THE ECONOMIC LEGACY OF EXPULSION: LESSONS FROM POSTWAR CZECHOSLOVAKIA

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Abstract

This paper examines the long-run effects of forced migration on the origin economy, using Czechoslovakia’s expulsion of 3 million Germans after WWII. For identification, I use the discontinuity at the border of the “Sudetenland” region where Germans lived, as made formal with the Munich Agreement in 1938. Since Germans had similar socioeconomic characteristics to Czechs, this bypasses factors that might drive effects elsewhere, such as differences in human capital and geography. The expulsion produced differences in population density, sectoral structure, and education between neighboring municipalities, which persist 70 years later. I trace effects to a selective resettlement of affected areas, generating de-urbanization and human capital decline. Empirical and historical evidence suggest agglomeration economies and extractive institutions as two important forces driving this response.

JEL codes: D74, N34, N94, R12, O15, I25

Key words: Expulsion; forced migration; local development; postwar; nationalism

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1 Introduction

Between 1945 and 1947, 3 million Germans were expelled from Czechoslovakia, in one of several forced migration events that transformed postwar Europe. Such is hardly unique. Jews, Greeks, Turks, and countless others were uprooted during the 20th century in the process of nation-building, and more recently, civil and ethnic conflict have driven large-scale population outflows in places like Uganda, Bosnia, Syria, and Myanmar. A large literature has documented the impact of such events, both on forced migrants, who often experience continued persecution abroad as refugees, and on their host economies (Ruiz and Vargas-Silva, 2013; Becker et al, 2019).

What, however, becomes of the places left behind? Comparably little work has been done to understand the effects of forced migration on the “origin economies” in which the displacement occurred. In this paper, I examine such effects over the long-run, using Czechoslovakia’s expulsion of 3 million Germans after WWII. This event has several features which are well-suited for identifying the effects of a forced migration event in ways that prior literature has not. Following the rise of nationalism and the collapse of Austria-Hungary into nation-states in 1918, those still identifying as German within the Czech lands (i.e. the modern day Czech Republic) were concentrated in one region – the borderlands, or “Sudetenland” – distinguished by a distinct “language border”. Yet after centuries of coexistence and common rule, during which language had held little economic or social significance among the masses, Germans and Czechs were relatively similar in terms of their occupational and cultural characteristics (Zahra, 2008). This boundary was made formal in 1938 with the Munich Agreement, which enabled Germany’s annexation of the majority-German borderlands, followed by its occupation of the remainder of the Czech lands shortly thereafter. It was in response to this that Czechoslovakia expelled nearly all of its German population in 1945.

My identification strategy exploits the discontinuity in exposure to the expulsion at this boundary to identify its local relative effects over the long-run, using a spatial regression discontinuity (RD) design.¹ To do this, I first construct a new dataset of municipal- and district-level data spanning 90 years. Using directories of Czech villages from during the war, I divide the Czech lands into a “borderlands” treatment region exposed to the expulsion and an “interior” region not exposed. I then examine economic outcomes in the borderlands, relative to interior areas only a few kilometers away. To the extent that ethnic differences were uncorrelated with relevant factors prior to the expulsion, any long-run differences must be driven by the expulsion and its subsequent channels, as opposed to differences in factors

¹Use of ethnic boundaries in spatial RD follows a literature on ethnic conflict and institutions, including Michalopoulos and Papaioannou (2013), Grosfeld et al (2013), and Moscona et al (2018).
such as geography and human capital that often distinguish displaced populations and might therefore drive effects in other settings. Accordingly, long-run effects in this setting are \textit{ex ante} unclear (i.e. path dependence versus steady state reversion).

I then combine data on a large set of socioeconomic variables from the interwar period with existing historical evidence to show that places with Germans and nearby places without them were indeed indistinguishable prior to the expulsion on a number of relevant dimensions, such as literacy, population density, and sector composition. This is true even if one omits segments of the language border around which the borderlands was more ethnically mixed.

Next, I document a large divergence in economic development today between neighboring municipalities on either side of the former German language border, with differences in both the intensity and the composition of economic activity. As of 2011, borderland municipalities had lower population density, higher unemployment, smaller skill-intensive sectors, and lower educational attainment relative to nearby interior municipalities. The magnitudes of these differences are robust to numerous RD specifications and sample restrictions.

Lastly, studying a historical expulsion allows me to shed light on the precise channels through which such differences emerged. I show that the borderlands underwent a \textit{de-urbanization} after the expulsion, with a relative decline in population density and a shift in sectoral structure toward agriculture. This originated from a \textit{selective initial migratory response} to the expulsion. Contrary to policymakers’ expectations that former-German areas could be quickly and voluntarily resettled by Czechs from nearby interior areas, interior population outflows did not match overall losses in the borderlands by the time its initial resettlement had wound down in mid-1947. These differences were larger for more urban sectors, such as business and transportation. This in turn gave rise to \textit{differences in human capital acquisition} between the regions. I document relatively lower levels of enrollment in advanced secondary, technical, and tertiary schooling in the borderlands in mid-1947, despite there being a similar or greater supply of education at these levels as measured in schools and teachers per pupil. I then discuss potential mechanisms though which the expulsion generated these short-run effects. Using data and historical evidence, I argue for (i) agglomeration economies and (ii) extractive institutions as two compelling forces driving these patterns. I also consider how other factors such as natural geography, central planning, and Cold War geopolitics may have mattered for long-run effects.

The borderlands’ decline was initially not intended by Czechoslovak policymakers, for whom the region had great economic importance. Yet the expulsion of the Germans had a

\footnote{Effects are relative due to spillovers across regions over time. Aggregate effects would likely be even larger, since the interior was negatively affected via out-migration, while the borderlands has likely benefited from market access spillovers in areas near the former German language border.}
persistent impact on the places in which they had once lived, relative to non-German places nearby. These findings provide valuable new insight into the economic effects of forced migration. While voluntary migration has been the subject of vast research and debate (Bell et al, 2013; Abramitzky et al, 2014), migration occurring as a result of expulsion as well as violence and disaster is increasingly relevant, with UN estimates placing the number of forcibly displaced people at nearly 70 million worldwide.\(^3\) Moreover, forced migration is often followed by expropriation and conflict. Hence, it may have effects that differ from those of voluntary migration.

This paper contributes to the literature on forced migration in two ways. First, whereas existing research has focused largely on the effects of forced migration events for host countries (Hornung, 2014; Johnson and Koyama, 2017; Michalopoulos et al, 2019) or on migrants themselves (Bauer et al, 2013; Becker et al, 2019), less work has been done to study their effects on the origin countries overseeing such displacement (Becker and Ferrara, 2019). The findings in this paper suggest that forced migration may not only affect migrants and their host economies but contribute to persistent geographic inequality within the origin economy. This is most similar to Chaney and Hornbeck (2016), who find delayed convergence following the Spanish expulsion of the Moriscos between former Morisco and non-Morisco districts. As in their paper, studying a politically-motivated expulsion yields advantages for identification here, to the extent that it is less likely to be associated with loss of physical capital or selection within the targeted group, relative to war or natural disaster.\(^4\)

Unlike this paper, however, existing research has focused on forced migrations involving relatively skilled or otherwise differentiated groups (Waldinger, 2010; Acemoglu et al, 2011; Akbulut-Yuksel and Yuksel, 2015; Pascali, 2016). To my knowledge, this paper provides the first evidence that a forced migration can have persistent local effects even when displaced populations are not compositionally distinct in relevant ways from those remaining. The existence of effects independent of relative composition suggests that expelling even relatively low-skilled groups may have growth-inhibiting effects locally, raising concerns about economic arguments for mass deportation and forced emigration policies more generally. It also mirrors a large literature on the benefits of population inflows, of refugees and other immigrants (Foged and Peri, 2016; Rocha et al, 2017; Droller, 2017; Murard and Sakalli, 2018; Sequeira et al, 2019). Finally, it adds to a body of research examining the economic consequences of the postwar German expulsions specifically (Schumann, 2014; Semrad, 2015; Braun et al, 2017; Becker et al, 2019).

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\(^3\)See https://www.unhcr.org/globaltrends2017.

\(^4\)An estimated 7000 German civilians were murdered by Czechs during the expulsion, with expellees being allowed only 100 lbs of property to take with them (Gerlach, 2017).
Lastly, this paper speaks to broader questions in development and urban economics regarding the importance of historical shocks for long-run development. Empirically, it contrasts with Davis and Weinstein (2002; 2008), who argue against the empirical relevance of multiple equilibria in economic activity, citing the relatively quick recovery of Japanese cities after WWII. Yet unlike many of the shocks studied in this literature, expulsion often occurs in weak or repressive institutional settings, and its effects may be contingent upon that context. In particular, an expulsion may be more likely to also generate spatial variation in fundamentals, such as local institutions and culture. This potentially suggests an alternative explanation for the differential effects of population shocks as noted in Acemoglu et al (2011), who attribute the Holocaust’s persistent effects in Russia to structural changes stemming from compositional differences between expellees and non-expellees. Rather, the persistent effects of shocks may have more to do with how they interact with or shape institutions and culture, as in Chaney and Hornbeck (2016) and Nunn (2007; 2008).

The remainder of the paper is structured as follows. Section 2 provides historical background. Section 3 describes the data. Section 4 describes identification and results. Section 5 considers possible channels. Section 6 concludes.

2 Historical background

The origins of the “Sudeten” Germans in the Czech borderlands can be traced to the 12th century, when early Bohemian kings opened them up to immigration by German-speaking artisans (de Zayas, 1989). They would pay taxes but trade relatively freely, diffusing their language and culture in the process (Agnew, 2004).

After the Thirty Years’ War, the Czech lands underwent further “Germanization” under Habsburg rule. During this time, more German speakers moved into the borderlands, creating vast German language frontiers (Dáňek, 1995). Yet despite growing German hegemony among the elite, German and Czech speakers coexisted peacefully at the local level, where identity depended more on local kinships than on language (King, 2002; Tampke, 2003). German industries attracted Czech speakers to German towns, creating bilingual economic centers where intermarriage was not uncommon and language choice was largely situational (Agnew, 2004; Zahra, 2008). By the early 1800s, language in the Czech lands was largely independent of economic, cultural, or even genetic factors among the masses (King, 2002; Zahra, 2008).

\footnote{See Acemoglu et al (2002), Tabellini (2010), Dell (2010), and Acemoglu and Dell (2010) for more on history, institutions, and development. Also see Maloney and Caicedo (2015), Jedwab et al (2019), Dell and Olken (2019), and Testa (2019) for examples of how agglomeration economies and institutions may interact to shape spatial development.}
The origins of a language border

A series of events resulted in increased segregation of German and Czech speaking within the Czech lands. From the late 1800s, nationalist activists worked to build exclusively German or Czech societies by establishing linguistically segregated social associations and lobbying for reforms that limited bilingual education (Tampke, 2003; Judson, 2006; Zahra, 2008). These efforts often took on a geographic dimension. Because later Austrian censuses required citizens to select a single language of daily use, German nationalists developed a visual of the borderlands as a distinctly German region and aimed to “Germanize” its mixed elements. Czech nationalists, in contrast, sought to preserve the historic boundaries of the Lands of the Bohemian Crown (i.e. the modern day Czech Republic) and built exclusively Czech-language institutions to combat Germanization (Bryant, 2002; Zahra, 2008). As a result, much of activists’ efforts focused on the more mixed areas where the borderlands met the Czech interior (Cornwall, 1994). And although the masses remained largely indifferent to national identification, the late 19th century saw greater language assimilation in these places. By the early 1900s, German “language islands” in the interior had shrunk dramatically and German-speaking populations in urban interior areas were rapidly declining (Agnew, 2004; Zahra, 2008).

This benefitted both groups, albeit in different ways. The notion of the borderlands as a formal, German region was further legitimized when, following the collapse of Austria-Hungary in 1918, it was included in German Imperial Council representatives’ proposal for
a new German-Austrian state – despite the several hundred thousand Czech speakers and countless nationally ambiguous and indifferent residing there (Agnew, 2004). When the Allies instead backed Czech efforts to keep historic boundaries intact, the inclusion of the over 3 million borderland German-speakers as a minority group in the new Czechoslovak state would serve as an important step toward unifying them around a cohesive “Sudeten” German identity (Gerlach, 2017). Meanwhile, Czechoslovak policymakers now had the power and legitimacy of the state to influence the ethnolinguistic composition of the Czech lands. After 1918, a parent’s nationality as it appeared on the census determined a child’s language of instruction, with minority-language schooling and public services being provided only if a minority group exceeded 20% of the local population (Zahra, 2008; Agnew, 2004). Coinciding with this, census officials could now choose nationalities for citizens based on “objective” traits, and failure to comply became a punishable offense. In total, German population counts in mixed areas fell by 420,000 (Zahra, 2008). At least officially, over 90% of German-speakers in the Czech lands lived in the borderlands in 1930.

Despite this, issues of nationality did not dominate political discourse during the 1920s, and German and Czech societies functioned in relative political and economy harmony (Tampke, 2003). After centuries of coexistence and common rule, during which language differences had mattered little among the masses, such national assignment remained largely arbitrary in terms of economic and even cultural factors (Zahra, 2008). During the Great Depression, however, economic anxiety amplified German concerns about the Czechoslovak state. Export-based industries deep in the borderlands experienced some of the highest unemployment in Czechoslovakia, and many Germans blamed the Czechoslovak government. The nationalist Sudeten German Party (SdP) was founded in October of 1933, and before long demands for autonomy were part of its platform (de Zayas, 1989). Although most popular German political parties remained anti-separatist and coalesced with leading Czech parties on common socioeconomic issues during the 1920s, by 1938, 85% of Sudeten Germans supported the SdP (Glassheim, 2016).

Germany’s proximity to the borderlands made its invasion highly likely. In an attempt to avoid war, Allied leaders signed the Munich Agreement, formally annexing all majority-German areas to Nazi Germany (see Figure 2; Taylor, 1980; Goldstein, 1999), fully formalizing the “Sudetenland” as a region.⁶ Meant to appease Germany, annexation severely weakened Czechoslovakia’s military and industrial capacities (Agnew, 2004; Glassheim, 2016). Within a few months, Germany had occupied the remainder of the Czech lands, sending its

⁶That being said, because the entire region was annexed, some <50% German “islands” were inevitably included, especially in northern Moravia. Moreover, Zaolzie in Cieszyn Silesia, a largely Polish-speaking area, was annexed by Poland in 1938. I exclude this latter area from the analysis.
The expulsion of the Sudeten Germans

The idea of expulsion arose soon after Nazi occupation. During the war, exiled Czechoslovak president Edvard Beneš established the legal basis for the expulsion of Germans from Czechoslovakia through several decrees. Thousands of national committees were to be set up throughout the borderlands to manage the expulsion, including the confiscation of German farms, houses, and other property without compensation and their allocation to incoming settlers. In the end, 3 million Germans would be expelled, mostly to the Western Zones of occupied Germany, along with almost a million to the East Zone and 142,000 to Austria (Odsun: Die Vertreibung der Sudetendeutschen, 1995).

When the war ended in early 1945, Allied forces moved into the borderlands to liberate Czechoslovakia from Nazi Germany, resulting in the first expulsions. It was not until June, however, that the expulsions would gain momentum. By summer’s end, 800,000 Germans had been expelled (Gerlach, 2017).

The 33rd Beneš Decree, signed on August 2, 1945, followed the formal Allied approval of the expulsion at Potsdam and formally stripped all Sudeten Germans of their citizenship. Another 2.2 million Germans were expelled through mid-1947 (Gerlach, 2017). These transfers were more systematic in comparison to the earlier “wild transfers”. All borderland residents were suspected of being German. When in doubt, the 1939 German or earlier Czechoslovak censuses could determine whether one was to be expelled. This meant that
some Germans who had become Czechs by force prior to the war were not expelled, while some non-Germans who had “switched” to German following the borderlands’ annexation were. For others, having an ambiguous or mixed national identity meant being expelled, regardless of census identification (Zahra, 2008; Spurný, 2013). Only a small number of Germans who were Czech by marriage, could prove their loyalty to the state, or were deemed economically vital were allowed to stay. By 1950, only 165,000 Germans remained, of which most would be re-granted citizenship (Cornwall, 1994).

The resettlement of the borderlands

The borderlands’ resettlement was of central importance to the Czechoslovak government, which sought to maintain the region’s great prewar output (Glassheim, 2016; Gerlach, 2017). In May 1945, the Czech borderlands contained upwards of 500,000 non-Germans, and the Czechoslovak government hoped that about 2.5 million more would arrive to resettle the region. Unlike those of other postwar expulsions, this process was to be voluntary, with property reallocation being managed by local national committees. The Czechoslovak government saw this as important for ensuring the elimination of perceived differences between the interior and borderlands, with the hope that confiscated land and property sold at low rates would be sufficient to spur a rapid and full resettlement (Gerlach, 2017). Settlers were to be made up solely of Czechs from nearby “interior” areas. However, as labor shortages ensued, policymakers recruited some Slovaks and others from abroad (Gerlach, 2017). Resettlement began in 1945, concurrently with the expulsion.

Early on, resettlement fed back into expulsion, with Germans being kept for their labor until settlers began to arrive (Gerlach, 2017). Farmer-settlers were distributed 9-12 hectare lots at low rates (Korbel, 1959). Others were made property administrators of confiscated factories and other businesses. As a result, towns with the most appealing property, particularly those closest to the interior, were emptied and resettled most quickly (Daněk, 1995).

3 The data

This section provides an overview of the district- and municipal-level dataset compiled for this paper. It spans over 90 years and contains newly- and already-digitized data from historical censuses, statistical journals, and demographic yearbooks.

The main treatment variable in Section 4 (i.e. located in the borderlands, or former “Sudetenland”) is coded from two directories. As the primary source, I use Amtliches Deutsches Ortsbuch für das Protektorat Böhmen und Mähren, published in 1940, which lists villages not annexed by Nazi Germany in 1938 (i.e. in the Protectorate of Bohemia and
Moravia, or interior) by German and Czech name, regional council district (Oberlandratsbezirk) and subdistrict (Bezirk).\footnote{This list can be accessed at http://www.hartau.de/PBM/Protektorat.html.} As a supplementary source, I use Sudetendeutsches ortsnamenverzeichnis: Amtliches Gemeinde- und Ortsnamenverzeichnis der nach dem Münchner Abkommen vom 29. 9. 1938, published in 1987, which lists villages in the annexed majority-German borderlands alphabetically by German name, along with their Czech name and government district (Regierungsbezirk).\footnote{This list can be accessed at http://www.sudeten-by.de/cms/userfiles/downloads/dokumente_nicht-loeschen/Ortsnamen.pdf.} With the aid of GIS maps of the Protectorate by Jelínek (2011) and 15,070 modern sub-municipal villages (části obce), provided by the Czech Statistical Office (CZSO) via its collaboration with the Czech Land Survey Office (ARCDATA PRAHA), I create a precise “Munich Agreement line” (MAL) to measure the German “language border” and sort modern villages into treatment or control groups (see Figure 3). I then aggregate this assignment as necessary.

The first Czechoslovak population census was taken in 1921. Decadal censuses have been held ever since except for during WWII. A smaller population index was also compiled for the Czech lands in May 1947. The 1930 census contains information for 330 judicial districts (soudní okresy) and 151 political districts (politický okresy) on ethnic composition, literacy, and employment by sector. The 1947 index and 1950 census contain data on employment but not literacy or education, with the number of political districts for the former increas-

\textbf{Figure 3:} Munich Agreement line overlaying municipalities (as of 2011)
ing to 163, and judicial and political districts being consolidated in 1949 into 182 districts (okresy). The latter also provides the first post-WWII data on ethnic composition (see Table 1). From 1961 to 1991, censuses contain information on ethnic composition, educational attainment, and employment by sector for 76 more-aggregated districts. For the 2001 and 2011 censuses, the number of districts increases to 77 and data are also provided for 6258 and 6251 municipalities (obce), respectively.

Most data from the 1930, 2001, and 2011 censuses are digitized or taken directly from census files provided by the CZSO. All other district-level census data are made available by the Urban and Regional Laboratory (URRlab) at Charles University in collaboration with the Czech Ministry of Culture, along with corresponding GIS district shapefiles (2017) for each census year. Other administrative boundary data are collected from ARCDATA PRAHA (2017).

Non-census outcome data come from a variety of sources. I construct 1933 variables using data from state social insurance and taxation reports published in 1938. The former provides the number of registered unemployed in each political district as reported by the Minister of Social Affairs, while the latter lists income and the share of eligible taxpayers by political district. These are combined with data on the size of the labor force and population from the 1930 census to estimate 1933 unemployment and income per capita, respectively.

I digitize non-census data from the post-expulsion period from several statistical reports published from the mid-1940s. District-level data for arable land in 1945 and school enrollment in 1947 are derived from the 1947 and 1948 editions of an annual state statistical report, respectively. Migration data come from a series of demographic yearbooks made available by the CZSO. Crime data are proved by URRlab. Data on the number of jobless by municipality in 2011 come from the Czech Ministry of Labor and Social Affairs.

4 The regional economic impact of expulsion

After WWII, around 95% of Germans living in the Czech lands (i.e. the modern day Czech Republic) were forced to permanently exit the country, leaving their homes and most property behind. This section examines how this impacted the relative development of former-German places over the long-run. Prior to the expulsion, those still identifying as German within the Czech lands were concentrated in one region, often called the “borderlands” and formerly the “Sudetenland”. Although German-speaking had for centuries been more prominent in the corners of the Czech lands, historical developments associated with the rise of nationalism resulted in this region becoming semi-formal by the 1920s, defined by a sharp spatial discontinuity in German identification – a “language border” – in official statistics.
Table 1: Exposure to Expulsion

<table>
<thead>
<tr>
<th>Region (subsample)</th>
<th>% German, 1930</th>
<th>% German, 1950</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borderlands (within 25 km of MAL, no overlap)</td>
<td>81.78</td>
<td>4.439</td>
</tr>
<tr>
<td></td>
<td>(2.276)</td>
<td>(.597)</td>
</tr>
<tr>
<td>Interior (within 25 km of MAL, no overlap)</td>
<td>1.601</td>
<td>.495</td>
</tr>
<tr>
<td></td>
<td>(.396)</td>
<td>(.047)</td>
</tr>
<tr>
<td>Borderlands (no bandwidth, no overlap)</td>
<td>86.67</td>
<td>6.821</td>
</tr>
<tr>
<td></td>
<td>(1.646)</td>
<td>(1.184)</td>
</tr>
<tr>
<td>Interior (no bandwidth, no overlap)</td>
<td>1.646</td>
<td>.464</td>
</tr>
<tr>
<td></td>
<td>(.418)</td>
<td>(.036)</td>
</tr>
<tr>
<td>Borderlands (full sample)</td>
<td>80.874</td>
<td>5.36</td>
</tr>
<tr>
<td></td>
<td>(1.904)</td>
<td>(.808)</td>
</tr>
<tr>
<td>Interior (full sample)</td>
<td>3.545</td>
<td>.569</td>
</tr>
<tr>
<td></td>
<td>(.544)</td>
<td>(.042)</td>
</tr>
</tbody>
</table>

Unit of measure for 1930 is 330 judicial districts. Unit of measure for 1950 is 182 districts. Standard errors are reported in parentheses. A district is considered to be in the borderlands (interior) if 50% or more of its area lies inside (outside) the lands annexed by Germany in 1938, as determined by the Munich Agreement line (MAL). The full sample includes districts that overlap the MAL. A district is classified as “no overlap” if >95% of its area lies on one side of the MAL or the other. A district is classified as “within 25 km” if its centroid lies within 25 km of the MAL. Prague and Polish Zaolzie are always excluded from the analysis, I exclude them here as well.

(see Figure 1). This boundary was formalized in 1938, when the Munich Agreement enabled the annexation of majority-German areas by Germany. This Munich Agreement line (MAL) in turn approximates a place’s exposure to the expulsion in 1945 (see Table 1).

My identification strategy exploits the discontinuity in exposure to the expulsion at this boundary in order to identify the local relative effects of the expulsion over the long-run. In particular, I use a spatial regression discontinuity (RD) design, with the treatment variable being a discrete function of a place’s location relative to the MAL. This strategy will help control for potentially confounding factors, such as natural geography and other historical shocks, to the extent that such factors vary smoothly through the MAL.

To do this, I assign a value of 1 to a municipality or district if it was on the majority-German side of the MAL and thus annexed by Germany in 1938. A value of 0 is assigned if it was located in the “interior” where few Germans lived. Consider the municipal-level specification,

\[ y_{mdb} = \alpha + \beta InBorderlands_m + f(location_m) + X'_m \Gamma + \Sigma_b + \Delta_d + \varepsilon_{mdb}, \]  

(1)

where \( y_{mdb} \) is the outcome variable for municipality \( m \) in district \( d \) along segment \( b \) of the MAL; \( InBorderlands_m \) is a dummy for if a municipality \( m \) lies in the borderlands where Germans lived; \( X_m \) is a vector of geographic characteristics, including elevation, ruggedness,}

\[9\] municipalities for which only some parts were annexed are dropped. I define treated as > 95% area annexed. All specifications and plots exclude those which otherwise overlap the MAL. For 1930-47 analyses,
temperature, precipitation, and river density (km per km$^2$); and $\Delta_d$ captures district fixed effects. $\Sigma_b$ gives the set of border segment fixed effects, denoting to which of the fifty segments, each roughly 50 km in length, a municipality is nearest. Finally, $f(location_m)$ is the running variable, capturing all other characteristics that vary smoothly through the MAL. For the main specifications, I use a municipality’s centroid distance from the MAL, interacted with the treatment. I explain this choice below. For main 2011 specifications, I cluster standard errors by the 71 districts in the final sample.

For 20th century outcomes, for which municipal-level data are not available, district fixed effects are omitted and geographic controls are calculated at the district-level. Depending on the number and size of districts, border segments are also lengthened and the number of them decreases. Most pre-1950 data are available for judicial districts. For those regressions, I control for 24 border segments, each about 100 km in length, and cluster standard errors by political districts, of which 98 remain in the final sample for main specifications. Some 1933 and 1947 data are available only for the larger political districts.\textsuperscript{10} For those specifications, I control for 16 border segments, around 150 km in length, and report robust standard errors.

**Balance testing**

Historians have noted how, following centuries of admixture and common rule, there were few occupational or social differences between Germans and Czechs even in the early 1900s, and the historical developments that gave rise to the MAL and eventual expulsion were ultimately rooted in national rather than economic considerations \citep{Zahra2008}. Thus, adopting an RD approach here should theoretically identify the local relative effects of the expulsion, absent differences in factors like geography and human capital, which commonly distinguish different ethnic groups and might therefore drive effects in other settings or under alternative empirical strategies. Nonetheless, it is important to check that the ethnolinguistic differences for which the MAL was drawn (and the drawing of the MAL itself) were not associated prior to 1945 with differences in factors relevant for economic performance.

To test whether ethnic differences were correlated with other distinctions locally, I estimate differences for 24 pre-treatment outcomes. Estimates can be found in Tables 2 and 3.\textsuperscript{11} Column (1a) of Table 2 confirms that traversing the MAL was associated with an increase

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\textsuperscript{10} Due to a higher level of aggregation, the sample underrepresents southern (i.e. non-Eastern Bloc-bordering) areas. I show in Section 5.5 that long-run effects are independent of this.

\textsuperscript{11} See the Supplemental Material for RD plots of all regressions, using a linear polynomial in distance from the Munich Agreement line and 50 km as the bandwidth, as well as geographic heatmaps for sectors (in addition to Figure 8).
of about 68 percentage points in the German population in 1930. However, this does not coincide with statistically significant (i.e. \( p < .10 \)) discontinuities in other factors, such as employment in mining, glassworks, and textile manufacturing, which were seen as German-dominated industries on the whole. These findings are robust to changes in RD bandwidth and running polynomial, as shown in Table A.4 in the Supplemental Material. In Figure 4, I show similar patterns for elevation, ruggedness, temperature, and precipitation.12 With the exception of ruggedness, geographic differences appear smooth through the MAL. To check smoothness for ruggedness, I report sample means at various bandwidths in Table A.2. Long-run results are also robust to excluding mountainous regions entirely.

The historical literature also downplays local differences in institutions. Even as national identification became more common and geographically salient after WWI, individual Czechoslovak citizens retained equal rights in the eyes of the state, including education and basic healthcare (Bryant, 2002; Tampke, 2003). Minority group rights were weaker, yet still liberal relative to the country’s peers, with facilities provided for German-language educa-

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12See Figure A.3 for the same plots for river density and arable land in 1945.
### Table 3: Pre-expulsion Sectoral Differences Between Regions

<table>
<thead>
<tr>
<th>Sector</th>
<th>In borderlands</th>
<th>$R^2$</th>
<th>Observations</th>
<th>Clusters</th>
<th>Border segments</th>
<th>Geo. controls</th>
<th>Bandwidth</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural sector</td>
<td>2.915</td>
<td>.526</td>
<td>165</td>
<td>98</td>
<td>24</td>
<td>Yes</td>
<td>25 km</td>
<td>1930</td>
</tr>
<tr>
<td>(1a)</td>
<td>(3.649)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining and extraction Metals</td>
<td>-1.150</td>
<td>.376</td>
<td>165</td>
<td>98</td>
<td>24</td>
<td>Yes</td>
<td>25 km</td>
<td>1930</td>
</tr>
<tr>
<td>(1b)</td>
<td>(1.698)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metals</td>
<td>.455</td>
<td>.313</td>
<td>165</td>
<td>98</td>
<td>24</td>
<td>Yes</td>
<td>25 km</td>
<td>1930</td>
</tr>
<tr>
<td>(1c)</td>
<td>(1.458)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-.421</td>
<td>.298</td>
<td>165</td>
<td>98</td>
<td>24</td>
<td>Yes</td>
<td>25 km</td>
<td>1930</td>
</tr>
<tr>
<td>(1d)</td>
<td>(.561)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>1.065</td>
<td>.338</td>
<td>165</td>
<td>98</td>
<td>24</td>
<td>Yes</td>
<td>25 km</td>
<td>1930</td>
</tr>
<tr>
<td>(1e)</td>
<td>(1.681)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles</td>
<td>-3.311</td>
<td>.634</td>
<td>165</td>
<td>98</td>
<td>24</td>
<td>Yes</td>
<td>25 km</td>
<td>1930</td>
</tr>
<tr>
<td>(1f)</td>
<td>(2.534)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Robust standard errors are clustered by political district. All regressions exclude Prague and Polish Zaolzie, include exogenous controls for elevation, ruggedness, precipitation, temperature, and river density (km per km$^2$), and utilize a local linear running variable of distance from the Munich Agreement line interacted with the treatment.

Tional and legal activities in sufficiently German (i.e. > 20%) areas and a role for German politicians in parliamentary politics (Tampke, 2003; Zahra, 2008). This relative egalitarianism is apparent in the borderlands’ and interior’s similar economic and taxation statuses, as shown above. Overall, historians recognize the widespread similarities of Germans and Czechs in the Czech lands after centuries of coexistence – as did the Nazis (Bryant, 2007).

### WWII, borderland Czechs, and pre-treatment sorting

The same nationalism that motivated the expulsion of the Germans had also inspired the annexation of the borderlands and the occupation of Czechoslovakia by Nazi Germany years prior. Yet one concern is that such events and others associated with them may have differentially affected borderland areas near the MAL. Indeed, a major limitation to studying this era is the lack of data from during World War II. I address these concerns here.

Following annexation, the remainder of the Czech lands was quickly occupied by Nazi Germany until 1945. The Czech government was exiled and preferential treatment of the Czech regions by the Nazis during the war would have favored the borderlands, biasing estimates toward zero. That being said, the Czech lands experienced little physical destruction during the war.\textsuperscript{13} There were also few acts of resistance by Czechs. The Czech lands held a

\textsuperscript{13}See Figure A.2 for a map of confirmed Allied bombings during WWII.
large and important industrial workforce, and Nazi officials came to see much of the Czech masses as “Germanizable” due to a cultural and genetic closeness forged by centuries of coexistence. Thus, life in the Czech interior continued largely as normal, avoiding much of the violence experienced by Yugoslavia and Poland (Agnew, 2004; Bryant, 2007; Glassheim, 2016). Economic life in the borderlands also changed little, at the displeasure of some borderland Germans, who had sought greater integration into German economy and society. In all, “Czechoslovakia emerged from the war with much of its industrial base intact” (Gerlach, 2017, 208). Differences in wartime deaths are more difficult to discern. Historical accounts suggest the borderlands suffered somewhat more in terms of war casualties than interior areas, due to conscription of some Sudeten Germans. However, these estimates would have been driven up by casualty counts from the violent liberation of Czechoslovakia in May of 1945, which also marked the beginning of the expulsions. And although Jews and Roma were also expelled from and murdered in the Czech lands during this time, these groups were distributed uniformly through the MAL, as shown in Table 2. Thus, pre-expulsion differences in casualty rates between the regions were likely small on net.\footnote{See Table A.3 for more details on estimates.}

To further quell concerns that the effects presented below reflect anything other than the expulsion, I also estimate pre-trends in Table A.5 in the Supplemental Material using

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure4}
\caption{Smoothness of geographic characteristics around Munich Agreement line}
\end{figure}
data from the 1921 census. With the exception of literacy, which increased slightly in the borderlands relative to the interior between 1921 and 1930, there are no statistically significant differences in pre-trends in my data. To the extent that this implies stability in the relative development trajectories and population patterns of both regions leading up to the war, this also helps further minimize concerns that they might have diverged significantly during the war.

That being said, one thing that could have disturbed pre-trends involves the presence of Czechs in various parts of the borderlands. Unlike the interior, which by 1930 was strikingly homogeneous (at least officially), some parts of the borderlands were more ethnically mixed, especially near the MAL. Related to this was pre-treatment sorting among Czechs, which according to historians occurred following Czechoslovak independence in 1918 – first by interior Czechs immigrating to some borderland cities; then by 300,000 of the 730,000 borderland Czechs into the interior during the war; and finally by nearly all of those Czechs back into the borderlands after the war (Cornwall, 1994; Agnew, 2004; Glassheim, 2016).

Even absent pre-treatment sorting concerns, the presence of borderland Czechs renders the cross-sectional balance tests above potentially problematic, as cross-region differences are not as such perfectly informative of cross-ethnicity differences. For example, if Czechs near the MAL were in fact less skilled than Germans, then it could bias balance tests toward zero. In this case there would be relatively smooth estimates, while in actuality the expulsion of the borderlands’ Germans would have interacted with crucial, preexisting distinctions between the regions and their residents. In such a scenario, persistent effects would be less surprising (Acemoglu et al, 2011).

Since I cannot compare Czechs and Germans directly, I must rely on heterogeneity in the ethnic composition of the borderlands prior to the expulsion to better compare Czechs and Germans across regions. In particular, I reexamine the balance tests above using a sample of “concrete” stretches of the MAL, in which I compare only homogeneous parts of the interior with nearby, homogeneous parts of the borderlands with few borderland Czechs (as well as less pre-treatment sorting, in turn). In Table A.9 in the Supplemental Material, I show that while this increases the size of the ethnic discontinuity to 86 percentage points, estimates regarding relative literacy, population density, and sector composition change little. Only eligible taxpayers shows a statistically significant change associated with crossing the MAL, with an increase of about 1.6 eligible taxpayers per 100 persons from entering the borderlands.\textsuperscript{15} This exercise helps reaffirm the historical narrative and assumption that spatial variation in ethnic composition was not associated with differences in relevant factors

\textsuperscript{15}Relative pre-trends also remain largely unchanged if I examine only the concrete sample, as are long-run outcomes if I adopt the same concrete stretches. These results are available upon request.
in the pre-expulsion Czech lands, at least near the MAL.\footnote{And in addition to the kinds of pre-treatment sorting discussed above, this exercise reaffirms that the kind in which Germans “switched” to Czech also would not have mattered.}

In contrast, post-treatment sorting is a natural channel of persistence in many spatial RD settings (Dell, 2010). Indeed, it will be an important channel here, since expulsion in the borderlands necessitated resettlement.

**Controlling for smooth differences**

Despite the smoothness of relevant variables through the MAL, identification is still threatened if the running variable \( f(\text{location}_m) \) does not adequately control for these smooth differences. To deal with this, many spatial RD designs limit the sample to a narrow bandwidth around the border of interest. If imposing a narrow bandwidth is feasible given the sample, then a linear polynomial is likely to be a reasonable control (Gelman and Imbens, 2018). Fortunately, the region of study in this case is quite small, and all samples are easily limited to within 50 km or less of the MAL. For most specifications I adopt the standard bandwidth of 25 km.\footnote{Increments of 25 km are standard in the prior literature. Output from optimal bandwidth algorithms varies by outcome but tends near this for municipal and judicial district specifications.}

A related concern is choice of running variable. A common choice in spatial RD settings is a two dimensional linear polynomial in longitude and latitude. This would vary smoothly through the MAL while controlling for local characteristics. However, it would not allow such differences to vary with treatment status, which could bias estimates. A second common choice is distance from the border of interest. Here, an interaction term lets smooth differences vary in slope on either side of the MAL, with the treatment effect being evaluated at the MAL. Although being \( x \) km from the MAL could mean something different in southern Bohemia versus northern Moravia, border segment dummies and other controls deal with such heterogeneity. I thus opt for the latter in all main specifications. In the Supplemental Material, however, I test alternative specifications, including using local linear polynomials in latitude and longitude. These estimates vary somewhat in size but are substantively similar.

### 4.1 Long-run effects

I will now provide evidence that the expulsion of the Germans from the Czech borderlands (i.e. the former “Sudetenland”) had long-lasting effects on the spatial distribution of economic activity within the Czech lands. I will focus on two types of outcomes: (i) the intensity...
Table 4: Long-run Differences in Economic Activity, 2011

<table>
<thead>
<tr>
<th></th>
<th>ln Population density (1a)</th>
<th>ln Labor force density (1b)</th>
<th>Unemployment (1c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In borderlands</td>
<td>-.312 (0.095)***</td>
<td>-.317 (0.097)***</td>
<td>2.729 (0.546)***</td>
</tr>
<tr>
<td>R²</td>
<td>.398</td>
<td>.399</td>
<td>.404</td>
</tr>
<tr>
<td>Observations</td>
<td>4049</td>
<td>4049</td>
<td>4049</td>
</tr>
<tr>
<td>Clusters</td>
<td>71</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>Border segments</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Geographic controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>District fixed effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>25 km</td>
<td>25 km</td>
<td>25 km</td>
</tr>
<tr>
<td>Year</td>
<td>2011</td>
<td>2011</td>
<td>2011</td>
</tr>
</tbody>
</table>

Robust standard errors are clustered by district. All regressions exclude Prague and Polish Zaolzie, include exogenous controls for elevation, ruggedness, precipitation, temperature, and river density (km per km²), and utilize a local linear running variable of distance from the Munich Agreement line interacted with the treatment.

of economic activity, as measured by population and employment, and (ii) the composition of economic activity, as measured by education and occupation.

Prior to the expulsion of the Germans, borderland areas were as educated and prosperous as their adjacent “interior” neighbors. If the determinants of economic activity are invariant to the expulsion, then we should see interior Czechs spilling over into relatively similar, nearby borderland areas in smooth ways thereafter. Instead, borderland municipalities today show discontinuous signs of marked economic decline relative to interior towns just a few miles away. As of 2011, population and employment were relatively more concentrated in the interior, as shown in columns (1a) and (1b) of Table 4.

Moreover, borderland towns have seen some of the highest unemployment rates since transition within the Czech Republic, which has relatively low unemployment overall. Column (1c) shows that simply traversing the MAL is associated with almost a 3% absolute increase in the municipal unemployment rate as of 2011. This illustrates the extent to which production remains less likely to locate in the borderlands, seven decades after the expulsion and over two decades since transition, with low internal migration helping keep rates high (Fidrmuc, 2004; Fidrmuc and Huber, 2007).\(^{18}\)

Table 5 suggests that this is due to an inability of borderland towns to develop skill-intensive service sectors. The borderlands shows significantly (i.e. \( p < 0.01 \)) less employment on average in finance, education, healthcare, communications, and the auto sector relative to nearby interior areas.

This also suggests a lower concentration of skill in borderland areas in 2011 relative to

\(^{18}\)For more on migration, see Table A.21 in the Supplemental Material.
Table 5: Long-run Differences in Sectoral Composition, 2011

<table>
<thead>
<tr>
<th>Sector</th>
<th>Agricultural sector</th>
<th>Industry</th>
<th>Construction</th>
<th>Transport sector</th>
<th>Finance and insurance</th>
<th>Hospitality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1a)</td>
<td>(1b)</td>
<td>(1c)</td>
<td>(1d)</td>
<td>(1e)</td>
<td>(1f)</td>
</tr>
<tr>
<td>In borderlands</td>
<td>-.573 (**.433)</td>
<td>-.621</td>
<td>-.447 (.*.267)</td>
<td>-.117 (.248)</td>
<td>-.369 (.080)***</td>
<td>.365 (.280)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.303</td>
<td>.34</td>
<td>.155</td>
<td>.19</td>
<td>.134</td>
<td>.339</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector</th>
<th>Auto trade and repair</th>
<th>Public Communications</th>
<th>Education</th>
<th>Healthcare</th>
<th>Other service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2a)</td>
<td>(2b)</td>
<td>(2c)</td>
<td>(2d)</td>
<td>(2e)</td>
</tr>
<tr>
<td>In borderlands</td>
<td>-.864 (.282)***</td>
<td>.001 (.274)</td>
<td>-.297 (.089)***</td>
<td>-.864 (.176)***</td>
<td>-.993 (.230)***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.201</td>
<td>.125</td>
<td>.204</td>
<td>.085</td>
<td>.139</td>
</tr>
</tbody>
</table>


Robust standard errors are clustered by district. All regressions exclude Prague and Polish Zaolzie, include exogenous controls for elevation, ruggedness, precipitation, temperature, and river density (km per km²), and utilize a local linear running variable of distance from the Munich Agreement line interacted with the treatment.

neighboring interior towns. If true, one would expect borderland municipalities around the MAL to have lower levels of educational attainment than those in the nearby interior. The next set of estimates in this section, in Table 6, show this to be the case. The results are striking: even with a sample bandwidth of just 25 kilometers, there is an absolute increase of over 4.8% of the adult (i.e. age 15 or over) population claiming to have completed no more than a primary education from an average interior municipality to a borderland one. This is matched by an absolute decrease of over 3.9% in secondary schooling completion from crossing the MAL and a 1.9% decrease in tertiary education, such as a college degree.

One concern is that despite the smoothness of geographic characteristics through the MAL, borderland and interior municipalities in the sample still have too many geographic differences for which to adequately control, as Figure 4 might imply. One solution is to limit the sample to areas around the MAL that are more geographically homogeneous (i.e. less mountainous). As it turns out, the results do not change if one excludes the mountainous sections of the borderlands from the sample, suggesting geography is not driving the results in the main specification. Results are also robust to numerous changes to bandwidth and RD polynomial (see Tables A.10-12).

I have used this section to show that the expulsion of the Germans generated a persistent, discontinuous spatial divergence in local development within the Czech lands. Whereas the
Table 6: Long-run Differences in Educational Attainment, 2011

<table>
<thead>
<tr>
<th></th>
<th>% Primary education or less</th>
<th>% Secondary education</th>
<th>% Tertiary education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1a)</td>
<td>(1b)</td>
<td>(1c)</td>
</tr>
<tr>
<td>In borderlands</td>
<td>4.883 (0.634)**</td>
<td>-3.923 (0.516)**</td>
<td>-1.936 (0.391)**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.297</td>
<td>.199</td>
<td>.271</td>
</tr>
<tr>
<td>Observations</td>
<td>4049</td>
<td>4049</td>
<td>4049</td>
</tr>
<tr>
<td>Clusters</td>
<td>71</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>Border segments</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Geographic controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>District fixed effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>25 km</td>
<td>25 km</td>
<td>25 km</td>
</tr>
<tr>
<td>Year</td>
<td>2011</td>
<td>2011</td>
<td>2011</td>
</tr>
</tbody>
</table>

Robust standard errors are clustered by district. All regressions exclude Prague and Polish Zaolzie, include exogenous controls for elevation, ruggedness, precipitation, temperature, and river density (km per km$^2$), and utilize a local linear running variable of distance from the Munich Agreement line interacted with the treatment.

spatial distribution of economic activity was relatively smooth through the Munich Agreement line prior to WWII, productive economic activity is now relatively more concentrated on the interior side. I will now explore the precise channels through which the expulsion resulted in this divergence.

5 Short-run effects and mechanisms

The previous section documented an unevenness in economic activity present within the Czech lands, nearly 70 years after the German population was expelled from its borderlands, i.e. the former “Sudetenland”. This section investigates the origins of these patterns. Since no such unevenness existed prior to the expulsion, I begin by examining the intensity and composition of economic activity of those who voluntarily resettled the borderlands from nearby interior areas immediately following the commencement of the expulsion, relative to those who did not. Indeed, the expulsion’s impact on the borderlands’ relative development depended on it being resettled in a quick and convergent manner. Because the expulsion was near-absolute (i.e about 95% of Germans), I can use data from after the expulsion and the borderlands’ initial resettlement had largely concluded in mid-1947 to compare these populations. This will also allow me to establish whether or not key structural changes had already occurred prior to the communist coup.

19 The historical literature indicates that the 5% or so remaining were disproportionately skilled workers initially kept out of necessary and later dispersed throughout the country in the 1950s. This may downward bias 1947 estimates slightly.
In this section, I show that the expulsion was instead followed by a (i) selective initial resettlement, with relatively few workers arriving from sectors like transportation and business relative to agriculture. This culminated in a relative (ii) de-urbanization of former-German areas and the emergence of (iii) human capital inequalities between the regions thereafter. Using a combination of data and historical evidence, I then propose and discuss two mechanisms underlying these short-run effects. First, I argue that large population losses interacted with agglomeration economies, decreasing the expected relative return to moving to affected borderland towns for workers in more urban sectors. Second, the expulsion engendered an extractive institutional environment in the borderlands, which helped crowd out production there in the short-run. This analysis focuses on the immediate post-expulsion period, during which the Czechoslovak economy remained generally unplanned, although I also occasionally discuss patterns of local development during the communist period and following transition to a market economy in 1989.

5.1 Selective resettlement

The economic future of the borderlands depended foremost on the German population being replaced by settlers of similar count and composition. The stated goal of resettlement was
that it be geographically convergent: since the expulsion “would reduce the Czechoslovakia population by 25%, the borderlands would only be resettled up to 75% of [its] original population,” preserving prewar relative densities while creating one homogeneous nation (Radvanovský, 2001, 203). This was to be done quickly and concurrently with the expulsion, with the goal of maintaining the region’s output (Glassheim, 2016). It was also to be carried out on a voluntary basis. Policymakers utilized propaganda and incentives, with local committees transferring confiscated farmland, businesses, and other assets to settlers at low rates. If settlers selected into more appealing locales first, committees would direct surplus settlers elsewhere (Radvanovský, 2001). Besides these interventions, worker and firm-level decisions remained unplanned until the communist coup of 1948 (Bernášek, 1970).

Under such circumstances, the theoretical migratory response to the expulsion is ambiguous, at least in the neighborhood of the MAL, around which differences in fundamentals and economic activity were smooth ex ante. Indeed, one might expect this to have made the borderlands an attractive place in which to settle and invest, inducing Czechs from nearby interior areas to move to the borderlands in a relatively smooth manner.

As it turns out, the expulsion was indeed met with a large-scale migratory response, beginning in mid-1945 through the first half of 1947, with the vast majority of settlers arriving from nearby interior areas (Radvanovský, 2001; Gerlach, 2017; see Figure 6). However, this initial resettlement was selective in nature. One way to examine this is to compare population losses endured by the interior (i.e. to the voluntary resettling of the borderlands) with those of nearby, similar borderland areas (i.e. from the expulsion net of resettlement) within each sector. Since contiguous borderland and interior districts had similar densities, compositions, and relevant pre-trends on average prior to WWII, with few shocks of permanence or scale during the war, the convergent migratory response envisioned by policymakers would have required that these losses be similar for each sector by the time expulsion and the borderlands’ initial resettlement had wound down in mid-1947, relative to pre-expulsion levels. If instead there was differential resettlement across sectors, it could in turn have generated the emergence of the patterns we see today.

I begin by constructing an outcome variable to measure population losses in each judicial district $d$ for each sector $s$ between the 1930 census and mid-1947 index:

$$PopLoss_{d,s} = \frac{Pop_{d,s,1947} - Pop_{d,s,1930}}{Pop_{d,s,1930}}.$$  

I then examine population dynamics visually by plotting $PopLoss_{d,s}$ overall and by sector (with observations binned for every 6 km) by distance from the MAL. Figure 7 shows that while interior areas did endure significant population losses to nearby borderland areas during
the main period of resettlement (see Figure 6), borderland districts near the MAL on average lost much more than the anticipated 25% of their populations on net, while interior districts on average lost less. Net population losses in the borderlands continue to increase as one moves away from the MAL, whereas interior losses decrease.

This lack of short-run convergence has its origins in the sectoral distribution of settlers. Namely, differences in worker losses around the MAL were relatively small for agriculture and large for the other, more “urban” sectors. This is consistent with the historical narrative that settlers were disproportionately unskilled farmers, with settlement initiatives struggling to attract skilled workers while interior areas suffered shortages in agricultural labor (Radvanovský, 2001; Gerlach, 2017). Nevertheless, there tends to be fewer differences in net losses between regions (i.e. greater convergence) as one approaches the MAL, around which most migration from the interior to the borderlands had occurred as of mid-1947. Overall, this exercise provides insight into the origins of the divergence found above. I will now show how these migratory patterns altered the sectoral structure of the borderlands as early as May 1947, culminating in the de-urbanization of the region we still see today.

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20 Although it is worth noting that the secondary sector includes the relatively small construction sector, which was more prevalent in less populated, developing areas in 1930, as discussed below.

21 While it is possible that more settlers coming from abroad or Slovakia were of those sectors, these made up only a very small fraction of settlers and would only have made the borderlands’ relative declines appear smaller.

22 For the RD estimates, see Table A.13 in the Supplemental Material.
Figure 7: Population change around Munich Agreement line by sector, 1930-47
5.2 De-urbanization

To see how selection in the borderlands’ initial resettlement altered its relative urban development in the post-expulsion period, I apply the RD approach above to examining differences between relative outcomes in 1930, prior to the expulsion, and those in mid-1947, after the near-total expulsion and the borderlands’ initial resettlement had wound down. In particular, I adopt a “local” difference-in-differences (DD) model,

\[ y_{dbt} = \alpha + \beta \ln \text{Borderlands}_d \times Y_{1947} + f(\text{location}_{dt}) + \sum_{bt} + \Delta_d + \epsilon_{dbt}, \]

which is equivalent to differencing (1) across years \( t \), indicated by the dummy \( Y_t \), using time-invariant district fixed effects \( \Delta_d \) while allowing the effects of the running variable \( f(\text{location}_{dt}) \), border segments \( \sum_{bt} \), and natural geography \( X_d \) to vary over time. This estimates the effect of being just in the borderlands in mid-1947 relative to the same effect in 1930. As before, I adopt a linear interacted polynomial in distance from the MAL and a default bandwidth of 25 km, with robustness for all short-run outcomes in Table A.18 in the Supplemental Material.

The first estimate of interest can be found in column (1) of Table 7 and shows that whereas differences in population density between the regions were statistically smooth and stable over time prior to the expulsion, population density became relatively lower in the borderlands after the expulsion and remained as such following the large-scale resettlement discussed above – even in the most easily accessible areas near the MAL. This is consistent with the historical literature, in which only 1.3 million settlers had arrived and remained by mid-1947, largely from nearby interior areas (Daněk, 1995; Gerlach, 2017). In combination with Czechs living in the borderlands pre-1938, its population was still below two thirds of its prior size. A more “global” DD analysis covering the entire period from 1921 to 2011 shows that such differences persisted on the whole throughout the communist period (see Table A.14). Moreover, they have actually grown since liberalization, suggesting that state investments under central planning may have cushioned the borderlands somewhat.

This suggests that the expulsion of the Germans triggered a de-urbanization of the borderlands. To explore this further, I consider a second important dimension of urban development: sectoral structure. Columns (2a-d) in Table 7 show a structural shift toward agriculture occurring alongside declines in density by the time expulsion and resettlement had concluded in mid-1947, in spite of a previous lack of differences and parallel pre-trends. And though all major sectors shrank, the sector which bears the largest and only statistically significant relative loss is the business sector – i.e. finance, insurance, trade, and other commerce – which was highly important in northern Bohemia in 1930, including in
Table 7: De-urbanization Around the MAL, 1930-47

<table>
<thead>
<tr>
<th></th>
<th>In Population density</th>
<th>Agricultural sector</th>
<th>Secondary sector</th>
<th>Transport sector</th>
<th>Business sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2a)</td>
<td>(2b)</td>
<td>(2c)</td>
<td>(2d)</td>
</tr>
<tr>
<td>$\Delta_{47-30}$ln</td>
<td>-.190</td>
<td>4.046</td>
<td>-.311</td>
<td>-.221</td>
<td>-1.306</td>
</tr>
<tr>
<td></td>
<td>(.048)**</td>
<td>(1.868)**</td>
<td>(1.810)</td>
<td>(.400)</td>
<td>(.515)**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.919</td>
<td>.59</td>
<td>.76</td>
<td>.673</td>
<td>.635</td>
</tr>
<tr>
<td>Observations</td>
<td>330</td>
<td>330</td>
<td>330</td>
<td>330</td>
<td>330</td>
</tr>
<tr>
<td>Clusters</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Border segments×1947</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Geographic controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>District fixed effects</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year fixed effects</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bandwidth</td>
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<td>25 km</td>
<td>25 km</td>
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<td>25 km</td>
</tr>
<tr>
<td>Year</td>
<td>1930-47</td>
<td>1930-47</td>
<td>1930-47</td>
<td>1930-47</td>
<td>1930-47</td>
</tr>
</tbody>
</table>

Robust standard errors are clustered by political district. All regressions exclude Prague and Polish Zaolzie, include exogenous controls for elevation, ruggedness, precipitation, temperature, and river density (km per km$^2$) interacted with year, and utilize a local linear running variable of distance from the Munich Agreement line interacted with the treatment and year.

Once again, the same patterns can also be seen “globally” in a panel covering 1921 to 2011 (see Table A.15). This shows an immediate and persistent shift toward agriculture relative to 1930 differences, with differences growing alongside a continued relative loss of industrial workers after 1950. This reflects how, after resettlement wound down in the late 1940s, migration out of the borderlands occurred by many skilled workers as “administrative conflicts, a lack of suitable settlers, labor shortages, and property squabbles” beset them (Gerlach, 2017, 14). Meanwhile, service sector differences have widened even more since transition to a market economy, when state investments in steel, coal, heavy weapons, and other industries were reduced and their labor forces transitioned into sectors like banking and the auto industry (Illner and Andrle, 1994). This mirrors the findings in Table 5, in which borderland municipalities in 2011 had lower employment shares in skill-intensive service-based sectors. Hence, the data show that the expulsion of the Germans generated an immediate urban divergence within the Czech lands, at the expense of the former Sudetenland, which persists long after the conclusion of intervening shocks.

See Figure A.6 for a heatmap of out-migration by 1950 districts.

In contrast, agriculture has tended to remain dispersed smoothly through the MAL over time, despite still being relatively more prominent in the borderlands “globally” as shown in Table A.15.
### Table 8: Short-run Educational Effects, Mid-1947

<table>
<thead>
<tr>
<th></th>
<th>Primary &amp; lower secondary</th>
<th>Upper secondary</th>
<th>Tertiary</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Enrollment, general 5-14</td>
<td>Enrollment, civic 10-14</td>
<td>Enrollment, agricultural 15-19</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(1a)</td>
</tr>
<tr>
<td>In borderlands</td>
<td>5.651</td>
<td>-8.204</td>
<td>7.174</td>
</tr>
<tr>
<td></td>
<td>(.967)**</td>
<td>(2.661)**</td>
<td>(1.817)**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.867</td>
<td>.589</td>
<td>.485</td>
</tr>
<tr>
<td>Observations</td>
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<td>115</td>
<td>115</td>
</tr>
<tr>
<td>Border segs.</td>
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<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Geo. controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>50 km</td>
<td>50 km</td>
<td>50 km</td>
</tr>
</tbody>
</table>

Robust standard errors reported in brackets. All regressions exclude Prague and Polish Zaolzie, include exogenous controls for elevation, ruggedness, precipitation, temperature, and river density (km per km$^2$), and utilize a local linear running variable of distance from the Munich Agreement line interacted with the treatment.

### 5.3 Regional human capital inequalities

Recall that there was little difference on average in literacy between districts around the MAL prior to the expulsion of the Germans. However, compositional changes associated with weak and selective migration into the post-expulsion borderlands as well as its subsequent de-urbanization may have generated differences in human capital between the regions, making it relatively more concentrated in the interior. This in turn could have fed back into de-urbanization (Moretti, 2004), generating further structural change as well as persistent human capital inequalities between the regions. Such a pattern would be consistent with the historical narrative that settlers were disproportionately unskilled (Radovanovský, 2001; Glassheim, 2016), as well as the finding that the borderlands is less educated today.

While no data exist on educational attainment for the Czech lands between 1930 and 1961, some evidence that the borderlands had lower human capital post-resettlement can be found by examining regional school enrollment patterns in mid-1947, after the main waves of expulsion and resettlement had wound down. Until the communist coup in 1948, Czechoslovakia had 8 years of compulsory education. For primary education, children attended a general school (obecná škola) for 5 years. Following this, one could either complete his or her education with 3 more years at a general school or pursue a more advanced lower secondary education. Commonly, this entailed attending a civic school (měšťanská škola) for 3 years. Civic schooling in turn was a prerequisite for subsequent upper secondary (e.g. vocational) education.\(^{25}\)

Upon examining differences in school enrollment in mid-1947 between the post-expulsion,

\(^{25}\)For more, see Greger et al (2012) and https://is.cuni.cz/webapps/zzp/download/120238971.
post-resettlement borderlands and nearby interior areas, I find that rates of enrollment in general schools among the relevant age group were significantly higher in the former relative to the latter. Given that all primary school-age children were enrolled in general schools regardless of region, this had to have been driven by differences at the lower secondary level—namely, a greater share of 10-14 year olds in the borderlands forgoing civic schooling in favor of the terminal general school track. Consistent with this, I find that civil school enrollment rates among 10-14 year olds were significantly lower in the borderlands in mid-1947 relative to those of nearby interior areas. This can be seen in Table 8.

This also means that there would have been relatively fewer students in the borderlands going on to pursue upper secondary and tertiary education. Indeed, column (3) confirms lower rates of college enrollment in the borderlands relative to the interior in mid-1947. Yet there may also have been differences in the types of schooling being pursued among those who did. To test this, I examine data from mid-1947 on enrollment for two common types of upper secondary schools: basic vocational schools (základní odborná škola) and agricultural folk schools (lidová škola zemědělská). The former provided education specific to a variety of trades, while the latter were meant specifically for those going into agriculture and horticulture.

In examining these, I observe another striking trend, which mirrors the structural changes observed above. Namely, while basic vocational schooling was significantly less popular among those living in the borderlands in mid-1947 relative to those in nearby interior areas, enrollment in agricultural folk schools was actually somewhat higher. This suggests that even among those in the borderlands who did go on to pursue advanced education, there was a tendency to invest in agricultural skills over other, more technical skills.

Overall, these findings are consistent with a demand-side explanation, in which those who selected into the borderlands after the expulsion of 3 million Germans had less demand for advanced and technical education, relative to those who stayed in nearby interior areas. Further evidence for this can be found in the Supplemental Material. Table A.16 shows that, contrary to a supply-side argument, lower rates of civic and basic vocational schooling in the borderlands did not correspond to relative shortages in the number of schools or teachers per pupil. On the contrary, there appears to be a greater teacher-pupil ratio in the borderlands for basic vocational schools.

Hence, despite Germans and Czechs previously having similar levels of education, the expulsion of the Germans generated a loss of human capital in former-German areas beginning with compositional changes they endured during their resettlement. That being said, the exact source of this decline in demand is harder to discern. In particular, it is difficult to differentiate between this being driven by (i) a lack of skilled workers selecting into the
borderlands and (ii) relatively fewer incentives to become skilled in the post-expulsion borderlands due to the relative lack of skill-intensive sectors there. More than likely there is a circular feedback between the two, with de-urbanization feeding into both and vice versa.26

5.4 Discussion of mechanisms

This section has established that the long-run differences observed around the Munich Agreement line (MAL) today can be traced back to the initial migratory responses to the expulsion, which culminated in the de-urbanization and subsequent human capital decline of the former “Sudetenland”. But why did the expulsion produce this response rather than the convergent one anticipated by policymakers? The setting here rules out some of the typical explanations, such as that Germans were too difficult to replace from a labor or skill standpoint; that they lived in geographically distinct places; that there was excessive destruction of physical capital; or that there was selection as to the types of Germans being expelled.

Indeed, the answer to this is not obvious in theory, at least in the neighborhood of the MAL around which differences in fundamentals and economic activity were historically smooth. For instance, one might expect the cheap land and capital made available by the expulsion to have made the borderlands an attractive place in which to settle and invest, inducing Czechs from nearby interior areas to spill over into borderland areas in relatively smooth ways. Instead, fewer settlers arrived to resettle the borderlands than remained in unaffected interior areas. Some settlers even returned to the interior, having not found the economic opportunity they sought. And those who did stick around were seemingly less skilled than those who did not.

I now discuss two possible forces through which the expulsion resulted in differences in economic activity around the MAL, rather than the spatial convergence initially envisioned by policymakers: (i) agglomeration economies and (ii) extractive institutions. These forces may or may not be complementary, and there may also be others, although I will argue that they are sufficient.27

First, the expulsion of the Germans served as a very large, negative shock to the borderlands’ population, relative to nearby interior areas in which few Germans lived. In the presence of agglomeration economies, this would have generated a massive spatial coordination problem among the remaining population, potentially decreasing the expected relative return to moving to affected borderland towns for workers in urban sectors in the short-run (Bosker et al, 2007; Murard and Sakalli, 2018). This would in turn have inhibited the

26Long-run trends show that these enrollment differences indeed correspond to a structural change which persists to today. See Table A.17.
27See Testa (2019) for theory and discussion of these forces and their interactions.
convergent resettlement envisioned by policymakers, helping lock in the de-urbanization of borderland areas over the longer-run (Krugman, 1991; Schumann, 2014).

Indeed, data from the 1930s suggest the presence of strong agglomeration economies throughout the Czech lands prior to the expulsion. Table A.20 in the Supplemental Material shows that population density was strongly and positively correlated with income as well as employment in overall industry, transport, and business, and negatively with employment in agriculture and construction, with magnitudes independent of region. Figure 8 also shows a significant degree of localization along sector lines in 1930, with industry featuring prominently in Northern Moravia and business in Northern Bohemia, which would have been severely disrupted by the expulsion.  

As it turns out, the sectors most associated with density were the ones most negatively selected against during the borderlands’ initial resettlement, as shown above. Importantly, these patterns first emerged prior to the communist coup of 1948. And while it is difficult to know how they might have evolved over the subsequent four decades in the absence of central planning, there exists evidence that agglomeration economies continue to matter in the post-transition period. Since 1991, net-migration into the borderlands on the whole

\[\text{Figure 8: Population density, agriculture, business, industry (clockwise) heatmaps, 1930}\]

\[\text{See Figure A.8 for more heatmaps and discussion.}\]
has declined, causing overall differences in population density between the borderlands and interior to increase (see Table A.14 and A.21). And around the MAL, differences in relevant variables remain remarkably stable since transition, as discussed later.

That being said, the political economy of forced migration cannot be ignored. Indeed, the expulsion also had important implications for the institutional environment within the borderlands: when the Czechoslovak government formally sanctioned the expulsions, it appropriated nearly all of Germans’ property. While confiscated property was intended to be sold and transferred to incoming settlers, in the interim this vacuum of property rights was often exploited by local authorities, as well as appropriative Czechs called “gold-diggers” (zlatokopové), who saw the borderlands not as a place in which to settle but as a free lunch. Historians have written extensively on how this helped crowd out the reemergence of production in the borderlands and left it with a “Wild West”-like character. As a result, the borderlands often failed to attract or retain productive workers, which in turn fed into the concentration of economic activity in interior areas (Radvanovský, 2001; Glassheim, 2016; Gerlach, 2017). Hence, the extractive institutions that enabled the expulsion also afflicted the borderlands thereafter. That historical institutions may have as such impacted future local economic conditions mirrors patterns observed elsewhere (Nunn, 2007; Becker et al, 2014; Acemoglu et al, 2019).

It did not end here. The expulsion also enabled state officials to expand their political and economic powers. Prior to the 1948 coup, communists oversaw the structure of the property allocation process, which lent them popularity among some settlers. The party won a plurality of seats for the first time in the 1946 elections, due to its new base of support in the borderlands, where it won three fourths of the vote (Radvanovský, 2001). Hence, the expulsion served as a source of patronage and legitimacy for the communists. In fact, historians consider the expulsion to have been key, if not necessary, for the communist takeover (Glassheim, 2001; Tampke, 2003). From there, historians have documented how the communist regime extracted from the borderlands. The liquidation and relocation of mills, machinery, and other physical capital from under-settled borderland areas to other parts of the country aided in the decline of thousands of towns, in spite of local resistance by borderland workers (Radvanovský, 2001; Gerlach, 2017). Others were destroyed or uprooted to extract raw materials beneath them (Glassheim, 2016). Soon “empty factory buildings [dotted] the borderlands like gravestones” (Gerlach, 2017, 258).²⁹

Hence, the expulsion shocked the borderlands’ formerly productive equilibrium in two key

²⁹In Figure A.7, I use data from Zaniklé obce a objekty (zanikleobce.cz), an ongoing open-source project to document abandoned and destroyed sites in the Czech lands predominantly from the postwar period, to illustrate this phenomenon relative to the MAL.
ways: by removing the bulk of its workforce in the presence of (i) agglomeration economies, and by engendering an (ii) extractive institutional environment there. And although gold-diggers disappeared and the Czech lands have since liberalized throughout, these two forces together can explain how the borderlands ended up on a lower development path as early as 1947, on which it still remains today.

5.5 Alternative channels

This paper shows a persistent spatial divergence in local development within the Czech lands following the 1945 expulsion of 3 million Germans from its borderlands. It has also discussed the origins of these patterns, which emerged immediately following the expulsion and persist decades after. That being said, there may be other forces which contributed to the persistence of or variation in such differences. I now consider three additional channels.

Natural geography

The analysis thus far controls for locational fundamentals, with physical geography being smooth through the MAL. Yet some questions remain. First, some stretches of the MAL lie close to edges of mountain ranges. If natural geography is too different in the borderlands relative to the interior, a spatial RD design may poorly approximate them. As a robustness check, I consider only stretches of the MAL that do not border mountain ranges. Tables A.11 and A.12 in the Supplemental Material show geographic balance tests and 2011 outcomes that exclude these mountainous stretches. Even when only geographically similar borderland and interior areas are compared, long-run effects remain practically unchanged.

However, locational fundamentals may nonetheless have helped mitigate the long-run effects of the expulsion within the borderlands. Since access to water is considered an important determinant of economic geography (Rappaport and Sachs, 2003), I expand the analysis by interacting the treatment variable with a mean-normalized river density control, which indicates kilometers (km) of waterways per square km in each municipality. Although the long-run effects on unemployment, population density, and educational attainment remain strong and significant, I find evidence that sufficiently high local river density can attenuate them. This can be found in Table A.22. However, note that this does not eliminate the treatment effect, as 95% of municipalities in the main specification have fewer than 0.9 km per square km of river greater over the mean. I find no such effect for ruggedness.
Central planning

The expulsion and the borderlands’ resettlement occurred prior to the communist coup of 1948, when Czechoslovakia’s labor economy still operated to a large extent via the market mechanism (Bernášek, 1970). However, it is important to consider to what extent central-planning institutions were responsible for preserving this divergence post-1947. If signs of convergence are observed as having occurred around the MAL since transition, then it might mean that this persistence had more to do with active central-planning decisions, whereas e.g. losses in density in the borderlands may not have persisted to the same extent locally in a market economy.

To test this, I consider in Table A.23 trends in relevant outcomes between 2001 and 2011, after the end of communism and the restructuring of the 1990s. Differences in density and unemployment remain remarkably stable near the MAL. I find similar stability for sector shares, with the exception of the construction sector, which declined somewhat more as a share of the labor force in the borderlands relative to the interior during the period. Thus, despite large-scale structural change since transition, the overall magnitudes of differences remain remarkably stable. This downplays the importance of central-planning institutions. That being said, the institutional environment is an important part of expulsion and plays a key role here, as discussed above.

Geopolitics

Economic geography may interact with political geography. After WWII, the Czechoslovak government intentionally kept parts of the borderlands near the West German border emptied for use as a military buffer zone (Illner and Andrle, 1994). Although these areas were closer to international borders than to the MAL, it is possible that once it was clear the borderlands would be under-settled, geopolitical concerns would have influenced other central-planning decisions, harmed trade networks, or altered foreign investment in former-German areas more broadly. It is therefore of interest to consider how stretches of the borderlands near the MAL that were closer the Eastern Bloc fared relative to stretches near West Germany and Austria. Table A.24 shows several of the baseline long-run regressions with an interaction term for if a municipality was closer to the Eastern Bloc prior to 1989. Interestingly, there is little difference between baseline and interacted coefficients.
6 Conclusion

This paper considers the long-run implications of Czechoslovakia’s postwar German expulsions for the relative development of former-German areas. Using a spatial regression discontinuity design on the border of the “Sudetenland” region where Germans lived – today known as the Czech borderlands – I show that the expulsion had immediate and long-lasting consequences for these areas relative to nearby places in the Czech interior. I then show that these patterns first emerged via a selective resettlement following the expulsion, which culminated in the region’s de-urbanization and relative human capital decline. Using data and historical evidence, I propose agglomeration economies and extractive institutions as two compelling forces through which the expulsion generated this outcome.

Much of this analysis has focused on how effects emerged out of the borderlands’ resettlement after the expulsion. In contrast, more work is needing to connect the short- and long-run outcomes documented in the paper and address the numerous questions that remain. For example, what role did communism play in driving persistence relative to what would have persisted regardless? On one hand, the relative stability of trends around the former German “language border” today suggests that central planning was unnecessary ex post for persistence. On the other hand, historians have documented how the communists extracted capital and raw materials from the borderlands following its initial de-urbanization, as discussed in Section 5. As such, it is unclear how effects might have differed had Czechoslovakia been more like Austria or Finland during the Cold War. Future work should examine how the communists influenced the first- and second-nature geography of the borderlands and on what margins this mattered for long-run persistence (i.e. post-transition). This would tell us more about both the channels of persistence in this particular setting, as well as the extent to which policy can influence long-run development more generally. Future research should also examine and compare the long-run effects of forced migration in a variety of institutional settings, including forced migration as a result of non-political factors such as climate change. Finally, household-level data collection and analysis is needed. A next step should entail examining narrow areas around the former language border, as in Karaja and Rubin (2017), to better understand the choice to resettle the borderlands as well as vertical and horizontal transmission mechanisms at play at a more micro level.

This paper provides several important lessons for understanding forced migration, at a time when the number of forcibly displaced worldwide is approaching 70 million. First, it illustrates how such events may affect not only targeted groups but also have long-term implications for development and regional inequality within the origin economy. Moreover, it shows that forced migration can have strong and persistent effects even when displaced popu-
lations are compositionally similar to those remaining. Other factors, such as agglomeration and institutional forces, may be important for explaining why affected areas do not recover their former relative statuses. This suggests that expelling even relatively disadvantaged minorities may have negative effects. This is no small finding. While previous research has focused on expulsions involving high-skilled minorities, forced migration has plagued groups from many backgrounds throughout history. This should give both dictators and legislators pause when considering the exclusion of even relatively low-skilled minorities, as doing so may leave a lasting mark on the places left behind.

References


