rhineland-Palatinate	3,004,752	152,267	5.0	6.3
Württemberg-Hohenzollern	1,183,748	113,554	9.6	2.0
British occupation zone				
Hamburg	1,605,606	115,981	7.2	12.2
Lower Saxony	6,797,379	1,851,472	27.2	14.0
North Rhine Westphalia	13,196,176	1,331,959	10.1	3.8
Schleswig-Holstein	2594648	856943	33.0	21.5
Federal Republic	47,695,672	7,876,211	16.5	8.2

Sources: Population figures are from the census of 13 September 1950. Unemployment statistics are from the Federal Ministry of Labor and refer to 30 September 1950.
Notes: Expellees are defined as German nationals or ethnic Germans who on 1 September 1939 lived in the former German territories east to the Oder-Neisse line or abroad. The unemployment rate is the share of unemployed among all dependent employees.

Once expellees had been transferred to a region or were stranded there as a result of their flight, they were severely restricted to move elsewhere. The military governments were anxious to control regional mobility and wanted all residents, not only expellees, to remain at the place

[6] By September 1950, the Saarland and West Berlin were not yet part of the territory of West Germany. Furthermore, the state of Baden-Württemberg was not yet established but subdivided into the three independent states of Baden, Württemberg-Hohenzollern and Württemberg-Baden.

where they had stayed at the day of armistice. While the total ban of relocations was eased in 1947, the general freedom of movement was only restored when the Federal Republic was founded in May 1949 (Ziemer, 1973). The initial distribution of expellee therefore proved to be very persistent over time.

The majority of expellees came from the former Eastern provinces of the German Reich. These so-called *Reichsdeutsche* numbered about 4.4 million and accounted for more than 55 percent of the expellee population in September 1950. Another 1.9 million expellees had resided in Czechoslovakia before the war, predominantly in the *Sudetenland*. After the Austro-Hungarian Monarchy had collapsed in 1918, the Sudentenland, though mainly inhabited by ethnic Germans, became part of the independent Czechoslovak state. It was annexed by Nazi Germany in September 1938. The remaining expellees mostly resided in those territories of Eastern Europe that Germany had lost after its defeat in World War I, such as West Prussia, Posen and Danzig.

The German expellees from Eastern Europe poured into a war-ridden country. Germany's infrastructure, its industry and housing stock were largely destroyed by the war the Nazis had unleashed. Yet, economic recovery came surprisingly quickly. Soon after a currency reform had been implemented in the Western occupation zones in June 1948, industrial production picked up rapidly. By 1950, industrial production almost doubled compared to 1948 and even surpassed pre-war levels. Yet, unemployment remained a considerable problem in post-war Germany (see Table 1). Regional unemployment rates differed markedly across states. Unemployment was highest in the state of Schleswig-Holstein where 21.5 percent of all dependent employees were unemployed in September 1950. Unemployment rates were also well above the national average of 8.2 percent in Lower Saxony (14.0 percent) and Hamburg (12.2 percent) but fairly small in Baden (2.6 percent) and Württemberg-Hohenzollern (2.0 percent). In contrast, there was little scope for regional wage differentiation in post-war Germany (Eichengreen and Ritschl, 2009; Vonyó, forthcoming). Unions were quickly resurrected[7] and the occupation authorities promoted the swift resumption of industry-level bargaining. One might thus expect that labor market adjustment to the very uneven influx of expellee workers mainly took place through employment, not wages.[8]

3. Empirical Strategy

3.1 Defining Labor Market Segments

Many existing studies on the labor market effects of immigration analyze the spatial correlation between labor market outcomes of natives and levels of immigration across local labor markets. We follow this approach and use regional variation in the expellee share across West German states. However, the overall fraction of expellees in a state is only an imperfect measure of competition between natives and expellees (Aydemir and Borjas, 2011; Card, 2001). To improve

[7] The Confederation of German Trade Unions (*Deutscher Gewerkschaftsbund*) comprised almost 5.5 million members in 1950.

[8] Due to data limitations, we do not study the wage effects of the expellee influx. The Federal Statistical Office conducted a major survey on the structure of wages in 1951. Yet, the survey did not distinguish between expellees and non-expellees and stratified the labor market by sector, not by occupation as we do.

on this measure, we further categorize workers in each local labor market into skill groups.[9] We then study the effect of an immigration-induced increase in the number of workers within a state-skill cell on the labor market outcomes of pre-existing native workers in the same cell.

Our definition of skill categories is based on occupations, as suggested by Card (2001) and Friedberg (2001). We define occupations according to the one-digit classification of occupations used by the German Federal Statistical Office for the Population Census 1950 (*Systematik der Berufe 1950*). The one-digit classification distinguishes between nine occupations (*Berufsordnungen*). Classifying workers into relatively broadly defined skill groups has the advantage that the resulting measure of immigrant competition does not miss competition from expellees in closely related occupations. Moreover, it reduces the possibility of endogenous selection into skill groups as workers are less likely to switch between more broadly defined occupations than between more narrowly defined occupations. If skill groups are defined too broadly, however, workers within these skill groups may not have truly comparable skills and hence not compete directly with each other. We therefore also check robustness using the narrower two-digit classification of occupations, which distinguishes between 38 occupations (*Berufsgruppen*).

In contrast to many other migration episodes, expellees and natives were arguably close substitutes on the West German labor market within state-occupation cells. Virtually all Germans living east to the Oder-Neisse line were forced to leave their homelands. Unlike most other immigrants, they were thus not a selected sub-group of the sending region, but represented a complete cross-section of society and should hardly have differed from natives in their (unobserved) ability.[10] Expellees and natives also shared common cultural features, spoke the same language, and had both been educated in German schools. Their pre-war levels of education were indeed almost identical (Bauer et al., 2011). Moreover, the ceded Eastern provinces, home to most expellees, had all been an integral part of the German Reich since the Reich was formed in 1871. In fact, they had already been part of the Free State of Prussia on whose territory also five of the 11 West German states in 1950 were founded after the war.[11] Expellees and natives had therefore not only lived in the same country before the war. Many of them had even resided on Prussian territory that had been integrated for several centuries.

3.2 OLS Estimation

We are interested in the effects of immigration into a state-occupation cell on the employment-to-labor-force-rate of native males in the same cell. Let y_{ij} be the share of employed natives

[9] Distinguishing between skills is important in our context, as native West Germans and expellees had different skill distributions. In particular, agriculture was, on average, more important in the Eastern territories of the German Reich than in the Western territories (Lüttinger, 1989; Bauer et. al., 2011).

[10] The comparability of natives and expellees would be imperfect if the decision of expellees to re-settle in West rather than East Germany had not been random. In that case, expellees arriving in West Germany would have been a selected subgroup of all expellees. We consider this possibility to be a minor problem, as the initial flight of Germans was largely undirected, and the 'ordered' expulsions that followed were, at least partly, steered by the occupying powers. Furthermore, later re-settlements were severely restricted by law in the immediate post-war period.

[11] North Rhine-Westphalia, Lower Saxony, Hesse, Rhineland-Palatinate, and Schleswig-Holstein were partly or completely founded on former Prussian territories. The same holds for West-Berlin and the Saarland, which were, however, not part of the federal territory of West Germany in 1950.

among all natives in occupation *j* who lived in state *i* in 1950. Our basic regression specification is:

$$y_{ij} = \alpha + \beta m_{ij} + x_i \gamma + d_j + \varepsilon_{ij} \quad (1)$$

where m_{ij} is the share of male expellees in state-occupation cell *ij*, x_i a vector of state-specific control variables, d_j a full set of occupation dummies, and ε_{ij} an error term. Our coefficient of interest is β. If expellee inflows reduced employment prospects of natives, β will be negative.

The vector of state-specific control variables includes the share of flats destroyed in the war, the pre-war share of agricultural workers, and a dummy for the city states Bremen and Hamburg. In alternative specifications, we also include a full set of state dummies in (1) to check the robustness of our results to unobservable factors at the state or occupation-zone level. The share of destroyed flats in a state, a proxy for the degree of war destruction, did not only affect the state of the economy. It also influenced a region's intake of expellees, as expellees were mainly transferred to areas where the housing stock was still relatively intact. The pre-war share of workers employed in agriculture measures the importance of the agricultural base for a state. The most important receiving states Bavaria, Lower Saxony and Schleswig-Holstein all had relatively large agricultural sectors. Finally, a dummy accounts for the specific circumstances in the city states of Hamburg and Bremen. Both city states were largely destroyed in the war and hosted relatively few expellees. By including a set of occupation dummies, we control for occupation-specific productivity and demand factors. Such factors may have simultaneously affected occupational choices of natives and expellees and occupation-specific employment opportunities.

Errors are clustered at the skill-specific occupation-zone level to allow for correlation in economic shocks faced by individuals with similar skills who lived in the same occupation zone. All regressions are weighted by the number of native male workers in each state-occupation cell.

3.3 IV Estimation

Migrants might be attracted to labor market segments with better employment opportunities. If an unobserved factor improved employment opportunities in a state-occupation cell and at the same time also increased the share of expellees in the cell, we will underestimate the true employment effect of expellee inflows.

Endogenous location choices are likely to be less of a problem in our specific historical context. The initial location of expellees was hardly driven by local labor market condition and the mobility of expellees and natives alike was severely restricted in the immediate post-war period. However, these restrictions gradually phased out and workers may thus have relocated by 1950 based on unobserved state factors. This potential problem can be addressed by adding state dummies to (1). Yet, adding state dummies removes any between-state variation and thus also most of the variation in the data.[12] With little identifying variation left, the inclusion of state dummies can also aggravate the influence of measurement error. For these reasons, we do not include state dummies in our baseline specification. We do so, however, in our robustness checks. State dummies do also not account for unobserved state factors that are specific to an

[12] A simple OLS regression of expellee shares in state-occupation cells on a set of state dummies yields an R^2 of 0.87.

occupation. To deal with unobserved factors at the state or state-occupation level, we instrument the expellee share in a state-occupation cell.

Our instrumental variable strategy exploits regional variation in the pre-war distribution of occupations and in the distance of the former Eastern territories of the German Reich to West German regions. Before proceeding, it is helpful to decompose the expellee share in a state-occupation cell as follows:

$$m_{ij} = \frac{\sum_s (e_{si} \times occ^e_{sij})}{(n_i \times occ^n_{ij}) + \sum_s (e_{si} \times occ^e_{sij})} \qquad (2)$$

where e_{si} is the total number of expellee workers from a sending region s that settled in the West German state i, n_i is the native labor force in i, occ^e_{sij} is the share of expellee workers from s in state i and occupation j, and occ^n_{ij} is the share of native workers in state i and occupation j. A fictive example helps to illustrate the decomposition. Consider the expellee share among agricultural workers in Schleswig-Holstein and suppose that there are just two sending regions, East Prussia and Silesia. Suppose further that 100,000 workers from East Prussia but only 10,000 workers from far-away Silesia settled in Schleswig-Holstein. 20 percent of all expellees from the mainly rural state of East-Prussia but only ten percent from more industrialized Silesia work as agricultural workers in Schleswig-Holstein. Finally, suppose that ten percent of the 790,000 native workers in Schleswig-Holstein are agricultural workers. According to (2), the share of expellees among agricultural workers in Schleswig-Holstein is

$$\frac{100{,}000 \times 0.20 + 10{,}000 \times 0.10}{790{,}000 \times 0.10 + (100{,}000 \times 0.20 + 10{,}000 \times 0.10)} = 0.21.$$

The decomposition illustrates that the share of expellees in a state-occupation cell depends both on the total inflow of expellees and on their occupational structure relative to those of the native population. Location and occupation choices are both potentially endogenous and may be affected by unobserved labor market conditions.

To construct our instrument, we proceed in two steps. First, we use geographical distances between sending and receiving regions to predict expellee flows from each sending to each receiving region. Second, we multiply the predicted flows by the pre-war occupational structure of sending regions to obtain skill-specific expellee flows into West German states. By summing across sending regions, we then arrive at an estimate of the migration-induced supply shock in occupation group j and state i. In what follows, we will describe the two steps in more detail.

In order to predict expellee flows, we exploit the fact that the initial distribution of expellees across West German states was largely driven by the geographical distance between sending and receiving regions. Expellees were heavily concentrated in areas close to their homelands, as they had sought shelter in the most accessible West German states. For instance, Germans from the Sudetenland (*Sudetendeutsche*) mostly fled to neighboring Bavaria in southern Germany where they accounted for more than 50 percent of all expellees in 1946. In contrast, the share of expellees from the Sudetenland was negligible in Schleswig-Holstein, the most northern state of West

Germany, located far away from the Sudetenland. Instead, expellees who settled in Schleswig-Holstein came mainly from the territory of East-Prussia which was connected to Schleswig-Holstein through the Baltic Sea. Such patterns of expellee inflows, determined by geographical distance between sending and receiving regions, were arguably unrelated to local economic conditions in the receiving regions, and even more so to local economic conditions in 1950.[13]

We run the following regression to predict the destinations of expellees:

$$\text{share}_{sr} = \delta + \lambda\, \text{distance}_{sr} + \varphi \text{distance}_{sr}^{2} + u_{sr} \qquad (3)$$

where $share_{sr}$ is the share of male expellees from sending region s that settled in the receiving county r in 1950 and $distance_{si}$ is a normalized measure of distance between sending and receiving regions[14]. Data on expellee shares are taken from the census of 1950 (Statistisches Bundesamt, 1953). We distinguish between ten source counties[15] and 37 possible destination counties in West Germany (370 observations). We estimate the coefficients of equation (3) with an OLS regression. The distance between source and potential host regions indeed reduced expellee inflows significantly. Coefficient estimates on the linear and quadratic distance terms are statistically significant at the 1 and 5 percent level, respectively, with an R^2 of 0.225.[16] The prediction of $share_{sr}$ is summed over all counties located in a state i and multiplied by the total number of expellees from area s to obtain an estimate for e_{si}, the total inflow of expellee workers from region s into state i.

Unobserved labor market conditions in different labor market segments may not only affect location but also occupational choices of expellees within a state. A source of exogenous variation in the choice of occupations can be found in the pre-war occupations of expellees as measured in 1939. Because expellees had accumulated occupation-specific human capital before they were forced to leave their homes, they tended to seek employment in their former occupations after they arrived in West Germany. Occupation choices of expellees before the war are arguably exogenous to occupation-specific local labor market conditions in West German states in 1950. An expellee's pre-war occupation reflected personal preferences and local labor market conditions in their former homelands in Eastern Europe. By 1939, later expellees could

[13] One might be concerned that local labor market conditions varied systematically between the more agriarian states in the east and the more industrial states in the west of Germany and were thus correlated with distance. Yet, our regression conditions on the pre-war share of agriculture and thus accounts for differences in the economic structure of states. As a check of robustness, we also add state-level dummies to eliminate any remaining unobserved state characteristics.

[14] All Germans in Eastern and Central Europe had to leave their homelands, no matter how far their homelands were away from the remaining German territory. What matters for the regional distribution of expellees across West German states is the relative distance to potential destinations. Let z_{sr} be the distance (in kilometers) between the administrative capital of a sending region s and the administrative capital of a receiving region r. Our normalized measure of distance is then defined as $\text{distance}_{sr} = (z_{sr} - \overline{z}_s)/\overline{z}_s$, where $\overline{z}_s$ is the average distance of the source region to every potential destination in West Germany.

[15] The source regions are the administrative districts of Königsberg, Gumbinnen, Allenstein, Frankfurt (Brandenburg), Stettin, Köslin and Posen-West Prussia, Breslau, Liegnitz, Oppeln, and Sudetenland/ Czechoslovakia. We only consider source regions for which we have data on the pre-war occupational structure.

[16] The coefficient estimates of the linear and quadratic distance are -0.090 (std. err. 0.013) and 0.152 (std. err. 0.071).

neither anticipate the mass exodus nor economic conditions in West Germany after the upcoming war.

The predicted skill-specific expellee inflow from a source region *s* to a West German state *i* is then found by multiplying the predicted expellee inflow from *s* to *i*, $\hat{e}_{si}$, with the share of workers from *s* that worked in occupation *j* before the war, occ_{sj}^{1939}. By summing over all sending regions, we obtain an estimate of the migration-induced supply shock in the relevant occupation group *j* and state *i*. The location of natives in specific segments of the labor market is potentially endogenous, too, as they may have responded to expellee inflows and moved to less crowded state-occupation cells. We address this problem by using the pre-war population size of a state *i*, $natives_i^{1939}$, and its occupational structure before the war, occ_{ij}^{1939}, to predict the post-war size of the native labor force in each state-occupation cell. The instrument for the share of expellees in state *i* and occupation *j*, $\hat{m}_{ij}$, is then given by:

$$\hat{m}_{ij} = \frac{\sum_s (\hat{e}_{si} \times occ_{sj}^{1939})}{(natives_i^{1939} \times occ_{ij}^{1939}) + \sum_s (\hat{e}_{si} \times occ_{sj}^{1939})} \qquad (4).$$

4. Data Sources and Descriptive Statistics

4.1 Employment, Expellees, and Covariates

Our main data source is the German population and occupation census of September 13, 1950.[17] Publications by the statistical offices of the West German states provide the size of the male labor force by state, occupation and expellee status. The labor force comprises all economically active individuals, including the self-employed and unemployed. For all individuals in employment, the currently performed occupation was recorded. Unemployed individuals were asked to provide their last occupation. The census distinguishes between 440 occupations, which are aggregated to 38 occupation groups and nine occupation branches. Our analysis excludes workers in undefined occupations and family workers, leaving us with 33 occupation groups and eight occupation branches. The census not only provides data on the total labor force in a state-occupation cell but also on the expellee labor force in the same cell, and thus allows us to calculate the share of expellees in each cell. Expellees are defined as German nationals or ethnic Germans who on 1 September 1939 lived in the former German territories east to the Oder-Neisse line or abroad.

Table A-1 in the Appendix provides the expellee share in each of the 88 state-occupation cells (11 states times 8 one-digit occupations) that we use in our baseline regression. The expellee share varies widely across cells and ranges from 4.29 percent among agricultural, forestry and fishery workers in Bremen to 35.10 percent among workers in industrial occupations in Schleswig-Holstein. Much of the variation in expellee shares is due to the very uneven distribution of expellees across states, as the very large state-level differences in the average

[17] See Statistisches Bundesamt (1955) for an overview of the content and the methodology of the census and Statistisches Bundesamt (1956) for an overview of the results on the occupational structure of West Germany.

expellee share show (last column of Table A-1). Yet, expellees were also unevenly distributed across occupations. In the whole of West Germany, the share of expellees was highest in industrial occupations (18.03 percent) and lowest in technical occupations (11.51 percent).

Calculating the share of employed workers in the native labor force requires information on cell-specific unemployment of natives. Unfortunately, not all West German states published census data on occupation-specific unemployment. We thus resort to occupation-specific data on the registered unemployed provided by the Federal Ministry of Labor (Bundesministerium für Arbeit, 1950). The classification of occupations is the same as the one used in the census. The unemployment data refer to 30 September 1950 and are thus measured slightly after the labor force census data. The unemployment data also use a slightly different definition of expellees than the census. It defines expellees as German nationals or ethnic Germans who on 1 January 1945 or before its flight or expulsion lived in the former German territories east to the Oder-Neisse line or abroad. Our dependent variable, the share of employed in the native labor force, is thus measured with an error.

It is important to notice that both the census and the unemployment data only distinguish between expellees and the rest of the population. While the statistical agencies frequently refer to the rest of the population as natives (*Einheimische*) in their publications, these so-called natives are in effect non-expellees. Strictly speaking, we hence analyze the effect of expellee inflows on employment of non-expellees. As there were hardly any foreigners in post-war Germany in September 1950, the overwhelming majority of non-expellees were indeed indigenous West Germans. However, a minor share of 2.6 percent of non-expellees had resided in the Soviet Occupation Zone on 1 September 1939 (Statistisches Bundesamt, 1953). Reassuringly, the labor market performance of workers from the Soviet Occupation Zone was comparable to the performance of the indigenous West German population (Lüttinger, 1989). For simplicity, we continue to refer to non-expellees as natives.

Among our vector of state-specific control variables is the share of destroyed flats in a state, which is taken from Deutscher Städtetag (1949). The pre-war share of workers employed in agriculture was published by the Federal Statistical Office (Statistisches Bundesamt, 1954) and is based on the population and occupation census of 17 May 1939.[18]

4.2 Instrument

The pre-war distribution of occupations is taken from the occupation census of 17 May 1939 (Statistisches Reichsamt, 1941). The one- and two-digit classification of occupations used in 1939 does not exactly match with the classification used in 1950. In the absence of an official recoding scheme, we use the finer three-digit classification of occupations of 1939 and assign, whenever possible, each occupation to the corresponding one- and two-digit occupation defined in the census of 1950. The 1939 census provides three-digit occupation data for 27 administrative units. Among those units are the five most important former homelands of expellees, namely East Prussia, Silesia, West Prussia, Pomerania, and the Sudetenland. The 1939 administrative units in

[18] The data only contain statistics for the later state of Baden-Württemberg but not for the states of Württemberg-Baden, Baden and Württemberg-Hohenzollern (that were merged to Baden-Württemberg in 1952). We proxy the employment shares in the three sub-territories by the respective share in Baden-Württemberg.

the west of the German Reich do not always correspond to the later West German states. In that case, we calculate the pre-war occupational structure of a later West German state as the population-weighted average of the administrative units on whose territories the state was founded.

Based on the predicted immigrant inflows from source to receiving areas and the pre-war distribution of occupations, we then calculate the instrument for the share of expellees in state-occupation cells.[19] While the prediction is not perfect, actual and predicted expellee inflows are highly correlated. An OLS regression of actual on predicted expellee inflows yields a highly significant coefficient estimate of 0.504, with an R^2 of 0.353.

5. Results

5.1 Main results

Table 2 summarizes our main results on the relationship between expellee inflows and employment opportunities of natives. The dependent variable is the employment rate of male natives in a state-occupation cell. Our baseline specifications build on the one-digit classification of occupations. Column 1 presents estimates from the most parsimonious OLS model that includes the share of expellees in the total male labor force as the only regressor. The highly significant coefficient estimate of -0.256 indicates a strong negative relationship between expellee inflows and native employment. A ten percentage point increase in the share of German expellees reduced the employment rate of native West Germans by more than two and a half percentage points. The R^2 of 0.328 documents the high explanatory power of the simple univariate regression. Figure 2 draws the regression line on the scatter plot of native employment rates and expellee shares. The figure clearly illustrates that the strong displacement effect of expellee inflows is not driven by outliers.

As a next step, we add controls at the occupation and state level to account for potential confounding factors. First, we include a full set of occupation dummies (column 2). The inclusion of occupation dummies eliminates occupation-specific demand and productivity factors at the national level, including those factors that simultaneously affect both native employment and occupational choices of natives and expellees. For instance, post-war reconstruction might have increased the demand for certain occupations across all West German states. If expellees were particularly attracted by these booming occupations, we would underestimate the displacement of natives in the same occupations. Second, we add the pre-war share of workers employed in agriculture, the share of destroyed flats and a dummy for the city states of Hamburg and Berlin to the model (column 3). These factors, all measured at the state level, played an important role for the direction of expellee flows and may potentially be related to employment outcomes of local residents. The inclusion of control variables, however, does little to our estimated coefficient on the expellee share. The coefficient increases slightly in absolute terms and remains highly statistically significant.

[19] While our prediction of expellee inflows distinguishes between ten source regions, detailed data on pre-war occupations are only available for five source regions and thus only for a higher aggregation level. We therefore aggregate predicted expellee inflows to match the classification of source regions used in the occupation data.

FIGURE 2: EXPELLEE INFLOWS AND NATIVE EMPLOYMENT, LINEAR FIT

Notes: Each point refers to a state-occupation cell. The size of each point indicates the size of the native male labor force in the cell. The regression line weighs the data by the native male labor force in each cell.

TABLE 2: EXPELLEE INFLOWS AND NATIVE EMPLOYMENT, LINEAR SPECIFICATION

Dependent variable: Employed natives / native labor force (one-digit occupations)				
	no controls	occupation fixed effects	**occupation fixed effects and state controls**	
	OLS	OLS	**OLS**	**IV**
	(1)	(2)	**(3)**	**(4)**
Expellee share	-0.256***	-0.270***	**-0.299*** **	**-0.396*** **
	(0.046)	(0.037)	**(0.050)**	**(0.090)**
First stage				
Predicted expellee share	-	-	-	0.619***
				(0.105)
F-statistic	-	-	-	17.46
Partial R2	-	-	-	0.314
R2	0.328	0.538	0.788	0.759
N	88	88	88	88

Notes: *** denotes statistical significance at the one percent level. Standard errors are in parentheses and clustered at the skill-occupation-zone level. All regressions are weighted by the native male labor force in each state-occupation cell.

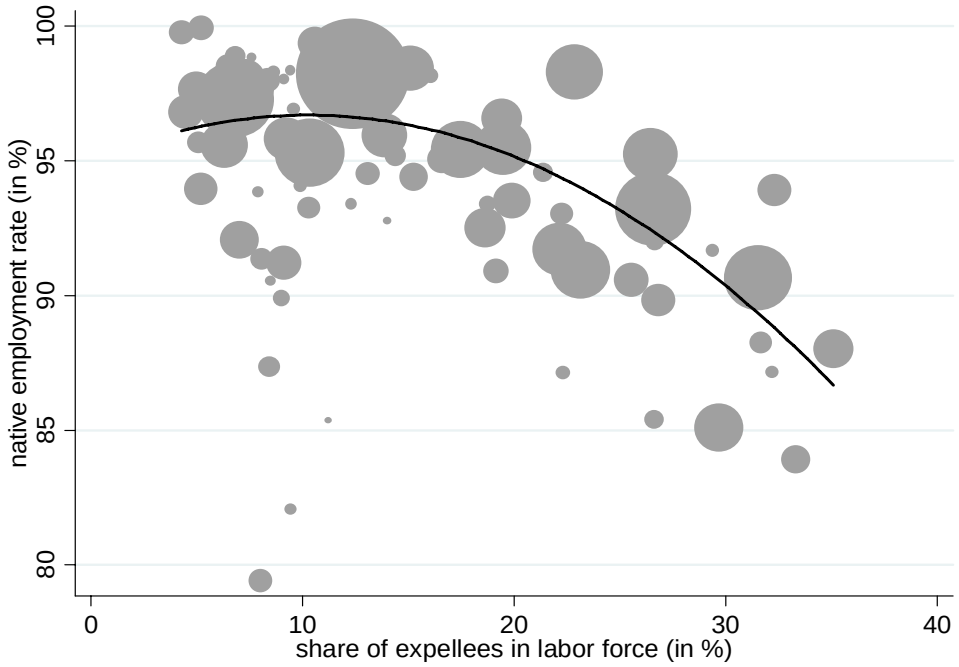
Our estimate may still be biased if unobserved factors render the expellee share in state-occupation cells endogenous. To address this concern, we instrument the actual by the predicted expellee share (while still controlling for occupation fixed effects and state controls). The results are presented in column 4 of Table 2. The first-stage regression shows that the predicted prevalence of expellees in a state-occupation cell is strongly and significantly correlated with the

actual prevalence and explains large parts of its variation. The F-statistic is high and well above conventional thresholds for weak instruments. The IV estimation confirms our previous finding that expellee inflows had a significant effect on local employment opportunities of natives. The IV estimate is only slightly higher than the corresponding OLS estimate. We now find that a ten percentage point increase in the expellee share decreased the share of employed in the native labor force by four percentage points. The relatively small difference between OLS and IV estimates of the displacement effect suggests that selection into state-occupation cells was indeed largely exogenous and not much driven by unobserved local labor market conditions.

The size of expellee inflows differed dramatically across West Germany. To allow for potential non-linearities in the relation between the native employment rate and the share of expellees, we add the squared expellee share as an additional regressor to our baseline regression. Figure 3 shows the resulting linear-quadratic regression line on the scatter plot of native employment rates and expellee shares. The linear-quadratic specification fits the data much more accurately than the previous linear specification. It appears that additional expellee inflows were associated with negative employment effects for natives only at high levels of immigration. In fact, the relation between the native employment rate and the share of expellees is almost flat until the expellee share exceeds a level of roughly 15 percent. Once this level was reached, however, additional expellee inflows had an increasingly negative impact on native employment.

Column 1 of Table 3 presents the corresponding regression results. Both the linear and quadratic expellee share terms are statistically significantly different from zero. The linear-quadratic regression specification has a markedly higher explanatory power than the linear specification. The R^2 rises from 0.328 to 0.412 after the inclusion of the squared expellee share. Adding occupation dummies and state controls reduces the magnitude of the (positive) coefficient estimate on the linear expellee share term, but hardly changes the coefficient estimate on the quadratic term (column 3). Columns 4 and 5 present OLS and IV estimates of a specification that includes the squared but not the linear expellee share term as regressor. Estimating the linear-quadratic specification using the IV approach would require a second instrument. While the square of the predicted expellee share appears to be an option, it turns out to be a weak instrument (it is not statistically significant in the first stage). The IV regression for the non-linear case thus focuses on a specification with a quadratic expellee share term only. Column 4 shows that the fit of the OLS regression is hardly reduced by dropping the linear expellee share term (the R^2 drops from 0.845 to 0.836). The IV estimate of the squared expellee share is highly statistically significant and only slightly larger than the OLS estimate.

FIGURE 3: EXPELLEE INFLOWS AND NATIVE EMPLOYMENT, LINEAR-QUADRATIC FIT



Notes: Each point refers to a state-occupation cell. The size of each point indicates the size of the native male labor force in the cell. The regression line weighs the data by the native male labor force in each cell.

TABLE 3: EXPELLEE INFLOWS AND NATIVE EMPLOYMENT, LINEAR-QUADRATIC SPECIFICATION

Dependent variable: Employed natives / native labor force (one-digit occupations)					
	no controls	occupation fixed effects	occupation fixed effects and state controls		
	OLS	OLS	OLS	OLS	IV
	(1)	(2)	(3)	(4)	(5)
Expellee share	0.353*	0.359**	0.208*	-	-
	(0.193)	(0.138)	(0.115)		
(Expellee share)^2	-0.017***	-0.017***	-0.014***	-0.009***	-0.011***
	(0.005)	(0.004)	(0.003)	(0.002)	(0.002)
First stage					
Predicted expellee share	-	-	-	-	21.364***
					(4.077)
F-statistic	-	-	-	-	19.05
Partial R2	-	-	-	-	0.266
R2	0.412	0.626	0.845	0.836	0.801
N	88	88	88	88	88

Notes: ***/**/* denote statistical significance at the one/five/ten percent level. Standard errors are in parentheses and clustered at the skill-occupation-zone level. All regressions are weighted by the native male labor force in each state-occupation cell.

5.2 Robustness checks

Table 4 presents results from three robustness checks. These are based on our baseline specifications that include occupation fixed effects and state controls (columns 3 and 4 in Table 2). For the sake of brevity, we only display the results of the robustness checks for the linear specification. All results, however, also hold for the quadratic specification.[20]

TABLE 4: ROBUSTNESS CHECKS

Dependent variable: Employed natives / native labor force						
	two-digit occupations		state fixed effects		excluding city states	
	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Expellee share	-0.275***	-0.369***	-0.151***	-0.326***	-0.303***	-0.404***
	(0.039)	(0.061)	0.041	0.115	0.052	0.092
First stage						
Predicted expellee share	-	0.541***	-	0.376***	-	0.721***
		(0.052)		(0.084)		(0.122)
F-statistic	-	43.43	-	18.70	-	19.00
Partial R2	-	0.253	-	0.223	-	0.365
R2	0.757	0.743	0.896	0.885	0.795	0.757
N	352	352	88	88	66	66

Notes: ***/**/* denote statistical significance at the one/five/ten percent level. Standard errors are in parentheses and clustered at the skill-occupation-zone level. All regressions are weighted by the native male labor force in each state-occupation cell and include a full set of occupation dummies. Regressions in (1), (2), (5) and (6) also include state-level controls.

We first re-define labor market segments and base their definition on the two- rather than the one-digit classification of occupations (Table 4, columns 1 and 2). As we have argued before, classifying workers into relatively broadly defined skill groups has the advantage that we do not miss competition from expellees in closely related occupations. Workers are also less likely to endogenously self-select into broadly defined skill groups. Yet, a broad definition of skills may render expellees and natives less than perfect substitutes within a state-occupation cell. We thus re-estimate the regressions based on data from the narrower two-digit classification of occupations.[21] Although R^2 of the regression is slightly lower compared to the baseline regression, the estimated coefficients are virtually the same.

In a second robustness check, we drop state-level controls and instead add state fixed effects (columns 3 and 4). If labor market conditions in West German states systematically varied with distance from the former Eastern territories of the German Reich, the exclusion restriction of our distance-based instrument may not be satisfied. Adding state fixed effects solves this problem by removing all (unobserved) heterogeneity between states, so that any remaining unobserved labor market conditions are specific to a state-occupation cell. The IV estimation then effectively

[20] OLS results generally also hold for the linear-quadratic specification. However, the linear term becomes insignificant when we use the two- rather than the one-digit classification of occupations to define labor market segments. In that case, adding a third- or fourth-order polynomial in the expellee share provides a better fit of the data.

[21] The two-digit occupation classification distinguishes between 33 occupations (excluding workers with unspecified occupations). We merge two of them, for which unemployment data are not available separately. This leaves us with 32 occupations in 11 states (352 observations).

exploits only regional variation in the pre-war occupational structure of expellees relative to natives to identify the employment effect of immigration. Yet, state fixed effects come at the significant cost of removing most of the variation in the data and could potentially intensify problems related to measurement error. Nevertheless, the inclusion of state fixed effects reduces the point estimate of the expellee share in the IV regression only moderately and leaves its statistical significance unchanged.

A final robustness check excludes observations from the two city states of Hamburg and Bremen from our baseline sample (columns 5 and 6). The two city states are generally difficult to compare to other German states, and the labor market effects of expellee arrivals in Hamburg and Bremen may well be different from those in the rest of West Germany. Both Hamburg and Bremen were largely destroyed in the war and received relatively few expellees, especially in comparison to the neighboring states of Schleswig-Holstein and Lower Saxony. Being city states, they also hardly offered any employment perspective for agricultural workers. Our instrument, which is based on pre-war occupations in the sending regions, may hence have less explanatory power for the two city states. Yet, the previously reported coefficient estimates of the expellee share term do hardly change when we re-estimate the regressions for the reduced sample without city states.

6. Conclusion

This paper studies the employment effects of the massive influx of German expellees from Eastern Europe to West Germany after World War II. Given the size of the influx and the close substitutability of German expellees and native West Germans, one may expect that the influx had strong negative effects on employment of native West Germans. Our results indeed suggest that expellee inflows substantially reduced the employment rate of competing natives. We find that, on average, a ten percentage point increase in the expellee share in a state-occupation cell decreased the employment rate of natives in the same cell by between three and four percentage points. We thus find a substantially larger displacement effect of immigration than most existing empirical studies do.

The strong *average* displacement effect of immigration is, however, exclusively driven by labor market segments that experienced very high inflow rates of expellees. In fact, expellee inflows had virtually no effect on the native employment rate as long as the expellee share did not exceed a level of about 15 percent. This level is hardly reached by today's immigration flows which may explain why we find stronger employment effects than most contemporary studies. Our findings suggests that, up to a saturation point, the labor market was able to absorb expellees without adverse labor market effects – despite the fact that migrants and natives were very close substitutes on the labor market. After the saturation point was reached, however, additional migrant inflows increasingly worsened the employment prospects of natives.

Our result of a non-linear relation between expellee inflows and native employment fits well with the widely-shared belief that post-war Germany, which was devastated by the Allied bombing campaigns, suffered from a relative shortage of physical capital (Giersch 1993; Paqué, 1987). The scope to substitute labor for capital was limited, so the argument goes, and the maximum level of

employment in labor market segments was restricted by capacity constraints.[22] As a result, labor market segments could only accommodate a limited inflow of expellees. The uneven expellee inflows apparently exhausted the capacity constraints in some labor market segments but not in others, and led to marked differences in local unemployment rates. More generally, our finding of a non-linear effect of immigration on native employment reminds us of the simple fact that the structural relationship between labor supply shifts and wages or employment is unlikely to be constant as we move along the labor demand curve.

[22] Similar arguments have been put forward to explain the persistence of unemployment in Europe since the mid-1970s (Bean and Mayer, 1989).

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Appendix

TABLE A-1: EXPELLEE SHARES IN STATE-OCCUPATION CELLS

	Occupation category								
	I	II	III	IV	V	VI	VII	VIII	I-VIII
Baden	4.29	10.60	8.37	7.01	6.46	7.59	6.59	9.11	7.69
	(6.62)	(9.42)	(6.46)	(1.09)	(5.79)	(0.69)	(2.17)	(0.76)	(33.00)
Bavaria	13.06	26.60	23.13	16.57	17.47	21.39	19.90	22.26	20.36
	(40.21)	(52.30)	(33.12)	(7.49)	(35.33)	(36.31)	(12.94)	(4.32)	(189.33)
Bremen	14.00	10.28	9.00	8.48	8.07	8.70	9.89	11.20	9.30
	(0.35)	(4.75)	(2.46)	(0.90)	(4.93)	(0.35)	(1.50)	(0.29)	(15.52)
Hamburg	12.29	9.12	8.01	7.93	7.00	7.89	8.43	9.42	8.13
	(1.07)	(12.50)	(6.05)	(2.23)	(15.92)	(1.11)	(4.49)	(1.04)	(44.39)
Hesse	13.00	19.49	18.61	14.39	13.88	13.52	15.27	18.74	16.57
	(12.71)	(31.61)	(16.49)	(4.35)	(21.89)	(2.11)	(7.74)	(2.11)	(98.9)
Lower Saxony	26.44	31.54	29.68	19.14	22.16	26.64	26.82	26.63	27.20
	(26.61)	(37.83)	(20.12)	(5.60)	(28.17)	(2.48)	(9.22)	(2.80)	(132.83)
North Rhine Westphalia	15.08	12.37	10.34	7.26	6.82	8.08	9.22	13.07	10.53
	(22.69)	(142.04)	(53.74)	(18.35)	(71.8)	(6.65)	(21.09)	(5.66)	(342.03)
Rhineland-Palatine	4.98	6.31	5.21	5.14	4.49	5.73	5.07	9.56	5.48
	(14.47)	(25.04)	(12.55)	(2.50)	(13.59)	(1.30)	(5.09)	(1.40)	(75.94)
Schleswig-Holstein	32.32	35.10	33.33	22.31	25.56	29.39	31.69	32.18	31.22
	(9.13)	(12.28)	(6.44)	(1.64)	(10.15)	(1.00)	(3.64)	(1.05)	(45.33)
Württemberg-Baden	10.59	22.85	19.42	11.52	12.02	16.07	11.63	17.06	16.81
	(11.64)	(29.95)	(16.35)	(4.62)	(19.55)	(1.89)	(6.19)	(1.87)	(92.01)
Württemberg-Hohenzollern	5.21	12.63	10.95	9.43	6.82	10.37	8.61	10.66	9.39
	(6.36)	(8.35)	(6.63)	(0.76)	(4.29)	(0.52)	(1.36)	(0.60)	(28.89)
Federal Republic of Germany	15.19	18.03	16.74	11.51	12.14	14.52	14.71	17.80	15.59
	(151.85)	(366.06)	(180.31)	(49.52)	(231.40)	(21.69)	(75.44)	(21.89)	(1098.17)

Notes: Each entry is the expellee share in the respective state-occupation cell. The number of male native workers in each cell (in 1000) is provided in parentheses.
Occupation categories: I – Agricultural, forestry and fishery workers, gardeners, animal breeders, hunters (*Berufe des Pflanzenbaues und der Tierwirtschaft*); II – Industrial occupations (*Industrielle Berufe*); III – Craftsmen (*Handwerkliche Berufe*); IV – Technical occupations (*Technische Berufe*); V – Trade and transport occupations (*Handels- und Verkehrsberufe*); VII – Administrative and legal occupations (*Berufe des Verwaltungs- und Rechtswesens*); VIII – Education, research and arts occupations (*Berufe des Geistes- und Kunstlebens*)

TABLE A-2: DESCRIPTIVE STATISTICS, ONE-DIGIT OCCUPATIONS

	Mean	Standard deviation	Min	Max
Expellee share	15.59	8.01	4.29	35.10
Native male employment rate	95.21	3.58	79.42	99.94
Share destroyed flats	39.38	8.23	18.90	53.50
1939 employment share in agriculture	18.45	8.61	1.86	28.97

Notes: The descriptive statistics are based on 88 observations. The data have been weighted by the native labor force in each cell. The native male employment rate is defined as the share of employed native males in a state-occupation cell among all workers in the same cell.