Migrating Extremists

Christian Ochsner
Felix Roesel

CESIFO WORKING PAPER NO. 5799
CATEGORY 2: PUBLIC CHOICE
MARCH 2016

ISSN 2364-1428

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Christian Ochsner[#]
Dresden, Germany

Felix Roesel[*]
Dresden, Germany

We show that migrating extremists can shape political landscapes toward their ideology in the long run. After WWII, Nazis moved from Soviet to US occupied regions in Austria. Regions that witnessed a Nazi influx exhibit significantly higher vote shares for right-wing parties in post-war times, but not before WWII. We estimate that migrating Nazis leverage votes by a factor of 1.3 to 2.5. Phonebook entries from 1942 allow us to trace back current party affiliation to Nazi migration. We can exclude channels such as general migration, denazification, occupation policies, and bomb attacks. Our results suggest tough control on migrating extremists within segregated communities.

JEL-Codes: R23, D72, N44, Z13

Keywords: Political economy, Migration, Extremism, Voting, Geonomastics, Austria

June 30, 2017

[#] ifo Institute – Leibniz Institute for Economic Research at the University of Munich, Dresden Branch, Einsteinstrasse 3, 01069 Dresden, Germany, and Technische Universität Dresden, Faculty of Business and Economics, 01062 Dresden, Germany. Phone: +49(0)351/26476-26, Fax: +49(0)351/26476-20, ochsner@ifo.de.

[*] Corresponding author. ifo Institute – Leibniz Institute for Economic Research at the University of Munich, Dresden Branch, Einsteinstrasse 3, 01069 Dresden, Germany, and Technische Universität Dresden, Faculty of Business and Economics, 01062 Dresden, Germany, Phone: +49(0)351/26476-28, Fax: +49(0)351/26476-20, roesel@ifo.de. We are grateful to Sascha O. Becker, Roberto Foa, Kathleen Kuerschner, Audrey Rose Menard, Atsuyoshi Morozumi, Natalie Obergruber, James Robinson, Philipp Schmidt-Dengler, Bernd Suessmuth, Marcel Thum, Tamas Vonyo, Hans-Joachim Voth, and Nikolaus Wolf as well as seminar participants at the CESifo Workshop on Political Economy (Dresden), CGDE Workshop (Magdeburg), EEA Annual Congress (Geneva), EHES Conference (Pisa), 2016 EPCS Annual Meeting (Freiburg i.Br.), ifo/CES Christmas Conference (Munich), IOS/APB/EACE Summer Academy (Tutzing), NOeG–SEA Joint Annual Meeting (Bratislava), WEast Workshop (Prague), Humboldt-University Berlin, Johannes Kepler University Linz, University of Dresden and at the Ifo Institute in Munich for helpful comments and suggestions. We also thank Michael Pammer for specific comments on Austrian politics and Austrian history. The usual disclaimer applies.

1. Introduction

Can an influx of (political) extremists shape a region in the long run? In this paper, we show that Nazi migration in the direct aftermath of WWII impacts extreme right-wing voting results in Austria even in the present day. By contrast, we do not find effects of general migration. Our results thus offer new insights relevant to the quite recent and ongoing debate on the benefits and perils of migration. Studies document long-term benefits of high-skilled immigration (Hornung, 2014; Moser, Voena and Waldinger, 2014; Semrad, 2015). By contrast, the public debate is often biased towards the (short-term) economic and cultural drawbacks of immigration. Recently, islamophobia has dominated the debate whether international migration may have led to some Islamist infiltration. Migrating extremists may have helped create so-called "terrorist hotspots".[1]

Beyond anecdotal evidence,[2] however, studies have thus far been unable to quantify either the short-term or long-term effects of migrating extremists. Our study aims to close this gap. We use an exceptional natural experiment to assess the persistent effects of the migration of political extremists on their destination regions. Austrian regions that witnessed a Nazi influx after WWII exhibit significantly higher vote shares for the extreme right throughout the entire post-war period, but not before WWII. We estimate a substantial multiplier effect: migrating Nazis leverage right-wing votes by a factor of 1.3 to 2.5, even in present day. General migration, by contrast, does not explain post-war right-wing voting.

We exploit the quasi-random assignment of occupation zones in the Austrian state of Upper Austria after WWII. Most parts of Upper Austria were initially liberated by US troops in May 1945. As a result of military considerations, however, US liberated regions in the North of the Danube River were, surprisingly, allocated to a Soviet occupation zone. After rumours of this occupation re-assignment began to circulate, people fled before the arrival of the Red Army for the US zone in the South (Leimlehner, 1974). The US Office of Strategic Services (OSS) reported the mass exodus in the following way:

"On 2 July 1945 a rumor circulated in Linz that the Russians were to take

[1] By contrast with perceptions prevalent in the mass media, the Office of the UN High Commissioner for Human Rights (OHCHR) stated recently that "[t]here is little evidence, however, that terrorists take advantage of refugee flows to carry out acts of terrorism or that refugees are somehow more prone to radicalization than others, and research shows that very few refugees have actually carried out acts of terrorism." See the Report of the Special Rapporteur on the promotion and protection of human rights and fundamental freedoms while countering terrorism, A/71/384.

[2] See, e.g., Leiken (2004, 2015). In Germany, former local Nazi and Communist strongholds persist. The German city of Flensburg in the state of Schleswig-Holstein was not only the seat of the last German Nazi government in May 1945 but also became a popular refuge of former Nazi party members. Post-WWII politics reflect this influx. For example, seven out of eight ministers in the 1950 cabinet of the German state of Schleswig-Holstein were members of the former Nazi party (NSDAP). See Wolfgang Pomrehn, "Flensburg war Rückzugsgebiet für Nazi-führung", Junge Welt, 17.05.2005.

> *over the area north of the Danube. That night people started crossing the Linz bridge into what was believed would be the future American zone. […] One MP officer estimates that 25,000 persons crossed over, but informant claims that 4,000–5,000 is a more accurate figure. Informant estimates that another 4,000–5,000 crossed on July 4. […] Two informants who made a trip to the area north of the Danube report that what appears to be a general exodus is in progress."*[3]

Historians, political scientists and contemporaneous newspaper articles, however, indicate that primarily Nazis migrated across the Danube River, which later became the zone border (e.g., Hindinger, 1968; Stiefel, 1981; Slapnicka, 1986; Schuster, 2004; see also section 3.2 and Table A.1 in the online appendix). For example, Leimlehner (1974) states:

> *"[…] Nazis in particular feared being punished more severely by the Russians and escaped with their belongings to southern Upper Austria."*[4]

The selection of the US zone by migrating Nazis yields one region characterized by a low density of Nazis (Soviet zone) and an adjacent region characterized by a high density of Nazis (US zone) within an otherwise historically, culturally, politically and economically homogeneous region. The separation of the state of Upper Austria is rather unique: All other occupation zone borders between the Soviet Union and the Western Allies in Austria followed pre-existing state borders.

Many Nazis in northern Upper Austria had good reasons to escape from the arrival of the Red Army as they might have been in fear of Soviet retaliation. In the "*Mühlviertler Hasenjagd*" in February 1945, for example, Nazi affiliates from northern Upper Austria hunted and slaughtered around 500 Soviet prisoners escaping from the Mauthausen-Gusen concentration camp. The South of Upper Austria was also a main destination for Nazis from Vienna and other parts of Soviet liberated Eastern Austria. US forces were aware of the Nazi migration towards their occupation zone. A political officer of the US in Vienna summarized the inspection report of Karl Waldbrunner, a member of the Austrian government, in September 1945 as follows:

> *"[…] On a recent trip to Salzburg and Upper Austria (American zone), he [Waldbrunner] was able to see the pernicious effects of the zoning boundaries, which permit Nazis with German money to live off the fat of the land, while Lower Austria [Soviet zone] is starving [..]"*[5]

[3] Cited in Beer (1991, pp. 206–207).
[4] Translation by the authors. The original text (in German) is as follows: "*Insbesondere Nationalsozialisten fürchteten eine Bestrafung durch die Russen weit mehr und begaben sich mit ihrer Habe ins südliche Oberösterreich*." (Leimlehner, 1974, p. 69).
[5] Cited in Wagnleitner (1984, p. 37).

Table 1 depicts the population shares of registered Nazis after WWII in the respective occupation zones. Nazis, and in particular Nazi elites, are highly overrepresented in the US zone. We investigate whether migrating Nazis come with shifts in regional vote shares for the extreme right in national elections.[6] The high level of continuity in Austria's right-wing camp (Staeuber, 1974; Luther, 1997; Ignazi, 2003) allows us to compare pre-WWII voting results with those of post-war elections. We apply a spatial regression discontinuity (RD) approach to identify regional differences in extreme right-wing votes in national elections. The exogenously drawn zone border between US and Soviet occupied municipalities serves as the discontinuity threshold. Vote shares for the right-wing Freedom Party of Austria (FPÖ)[7] appear to be well suited as an indicator of extreme political attitudes because the post-war FPÖ has been strongly influenced by a neo-fascist and neo-Nazi faction (Staeuber, 1974; Luther, 2000; Pelinka, 2002; Ignazi, 2003). Our results indicate a persistent shift in extreme right-wing voting in the former US zone after WWII. However, effects are more pronounced in periods of a hard right-wing orientation of the FPÖ and diminish in more liberal times. Seventy years after the Nazi influx and sixty years after the abolishment of the occupation zones, vote shares for extreme right-wing parties at the threshold remain 26% higher in the former US zone than in the former Soviet zone. By contrast, vote shares for the extreme right vary smoothly along the zone border prior to WWII.

TABLE 1. REGISTERED NAZIS AND RIGHT-WING VOTING IN DIVIDED POST-WWII UPPER AUSTRIA

	Population 1947	*Registered Nazis per 1,000 capita 1947*		*Right-wing (FPÖ) vote share 1949*
		Total	*Nazi elites ("Belastete")*	
	(1)	(2)	(3)	(4)
US zone (including Linz-South)	903,167	86.57	26.40	23.1%
Soviet zone (including Linz-North)	216,191	56.70	9.36	12.5%
Total	1,119,358	80.80	23.11	20.8%
Ratio US zone/Soviet zone		*153%*	*282%*	*185%*

Notes: This table shows the population of the Soviet and US zones in Upper Austria in late 1946 (column (1)). Columns (2) and (3) show the total numbers of registered Nazis per 1,000 capita and the subgroup of Nazi elites ("*Belastete*") per 1,000 capita in 1947. Columns (1) to (3) include the occupied parts of Linz. Source: Schuster (2004). Column (4) shows the vote share in the national election in 1949 for the far-right FPÖ by occupation zone.

Spatial differences in the voting patterns of moderate political parties appear not to be affected by zoning. We can exclude channels other than Nazi migration that may have affected post-war elections. Nor do we find explanatory power in migration in general, Allied bombings during WWII or the tactical considerations of other parties. We can also exclude (unobservable) Allied differences in occupation policies, including US-Soviet differences in denazification. In addition, according to

[6] Figure A.9 in the online appendix presents first evidence for Austria as a whole. We compare the vote shares for the right-wing camp (FPÖ) in the 1930 national election to the 1949 national election in all US and Soviet occupied districts in Austria. Vote shares in US occupied districts surged while votes in Soviet occupied districts decreased.
[7] In this paper, FPÖ (Freiheitliche Partei Österreich) denotes the entire right-wing camp in Austria since 1919. Right-wing parties in Austria include the following: Pan-German parties (before WWII), Verband der Unabhängigen (VdU), Bündnis Zukunft Österreich (BZÖ) and the Freedom Party of Austria (FPÖ) (after WWII). See section 2 or the online appendix for a detailed description.

Mueller (2005), the Soviet occupation forces did not attempt to control activities of the far right before its electoral victory in 1949. Quite the contrary, the Soviet occupation force supported the FPÖ within its zone, hoping to weaken the established parties.

Two main channels may explain persistent differences in right-wing voting across the former zone border. First, we rely on *geonomastics* (the science of regional clustering of surnames; see Shokhenmayer, 2010; Cheshire, Mateos and Longley, 2011) as a novel approach to trace current right-wing affiliation to past migration patterns: We compare more than 17,000 candidates' surnames from municipal council elections in Upper Austria in September 2015 with the pre-war spatial distribution of surnames based on phonebook entries from 1942 (*Reichstelefonbuch*). We find that the surnames of 2015 FPÖ candidates in the former US zone are significantly more prevalent in Soviet occupied regions compared with the surnames of candidates of other parties. The results thus provide a clear indication that migrant clans from the former Soviet zone are more actively engaged in the far right-wing party in their destination region than in moderate political parties. Second, we observe an earlier formation of local FPÖ party branches in Nazis' destination regions. Families and local party branches might thus act as social multipliers in shaping public opinion, and may explain why we find that right-wing votes increased (decreased) more than the number of local Nazis changed.

Our findings contribute to several further strands of the literature. First, the recent literature links past events and institutions to present socio-economic spatial patterns. The historical roots of present economic figures are well documented in Hall and Jones (1999), Glaeser and Shleifer (2002), Dell (2010), Acemoglu, Hassan and Robinson (2011), and Hornbeck and Naidu (2014). Other studies examine how historical circumstances affect cultural norms (Putnam, 1993; Tabellini, 2008, 2010; Alesina, Giuliano and Nunn, 2013; for a broader discussion, see Spolaore and Wacziarg, 2013). In developing countries, missionary activities (Nunn, 2010; Caicedo, 2014), colonialization (Acemoglu, Johnson and Robinson, 2001) and slave trade (Nunn, 2008; Nunn and Wantchekon, 2011) from the past still shape current cultural norms and attitudes toward trust. In Europe, current values, beliefs and attitudes toward trust and corruption have been shown to be based on events or institutions from decades or even centuries ago, e.g., medieval pogroms (Voigtländer and Voth, 2012), Italian city states (Guiso, Sapienza and Zingales, 2016), the long-gone Habsburg Empire (Becker et al., 2016), Nazi indoctrination (Voigtländer and Voth, 2015), the Holocaust (Grosfeld, Rodnyansky and Zhuravskaya, 2013) and the division and reunification of Germany (Ockenfels and Weimann, 1999; Alesina and Fuchs-Schündeln, 2007; Brosig-Koch et al., 2011; Heineck and Suessmuth, 2013). A causal effect of historical shocks on political economy outcomes, however, has not yet been established. Our study shows that electoral outcomes, shaped by events from the distant past, can persist over generations. Our empirical setting allows us to observe the evolution

of a causal effect over time. Previous studies use historical events to identify current geographic discrepancies in cross-sectional data. We can trace the effect of an exogenous shock on the political landscape over a period of almost a century. We further show that spatial differences in extreme voting behaviour increase or diminish depending on the political re-orientation of right-wing parties.

Second, and closely related, we present causal evidence for the historical roots of right-wing party voting. In recent decades, populist movements and right-wing parties all over Europe have gained increasing electoral support (Mudde, 2013).[8] Economists and political scientists have examined the determinants of populist right-wing voting behaviour. These studies link immigration to right-wing attitudes with respect to labour market conditions (Scheve and Slaughter, 2001; Mayda 2006), welfare state concerns (Dustmann and Preston, 2007; Hanson, Scheve and Slaughter, 2007; Facchini and Mayda, 2009; Card, Dustmann and Preston, 2012), criminality (Rydgren, 2008), or individual values and beliefs of voters (Hainmueller and Hiscox, 2007, 2010; Hainmueller, Hiscox and Margalit, 2015). Other studies link contact with foreigners (e.g., Schindler and Westcott, 2015; Halla, Wagner and Zweimüller, 2016; Steinmayr, 2016), social capital (Rydgren, 2011; Satyanath, Voigtländer and Voth, 2017), and economic shocks (Funke, Schularick and Trebesch, 2016) to right-wing votes. We show, by contrast, that an exogenous shock led to a selective migration pattern of political extremists, which substantially shaped voting behaviour over more than seven decades. In a related study, Fontana, Nannicini and Tabellini (2017) document long-lasting effects of the German Nazi occupation on communist voting in Italy for around four decades. We thus conclude that regional voting behaviour is not only a function of *current* economic and social circumstances but also a reflection of values that are inherited over generations. Moreover, our study provides evidence of a direct link between former Nazis and NSDAP members and current right-wing voting in a Western democracy.

Third, our study shows that migrants can pass on their political views to their descendants for at least three generations, and to local residents. To show this, we use surnames of party fellows. Dal Bó, Dal Bó and Snyder (2009), for example, use surnames to analyse the longevity of political dynasties in the US. Additional studies that use surnames either select specific surnames and follow them over generations (Clark, 2014) or just use the skewness of the surname distribution rather than

[8] The most prominent examples are the United Kingdom Independence Party (UKIP) in the United Kingdom, the Front National (FN) in France, the Lega North (LN) in Italy, the People's Party of Switzerland (SVP) and the Freedom Party of Austria (FPÖ). However, the Netherlands, Belgium, Sweden, Denmark, Finland, Greece, Germany and many other European countries have also witnessed an increase in the voting shares of far right-wing parties in recent years.

the surnames themselves (Güell *et al*., 2015; Güell, Rodríguez Mora, and Telmer, 2015).[9] Our study is – to the best of our knowledge – the first in political economy that directly links the historical distribution of surnames to current surnames of party fellows. We find that current-day FPÖ local party candidates in the former US zone (the Nazis' destination region) have surnames that are more prevalent in the former Soviet zone compared with candidates from other parties. We thus also add to the literature on the intergenerational transmission of values and beliefs. Existing micro-level studies show strong correlations between parents' and their children's attitudes (Dohmen *et al.*, 2012; Avdeenko and Siedler, 2016), while our study shows that values can survive for a time span of at least three generations. We also observe an earlier formation of local party branches in the former US zone. We thus conclude that family ties and local party branches might have acted as social multipliers of the sort noted by Glaeser, Sacerdote and Scheinkman (1996, 2003), Topa (2001), Calvó-Armengol and Jackson (2004) and Madestam *et al*. (2013). This finding goes far beyond previous studies that show that migrants conserve their inherited cultural norms of their regions of origin (Atkin, 2016) or that link crime rates and corruption to migrants' origins (Larzelere, 1988; Albrecht, 1997; Fisman and Miguel, 2007; Varese, 2011; Dimant, Krieger and Redlin, 2015).[10]

We will proceed as follows: In the next section, we provide an overview of the political landscape of Austria, with a special focus on the development of extreme right-wing parties since 1919. Section 3 provides the historical background of the zoning of Upper Austria and the spatial sorting of Nazis after WWII. Section 4 introduces our data and identification strategy. Section 5 presents our spatial RD results and show that our results hold under different robustness checks such as various polynomial fits, RD bandwidths, and different standard errors. Section 6 rules out channels other than Nazi migration that may influence right-wing voting. In section 7, we provide the transmission channels for persistence. Finally, section 8 offers concluding remarks.

2. Right-wing camp in Austrian politics

Austria is traditionally divided into three political camps: Social Democrats, Catholic Conservatives and a right-wing camp (Wandrszuka, 1954; Ignazi, 2003). The right-wing camp in Austria was based on a pan-German ideology (*Deutschnationale*) before WWII. This ideology survived WWII

[9] Collado, Ortuño-Ortín, and Romeu (2012), in addition, examine the spread of consumption preferences across regions based on the spread of surnames. Olivetti and Paserman (2015) look at the socio-economic status of families and Jurajda and Kovač (2016) examine the spread of nationalism based on first name choices.

[10] Migrants also transfer ideas, beliefs and attitudes back to their home countries, e.g., concerning democracy (Spilimbergo, 2009), institutions (Batista and Vicente, 2011; Docquier *et al*., 2016), fertility norms (Beine, Docquier and Schiff, 2013; Bartoli and Marchetta, 2015) or labour market participation (Piracha and Vadean, 2010).

and was prevalent in the formation of the post-WWII right-wing camp in Austria. According to Knight (1992), Luther (1997, 2000) and Ignazi (2003) there is a direct link between the pre-WWII right-wing pan-German parties – among them the Nazi party NSDAP – and the current Freedom Party of Austria (FPÖ). Figure 2 shows the evolution of vote shares casted for the far right in Upper Austria between 1919 and 2013 in national elections.

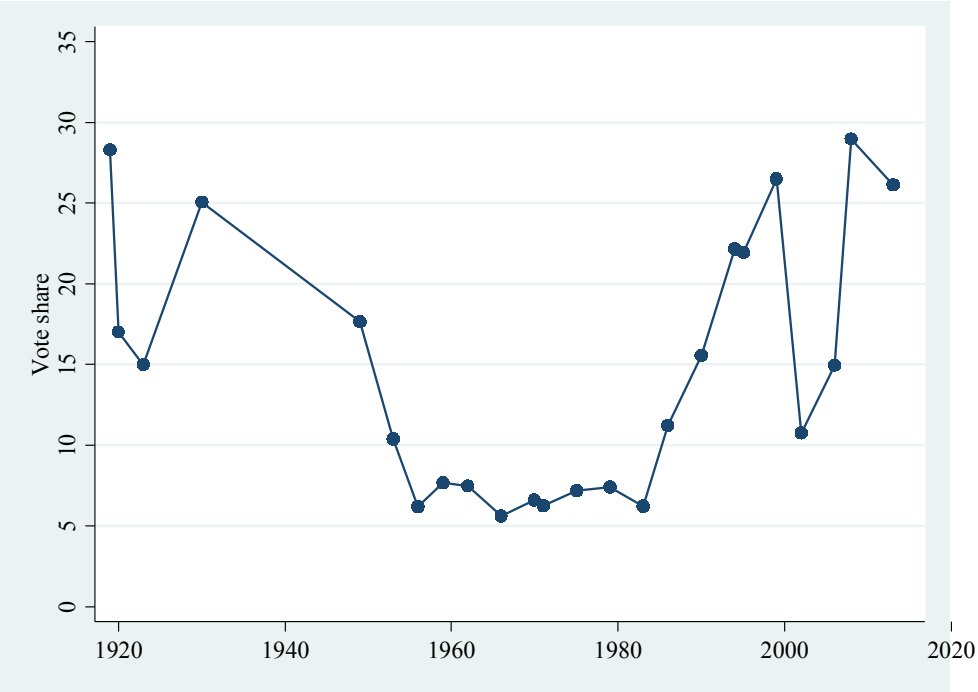

FIGURE 2. FPÖ VOTE SHARE IN UPPER AUSTRIA 1919–2013

Notes: This figure shows the mean vote share for the FPÖ (1919–1930: pan-German parties; 1949–1953: *VdU;* 2006–2013: FPÖ and *BZÖ*) in national elections in 442 Upper Austrian municipalities. Note that there were no democratic elections between 1930 and 1949 with FPÖ participation.

In the interwar period, pan-German parties constitute the right-wing camp. This camp rejected the idea of an Austrian nation state and enforced accession to the German *Reich*. Table A.2 in the online appendix gives an overview of the pan-German camp from the first national election in 1919 to the last democratic election prior to WWII in 1930. The Austrian branch of the National Socialist German Workers Party (NSDAP), "Hitler's movement" as it was called in Austria, was one of many parties that competed for votes in the pan-German camp.[11] The vote shares for the pan-German camp were the largest in the direct aftermath of WWI and varied little afterward (see Figure 2).[12] From 1934 until the accession of Austria to Nazi Germany in 1938, an authoritarian fascist government that was rooted in the Catholic Conservative camp came into power. During this autocratic

[11] The pan-German camp was split between proponents of autocracy vs. democracy and between workers and farmers (Burkert, 1995; Dostal, 1995; Jagschitz, 1995).
[12] Figure A.8 in the online appendix shows vote shares for all parties in Upper Austria in national elections from 1919 to 2013 for the US zone (southern Upper Austria) and the Soviet zone (northern Upper Austria) separately.

period, no elections were held and pan-German parties – especially the NSDAP – were banned. After the accession of Austria, however, the NSDAP was not only re-established but also the only permitted party in Austria. In 1945, approximately 13% of the Austrian population were officially Nazi affiliated (Stiefel, 1981).

After WWII, the Allies entirely consolidated the political landscape in Austria. Denazification was implemented. The NSDAP was banned, and three democratic parties were re-founded in 1945: The social-democratic SPÖ, the conservative ÖVP, which was rooted in the former catholic conservative camp, and the communist party (KPÖ). Allied denazification excluded more than 535,000 former Nazis (former members and membership candidates of the NSDAP, SA, SS, NSKK and NSFK)[13] from the first national election in 1945 (Stiefel, 1981). Furthermore, the formation of any right-wing party was prohibited. Due to several amnesties that began in 1947, approximately 90% of formerly registered Nazis became eligible to vote in the national election in 1949. However, a fourth party was founded in 1949. The so-called League of Independents (*Verband der Unabhängigen*, VdU) was formed by and for former Nazis, expellees and dissatisfied residents (Staeuber, 1974; Rathkolb, 1986; Luther, 1997; Pelinka, 2002; Ignazi, 2003). In the national election in 1949, the VdU gained more than 11% of all votes in Austria; in Upper Austria, the vote share was almost twice as high as the national result (21 % of all votes). After a somehow more liberal but brief period in the early 1950s, right-wing politicians transferred large parts of the VdU to the newly founded Freedom Party of Austria (FPÖ). In its early years, the FPÖ was more of a national-right party than the former VdU had ever been (Luther, 1997). Early FPÖ leaders played an active role as members of the NSDAP, the Nazi Army, the SA and the SS during WWII. The first two FPÖ leaders, Anton Reinthaller and Friedrich Peter, were both leading members of the NSDAP and the *Waffen*-SS. During WWII, Reinthaller acted as the NSDAP state secretary for food and agriculture, and Peter served as an officer in the *Waffen*-SS (Staeuber, 1974).

Until the mid-1980s, the FPÖ played only a minor role in Austrian politics and vote shares stagnate at around 5 to 6% (Figure 2). After a somehow more liberal party ideology in the early 1980s, the right-wing faction led by its charismatic leader Jörg Haider asserted more and more control over the liberal wing. Haider was elected as the party's leader in 1986 and started to run right-wing populist campaigns (Luther, 1997). Haider himself has never made any secret of his admiration for Nazi policies in the German *Reich* (Knight, 1992). During the 1990s, Jörg Haider became the icon

[13] The abbreviations are defined as follows: NSDAP: *Nationalsozialistische Deutsche Arbeiterpartei* (National Socialist German Workers Party); SA: *Sturmabteilung* (armed and uniformed branch of the NSDAP); SS: *Schutzstaffel* (the two major SS-branches are *Allgemeine-SS* (concerned with police and racial matters) and *Waffen-SS* (armed forces that consisted of combat units within the Nazi army)); NSKK: *Nationalsozialistische Kraftfahrkorp* (paramilitary sub-organization of the NSDAP with respect to motor vehicles); NSFK: *Nationalsozialistische Fliegerkorps* (paramilitary sub-organization of the NSDAP with respect to aviation).

of right-wing populism across Europe. FPÖ vote shares surged under Haider and climaxed in its landslide victory in 1999 (27%). Thereafter, the FPÖ vote share heavily decreased to 10% in 2002 after the FPÖ joined a coalition with the conservative ÖVP. Haider left the FPÖ after internal disputes in 2005 and formed the Alliance for the Future of Austria (*Bündnis Zukunft Österreich*, BZÖ). The FPÖ was led after 2005 by Heinz-Christian Strache, who shifted the party further to the far right (Luther, 2008, 2009). Today, the FPÖ uses strong nationalistic, anti-immigration and anti-Muslim rhetoric. Right-wing votes are increasing once again in Austria. In the national elections of 2008 and 2013, the right-wing populist camp gained more than 28% and 24% of all votes.

3. Upper Austria after WWII

3.1 Occupation of Upper Austria (1945–1955)

The Austrian state of Upper Austria is located in the northeast of Austria. It shares a border with Germany and the Czech Republic (prior to 1993: Czechoslovakia). After WWII, Upper Austria was the only Austrian state (with the exception of the capital of Vienna) that was divided into a US and Soviet occupation zone after WWII. Figure 1 shows Upper Austria within the realized occupation zones in Austria that lasted from 1945 to 1955. Note that all other zone borders with the exception of Upper Austria followed historical and pre-existing borders.

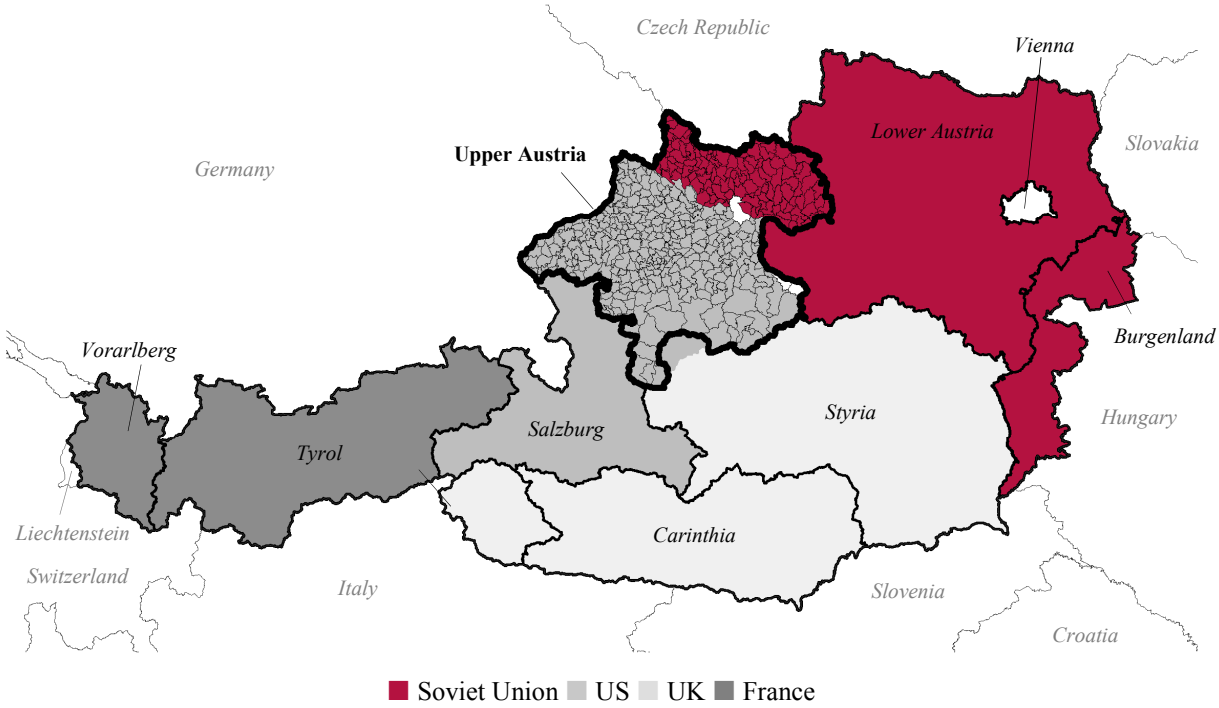

FIGURE 1. ALLIED OCCUPATION OF POST-WWII AUSTRIA, 1945–1955

Notes: This figure shows Austria and the four occupation zones from 1945 to 1955 within present external borders. The state of Upper Austria is highlighted with the boldest dark line. Black lines indicate state borders. Thin lines within Upper Austria depict municipal borders. The white areas within Austria indicate municipalities that were divided among the Allies. These are Austria's capital city Vienna, Upper Austria's capital city Linz and two small municipalities in the southwest of Upper Austria (Maria Neustift, Gaflenz). Maps of occupation plan proposals and the initial demarcation line at the end of WWII are provided in Figure A.1 for Austria.

The surprising and last-minute decision to divide Upper Austria was neither envisaged by the four allies (the US, Soviet Union, UK and France), nor was the division based on local economic or political issues or needs (Erickson, 1950). All proposed zoning plans from 1943 (Moscow Declaration)[14] until March 1945 assigned Upper Austria to a single occupation power (Erickson, 1950; Slapnicka, 1986). Figure A.1 in the online appendix shows the zoning proposals by different Allied forces as well as Upper Austria's initial liberation by US troops. Completely unexpectedly, the final and secretly negotiated division plan divided Upper Austria along the Danube River into a US and Soviet zone. The Soviets requested the northern part of Upper Austria to isolate Czechoslovakia from the US zone (Slapnicka, 1986).[15] The US agreed to the Soviet proposal in the final agreement

[14] The Moscow Declaration was signed in October 1943. The Foreign Ministers of the major Allies (the US, Soviet Union, and the UK) agreed to liberate Austria from Nazi Germany and to restore an Austrian state within the national boundaries of 1937 (Erickson, 1950; Stourzh, 2004).
[15] The Soviet proposal was issued to the Allies in April 1945. However, this plan was not provided to the public until the end of zoning negotiation in July 1945.

on July 9, 1945, after the Soviets accepted some US claims related to the zoning of Vienna (Erickson, 1950). Municipalities in the north of the Danube River were thus assigned to the Soviets, and the southern parts became part of the US zone.[16]

After the announcement of the occupation plan on July 9, 1945, US troops withdrew from parts of northern Upper Austria. Until August 8, the Red Army took complete control over northern Upper Austria. During the US withdrawal and prior to the Soviet invasion, migration across the assigned zone border was possible (Beer, 1991). Thereafter, crossing the zone borders was severely restricted. In October 1945, crossing the zone border became possible with a permit and an identity card. Border controls between the Soviet and the US zone were in force until September 9, 1953 (Slapnicka, 1986).[17] Upper Austria remained divided until the Austrian State Treaty (*Staatsvertrag*) was signed in 1955. Thereafter, Austria was fully restored as a sovereign state. Soviet forces completely withdrew from Upper Austria during summer 1955. The last Allied soldiers left Austria on October 25, 1955.

3.2 Nazi migration in the aftermath of WWII

The US zone in Upper Austria experienced two major Nazi immigration waves. The first wave was caused by the arrival of the Red Army in East Austria in the last weeks of WWII. The second wave occurred in July and early August in 1945 after formerly US occupied regions in northern Upper Austria were re-assigned to the Soviets. Table 1 depicts this unequal regional distribution of former Nazis after these immigration waves. In relation to total population, the US zone hosted 53% more registered Nazis and nearly three times as many Nazi elites than the Soviet zone. Stiefel (1981) and Schuster (2004) suggest that this finding is mainly driven by Nazi migration toward the US zone. In the following, we briefly discuss these two different waves of migrating Nazis.

The first wave of Nazi immigration was a direct result of the arrival of the Red Army in eastern parts of Austria (Hindinger, 1968; Stiefel, 1981). Rumours circulated that the Red Army planned to kill NSDAP members after the liberation of Austria. A commitment by Red Army Marshall Fjodor Iwanowitsch Tolbuchin in late March 1945, that ordinary members of the NSDAP would not be punished harshly (Hindinger, 1968), was not perceived as credible. Fearing the advancing Red Army, Nazis from eastern parts of Austria fled toward the West. A broad selection of anecdotal evidence of Nazis fleeing for the West is offered in the online appendix (Table A.1). Escapes reached a peak in the last months of WWII, especially in March and April 1945. By May 9, 1945, Austria was entirely liberated from Nazi occupation (Iber *et al*., 2008). The front line where the Red

[16] Upper Austria's capital city of Linz was divided along the Danube River, too. Due to geographical constraints, two smaller municipalities in southwestern Upper Austria (Maria Neustift, Gaflenz) were also divided into a US and Soviet occupied part.
[17] Border controls between the Western occupation zones were abolished in 1947.

and the US armies met in May 1945 roughly corresponded with the eastern external border of Upper Austria (see the left-hand map in Figure A.2 in the online appendix).

During WWII, Upper Austria was considered to be a safe haven for Nazis; this remained true until July 1945. Note that all occupation plans issued after August 1944 allocated all of Upper Austria to the US zone. Thus, during the final weeks of WWII, parts of the Nazi Army fled from Vienna and Lower Austria toward Upper Austria (Hindinger, 1968). For example, the military combat unit *Heeresgruppe Süd* escaped the advancing Red Army beyond the River Enns in Upper Austria hoping that they would be overrun by the US rather than by the Red Army. In addition, NSDAP members from eastern parts of Austria escaped the advancing Red Army and fled to the West. For example, the NSDAP leader of Vienna, Hans Dörfler, fled to Upper Austria in April 1945 escorted by approximately 400 Nazi fellows (Seliger, 2010). Most of these Nazi refugees never returned to their home region even after the end of the occupation period in 1955. For example, about one-third of former Nazis on the local council in Vienna stayed (and died) in southern and western regions of Austria (Seliger, 2010).[18]

The second wave of (Nazi) migration was prompted by the surprising last-minute division of Upper Austria into a US and Soviet occupation zone. First, rumours that the Russians were seeking to take over northern Upper Austria circulated on July 2, 1945 in Linz (Beer, 1991). At this time, most of northern Upper Austria was still controlled by the US. Until the withdrawal of the US army between July 27 and August 3 and the takeover by the Red Army until August 8, 1945 (see Figure A.2 in the online appendix), people were relatively free to migrate toward the South (Leimlehner, 1974). The US Office of Strategic Services (OSS) estimated that 25,000 people crossed the planned zone border in Linz within a single day (Beer, 1991). Other estimates of the OSS document indicated 4,000 to 5,000 refugees within one day. Slapnicka (1986) states that approximately 900 dwellings became vacant in the Soviet occupied part of Linz (Urfahr) alone. However, broad anecdotal evidence indicates that this population flow was biased towards Nazis (see Table A.1 in the online appendix for an overview).[19] In particular, former members of the NSDAP and other Nazi organizations were in favour of the US zone because they feared harsher punishment and persecution within the Soviet zone (Hindinger, 1968; Stiefel, 1981). Nazis may have feared Soviet retaliation due to the mass killing of Soviet prisoners in northern Upper Austria in February 1945 ("*Mühlviertler Hasenjagd*"),

[18] Although Nazis preferred the US occupation zone (Iber *et al*., 2008), there were other Austrian territories that were liberated by the Western Allies that faced a Nazi influx at the end of the war.

[19] Note that in addition to the influx of Nazis, the US zone in Upper Austria was a favoured place for internal and external refugees and expellees in general. Population size increased enormously during the first month after WWII. Slapnicka (1986) estimated that the resident population in May 1945 was 950,000 and that it hosted about 1 to 1.2 million refugees and 150,000 Allied soldiers. However, most of these temporary residents left Upper Austria within a couple of months. We control for the potential channel of refugees on FPÖ voting shares in section 6.

when local Nazi affiliates hunted and slaughtered around 500 Soviet prisoners escaping from the Mauthausen-Gusen concentration camp (Gusenbauer, 1992). According to Hindinger (1968), most fleeing families were affiliated with the former Nazi party. Schuster (2004) concludes that Nazi elites who feared being exposed to Soviet punishment left the regions that were assigned to the Soviets in Upper Austria. Return migration after the autumn of 1945 took place on a moderate scale, but it was even less likely for the Nazis (Stiefel, 1981). As shown in Table 1, Schuster (2004) and Stiefel (1981) show a dramatically higher share of Nazi elites (the so-called "*Belastete*") in the US zone in relation to the overall number of registered Nazis according to the "Act against Nazi activities" (*Nationalistengesetz*).[20] This indicates that Nazi elites in particular, and therefore the extreme ideologists, favoured the US zone. To summarize, Upper Austria is a unique case of a clearly divided region with a high density of Nazis (US occupation zone) and a low density of Nazis (Soviet occupation zone). In the following sections, we present evidence that the post-war Nazi migration to southern Upper Austria has had an impact on right-wing voting to the present day.

4. Empirical strategy

4.1 Identification strategy

We test whether post-war Nazi migration impacts the spatial distribution of right-wing voting outcomes in national elections. We employ a spatial regression discontinuity (RD) approach (e. g., Dell, 2010; Schumann, 2014; Egger and Lassmann, 2015; Becker *et al*., 2016) in order to identify geographical discontinuities in right-wing vote shares between US and Soviet occupied municipalities in Upper Austria. RD controls for unobservable heterogeneity across treated and non-treated units that are arbitrarily close to each other (Imbens and Lemieux, 2008). In general, the RD approach is able to address spatial clustering of unobservables at its best. Our baseline model uses the distance to the Danube River (constituting the zone border) as a single-dimensional running function. We estimate a cross-section RD for all national elections between 1919 and 2013 as follows:

$$s_i = \alpha + \beta US_i + [\gamma_1 d_i + \gamma_2 (US_i \times d_i) + \gamma_3 (d_i \times d_i) + \gamma_3 (US_i \times d_i \times d_i)] + X_i' \delta + \varepsilon_i \qquad (1)$$

s_i denotes a party's vote share in national elections in municipality i. US_i is a dummy variable that equals one if a municipality is located in the US zone and zero otherwise (Soviet zone). Our treatment effect at the threshold is captured by coefficient β. Hence, β can be interpreted as the shift in a party's vote share as a result of marginally crossing the zone border from the Soviet to the US

[20] According to the denazification law (*Nationalistengesetz*), "*Belastete*" were mainly former Nazis that were affiliated with the NSDAP prior to the accession of Austria to Nazi Germany. Therefore, the *Nationalistengesetz* distinguished between Nazis of conviction (old members) and NSDAP members who joined the party due to economic reasons or due to social pressure after the accession (new members). "*Belastete*" (in this paper: Nazi elites) account for approximately 10% of all registered Nazis after WWII (Stiefel, 1986; Schuster, 2004).

zone. The term in square brackets represents the RD polynomial that controls for smooth functions of geographic location. Herein, d_i measures the geographical distance in kilometres of municipality i to the Danube River. In our baseline specification in equation (1), we allow for a quadratic form of our running variable on both sides of threshold and limit our sample to 239 municipalities that are located ± 30 km to the zone border. 30 km is roughly the maximum distance to the Danube River we observe in the North of Upper Austria. Limiting the bandwidth to a maximum of 30 km ensures a quite homogenous sample of closely located municipalities, and a well-balanced number of US and Soviet occupied municipalities (for a graphical impression, see Figure A.2 in the online appendix). We also run several robustness checks where we vary the polynomial orders, RD bandwidths, and regional subsamples and use multidimensional interactions with longitude and latitude as proposed by Dell (2010). X_i is a vector of socio-demographic, economic structure and geography control variables. α is a constant. ε_i is the error term. We apply standard errors adjusted to spatial correlation as proposed by Conley (2008) to account for potential spill-overs between municipalities (e.g., commuters, joint party campaigning).[21]

We can show that all relevant identifying assumptions for a spatial RD approach seem to be met (Lee and Lemieux, 2010). First, the location of the zone border has to be arguably exogenous. In our case, the zone border, i.e., the Danube River, does not coincide with any historical border, nor was it foreseeable before the official announcement of the occupation plan on July 9, 1945. As we outline in section 3.1, the last-minute division of Upper Austria was unexpected and entirely driven by military considerations of the Soviet Union (ensure access to the full borderline to Czechoslovakia). Further concerns may apply to the fact that the later Soviet zone highly coincides with the historical region of the *Mühlviertel* as one of the four sub-regions of Upper Austria.[22] We address this issue in several ways. First, the four historical regions were rather seldom used statistical units without an own form of government. Second, boundaries are somewhat fuzzy. One example is publications of election outcomes: Neither before WWII nor after WWII does the statistical unit of the *Mühlviertel* fully coincide with the later Soviet zone. The same applies to present-day NUTS-3 regions of Upper Austria, which in turn defines eligibility for European Union structural funds. Third, we will later use both the *Innviertel* as another historical region of Upper Austria and the Traun River as another natural border within Upper Austria (like the Danube River) as robustness checks. We find no pre- or post-WWII spatial discontinuity in vote shares either at the border of the highly right-wing affiliated *Innviertel* or across the Traun River.

[21] We are highly indebted to Stefano DellaVigna for this suggestion. We use the Stata command provided by Hsiang (2010) and limit the spatial correlation cutoff to 10 km. Our results also hold under standard errors robust to heteroscedasticity.

[22] Today, there is some common cultural identity as expressed by an own TV channel (Mühlviertel TV). Present-day identity, however might be endogenous to the zoning of Upper Austria from 1945 to 1955.

As a second identifying assumption, our units of observation (municipalities) should not be able to manipulate the assignment variable. Municipalities were not able to self-select into occupation zones. Upper Austria was zoned by the Allies without consideration for Austrian internal requests (Erickson, 1950). We can thus exclude problems of self-selection.

Third, we test whether further observable characteristics beside election outcomes vary smoothly across the zone border. To draw strong implications from our RD identification, exogenous control variables should be continuous at the RD threshold for the pre-treatment period. Table 2 shows the variation in covariates at the zone border based on 1934, 1939, 1951, and recent census data. Paralleling our baseline analysis, we use municipalities that are located ± 30 km to the zone border and apply Conley (2008) standard errors. We do not observe any spatial discontinuity in observable socio-demographics, economic structure, geography or further characteristics before and after WWII.[23] Most importantly, neither voter turnout, unemployment rates (unavailable for 1939 and 1951), nor eligibility for EU structural funds differs between municipalities at the southern and at the northern bank of the Danube River. Furthermore, differences in local tax revenue that represent the local income level do not turn out to be significant. We conclude that municipalities close to the zone border were and are highly comparable in terms of economics.

[23] In an earlier working paper version, we document some spatial discontinuities when we use all municipalities of Upper Austria (see Ochsner and Roesel, 2016). As we limit the sample to municipalities close to the zone border, however, these effects vanish.

TABLE 2. CONTINUITY OF COVARIATES ACROSS THE DANUBE RIVER

	RD			
	1934	*1939*	*1951*	*2013*
	(1)	(2)	(3)	(4)
Socio-demographics				
Population (in 1,000)	-0.57	-0.74	-0.57	-0.73
	(0.76)	(0.87)	(1.05)	(2.06)
Share of foreigners	4.70		9.00*	1.53
	(5.40)		(4.62)	(1.86)
Share of protestants[a]	6.25		6.74	4.46
	(4.98)		(5.07)	(3.45)
Share of Jews[b]	-0.02		-0.02	-0.02
	(0.02)		(0.02)	(0.02)
Economic structure				
Share of agrar	7.29	9.71	8.02	1.49
	(9.54)	(9.64)	(8.86)	(1.73)
Share of industry	-6.39	-8.02	-6.09	3.64
	(5.94)	(5.60)	(4.51)	(3.59)
Share of retail/transport	-1.06		-3.95	3.20
	(2.33)		(2.96)	(2.90)
Share of public administration	1.69		0.45	-0.71
	(1.23)		(0.80)	(1.09)
Share of other services	-0.06		0.04	-3.24
	(0.54)		(0.60)	(5.02)
Geography				
Share of settlement area	-4.72	-4.97	-4.66	-4.66
	(8.15)	(8.14)	(8.19)	(8.19)
Distance to external border	-0.57	-0.83	-0.67	-0.67
	(8.40)	(8.42)	(8.38)	(8.38)
Mean altitude	32.06	36.25	32.72	32.72
	(79.29)	(79.65)	(79.48)	(79.48)
Altitude range	-29.13	-25.97	-29.37	-29.37
	(59.32)	(58.21)	(59.47)	(59.47)
Further variables				
Voter turnout	-1.99		-0.05	1.40
	(2.27)		(1.24)	(1.56)
No votes in theatre referendum 2000				-1.28
				(1.63)
No votes in military service referendum 2013				5.68
				(4.14)
Voter turnout (EU election 2014)				-1.55
				(2.29)
EU funding				-0.06
				(0.43)
Unemployment rate[b]	-0.62			-0.10
	(2.23)			(0.28)
Local gov. expenditures per capita				90.48
				(127.40)
Local tax revenue per capita				67.65
				(89.91)
Local gov. debt per capita				-72.88
				(489.29)

Notes: In this table, we test for spatial discontinuities in various covariates using a quadratic interacted RD polynomial with respect to the distance to the Danube River at the level of 239 municipalities (± 30 km to the Danube River). Covariates regarding socio-demographics and economic structure are obtained from the national census in 1934 (for 1930 election), 1939 (last census before WWII), 1951 (1949) and 2011 (2013). Time-invariant geography covariates change slightly due to differences in the number of observations due to different territorial status in the 1934 and 1939 census. The rate of unemployment at the municipal level is not available for the decades around WWII. a) Denomination only available up to 2001. b) Share of Jews 2013: Robust standard errors because Conley standard errors are not feasible. c) 1934: Share of population without occupation. Significance levels: *** 0.01, ** 0.05, * 0.10 (Conley standard errors).

We also test whether social capital differs across the zone border. As no microdata on trust and cultural attitudes are available at the municipal level, we use election data instead. Voter turnout in the EU 2014 election is a rough proxy for European identity; the share of no votes in two referenda held in 2000 (construction of a new state theatre) and 2013 (abolishment of the military service) give some idea of values regarding culture and "civic duty". Again, none of the variables show significant discontinuity. The sole exception among all variables is the share of foreigners in 1951 that varies discontinuously at the demarcation line after WWII (10% level), but not in 1930 and 2013. The share of foreigners was higher in the US zone in 1949 because of external refugees that potentially may affect our results. However, we control for the share of foreigners, and we employ further robustness tests later on to rule out the potential channel of external immigration on differences in right-wing vote shares. Altogether, since all assumptions seem to be met, spatial RD is thus a powerful approach to estimate the (local average) treatment effect at the occupation zone border.

4.2 Data

We use municipal-level data for all democratic national elections in Austria. As we outlined above (see section 2), the FPÖ gave former Nazis a new political home after WWII. We thus focus on vote shares for the FPÖ (and its predecessors) as the main dependent variable. We collect pre- and post-WWII political economy data from several historical sources. Municipal-level data on the outcomes of all 26 national elections between 1919 and 2013 have been obtained from official electoral publications.[24] We code a party as "right-wing" according to Burkert (1995), Dostal (1995), Hänisch (1998) and Jagschitz (1995) for the interwar period and Luther (1997) and Mudde (2013) for the post-WWII period.[25] We collect municipal-level data regarding socio-demographics (population, number of foreigners[26], religion) and the economic structure of residents from official census publications of the Statistical Office of Austria for the years 1934, 1939, 1951 and 2011.[27] We end up with a full set of covariates on the municipal level close to the three elections of main interest. These include the national election in 1930 (the last democratic election prior to the autocratic regime takeover in 1934 and the accession to Nazi-Germany in 1938), the first post-WWII election in 1949 where the FPÖ was permitted to compete, and the most recent national election in 2013.

[24] We are highly indebted to the Archives of Upper Austria for providing raw data from the DORIS (Digitales Oberösterreichisches Raum-Informations-System) database on request.

[25] In particular for the interwar period, a distinction between the right-wing and national-conservative camp is not always applicable. Our results, however, do not differ under different definitions of right-wing.

[26] The number of foreigners is not available for the years 1934 and 1939 at the municipal level. For 1934, we use the ratio of present population to resident population instead.

[27] Data sources used include the following: for 1934: *Die Ergebnisse der Österreichischen Volkszählung vom 22. März 1934, Heft 5*; for 1939: *Ergebnisse der Volks-, Berufs- und landwirtschaftlichen Betriebszählung 1939 in den Gemeinden vom 17. Mai 1939, Heft 13: Alpen und Donau-Reichsgaue;* for 1951: *Ergebnisse der Volkszählung vom 1. Juni 1951 nach Gemeinden, Heft 8;* for 2011: *Ein Blick auf die Gemeinde* retrieved from StatistikAustria. Due to a lack of more recent data, we use 2001 data for religious denomination.

Table A.3 in the online appendix reports descriptive statistics for the national elections in 1930, 1949 and 2013 and the related covariates of the full sample. To make results comparable, we follow the mergers of municipalities over time.[28] All data have been transformed to the 2015 territorial status.

In section 7, we employ additional data. We collected the names of more than 17,000 candidates that ran for municipal council elections in September 2015 as well as phonebook entries from the *Reichstelefonbuch* 1942. We also collect data on airstrike campaigns during WWII, locations of refugee camps, and the number of Nazis before and after WWII. We explain the data in the respective sections in more detail.

5. Results

5.1 Baseline

We inspect RD graphs before addressing regression outputs. Figure 3 depicts the geography of right-wing electoral outcomes in Upper Austria at the municipal level (maps on the right-hand side) and the corresponding RD graphs on the left-hand side. We plot municipalities' distances to the Danube River against FPÖ vote shares, and we include a quadratic interacted polynomial fit. The maximum bandwidth is ± 30 km to the Danube River as the 1945–1955 zone border. Negative (positive) distances are used for municipalities temporarily occupied by the US (Soviet Union). The upper graphs show the vote shares for FPÖ in the last democratic national election before the autocratic regime and the accession to Nazi-Germany and WWII in 1930. Centre graphs show the first national election with FPÖ participation after WWII in 1949. The bottom graphs depict FPÖ vote shares in the most recent national election in 2013. Southern Upper Austria (i.e., the later US zone) already appears to be more affiliated with right-wing ideology in the pre-WWII period. However, we observe a smooth decline in FPÖ electoral outcomes from the Southwest to the Northeast in the 1930 election without any discontinuity at the later zone border. By contrast, the results of the 1949 and even the 2013 national election show a clear and significant discontinuity at the Danube River between the US and Soviet zone in post-WWII Austria. Thus, even 60 years after the 1949 election, the same spatial pattern in right-wing votes can be observed in present days.

[28] The number of municipalities decreased from 515 in the 1930s to 442 in 2015. We use the 2015 territorial status for our estimates. However, some municipalities have been merged to larger units in the census data for 1934 and 1939, which slightly decreases the number of observations for the pre-WWII period.

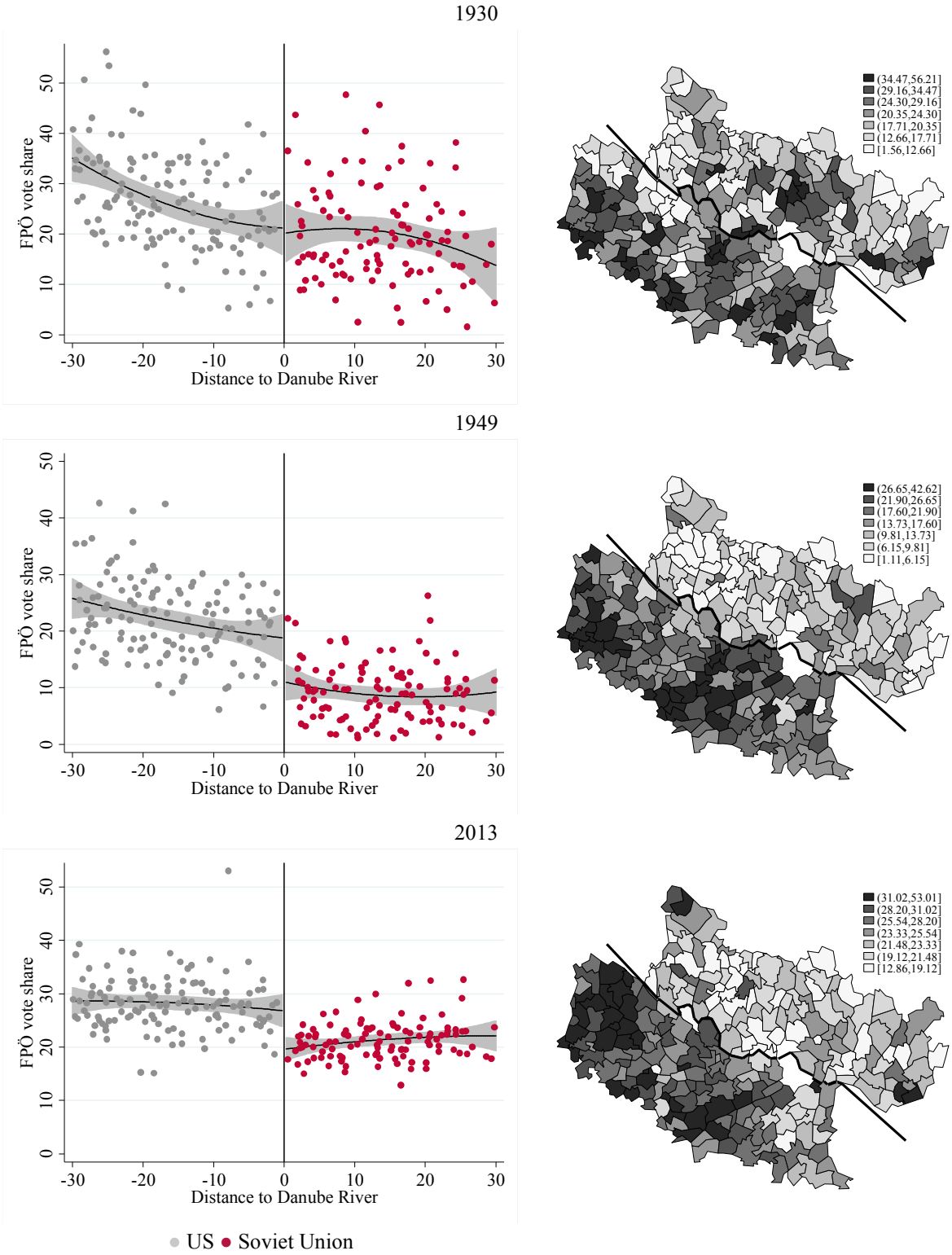

FIGURE 3. FPÖ VOTE SHARES IN NATIONAL ELECTIONS 1930, 1949, AND 2013

Notes: These figures depict vote shares for the FPÖ (1930: pan-German parties, 1949: *VdU*) in 239 municipalities (± 30 km to the Danube River) of the state of Upper Austria in the national elections of 1930, 1949 and 2013. The right-hand maps visualize the spatial distribution of the vote shares. The bold black line is the Danube River, which was the US-Soviet occupation zone border from 1945 to 1955. Figures on the left show municipal FPÖ vote shares with respect to the distance to the Danube River. Negative (positive) distances represent for US (SU) occupied municipalities. Grey shaded areas indicate the 95% confidence band of quadratic polynomial in distance to the Danube River.

These results are in line with the anecdotal reports of large-scale Nazi migration after WWII. The US zone appeared to be a safe haven for Nazis. Marginally crossing the zone border from the northern to the southern side of the Danube River may not matter in terms of geographical distance but indeed matters in terms of expected retaliation and occupation policy. A Nazi who migrated from the Soviet-occupied North to the US-occupied South lowered right-wing vote shares in northern Upper Austria and increased vote shares in the southern zone.[29]

We now turn to our regression tables that include further controls. Table 3 presents RD estimations with a quadratic interacted polynomial fit for the national elections in 1930, 1949 and 2013. Columns (1) to (3) cover the RD plots of Figure 3. The results read as follows: FPÖ vote shares vary smoothly at the zone border in the interwar period as indicated by the insignificant treatment dummy US (column (1)).[30] After WWII, the treatment effect is highly statistically significant. Switching from a border municipality in the Soviet zone to its adjacent municipality in the US zone increases FPÖ votes on average by 7.7 percentage points in 1949 (column (2)) and 7.2 percentage points in 2013 (column (3)). Columns (4) to (6) show that all results hold when we add controls for the socio-economic characteristics of municipal residents and time-invariant geographic controls (columns (7) to (9)). In column (10), we add further relevant control variables that are available in present days only. These are the eligibility for EU funding, unemployment rates and local tax revenues.[31] Adding covariates to our model somewhat changes the magnitude of the treatment effect, especially for the 1930 and the 1949 election; but all findings remain robust under these specifications.

[29] One crucial assumption that Nazis impact right-wing voting across the border is that migrating Nazis did not avoid settling in municipalities close to the zone border. Generally, the zone proposal in July 1945 was credible; the Soviets never discussed an enlargement of their zone (Erickson, 1950; Cronin, 1989). Additionally, the Soviets were credible in reassigning occupation zones; e.g., the Soviets started to withdraw their forces already in July 1945 from their liberated regions in Styria, which had been reassigned to the UK occupation zone (Iber *et al*., 2008). Thus, the zoning announcement was considered credible for both residents as well as migrating Nazis.

[30] Vote shares also vary smoothly at the zone border if we consider all right-wing parties in 1930 separately. Four parties constitute the right-wing camp in 1930 (see Table A.2). Voting shares of LBd, SCHO and HB do not show any discontinuity. Voting shares of the NSDAP are 1.1 percentage point *lower* in southern Upper Austria in 1930, which is significant at the 10% level if we use a quadratic RD fit. The effect turns out to be insignificant for linear and cubic RD specifications. However, a discontinuity would not harm our results at all. *Lower* NSDAP voting shares in southern Upper Austria in the interwar period give an even higher treatment effect due to Nazi migration.

[31] For a graphical illustration, see Figure A.3 in the online appendix.

TABLE 3. BASELINE RESULTS

	Dependent variable: FPÖ vote share									
	RD			*RD (controls included)*						
	1930	*1949*	*2013*	*1930*	*1949*	*2013*	*1930*	*1949*	*2013*	*2013*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	1.07	7.74***	7.20***	-0.28	7.94***	5.10**	0.25	7.29***	4.59**	4.78**
	(5.80)	(2.53)	(2.11)	(5.51)	(2.06)	(2.14)	(5.26)	(2.21)	(1.92)	(1.86)
Population				-0.47	-0.14	0.01	-0.50*	0.03	0.07*	0.03
				(0.29)	(0.11)	(0.04)	(0.30)	(0.12)	(0.04)	(0.04)
Share of foreigners				-0.01	0.02	0.26***	-0.01	-0.02	0.12	0.02
				(0.03)	(0.05)	(0.10)	(0.02)	(0.05)	(0.12)	(0.13)
Share of protestants				0.26***	0.20***	-0.03	0.16*	0.30***	0.13*	0.12*
				(0.08)	(0.05)	(0.07)	(0.08)	(0.02)	(0.07)	(0.06)
Share of Jews				13.76	6.51*	2.69	13.41	3.90	0.12	1.79
				(12.46)	(3.64)	(6.25)	(11.48)	(3.80)	(5.75)	(6.06)
EU funding										0.25
										(0.80)
Unemployment rate										0.87
										(0.58)
Local tax revenue per capita										0.003
										(0.002)
Constant	20.12***	11.02***	19.59***	18.10***	3.13	17.84***	15.60	18.56***	23.78***	23.07***
	(4.74)	(2.29)	(1.17)	(6.50)	(2.64)	(2.48)	(12.19)	(5.78)	(4.12)	(4.13)
Economic structure controls	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geography controls	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Obs.	236	239	239	236	239	239	236	239	239	239
Adj. R²	0.88	0.89	0.97	0.89	0.91	0.98	0.89	0.92	0.98	0.98

Notes: The coefficient *US* represents the spatial discontinuity in FPÖ vote shares (quadratic interacted RD polynomial) across the Danube River at the level of 236 (for 1930) and 239 municipalities (± 30 km to the Danube River) in the national elections of 1930, 1949, and 2013. Columns (1) to (3) show the results without controls; in columns (4)–(6), we include socio-demographic (population in 1,000, population share of foreigners, protestants, and Jews) and economic structure controls (sectoral shares of industry, retail/transport, public administration, and other services), and in columns (7)–(9), we add geographic controls (share of settlement area, distance to external border, mean altitude of a municipality, min-max altitude range within a municipality, and a border segment dummy for municipalities west of longitude 14°). In column (10), we add further controls that are available for the year 2013 only. Significance levels: *** 0.01, ** 0.05, * 0.10 (Conley standard errors).

Several covariates are correlated with FPÖ vote shares. First, the share of Protestants is a well-acknowledged factor for right-wing voting (Hänisch, 1998) and turns out to be statistically significant in most specifications. Second, the share of foreigners is found to be a crucial determinant for right-wing voting as shown in Dustmann and Preston (2007), Rydgren (2008) or Halla, Wagner and Zweimüller (2016). We find a correlation between FPÖ voting and the municipal share of foreigners for the national elections in 2013, but not in 1949 (column (5) and (6)). Thus, the massive increase in the share of foreigners due to external refugees and expellees in the US zone after WWII cannot explain the 1949 discontinuity in FPÖ vote shares. Finally, we control for local unemployment, income (proxied by local tax revenue), and eligibility for EU funding. None of these variables exhibit any explanatory power for FPÖ vote shares in 2013.

At a first glance, testing is conducted regarding whether pre- and post-WWII spatial (dis)continuities in FPÖ vote shares (i.e., the coefficients *US* in Table 3) appear to be a natural extension of our analysis. We perform a difference-in-discontinuities estimation in the fashion of Grembi, Nannicini and Troiano (2016). Results indicate a statistically significant difference of the dummy *US* when

we compare the 1930 to the 1949 election.[32] We find no statistically significant difference between the spatial discontinuity in 1930 and in 2013 because of the large-scale variation in FPÖ vote shares across the Danube River in the 1930 election (see upper left-hand graph in Figure 3). However, inferences of a difference-in-discontinuity estimation are not very conclusive in the context of our study. The method is designed to compare the change in (at least) two working discontinuities. However, we explicitly do *not* expect any discontinuity in the case of the 1930 national election and would therefore compare a non-discontinuity to a discontinuity. Thus, we do not overstate the mentioned difference-in-discontinuity results, which should be treated with great caution.

We also test spatial discontinuities in vote shares for other parties and in voter turnout. By definition, a discontinuity in FPÖ vote shares has to correspond with a reciprocal discontinuity in the sum of vote shares for all other parties. Vote shares for *individual* parties, however, do not necessarily have to exhibit a statistically significant jump at the border line when variation along the border is large. Table A.5 in the online appendix shows the RD results for the other two main political camps in Austria, the Social Democrats (SPÖ) and the Catholic Conservatives (ÖVP), as well as for the Green party (Grüne) founded in 1983, and all other remaining parties. Because of large-scale variation in SPÖ and ÖVP vote shares along the zone border, none of the national elections yields a discontinuity that turns out to be significant. The sole exception is the 1949 national election for which we find a negative discontinuity in SPÖ vote shares at the zone border that is statistically significant at the 10% level. We also find significantly negative discontinuities for the Green party in the first years after the party was founded but not in more recent elections and for voter turnout in some nonconsecutive elections.[33] This indicates that the randomly drawn occupation zones trigger right-wing votes but do not affect voting behaviour in favour of any main party. Other parties do not play a role in Upper Austrian politics; the four main parties, FPÖ, ÖVP, SPÖ, and Grüne, account for 98.2% of total vote shares between 1919 and 2013 on average. Total vote shares for other parties are somewhat discontinuous in the 1950s. Among these parties, the Communist party (KPÖ) gained 0.3% of all votes in the 1930 national election, 3.1% in the 1949 election, and 0.8% in the 2013 election in Upper Austria. The KPÖ never passed the minimum threshold of votes required for the Upper Austrian state parliament in any election before WWII and after WWII. We find some significant spatial discontinuities in KPÖ vote shares in 1945 and 1949, but the effect decreases soon afterwards.

[32] We use robust standard errors. Results available upon request.
[33] In 1945, however, voter turnout was around 3 percentage points lower in the US zone. This might indicate that some of the electorate are unhappy with the offered options to vote for (the right-wing camp was not allowed to compete) and abstain from voting.

5.2 Evolution of the treatment effect and persuasion rates

So far, we have shown the effects in the 1949 and 2013 election outcomes. We extend our RD baseline model without controls to all 26 democratic national elections between 1919 and 2013 to trace the effect over time.[34] The left-hand graph of Figure 4 shows the evolution of the treatment effect that is equivalent to the spatial discontinuity in FPÖ vote shares in Figure 3 or Table 3 (coefficient denoted by US). We find that the FPÖ vote share is significantly disruptive at the zone border for almost the entire post-WWII period, the more liberal period that starts in the 1970s being the exception. By contrast, we do not find a significant discontinuity in any pre-WWII election. Note that the U-shaped pattern of border differentials is mainly triggered by the weak FPÖ election performance between the 1960s and the mid-1980s.

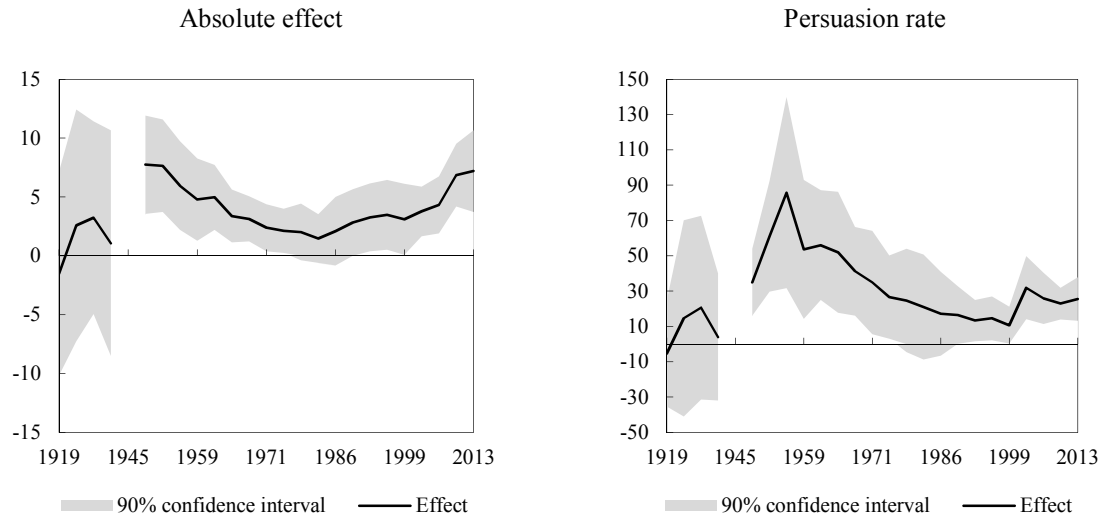

FIGURE 4. EVOLUTION OF THE TREATMENT EFFECT

Notes: The left-hand figure shows the evolution of the spatial discontinuity across the Danube River (quadratic interacted RD polynomial) in FPÖ vote shares between 1919 and 2013 at the level of 239 municipalities (± 30 km to the Danube River). The specification refers to columns (1) to (3) in Table 3. The right-hand figure depicts the persuasion rate (absolute effect divided by mean vote share in the former US zone). Dashed lines represent the 90% confidence interval (Conley standard errors).

We account for the comparably weak FPÖ results by computing persuasion rates. We define persuasion as the share of votes in southern Upper Austria (maximum distance of 30 km to Danube River) that can be explained by the treatment effect, i.e., the treatment effect over the mean vote share in the US zone. The right-hand graphs of Figure 4 and column (7) in Table A.5 (online appendix) plot the persuasion rate for the US zone. Again, there is no significant effect before WWII. After WWII, we found the largest persuasion in the national election of 1956. In this election, the newly founded FPÖ competed as the remaining extreme right-wing and Neo-Nazi branch of the

[34] The 1927 election has to be dropped because pan-German parties and the Conservatives have a common electoral list.

dissolved VdU (Luther, 1997; Pelinka, 2002). Afterwards, the effect diminishes throughout the entire WWII period until the mid-2000s, when the party becomes more radical and populist again. Beginning in 2002, persuasion resurges. In the most recent 2013 election, around 1 out of 4 votes (26%) in the former US zone can be attributed to former Nazi migration. Thus, spatial differences seem to depend on the political re-orientation: former Nazi migration materializes in times of a strong right-wing strategy of the FPÖ and vanishes in more liberal times.

To underpin this finding, we also estimate a difference-in-differences model where we compare all post-WWII elections to the 1930 national election in municipalities. We include municipality fixed effects, year fixed effects, and a dummy variable that equals 1 in US occupied municipalities after WWII (zero otherwise). Because we include a US dummy instead of a polynomial, we reduce the maximum distance to the Danube River to a very narrow bandwidth of 10 km to the Danube River. Difference-in-differences estimates corroborate all findings so far. We find a statistically significant increase in FPÖ vote shares of 3.5 percentage points in US occupied municipalities after WWII (see Table A.6, column (1)). Stratifying the post-WWII period by ideological orientation, however, yields significant effects for the Neo-Nazi period in the direct aftermath of WWII and for the present right-wing populist period but no significant effects for the liberal era in the 1970s/1980s. We therefore document some non-linearity in the evolution of the treatment effect.

5.3 Robustness checks

We conduct a bunch of robustness checks that are available in the online appendix (Table A.4). We test different polynomial fits and RD bandwidths, use longitude and latitude as multidimensional running variables, and test different standard errors (different spatial cutoffs for Conley standard errors, robust standard errors), regional subsamples, and pseudo-occupation assignments. We also address the specific location of the Soviet occupation zone in Upper Austria. Rows B to R in Table A.4 present the results of these specifications in comparison to our baseline results in row A. Columns (1) to (3) show robustness checks without controls; columns (4) to (6) include the full set of municipal control variables as presented in Table 3, columns (7) to (9). Figure A.4 provides a graphical impression for each of our robustness checks.

Rows B and C report the treatment effect for a linear and a cubic interacted RD specification. Rows D and E show that the results are robust under multidimensional longitude-latitude RD specifications proposed by Dell (2010). The results change only marginally with respect to our quadratic baseline specification. More saturated specifications such as cubic RD and quadratic multidimensional RD polynomials lead to some insignificant discontinuities for the 1949 and 2013 election. Simulation evidence by Gelman and Imbens (2014), however, suggest favouring parsimonious RD specifications – especially when using a narrow bandwidth. In rows F to H, we check different

regional bandwidths for the temporary zone border. We change the maximum distance to the Danube River to 20 and 50 kilometres and use the full sample. All treatment effects remain robust. Rows I to K report inferences for different spatial cutoffs for Conley standard errors and robust standard errors. Effects do not change. In rows L to O, we test treatment effects for four pseudo-border assignments. First, we apply an alphabetical order of municipalities' names (row L). Second, we use a pseudo-division along the Traun River, the second major river in Upper Austria beside the Danube River, (row M). Third, one may argue that northern Upper Austria, which coincides with the historical region of the *Mühlviertel*, has its own identity, e.g., due to regional newspapers or closeness to the Czech Republic. To address this potential issue, we use the *Innviertel* as a former German-Bavarian region with its very strong regional identity as a "pseudo Soviet zone" (row N). Finally, we shift the original zone border 20 kilometres to the south (row O). None of these pseudo borders yield a significant discontinuity. We also restrict our data set to regional subsamples by longitude (rows P to R). We use the most western and most eastern points of the zone border within Upper Austria. These points are represented by two municipalities, Mauthausen (East) and Engelhartszell (West). The results show no difference with our baseline results with and without controls variables.

6. Other channels

In the following, we discuss whether channels other than Nazi migration may have induced discontinuities in right-wing vote shares after WWII. We test the following alternative channels that might have triggered FPÖ votes: General migration, i.e., the rapidly increasing share of foreigners (mainly *Volksdeutsche* refugees), potential regional differences in denazification, Allied aerial bombing during the war as an indicator for both suffering during the war and domiciled armament industries, and tactical considerations of the established parties. We test whether these channels have explanatory power for our findings. We thus include proxies for these channels as additional controls in our baseline specification in equation (1) for 1949 FPÖ vote shares (see sections 6.1 to 6.4). This strategy provides two meaningful insights: On the one hand, we can see whether a certain channel affects the treatment effect at the temporary zone border. On the other hand, the coefficient of the covariate itself indicates whether the observed channel comes with differences in FPÖ vote shares. Table 4 shows the effects of different additional covariates on FPÖ vote shares in the national election in 1949. A geographical representation of these additional covariates is given in Figure A.5 in the online appendix. We further attempt to rule out unobservable differences in Allied occupation policy by comparing US and Soviet occupied districts in the Austrian capital Vienna (see section 6.5 later on).

TABLE 4. CONTROL FOR OTHER CHANNELS (1949 NATIONAL ELECTION)

	Dependent variable: FPÖ vote share								
	Baseline	*General migration*		*Denazification*		*Bomb attacks*			*"ÖVP terrorism"*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	7.29***	6.96***	7.16***	8.16***	6.94***	7.26***	7.16***	7.39***	7.63***
	(2.21)	(2.2)	(2.12)	(2.2)	(1.73)	(2.31)	(2.1)	(2.23)	(2.36)
Refugee camp 1949		1.87							
		(1.46)							
Population growth 1939–1951			0.46						
			(0.31)						
Electorate growth 1945–1949				0.14**					
				(0.06)					
FPÖ vote share 1930					0.22***				
					(0.06)				
Bomb attacks (narrow)						-0.13			
						(1.35)			
Bomb attacks (broad)							-0.40		
							(1.33)		
Bomb attacks (neighbours)								0.38	
								(1.29)	
ÖVP vote share 1945									-0.04
									(0.03)
Socio-demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Economic structure controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geography controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	239	239	239	239	236	239	239	239	239
Pseudo R²	0.92	0.92	0.92	0.92	0.93	0.92	0.92	0.92	0.92

Notes: The coefficient *US* represents the spatial discontinuity in FPÖ vote shares (quadratic interacted RD polynomial) across the Danube River at the level of 239 municipalities (± 30 km to the Danube River) in the national election of 1949. All estimations include a constant and a full set of control variables as introduced in Table 3. Column (1) replicates our baseline RD result (see Table 3, column (8)). Columns (2)–(9) add measures for further potential channels of persistence separately. Figure A.5 in the online appendix gives a geographical representation of each additional covariate. Significance levels: *** 0.01, ** 0.05, * 0.10 (Conley standard errors).

6.1 General migration

FPÖ votes might have been triggered not only by migrating Nazis but by post-war migration in general. The US occupation zone in Upper Austria was a favoured destination for internal refugees from Soviet occupied regions and external refugees and expellees during and in the direct aftermath of WWII.[35] *Volksdeutsche* refugees from Hungary and Romania or national Germans (*Reichsdeutsche*) expelled from Bohemia and Moravia might have put some pressure on local residents because they compete for affordable housing and scarce jobs.[36] This in turn might have increased right-wing voting (e.g., Dustmann and Preston, 2007) and thus FPÖ vote share differentials across the temporary zone border.

To address the issue of refugees and expellees, we collected data on the location of refugee camps in 1949 from Slapnicka (1986). In column (2) in Table 4, we show the correlation of a refugee camp and the vote share for the FPÖ in 1949. A dummy variable indicates whether a municipality hosted

[35] Eder and Halla (2016) show substantial movements across the temporary zone borders in post-WWII Austria.
[36] Most external refugees, however, left Upper Austria for Germany within the year 1945 (Slapnicka, 1986).

a refugee camp in 1949 ($yes = 1$; $no = 0$). The existence of a refugee camp does not show a significant effect on the FPÖ vote share, and it does not change the treatment effect. The same holds true when we regress FPÖ vote shares on municipal population growth between 1939 and 1951[37] as a proxy for refugee settlement (column (3) in Table 4). Although population growth rates were substantial between 1939 and 1951, population growth neither influences our treatment effect nor shows any statistical power in explaining FPÖ voting.[38] These results have strong implications because we are able to exclude a general effect of a shift in population due to refugees and migrants on FPÖ vote shares. Migration *in general* thus does not explain FPÖ voting outcomes in 1949.

6.2 Denazification

After WWII, former Nazis were registered according to the "Act against Nazi activities" (*Nationalistengesetz*). The target of the *Nationalistengesetz* was to denazify society, but in particular, the public administration.[39] For example, registered Nazis lost the right to vote in the national election in 1945 and faced higher tax rates (Knight, 1986).[40] From 1947 onward, several amnesty laws rehabilitated non-elite NSDAP members (ordinary party members). Amnesty only led to an increase in the electorate of around 83,000 for the national election in 1949.[41] The VdU as the predecessor of the FPÖ tailored its electoral campaigns in 1949 to this (temporarily) disenfranchised group of registered Nazis. If the intensity and the accuracy of the respective occupation power to denazify differed between occupation zones in Upper Austria, this in turn may have caused voting differentials across the zone border beside Nazi migration.[42] Due to a lack of municipal denazification data, we rely on the municipal increase of the electorate from the national election in 1945 to the election

[37] Population data on the municipal level are not available for 1949. We thus use data based on the census in 1951.
[38] Refugees from the Soviet occupation zone even without any Nazi record might have been more conservative because they obviously avoided living under Soviet occupation. These refugees should already have been in favour of the conservative ÖVP in the national election in 1945. However, ÖVP voting shares vary smoothly at the zone border in 1945 as well as in 1949.
[39] According to Knight (2007), denazification is narrowly defined as a political purge or more broadly as an attempt to change the values of post-Nazi society.
[40] According to this act, members and membership candidates of the NSDAP and members of the *Schutzstaffel* (SS), *Sturmabteilung* (SA), *Kraftfahrerkorps* (NSKK) and *Fliegerkorps* (NSFK) had to be registered (Schuster 2004). Note that the Act against Nazi activities had severe consequences only for members of the NSDAP who were employed in public services (administration, teacher) as opposed to ordinary members, whereas the majority of registered Nazis only lost their right to vote in the national election in 1945 and were partially levied by higher tax rates (Stiefel, 1981).
[41] The electorate increased not only by virtue of the number of former Nazis (approximately 83,000) but also naturalization (20,020), returned soldiers and young voters (Stiefel, 1981).
[42] Regional differences in registered Nazis may arise in particular as a result of the accuracy of the execution of denazification policies by the respective occupation force (Stiefel, 1981, 1986). Registration of Nazis was best executed within the US zone and was handled less accurately in the Soviet zone (Stiefel, 1981). The Soviets transferred the registration of Nazis to their trustworthy local forces, i.e., the Communist Party of Austria (KPÖ), which was part of the national government. However, the KPÖ was too overstrained by the task to register Nazis accurately (Stiefel, 1986).

in 1949 as a rough proxy to test whether differences in Nazi registration affect FPÖ votes. Furthermore, traditional strongholds of the pan-German camp in southern Upper Austria may explain differences in the density of registered Nazis, too. We use the municipal right wing vote shares in the last national election prior to WWII in 1930 as an indicator for persistent regional strongholds of the far right.

Column (4) in Table 4 shows the correlation of an increase in the electorate with FPÖ vote shares. An increase in the electorate is accompanied by a statistically significant higher FPÖ vote share. Therefore, a formerly registered electorate might be more in favour of the FPÖ as has been mentioned by political scientists so far (Knight, 1992; Luther, 2000; Ignazi, 2003). However, controlling for the change in the electorate does not affect our RD treatment effect. We thus conclude that the change in electorate may have triggered FPÖ vote share differences *within* but not *between* US and Soviet occupied municipalities. We also include lagged FPÖ vote shares as a second approximation of the regional differences in registered Nazis. Column (5) depicts similar results compared to the increase in electorate. In sum, measures of the number of registered residents are associated with higher right-wing vote shares but cannot explain spatial differences in FPÖ vote shares across the temporary zone border.

6.3 Allied bombings

Regions in the US occupation zone were more exposed to airstrikes by the US and the Royal Airforce during the last two years of WWII than were the later Soviet-occupied regions.[43] According to Ulrich (1978), the state of Upper Austria became an airstrike target mainly because of the armament industries located in and around the cities of Linz, Steyr and Wels and because of its railroad infrastructure.[44] Bombed regions serve as a proxy for the armament industry workforce during WWII. Bombings during WWII therefore cover not only war destruction but also control for a higher density of profiteers from the Nazi war industry during WWII. After WWII, bombed municipalities not only may have suffered from a housing shortage but also from sharply decreasing incomes when production of war equipment stopped. Furthermore, people who were exposed to Allied bombing attacks might have been opposed to occupation by a former enemy. Thus, bombing victims may have favoured the FPÖ as the party strongly opposed the SPÖ-ÖVP-KPÖ government, which collaborated with the occupation forces (Staeuber, 1974).

We identify municipalities that have been exposed to bombings to test the effects of Allied bombing on FPÖ votes. Columns (6) to (8) in Table 4 show the coefficients of a dummy variable that equals

[43] The first US bombing campaign against Austria took place on August 13, 1943. However, airstrikes against Austrian targets became more frequent after June 1944 (Ulrich, 1978).
[44] In terms of destroyed houses, killed and injured people and total damages, Upper Austria suffered less than Vienna, Lower Austria and Styria but more than other West-Austrian states (Ulrich, 1978).

1 if the municipality was exposed to bomb attacks and zero otherwise. We use three measures of the intensity of Allied bombing attacks based on Ulrich (1978). Column (6) shows the effects of a dummy for municipalities located in regions that have been the most affected – from Steyr to Linz and Wels and including Attnang-Puchheim. Column (7) includes municipalities bordering these most affected regions. Finally, column (8) shows the effects of bomb attacks for the cities of Steyr, Linz, Wels and Attnang-Puchheim and their direct surrounding municipalities. Figure A.5 in the online appendix shows the location of the respective municipalities. Our findings suggest that the Allied bombings do not affect our RD treatment effect, nor do they prompt higher FPÖ vote shares. On the contrary, municipalities that were more exposed to Allied bombing have lower FPÖ vote shares, which are, in the broad specification (column (7)), statistically significant.

6.4 "ÖVP terrorism"

An additional possible channel for regional differences in right-wing votes are the tactical considerations of other parties. Knight (1992) reports that the two major parties, the social-democratic SPÖ and the conservative ÖVP, tried to integrate former Nazis into their organization. The ÖVP, however, attempted to hinder the formation of local FPÖ branches in 1949 as ÖVP politicians feared a fragmentation of the conservative camp and a consequent loss of votes. The co-founder of the VdU, the predecessor of the FPÖ, Viktor Reimann reported massive obstructions, which he called "ÖVP terrorism" (Reimann, 1980). In many municipalities, the ÖVP attempted to hinder the formation of FPÖ local party branches.

To address potential "ÖVP terrorism", we include ÖVP vote shares in the first post-WWII election in 1945 as an additional covariate. We hypothesize that the stronger the local ÖVP, the higher the degree of pressure against the formation of a FPÖ local party branch. The Soviet occupied regions in Upper Austria have been a traditional stronghold of the ÖVP. Hence, successful "ÖVP terrorism" may have weakened the success of the FPÖ, especially in northern Upper Austria. The results of our estimation, however, indicate that the relative strength of the ÖVP neither influences the treatment effect nor right-wing voting in general (column (9) in Table 4). We conclude that "ÖVP terrorism" plays a negligible role in explaining regional differences in FPÖ voting.

6.5 Differences in occupation policy

According to Mueller (2005), the Soviet occupation forces did *not* attempt to control activities of the far right before its electoral victory in 1949. Quite the contrary, the Soviet occupation force supported the VdU in the Soviet zone, hoping to weaken the established parties. Further differences in the occupation policies of the Allies, however, are difficult to identify. They are either unobservable – e.g., psychological pressure on local politicians who wanted to run for the newly founded right wing party in national or local elections – or their influence on election outcomes is somehow

unclear.[45] Nevertheless, differences in (unobservable) occupation policy may cause differences in vote shares for the FPÖ between the US and Soviet zone.

To isolate differences in occupation policy from Nazi migration effects, we investigate national election outcomes in US and Soviet occupied districts in Vienna, the capital of Austria. As in the case of Berlin, Vienna was divided among the four Allies throughout the entire occupation period. Studying Vienna provides a counterpart to Upper Austria with the same occupational treatment (regional differences in unobservable policies by the respective Allies) but without differences in the regional density of Nazis. Vienna was entirely freed and temporarily occupied from May to July 1945 by the Red Army. Nazis and especially Nazi elites fled the advancing Red Army in the last weeks of WWII and its direct aftermath and left Vienna without returning (e.g., Seliger, 2010, see also Section 3.2). We also do not find any anecdotal evidence of a specific sorting of Nazis in Vienna in favour of US districts, whereas we do in the case of Upper Austria. In sum, the density of former Nazis, in particular Nazi elites, was relatively low in both the US and Soviet occupied districts of Vienna. Furthermore, we find no evidence that US and Soviet occupation policy differed between Vienna and Upper Austria.[46] We thus argue that potential differences in FPÖ vote shares between the US and Soviet occupied districts of Vienna in the national election in 1949 give the isolated effect of unobservable policies by the respective Ally.

We compare the shift in FPÖ vote shares for the national election in 1949 to the last democratic election prior to WWII. We set out separate estimations for both districts in Vienna as well as for municipalities in Upper Austria and estimate the following difference-in-differences model:

$$s_{it} = \alpha + \beta US_i + \delta PostWWII_t + \gamma(US_i \times PostWWII_t) + \varepsilon_{it} \quad (2)$$

s_{it} is the vote share for right-wing parties in national elections in 1930 and 1949. US_i is a dummy that equals one for a district (Vienna) or a municipality (Upper Austria) occupied by the US. $PostWWII_t$ is a dummy that equals one for the national election in 1949 and zero for the election

[45] Most importantly, the US provided better nutrition and economic aid in the direct aftermath of WWII. Later, the European Reconstruction Program (ERP), which was launched in 1948, favoured regions that were occupied by the Western Allies (Hofbauer, 1992). According to Bader (1966), the election in 1949 was a test for the ruling coalition government also with respect to the ERP. Therefore, better economic conditions in the south of Upper Austria should have favoured the ÖVP or SPÖ rather than the FPÖ.

[46] One potential concern is that US policy might have differed between Vienna and Upper Austria. However, we do not find any report on differences. Quite the contrary, there have been neither differences in censorship and the setting up of Security Forces (Wagnleitner, 1984), Intelligence Services (Beer, 2000), newspaper coverage (Mueller *et al*., 2005) nor in cultural and educational policy (Rauchensteiner, 1998) between US occupied districts in Vienna and US occupied regions in Upper Austria. Large-scaled US polls on anti-Jewish attitudes were conducted in US occupied districts of Vienna and in Upper Austria as well (Wassermann, 2002). The Soviets complained that they have no influence in all Western occupation zones, including US districts of Vienna (Mueller *et al*., 2005).

in 1930. γ measures the interaction of the two dummies and is the coefficient of interest. The coefficient γ thus indicates whether US occupied regions experience a shift in FPÖ vote shares after WWII. α is a constant. ε_{it} is the error term.

Table 5 shows the difference-in-differences results for six US and five Soviet occupied districts in Vienna (column (1)) and 75 municipalities along the zone border in Upper Austria (column (2)).[47] The interaction term is small in size and insignificant for Vienna. FPÖ voting in Vienna is independent of the respective occupation force. By contrast, we find the interaction term to be positive and highly statistically significant for Upper Austria.[48] The difference between the effects in Vienna and Upper Austria is statistically significant different from zero (column (3)). Differences-in-differences estimations thus indicate no significant separate occupation policy effect. In conclusion, we can rule out differences in unobservable occupational policies as a driver for FPÖ voting differences after WWII. This finding provides strong evidence that higher vote shares in favour of right-wing parties in the US zone in Upper Austria did not originate from different (unobservable) occupation policies. We conclude that the anecdotally reported influx of Nazis into the US zone in Upper Austria (and the resulting differences in the regional density of Nazis) is the channel that led to an increase in right-wing votes in the US zone after WWII.

TABLE 5. DIFFERENCES IN OCCUPATION POLICY IN VIENNA VS UPPER AUSTRIA

	Dependent variable: FPÖ vote share		
	Vienna (11 districts)	*Upper Austria (75 municipalities)*	*Difference (2)–(1)*
	(1)	(2)	(3)
US	6.53	1.11	
	(3.88)	(2.22)	
PostWWII	-7.84*	-10.82***	
	(3.80)	(1.84)	
US × PostWWII	-1.81	8.79***	10.60**
	(4.26)	(2.63)	(4.76)
Constant	13.48***	20.58***	
	(3.51)	(1.62)	
Obs.	22	146	
Adj. R²	0.60	0.28	

Notes: This table shows the results of two difference-in-differences estimations using the 1930 and 1949 FPÖ vote share as the dependent variable. The model in column (1) comprises the six US and five Soviet occupied districts of Vienna. The model in column (2) uses the 73 municipalities of Upper Austria, which are located at a maximum distance of 10 km from the Danube River (see Figure A.7 in the online appendix for a graphical illustration). Column (3) takes the difference between both states (pooled regression). The dummy *US* equals one (zero) if a district or municipality is part of the US (Soviet) zone, and *PostWWII* equals one (zero) for the national elections in 1949 (1930). *US × PostWWII* is the interaction term. Significance levels: *** 0.01, ** 0.05, * 0.10 (Robust standard errors).

[47] We restrict our municipality sample in Upper Austria to municipalities that are located within 10 kilometres of the temporary zone border line. Thus, the municipalities are located approximately within the same great circle distance to the zone border as the districts in Vienna.

[48] Note that the difference-in-differences estimator yields a similar treatment effect compared to our RD specification.

7. Persistence and transmission

We show that FPÖ vote shares differ substantially in the former US zone in comparison to the former Soviet zone for the entire post-war period. We are also able to exclude other potential factors besides Nazi migration that might trigger these results. In the following, we discuss several explanations for the persistence of FPÖ voting differentials between former US and Soviet occupied regions. We present evidence for two channels that are both likely to interact: intergenerational transmission and institutions. We show that right-wing attitudes have been inherited within families over generations. We further document the early formation of local FPÖ party branches in the Nazis' destination region. We also estimate the extent to which family ties and local party branches might have acted as the type of social multipliers mentioned by Glaeser, Sacerdote and Scheinkman (1996, 2003), Calvó-Armengol and Jackson (2004) or Madestam *et al*. (2013).

7.1 Intergenerational transmission

Recent studies show that political beliefs and attitudes are inherited from parents to their kids (Dohmen *et al*., 2012; Necker and Voskort, 2014). Avdeenko and Siedler (2016) find an even stronger intergenerational transmission for right-wing beliefs and attitudes compared to more moderate ones. Based on these findings, we hypothesize that the initial regional differences in Nazi (elite) density in August 1945 impact both the FPÖ electorate and FPÖ supporters. If migrated FPÖ affiliates transmitted their values to the next generation, and this generation to the next generation, the regional voting pattern may survive for decades. Austrian party members themselves mention ideology and family tradition as the main reason for their party membership (Mueller, 1995).

We rely on the technique of *geonomastics* to overcome the lack of FPÖ-related microdata. Geonomastics is the analysis of the geographic distribution of names using statistical characteristics such as frequency, density and spatial clustering (Shokhenmayer, 2010). Surnames offer detailed insight into the long- and short-term dynamics of migration and residential mobility (Cheshire, Mateos and Longley, 2011). This holds for intra-country studies (Cheshire, Longley and Singleton, 2010) as well as for international comparisons (Cheshire, Mateos and Longley, 2011). Given the hypothesis of an intergenerational transmission, we presume that the Nazi influx after WWII should still be visible in the distribution of surnames of current FPÖ supporters in former US occupied municipalities. Current FPÖ supporters in southern Upper Austria should exhibit a higher propensity for a "typical" northern Upper Austrian surname than other parties.

We collect pre-treatment surnames and names of current local politicians from two sources. First, we use phone book data for the German *Reich*. Totalling more than 6,800 pages, the *Reichstelefonbuch* from 1942 includes more than 2.6 million entries. In 1942, neither the end of the war nor the existence or shape of occupation zones could have been anticipated. Furthermore, the front line

was far away from Austria. Thus, the 1942 spatial distribution of surnames covers the pre-migration status at best. We extract all surname entries for the latter US and Soviet zone in Upper Austria separately. We end up with more than 5,300 surnames from the *Reichstelefonbuch* of 1942. In Austria, surnames are highly regionally concentrated.[49] A typical surname in northern Upper Austria is, e.g., *Löffler*. *Lechner* is much more frequent in southern Upper Austria. Also, varieties of names differ. *Kehrer* is a typical northern name whereas *Köhrer*/*Körrer* is virtually only present in the South of Upper Austria. Phonebook entries in 1942, however, might be biased according to social classes or work occupation. As mentioned by Jäckel (2000), state officials and Nazi members are somehow overrepresented in the *Reichstelefonbuch.* On the one hand, this would provide a more accurate fit of former Nazi members in the pre-migration surname distribution, which in turn increases the suitability of our data. On the other hand, this might challenge the comparison of right-wing and non-right-wing parties. We address this issue by investigating surnames within the right-wing camp for both directions: migration from the Soviet toward the US zone, but also the hypothetical way vice versa.

Second, we collect surnames of candidates running for the municipal council elections in Upper Austria in September 2015. We consult the websites of all Upper Austrian municipalities and digitalize the official published list of all candidates. 228 out of 439 municipalities provided a digital list of local candidates, each of which was published only a few weeks prior to the municipal council elections in September 2015.[50] We collect more than 17,000 candidates from FPÖ, conservative ÖVP and social-democratic SPÖ who competed in the municipal council election in September 2015.

We compare the frequency of surnames of current party candidates to the spatial distribution of surnames in 1942.[51] We hypothesize that current FPÖ candidates in the former US zone are more likely than candidates from other parties to have a surname that is listed in the 1942 phonebook of the former Soviet zone. If this hypothesis holds, it would provide a link between migration towards the US zone and current political FPÖ affiliation. We use two score measures to test the sensitivity of our findings. The first measure is the *Representation Score.* To obtain this score, we count how often the surname of every candidate j ($j = 1,2, \dots, J_R$) from region R appears in the *Reichstelefonbuch* 1942 of the *other* region $\bar{R}$. We derive the *Representation Score* ($RepScore_R$) as follows:

[49] Hohensinner (2011) provides maps of the (present) spatial distribution of surnames in Upper Austria. Some sample maps can be found at http://www.kulturgeschichte.at/Familiennamenatlas/Familiennamenkarten.html.
[50] The list of candidates covers the municipalities of all 16 Upper Austrian districts. We do not collect candidates from Linz due to the division of Linz during the occupation period. The mean t-tests for municipalities that are included in our sample and those municipalities without an online published list of candidates show no difference in FPÖ, ÖVP or SPÖ voting shares (see Table A.7 in the online appendix).
[51] We replace the German language characters “ä”, “ö”, “ü” and “ß” by “ae”, “oe”, “ue” and “ss” to ensure a common syntax.

$$RepScore_R = \frac{1}{J_R}\sum_{j=1}^{J_R} M_{j,\bar{R}} \quad (3)$$

$M_{j,\bar{R}}$ describes the number of cross-regional surname matches for candidate j. We divide the sum of cross-regional surname matches by the number of party candidates J_R in Region R to obtain our *Representation Score*. This score measures how often the surname of a randomly chosen candidate of a certain party appears in the *Reichstelefonbuch* 1942 in the other region.

Our second measure gives the probability that a randomly chosen candidate's surname from region R appears *at least once* in the *Reichstelefonbuch* 1942 in the other region $\bar{R}$. The *Probability Score* for region R ($ProbSore_R$) is given by

$$ProbScore_R = \frac{1}{J_R}\sum_{j=1}^{J_R} \min[\, M_{j,\bar{R}}\,, 1] \quad (4)$$

where $M_{j,\bar{R}}$ again denotes the number of cross-regional surname matches of an individual candidate j in 2015 from region R with surname entries in the 1942 *Reichstelefonbuch* in the other region $\bar{R}$. However, the $\min[\,\cdot\,]$ function censors the individual matches at unity. Again, we divide the sum of the censored surname matches by the number of party candidates J_R in Region R. Comparing two different measures allows us to address the adverse effects of very common surnames. Think of a surname that appears frequently in the *Reichstelefonbuch* 1942. An additional current candidate with this frequent surname would have a strong impact on the overall number of cross-regional surname matches $M_{j,\bar{R}}$. Thus, the *Representation Score* is more sensitive to frequent phonebook entries, which may lead to biased results. By contrast, the *Probability Score* is less sensitive to very frequent surnames but somehow underrates the frequency of 1942 surnames.

Table 6 shows the results for both scores by different parties. Column (1) to (3) report the *Representation Scores* and the *Probability Scores* for each of the three major parties separately. The scores read as follows: The surname of a randomly chosen 2015 FPÖ candidate from the former US zone is cited 0.247 times in the *Reichstelefonbuch* 1942 of the former Soviet zone (*Representation Score* in column (1)). In contrast, a randomly chosen 2015 SPÖ candidate's surname from the former US zone was cited only 0.208 times in the *Reichstelefonbuch* of the former Soviet zone (column (2)). Thus, a surname from the former Soviet zone has a 19% higher probability of showing up on the FPÖ candidates' lists than on the SPÖ candidates' lists in the former US zone.[52] This probability is somewhat smaller in comparison to the ÖVP but remains substantial and statistically significant. Concerning the *Probability Score,* the likelihood that the surname of a randomly chosen 2015 FPÖ candidate from the former US zone appears in the Reichstelefonbuch in the former Soviet

[52] We compute the probability by dividing the difference between the FPÖ and the SPÖ by SPÖ matches. Thus, 0.039/0.208 = 19%.

zone is 14.5% (*Probability Score* in column (1)), whereas this likelihood is only 11.7% for a current SPÖ candidate (column (2)). Columns (4) to (6) take the differences in the two score measures between the FPÖ and the other parties. Column (4) compares FPÖ candidate surnames with the surnames of the other two parties, and columns (5) and (6) takes the difference between the FPÖ and SPÖ (ÖVP) candidates separately. We find that the surnames of candidates who compete for the FPÖ in the former US zone are significantly more frequent in the *Reichstelefonbuch* 1942 in the former Soviet zone than the surnames of candidates of other parties. These results hold for both representation measures.

TABLE 6. MATCHING OF 1942 PHONEBOOK NAMES AND PRESENT CANDIDATE NAMES

1942: Reichstelefonbuch *2015: Names of party candidates*	*Matches with phonebook data*			*Differences*		
	FPÖ	*SPÖ*	*ÖVP*	*FPÖ–(SPÖ/ÖVP)*	*FPÖ–SPÖ*	*FPÖ–ÖVP*
	(1)	(2	(3)	(4)	(5)	(6)
US zone 2015 vs. Soviet zone 1942						
Representation Score	0.247	0.208	0.226	0.028***	0.039***	0.021*
Probability Score	0.145	0.117	0.132	0.018***	0.028***	0.013*
Obs.	2,806	4,012	6,648	13,466	6,818	9,454
Soviet zone 2015 vs. US zone 1942						
Representation Score	2.110	1.913	2.249	-0.020	0.197	-0.139
Probability Score	0.400	0.385	0.401	0.005	0.016	-0.001
Obs.	272	1,216	2,240	3,728	1,488	2,512

Notes: This table shows two different measures of surname representation. Columns (1)–(3) depict these representation measures for the FPÖ, SPÖ and ÖVP, respectively. Columns (4)–(6) represent the differences in representation measures between the FPÖ and the other two major parties together (4) and for the SPÖ (5) and ÖVP (6) separately. The upper part of the table compares the candidates of current parties in the former US zone with phonebook entries from 1942 in the former Soviet zone. The bottom part of the table compares the candidates of current parties in the former Soviet zone with the phonebook entries of 1942 in the former US zone. Significance levels of party differences (two-sample Wilcoxon rank-sum test): *** 0.01, ** 0.05, * 0.10.

To ensure the validity of our results, we compare the surnames of current candidates from former Soviet municipalities with the surnames entries for 1942 in the former US zone (lower part of Table 6). This exercise includes hypothetical migration from the US to the Soviet zone. We find no significant differences among parties for the surnames of current candidates in former Soviet occupied municipalities. This is in line with our historical investigation: No political subgroup was favoured to escape from the US zone to the Soviet zone. Thus, differences in surnames are neither found nor suggested.

The analysis of the origin of the surnames of current candidates in the former US zone provides strong evidence for post-war Nazi migration. Even recent surnames reflect this migration pattern; intergenerational transmission over at least three generations thus serves as an important channel for persistence in party membership and for spatial differences in FPÖ voting. Andreas Rabl, FPÖ mayor of Upper Austria's second largest city Wels since 2015 (former US zone), serves as a prominent example for intergenerational transmission. His grandfather, Max Rabl, was a politician of the pan-German camp until 1933 in Lower Austria (former Soviet zone). After WWII, Max Rabl settled

in Upper Austria (US zone) and represented the FPÖ in the Upper Chamber of the Austrian parliament from 1949 to 1955.[53]

7.2 Local party branches

Local party branches may serve as an important institutional trigger for persistence beside family ties. In contrast to vote shares in national elections, local party branches strongly reflect a party's "supply" side. Local party branches tailor national electoral campaigns to local needs, provide human and financial resources, and nominate local residents running for membership in the municipal council. Participation in local elections thus appears to be a good indicator for local political power and embeddedness. This holds true especially for Austria, where local party politics are characterized as being highly continuous (van Biezen, Mair and Poguntke, 2012). We thus analyse the impact of an early formation of a local right wing party branch on current right-wing affiliation.

Figure A.6 (online appendix) shows in the left-hand and centre map whether the FPÖ nominated candidates in the municipal council election in 1949 and in 1955 (blue coloured each).[54] In most Soviet occupied municipalities, right-wing candidates abstained from participation. In 1949, in 92 out of 120 Soviet occupied municipalities, either a local party branch did not exist or it was too weak to compete in local elections. We run a probit estimation using participation by the FPÖ in the local election in 1949 ($yes = 1$; $no = 0$) and 1955 as the dependent variable. The results are shown in Table 7. We include several explanatory variables stepwise, which are introduced in section 5. As a main result, we find a positive and significant effect for municipalities located in the US zone on local FPÖ election participation in 1949 and 1955, which is robust to all specifications. As outlined in section 6, the rather weak presence of FPÖ branches in the Soviet zone cannot be explained by occupational treatment, e.g., psychological pressure that discourages local residents from running for the FPÖ. In fact, in the late 1940s, the Communist party on behalf of the Soviet occupation force sought to push local FPÖ branches in its zone for the purpose of weakening well-established parties (Mueller, 2005). Moreover, the Soviets had already withdrawn from northern Upper Austria in the summer of 1955, several months prior to the local elections. The lower density of local party branches in the north in the fall of 1955 can no longer be attributed to the Soviet presence. Apart from that, we can exclude regional differences in suppression by the conservative ÖVP due to a potential lack of local ÖVP branches: The ÖVP participated in all municipalities in southern and northern Upper Austria in local elections in the aftermath of WWII.

[53] Information is obtained from the official website of the Austrian Parliament (http://www.parlament.gv.at/WWER/PAD_01499/).

[54] To keep things simple, we refer again to the FPÖ in both municipal council elections of 1949 and 1955. In fact, we measure whether the VdU in 1949 and *Freiheitliche Wahlgemeinschaft* (FW) in 1955 compete on the municipal level.

TABLE 7. LOCAL PARTY FORMATION IN 1949/1955 (PROBIT)

	Dependent variable: FPÖ participation in local election 1949				*Dependent variable: FPÖ participation in local election 1955*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
US	1.41***	1.48***	1.53***	1.67***	1.53***	1.48***	1.61***	1.53***
	(0.15)	(0.22)	(0.23)	(0.30)	(0.18)	(0.23)	(0.25)	(0.29)
Socio-demographic controls	No	No	No	Yes	No	No	No	Yes
Economic structure controls	No	No	Yes	Yes	No	No	Yes	Yes
Geography controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Obs.	438	438	438	438	438	438	438	438
Pseudo R²	0.17	0.20	0.24	0.33	0.16	0.17	0.21	0.22

Notes: This table shows the results of probit estimations. The dependent variable equals one in columns (1)–(4) if the FPÖ participates in local elections in 1949 and in columns (5)–(8) for FPÖ participation in local elections in 1955 (zero otherwise). *US* is a dummy that equals one if the municipality is located in the US zone (zero otherwise). Columns (1) and (5) depict univariate probit results. Columns (2)–(4) and columns (6)–(8) stepwise include municipal control variables for geography, economic structure and socio-demographics (see Table 3). Significance levels: *** 0.01, ** 0.05, * 0.10 (Robust Standard Errors).

We test whether the other channels introduced in section 6 have any additional explanatory power for the likelihood of the formation of an FPÖ local party branch in 1949. In Table A.8 in the online appendix, we present results of a control for potential regional differences in denazification, Allied aerial bombings during the war, the rapidly increasing share of foreigners (general migration) and tactical considerations by established parties. All additional explanatory variables exhibit weak or no correlation with the likelihood of forming a local FPÖ party branch in 1949. Note that our proxies for the number of denazified electorate have none or only a very weak impact on the likelihood of the formation of a local party branch, whereas these proxies come with statistically significant higher FPÖ vote shares in the national election in 1949 (Table 4). Thus, the overall group of former Nazis (natives and migrants) influenced right-wing party votes in the national election in 1949 but only marginally affected the formation of a local party branch. We thus argue that the absolute number of former Nazis cannot fully explain the formation of a local party branch. We combine this finding with our previous result that current FPÖ local party candidates are more likely to have ancestors from formerly Soviet occupied regions. Thus, it is plausible to argue that an early formation of a local party branch is also a result of Nazi migration to southern Upper Austria. Former Nazis who were engaged in the formation of a local party branch were more likely to be located in the US rather than in the Soviet zone.

The absence of a local FPÖ party branch in 1949 has an impact in the present day. Figure A.6 in the online appendix on the right shows whether candidates represented the FPÖ in the municipal council election in September 2015 (blue coloured). 34 out of 120 (approximately 30%) of all former Soviet-occupied municipalities lack local FPÖ participation. By contrast, in the former US zone, only 7% of all municipalities lack FPÖ participation in 2015. Additionally, we find support for a transmission link to the national election in 2013. We observe a correlation of 0.33 between

FPÖ participation in local elections in 1949 and 2013 FPÖ vote shares (the correlation for participating in 1955 and 2013 is equally 0.33). This result is significant at the 1 % level. We conclude that the early formation of an FPÖ local party branch, triggered by immigrating Nazis, might lead to more persistent local embeddedness of a right-wing party that is still visible today. Hence, local FPÖ party branches might act as an institution that transmits local right-wing attitudes over generations and pass on political beliefs to local residents, too.

7.3 Multiplier effect

Migrating extremists may leverage their impact. Madestam *et al*. (2013) show how specific minorities can act as a catalyst in shaping public opinion. As shown in the previous section, we observe an earlier formation of local party branches in the Nazis' destination region. Beside their engagement in local party branches, however, they may also successfully spread their views in local clubs and associations (Satyanath *et al.*, 2017).

In the following we present a rough calculation of the multiplier effect of migrating Nazis in Upper Austria for the election in 1949. First, we approximate the absolute change in local Nazis in the Soviet zone and the US zone before and after 1945. Second, we compare these changes to changes in absolute votes cast for the far right in 1930 and 1949. If changes in right-wing votes are larger than changes in the number of Nazis, we have some indication for a multiplier effect. Table 8 shows our estimation for the Soviet zone (upper panel), and for the US zone (lower panel). All figures include the US and Soviet occupied parts of the capital of Linz. We start with column (2), which depicts the absolute number of votes cast for the far right in 1930 and 1949. Absolute votes for the FPÖ decrease by around 4,200 votes from the 1930 to the 1949 national election in the Soviet zone and increase by 15,500 votes in the US zone. We now compute the estimations for the number of local Nazis. For post-WWII times, we can use the exact number of registered Nazis in 1947 by occupation zones in Upper Austria (Schuster, 2004). By contrast, pre-1945 figures of local Nazis are only available at the state level. We use the state-wide number of Nazi party members in 1942 by Stiefel (1981) and allocate these Nazi party members to the two later occupation zones according to right-wing votes in the last pre-WWII election in 1930. The 1930 election gives the best guess for the spatial distribution of Nazis within Upper Austria before the migration of Nazis in 1945.

TABLE 8. MULTIPLIER EFFECT OF MIGRATING NAZIS

	Nazis	*FPÖ votes (absolute)*	*Multiplier effect*	*Share of Nazi elites ("Belastete")*
	(1)	(2)	(3)=(2)/(1)	(4)
Soviet zone (including Linz-North)				
Pre-WWII (1942/1930)	15,529	20,068		
Post-WWII (1947/1949)	12,258	15,870		16.5%
Pre-WWII–Post-WWII	-3,271	-4,198	1.28	
US zone (including Linz South)				
Pre-WWII (1942/1930)	72,059	93,118		
Post-WWII (1947/1949)	78,184	108,650		30.5%
Pre-WWII–Post-WWII	6,125	15,532	2.54	
Ratio US zone/Soviet zone			198.4%	184.8%

Notes: This table shows the total number of Nazis (pre-WWII: estimation for 1942, post-WWII: registered Nazis in 1947) and FPÖ votes (pre-WWII: 1930, post-WWII: 1949) in the Soviet and US zone in Upper Austria (columns (1) and (2)). Column (3) shows the multiplier effect, defined as the ratio of the absolute change in FPÖ votes over the absolute change of Nazis. Column (4) gives the share of Nazi elites ("*Belastete*") by all registered Nazis in 1947. Columns (1) to (3) include the occupied parts of Linz. Sources: Stiefel (1981), Schuster (2004), Statistical Yearbooks of the city of Linz 1947/1948, 1949.

Taking differences between pre- and post-WWII figures yields a decrease in the absolute number of Nazis in the Soviet zone of around 3,300 and an increase of 6,100 Nazis in the US zone. The increase in the South exceeds the loss of the North because some further Nazis migrated from Vienna and Soviet occupied East Austrian regions to the US zone (see section 3.2).

We compare changes in Nazis to the changes in right-wing votes. We find that a reduction by one Nazi in northern Upper Austria comes with a drop in 1.3 right-wing votes (column (3) in Table 8). By contrast, one additional Nazi comes with an increase of more than 2.5 FPÖ votes in southern Upper Austria. Therefore, we find a multiplier effect larger than one for both occupation zones: migrating extremists leverage voting results beyond their own vote. The positive multiplier effect of an additional Nazi in the US zone, however, is much larger as the negative impact of a missing Nazi in the north. Column (4) in Table 8 provides one possible explanation: Nazi elites are also highly overrepresented in the US zone. These elites might have been even more interested and engaged in re-establishing the right-wing camp after WWII. We conclude that the "strength" of migrating extremists matters to the extent of their leverage.

Besides the national election in 1949, we further conduct a rough calculation of a multiplier effect of migrating families based on the most recent elections. We combine the (local average) persuasion rate of 26% in the national election of 2013 (see Figure 4 or Table A.5, column (7)) with the surname overrepresentation of FPÖ candidates in southern Upper Austria in the municipal council elections of 2015. FPÖ candidates in the US zone get a higher match based on the Representation Score with northern surnames of around 2.8 percentage points compared to candidates of the SPÖ and ÖVP (Table 6). Given the ÖVP and SPÖ joint surname matches of 21.9 percent (weighted matches in columns (2) and (3) in Table 6), this yields a relative overrepresentation of 12.8% (2.8/24.7) of northern surnames in the FPÖ in southern Upper Austria. Thus, the persuasion rate of vote shares

is around 2 times the persuasion rate in surnames matches (26%/12.8%). We conclude that family ties from the north still leverage their beliefs to southern residents by a factor around 2.[55]

8. Conclusion

This paper shows that migrating extremists can shift the political sentiments of their destination regions toward their political ideology in the long run. Our results show that initial local differences in an extreme ideology that arise from external migration shock can persist for over 60 years, even within politically, economically, culturally and historically homogeneous regions. In contrast, the spatial distribution of voting for moderate parties remains unaffected by such shocks and changes only slightly over nearly a century. The persistence of cross-border differences in right-wing vote shares is triggered by an individual channel (intergenerational transmission within families over at least three generations) and an institutional channel (early formation of a local party branch). We apply geonomastics to trace current right-wing affiliation to past migration. Historical phone book entries are a promising approach to overcome a lack of micro-data.

The case of Upper Austria shows that right-wing attitudes are deeply rooted not only in current economic and cultural circumstances but also in history. Once the seed of extreme political ideology is planted within a somewhat closed community, such as an Austrian municipality in the 1940s, it spreads and proves to be persistent. Our findings thus may serve as a blueprint for segregated "terrorist hotspots", such as Molenbeek-Saint-Jean in Brussels. Islamists, most of whom were born abroad, pass on their values and beliefs to locally born Muslims. Abdelhamid Abaaoud, the mastermind behind the Paris terror attacks in 2015, was born in Molenbeek-Saint-Jean, where he came in contact with (mainly imported) extremist ideology. Although there are differences between the situation in Molenbeek and other Muslim-dominated suburbs in Europe and post-WWII Austria, the following important conclusion can be drawn: Not only migrating extremists themselves, but also interactions with locally born residents may have consequences. We find that migrating Nazis leverage right-wing votes at least by a factor of 1.3 up to a factor of 2.5. We also document that after three or even four generations, attitudes and beliefs of migrant clans continue to differ and that such clans continue to spread their beliefs to residents through active engagement in local politics. In conclusion, societies and states should actively seek to prevent the infiltration of extreme ideologists who in turn are able to share their beliefs with local resident communities, especially in poor and socially isolated individual neighbourhoods.

[55] The social multiplier effect for 2013 is the upper bound of the effective leverage effect since these numbers do not include family ties that migrated from Eastern Austria and Vienna toward southern Upper Austria.

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Online appendix

TABLE A.1. ANECDOTAL EVIDENCE FOR NAZI MIGRATION IN 1945

Original	*Translation*	*Source*
"[NSDAP-]Kreisleiter Hans Dörfler soll sich 'an der Spitze von 400 flüchtigen Parteigenossen, getarnt als Volkssturmmänner nach Oberösterreich' abgesetzt haben."	The leader of the local [Nazi party] branch, Hans Dörfler, is said to have fled to Upper Austria escorted by 400 party members camouflaged as soldiers of last resort (*Volkssturm*).	Seliger, M. (2010), *Scheinparlamentarismus im Führerstaat* (Vienna, Münster: LIT Verlag, p. 661).
(Regarding a very Nazi friendly manager in Vienna): *Übrigens, dieser werte Herr Prokurist flüchtete zeitgerecht, bevor die Russen Wien besetzten, nach Oberösterreich in die amerikanische Besatzungszone."*	Incidentally, the "honorable" manager fled to Upper Austria toward the US occupation zone before the Russians occupied Vienna.	Haidinger M. and Steinbach, G. (2009), *Unser Hitler: Die Österreicher und ihr Landsmann* (Salzburg: Ecowin).
(Regarding the municipality of Mitterschlag (today: Langschlag) in Lower Austria): *"Der [NSDAP-]Ortsgruppenleiter, einige Männer und Frauen und der Gutsbesitzer und sein Personal flüchteten nach Oberösterreich."*	The leader of the local [Nazi party] branch, additional men and women and the landowner and his employees fled to Upper Austria.	Schübl, F. (2011),, *Schulchronik Langschlag 1879–1955* (Mitterschlag, p. 83).
"[S]ogar die Tische, Sessel und Stockerl fanden Anwert und wurden auf die Autos, mit denen die SS und Flüchtlinge aus dem Banat beim Herannahen der Roten Armee nach Oberösterreich weiter flüchtete, aufgeladen und kehrten nie wieder."	Tables, chairs and stools were loaded up and transported by vehicles that were used by the SS and refugees from the Banat [region in Hungary] to escape the Red Army and flee toward Upper Austria. They never returned.	Salvesberger, M. (ed.) (1997), *Briefe von der Front: Feldpostbriefe, 1939-1945* (Gösing am Wagram: Edition Weinviertel, p. 312).
(Regarding the takeover of a dispossessed pharmacy in Vienna by a Nazi): *"Anfang Mai 1938 wurde die Leitung der Apotheke von der späteren 'Ariseurin' Mag. Frieda Kahls übernommen und am 19. Mai 1938 SA-Sturmbannführer Mag. Erwin Renner auch in dieser Apotheke als kommissarischer Verwalter eingesetzt. [...] Angesichts der bevorstehenden Befreiung Wiens durch die Rote Armee verübte Anton Datz am 10. April 1945 Selbstmord. Frieda Datz, geb. Kahls - sie hatte zwischenzeitlich ihren Geschäftspartner Mag. Datz geheiratet - flüchtete nach Ostermiething in Oberösterreich."*	In early May 1938, the "Ariseur" [Nazi affiliated person who takes over dispossessed Jewish property in Nazi Germany] Frieda Kahls took over the pharmacy. SA-*Sturmbannführer* Erwin Renner served as temporary manager. […] On the 10th of April, 1945, Anton Datz committed suicide due to the arrival of the Red Army. Frieda Datz (formerly: Frieda Kahls), who had married her business partner Mr. Datz, fled to Ostermiething in Upper Austria.	Fehringer, A. (2013), *Arisierung und Rückstellung von Apotheken in Österreich* (Vienna: Vienna University Press, pp. 113–114).
(Regarding 50,000 Austrian citizens from Vienna, Lower Austria and Burgenland in Upper Austria in February 1946): *"Es finden sich unter ihnen Nationalsozialisten, die sich abseits ihrer einstigen Umgebung und fern von Menschen aufhalten wollen, die über ihr Wirken in der NS-Zeit gut Bescheid wissen."*	There were many Nazis among the refugees who wanted to live far from their former homes and far from former neighbours who knew about their actions within the Nazi regime.	Slapnicka, H. (1986), *Oberösterreich – zweigeteiltes Land* (Linz: Oberösterreichischer Landesverlag, p. 93).
"Als sich anfangs Juli das Gerücht verbreitete, es werde eine Änderung der Besatzungszonen vorgenommen bzw. das Mühlviertel von der Roten Armee besetzt, löste diese Nachricht Schecken und Angst unter der Bevölkerung aus und hatte einen Flüchtlingsstrom zur Folge, der sich vor allem über Linz ergoß. Unter den ca. 900 Familien, die vor den Russen die Flucht ergriffen, befanden sich in der Hauptsache Reichsdeutsche, ehemalige Parteigenossen, die von den Russen eine weit schlimmere Behandlung befürchteten."	In early July, rumours circulated about a change of occupation zones, i.e., the occupation of the Mühlviertel [northern Upper Austria] by the Red Army. This announcement brought fear to the population and led to large-scale migration, especially in the direction of Linz. The 900 fleeing families were mainly *Reichsdeutsche*, former Nazi fellows who expected the worst under Russian occupation.	Hindinger, G. (1968), *Das Kriegsende und der Wiederaufbau demokratischer Verhältnisse in Oberösterreich im Jahre 1945* (Vienna: Verlag Brüder Hollinek, p. 130).
"Im Juni/Juli 1945 lösten Gerüchte über eine Besetzung des Mühlviertels durch die sowjetische Rote Armee eine Massenflucht aus. Vor allem ehemalige NSDAP-Angehörige setzten sich mit Hab und Gut ins südliche Oberösterreich ab."	In June/July 1945, rumours of a Soviet occupation of the Mühlviertel [northern Upper Austria] led to a mass exodus. Former Nazi party fellows in particular took their belongings and fled to southern Upper Austria.	Bohrmann, Y. (2015), *Die Kulturgeschichte des Mühlviertels* (http://www.waldwildnis.de/cd/archiv/muehlviertel/mkgeo.htm), access: 09.12.2015.
"Die Folge war, dass schon in den letzten Julitagen, nach Bekanntwerden dieser Tatsache [Teilung Oberösterreichs in eine US- und eine Sowjetische Besatzungszone], eine Flucht über die Donau einsetzte. Insbesondere Nationalsozialisten fürchteten eine Bestrafung durch die Russen weit mehr und begaben sich mit ihrer Habe ins südliche Oberösterreich."	In the last days of July, a mass exodus across the Danube River began. Nazis in particular feared being punished more severely by the Russians and escaped with their belongings to southern Upper Austria.	Leimlehner, E. K. (1974), *Das Kriegsende und die Folgen der sowjetischen Besetzung im Mühlviertel 1945 bis 1955* (Zurich: Juris Druck + Verlag, p. 69).

(Continues)

TABLE A.1. – CONTINUED

Original	*Translation*	*Source*
(Regarding the registration of Nazis according to the Act against National Socialist Activities): *"[In] der russischen Zone andererseits löste sich das Entnazifizierungsproblem zum Teil von selbst, weil die meisten wichtigen Nationalsozialisten sich vor der russischen Besatzung in die westlichen Bundesländer abgesetzt hatten."*	The denazification problem within the Russian zone partially vanished because most of the important Nazis escaped to the western Austrian states.	Stiefel, D. (1981), *Entnazifizierung in Österreich* (Vienna, Munich, Zurich: Europaverlag, p. 33).
(Regarding denazification in Vienna): *„Viele belastete Nazis setzten sich deshalb vor der russischen Besatzung und vor den Maßnahmen der österreichischen Regierung nach Westen ab, vor allem in die amerikanische Zone, in jene Gebiete, wo es nicht nur Fleisch und Butter gibt, sondern wo, nach dem allgemeinen Eindruck, allzu viele Nazi unbehelligt geblieben sind."*	Numerous Nazis escaped the Russian occupation and fled the actions of the Austrian government for the West, in particular the American zone. In those regions, not only was a provision of meat and butter granted, but also, by public opinion, many Nazis could remain unharmed.	*Arbeiterzeitung* (Jan. 1, 1946); Newspaper of the labor movement, cited in Stiefel, D. (1981), *Entnazifizierung in Österreich* (Vienna, Munich, Zurich: Europaverlag, p. 90).
(Regarding the escape of NSDAP members, businessmen and Nazi-sympathizing artists to the West): *„Es sind gewichtige Burschen unter ihnen, […] denn es waren bestimmt nicht die ärmsten und kleinsten PGs [Parteigenossen], die da mit sehr großem Sack und Pack abgezogen sind […] Auch viele Wirtschaftskapitäne sollen es sich an den Seen unseres schönen Landes gutgehen lassen, die vor den Stürmen des rasanten Vormarsches der Roten Armee […] sich selbst in stillere Gewässer in Sicherheit brachten. Dass zu sehr in die braune Soße hineingetretene Künstler ebenfalls dem großen Zug nach dem Westen gefolgt sind, […] ist uns ebenfalls bekannt."*	There are important comrades among them. Those NSDAP members who escaped with bags and baggage were not the poorest and least powerful. Additionally, many businessmen escaped the advancing Red Army and enjoyed their lives at the lakes [southern Upper Austria and Carinthia] of our beautiful country. We also know that many artists that sympathized with the Nazis followed the great escape to the West.	*Arbeiterzeitung* (Aug. 7, 1945); Newspaper of the labor movement, cited in Stiefel, D. (1981), *Entnazifizierung in Österreich* (Vienna, Munich, Zurich: Europaverlag, pp. 91–92).
(Regarding the registration of Nazis according to the Act against National Socialist Activities): *„[…] dass die elastische Absatzbewegung der besonders Schuldbewussten in das mildere Klima des Westens und Südens […] die Lösung des Problems sehr erschwert habe."*	The flexible escape movements of guilty Nazis toward the milder climate of the West and South […] complicates the problem [Registration of Nazis according to the Act against National Socialist Activities] even further.	Communist Party of Austria (KPÖ) (July 24, 1946), cited in Stiefel, D. (1981), *Entnazifizierung in Österreich* (Vienna, Munich, Zurich: Europaverlag, p. 90).
(Regarding Nazi refugees in Upper Austria): *„[…] dass Nazibonzen aus allen Teilen Österreichs und Deutschlands in Oberösterreich und anderswo mit Auto und Dienerschaft ein ruhiges Leben führten und über die Dummen lachten, die in der unmittelbaren Kriegszone geblieben sind."*	Nazi officials from all over Austria and Germany lived comfortably in Upper Austria and elsewhere. They laughed at the stupid ones who stayed in the war zone [i.e., the Russian occupation zone].	*Das kleine Volksblatt* (Aug. 24, 1945); Party newspaper of the catholic-conservative party of Austria (ÖVP), cited in Stiefel, D. (1981), *Entnazifizierung in Österreich* (Vienna, Munich, Zurich: Europaverlag, p. 92).

Notes: This table presents anecdotal evidence of Nazi migration from Soviet-occupied regions toward the US occupation zone in Upper Austria. Translation was performed by the authors.

TABLE A.2. PARTIES FORMING THE RIGHT-WING CAMP ("FPÖ")

National election	*Parties forming the right-wing camp*	*Vote share in Upper Austria*
Before WWII		
1919	DFOP, DVP	28.25
1920	DOEBP, GDVP	17.01
1923	GDLB	15.03
1927	– (Common list with Conservative CP)	–
1930	LBd, NSDAP, SCHO, HB	25.03
After WWII		
1945	– (No participation: Nazis have been banned)	–
1949	VdU	17.70
1953	VdU	10.39
1956	FPÖ	6.20
1959	FPÖ	7.70
1962	FPÖ	7.49
1966	FPÖ	5.63
1970	FPÖ	6.62
1971	FPÖ	6.28
1975	FPÖ	7.20
1979	FPÖ	7.41
1983	FPÖ	6.25
1986	FPÖ	11.23
1990	FPÖ	15.58
1994	FPÖ	22.19
1995	FPÖ	21.93
1999	FPÖ	26.53
2002	FPÖ	10.74
2006	FPÖ, BZÖ	14.94
2008	FPÖ, BZÖ	28.97
2013	FPÖ, BZÖ	26.10

Notes: This table presents the parties that form the right-wing camp ("FPÖ") in our analysis and the vote shares in Upper Austria in national elections since WWI. Abbreviations are as follows: DFOP: Deutsche Freiheits- und Ordnungspartei; DVP: Deutsche Volkspartei; DOEBP: Deutschösterreichische Bauernpartei; GDVP: Großdeutsche Volkspartei; DOEBP: Deutschösterreichische Bauernpartei; GDVP: Großdeutsche Volkspartei; GDLB: Verband der Großdeutschen und des Landbundes; LBd: Landbund für Österreich; NSDAP: Nationalsozialistische Deutsche Arbeiterpartei (Hitlerbewegung); SCHO: Nationaler Wirtschaftsblock und Landbund (Führung Dr. Schober); HB: Heimatblock; VdU: Verband der Unabhängigen; FPÖ: Freiheitliche Partei Österreichs; BZÖ: Bündnis Zukunft Österreich.

TABLE A.3. DESCRIPTIVE STATISTICS

	1930 (n = 436)				*1949 (n = 441)*				*2013 (n = 442)*			
	Mean	*Std. Dev.*	*Min*	*Max*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Mean*	*Std. Dev.*	*Min*	*Max*
Political Economy												
FPÖ vote share	25.03	11.00	0.34	62.86	17.66	9.00	0.66	50.17	26.10	5.44	12.87	53.01
SPÖ vote share	17.78	14.59	0.00	79.35	23.50	11.71	1.31	65.99	22.74	7.82	5.59	49.53
ÖVP vote share	57.12	18.09	6.49	99.31	57.19	16.22	9.38	97.38	32.35	9.73	8.89	61.92
Socio-demographics												
Population	2,054	5,814	266	115,338	2,513	9,179	280	184,685	3,115	9,492	234	183,504
Share of foreigners[a]	100.31	22.57	0.00	404.21	8.15	7.37	0.00	55.81	4.43	3.48	0.00	17.75
Share of protestants	2.15	7.42	0.00	87.72	4.89	7.61	0.00	84.66	3.23	6.00	0.00	75.77
Share of Jews	0.02	0.09	0.00	1.16	0.00	0.05	0.00	1.05	0.01	0.03	0.00	0.30
Economic structure												
Share of agriculture	52.15	18.90	1.33	82.87	41.80	17.50	1.31	82.75	6.71	3.76	0.22	19.14
Share of industry	24.57	10.01	6.03	64.64	31.86	10.50	7.82	79.66	25.04	6.52	7.40	46.41
Share of retail/transport	6.54	4.95	0.00	40.65	6.12	4.32	0.00	35.88	18.35	4.75	3.97	36.88
Share of public administration	1.45	1.74	0.00	16.68	1.90	1.72	0.00	14.99	4.44	1.51	1.16	9.89
Share of other services	1.47	1.73	0.00	15.68	2.00	2.03	0.00	20.44	24.15	7.48	6.00	48.42
Geography												
Share of settlement area by overall area	70.40	22.90	2.43	100	70.48	22.99	2.43	100	70.50	22.97	2.43	100
Distance to external border	25.00	19.26	0.00	84.73	25.27	19.38	0.00	84.73	25.23	19.38	0.00	84.73
Mean altitude	511.83	182.56	235.57	1,647.02	511.93	183.50	235.57	1,647.02	511.94	183.30	235.57	1,647.02
Altitude range	316.86	363.54	11.39	2,474.07	318.26	368.79	11.39	2,474.07	317.87	368.46	11.39	2,474.07

Notes: This table provides the descriptives for our data set covering political economy, socio-demographic, economic and geographical variables. In 1930, six municipalities (Perwang am Grabensee, Schlüßlberg, Roßleithen, Dietach, Lenzing, Sattledt) were the administrative districts of other municipalities. In 1949, one municipality (Perwang am Grabensee) was an administrative district of another municipality (Palting). Our data set also comprises data on the outcome of all 26 democratic national elections taking place between 1919 and 2013 (not shown here). a) 1930: Ratio of present population by resident population.

TABLE A.4. ROBUSTNESS TESTS

		Dependent variable: FPÖ vote share					
		RD			*RD (with controls)*		
		1930	*1949*	*2013*	*1930*	*1949*	*2013*
		(1)	(2)	(3)	(4)	(5)	(6)
Baseline (quadratic interacted RD)	*A*	1.07	7.74***	7.20***	0.25	7.29***	4.59**
		(5.80)	(2.53)	(2.11)	(5.26)	(2.21)	(1.92)
RD polynomial							
Linear interacted	*B*	-3.38	8.24***	7.25***	-3.80	5.71***	4.21**
		(3.81)	(1.99)	(1.79)	(3.39)	(1.66)	(1.72)
Cubic interacted	*C*	-1.87	7.19***	3.83	-2.42	7.38***	1.77
		(7.86)	(2.45)	(2.34)	(6.97)	(2.57)	(2.22)
Longitude-latitude (linear, interacted)	*D*	3.03	13.03***	8.64***	1.68	14.85***	6.27***
		(5.11)	(3.05)	(2.13)	(7.03)	(2.99)	(2.29)
Longitude-latitude (quadratic, interact.)	*E*	-4.04	6.19*	6.82***	-4.13	4.31	4.20*
		(4.47)	(3.57)	(2.08)	(4.81)	(3.32)	(2.36)
RD bandwidth (quadratic interacted RD)							
± 20 km to Danube River	*F*	-0.36	7.32***	4.87**	-2.02	7.17***	3.74*
		(7.09)	(2.19)	(2.04)	(6.83)	(2.20)	(2.07)
± 50 km to Danube River	*G*	-3.49	8.36***	7.54***	-3.49	6.51***	4.33**
		(4.80)	(2.46)	(1.98)	(4.07)	(1.81)	(1.92)
Full sample	*H*	-0.77	9.81***	7.37***	-2.50	8.44***	5.06***
		(4.27)	(2.17)	(1.83)	(3.58)	(1.48)	(1.77)
Standard errors (quadratic interacted RD)							
Conley, 5 km spatial correlation cutoff	*I*	1.07	7.74***	7.20***	0.25	7.29***	4.59**
		(5.78)	(2.79)	(1.98)	(4.98)	(2.49)	(1.94)
Conley, 15 km spatial correlation cutoff[a]	*J*	1.07	7.74***	7.20***	0.25	7.29***	4.59**
		(3.54)	(0.33)	(1.81)	(4.51)	(1.82)	(1.91)
Robust	*K*	1.07	7.74***	7.20***	0.25	7.29***	4.59**
		(4.22)	(2.72)	(1.69)	(4.07)	(2.53)	(1.78)
Pseudo borders (quadratic interacted RD)							
Alphabetical assignment	*L*	-1.64	-4.38	-0.25	-1.67	-3.51	-1.38
		(3.74)	(3.49)	(1.61)	(2.95)	(3.38)	(1.43)
Traun River	*M*	1.13	-0.83	-0.75	-1.14	-2.49	-0.11
		(6.25)	(3.45)	(0.66)	(6.09)	(4.60)	(0.95)
Innviertel	*N*	1.19	2.77	1.62	0.81	2.59	1.59
		(3.97)	(3.17)	(1.79)	(3.24)	(2.90)	(1.79)
Shift border 20 km to south	*O*	0.27	0.94	1.60	-1.78	0.83	1.80
		(2.73)	(2.71)	(2.31)	(3.38)	(2.49)	(1.54)
Subsamples (quadratic interacted RD)							
Without east of Mauthausen	*P*	0.86	7.02***	6.75***	-1.41	6.81***	3.85*
		(6.24)	(2.47)	(2.20)	(5.72)	(2.31)	(2.05)
Without west of Engelhartszell	*Q*	2.12	9.72***	6.02***	-1.19	8.96***	3.54***
		(6.38)	(2.76)	(1.54)	(5.60)	(2.49)	(1.24)
Between Mauthausen and Engelhartszell	*R*	1.91	9.00***	5.57***	-2.50	8.23***	3.27**
		(6.79)	(2.65)	(1.66)	(6.12)	(2.56)	(1.28)
Socio-demographic controls		No	No	No	Yes	Yes	Yes
Economic structure controls		No	No	No	Yes	Yes	Yes
Geography controls		No	No	No	Yes	Yes	Yes

Notes: This table shows the coefficient *US* for several robustness tests for Table 3. Columns (1)–(3) are without controls; columns (4)–(6) include the full set of controls. Row A replicates the baseline results in Table 3 (quadratic interacted RD polynomial, ± 30 km to the Danube River, Conley cutoff at 10 km). Rows B and C present the linear interacted and cubic interacted RD polynomials; rows D–E show the results of a two-dimensional polynomial RD proposed by Dell (2010). Rows F–H present a quadratic interacted RD polynomial that restrict the sample to municipalities within 20 km and 50 km to the Danube River, and the full sample. In rows I–K, we vary the cutoff for Conley standard errors and employ robust standard errors. Pseudo treatments are employed in rows L–O (alphabetical order of municipalities' names, southwest to northeast division along the Traun River, the regional border of the Innviertel, and a shift of the zone border 20 kilometres to the south). Rows P–R show the results for regional subsamples in the longitude space, excluding municipalities in the west and/or east of the longitude of the temporary zone border. See Figure A.4 for geographical illustrations. a) Conley cutoff in column (2) reduced to 14.5 km to achieve feasible standard errors. Significance levels: *** 0.01, ** 0.05, * 0.10 (Conley standard errors; row K: robust standard errors).

TABLE A.5. DISCONTINUITY IN VOTE SHARES OVER TIME

	Dependent variable: Vote shares/voter turnout						*Persuasion rate*
	FPÖ	*ÖVP*	*SPÖ*	*Grüne*	*Others*	*Voter turnout*	*FPÖ*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Before WWII							
1919	-1.51	12.93	-11.43				-5.24
1920	2.58	7.94	-10.33				14.60
1923	3.24	10.31	-13.56				20.61
1930	1.07	12.76	-13.83			-1.99	4.03
After WWII							
1945		12.59	-11.23		-1.35**	-2.98***	
1949	7.74***	6.95	-12.64*		-2.06**	-0.05	35.03***
1953	7.66***	6.22	-11.91		-1.97**	-0.84	61.02***
1956	5.97***	6.97	-12.00		-0.95*	-1.70	85.74***
1959	4.78**	7.55	-11.40		-0.93**	-1.81	53.61**
1962	4.97***	5.89	-10.08		-0.77	-1.31	56.04***
1966	3.39**	5.86	-9.70		0.45	-1.32	52.01**
1970	3.14***	5.16	-7.92		-0.38**	-1.94**	41.26***
1971	2.39**	6.13	-8.28		-0.24	0.06	34.91**
1975	2.11*	5.85	-7.77		-0.20	0.33	26.54*
1979	2.03	5.41	-7.41		-0.02	0.78	24.64
1983	1.47	6.37	-6.41	-1.10*	-0.32	1.04	21.08
1986	2.11	4.98	-4.79	-2.22**	-0.08	1.80	17.15
1990	2.84*	4.40	-4.51	-3.20**	0.46	2.07	16.40*
1994	3.27*	4.48	-4.72	-1.67	-1.36	2.53	13.31*
1995	3.49*	3.97	-4.60	-1.85**	-1.02	0.85	14.57*
1999	3.10*	4.57	-4.75	-1.88	-1.03*	2.83**	10.72*
2002	3.78***	3.79	-4.94	-2.62	-0.02	1.27	31.92***
2006	4.33***	2.76	-4.86	-2.71	0.49	1.70	25.94***
2008	6.85***	1.39	-5.30	-2.51	-0.43	1.21	22.98***
2013	7.20***	0.04	-3.65	-2.11	-1.47	1.40	25.56***

Notes: This table shows the evolution of the spatial discontinuity across the Danube River (quadratic interacted RD polynomial) in vote shares for political parties of Austria (columns (1)–(5)) and voter turnout (column (6)) between 1919 and 2013 at the level of 239 municipalities (± 30 km to the Danube River). The specification refers to columns (1) to (3) in Table 3. Column (7) shows the persuasion rate for the FPÖ. We compute the persuasion rate by dividing the discontinuity across the Danube River by the average FPÖ vote share in the US zone. Significance levels: *** 0.01, ** 0.05, * 0.10 (Conley standard errors).

TABLE A.6. DIFFERENCE-IN-DIFFERENCES ESTIMATIONS

	Dependent variable: FPÖ vote share	
	(1)	(2)
US × PostWWII (1949–2013)	3.45*	
	(2.00)	
US × Neo-Nazi period (1949–1966)		4.77***
		(1.79)
US × Liberal period (1967–1986)		1.64
		(1.99)
US × Populist period (1987–2013)		3.82*
		(2.24)
Year fixed effects	Yes	Yes
Municipality fixed effects	Yes	Yes
Obs.	1,533	1,533
Municipalities	73	73
R^2 *(within)*	0.17	0.34

Notes: This table shows the results of difference-in-differences estimations using FPÖ vote shares between 1930 and 2013 as the dependent variable. We use the 73 municipalities of Upper Austria, which are located at a maximum distance of 10 km from the Danube River (see Figure A.7 in the online appendix for a graphical illustration). In column (1), US × PostWWII measures the change in FPÖ vote shares for the entire post WWII period in US occupied municipalities compared to Soviet occupied municipalities and to the national election in 1930. Column (2) divides the post WWII period into three sub-periods according to the FPÖ's political orientation. Significance levels: *** 0.01, ** 0.05, * 0.10 (Robust standard errors).

TABLE A.7. REPRESENTATIVENESS OF THE SAMPLE OF CURRENT LOCAL POLITICIANS

	Mean		*Difference*
	Sample	*Non-Sample*	
	(1)	(2)	(3)
FPÖ vote share local election 2009	12.92	14.25	-1.32
			(0.87)
SPÖ vote share local election 2009	28.53	27.82	0.71
			(1.28)
ÖVP vote share local election 2009	52.88	53.77	-0.89
			(1.42)
Obs.	228	211	439

Notes: This table shows the municipal vote shares for the FPÖ, SPÖ and ÖVP in local elections in 2009. Column (1) depicts the mean municipal vote shares for municipalities in our sample. Column (2) depicts vote shares in municipalities without online listed candidates. Column (3) compares the mean differences of the samples for each party separately. Significance levels: ***0.01, ** 0.05, * 0.10 (Standard errors in brackets).

TABLE A.8. CONTROL FOR OTHER CHANNELS (LOCAL PARTY FORMATION IN 1949, PROBIT)

	Dependent variable: FPÖ participation in local election								
	Baseline	*General migration*		*Denazification*		*Bomb attacks*			*"ÖVP terrorism"*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	1.67***	1.65***	1.55***	1.64***	1.64***	1.66***	1.74***	1.66***	1.67***
	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.32)	(0.30)	(0.30)
Refugee camp 1949		0.45							
		(0.32)							
Population growth 1939–1951			-0.14						
			(0.09)						
Electorate growth 1945–1949				0.01					
				(0.01)					
FPÖ vote share 1930					0.02**				
					(0.01)				
Bomb attacks (narrow)						-0.06			
						(0.27)			
Bomb attacks (broad)							0.21		
							(0.22)		
Bomb attacks (neighbours)								-0.27	
								(0.33)	
ÖVP vote share 1945									-0.01
									(0.01)
Socio-demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Economic structure controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geography controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	438	438	433	438	438	438	438	438	438
Pseudo R²	0.33	0.33	0.33	0.33	0.34	0.33	0.33	0.33	0.33

Notes: This table shows the results of probit estimations. The dependent variable equals one if the FPÖ participates in local elections in 1949 (zero otherwise). *US* is a dummy that equals one if the municipality is located in the US zone (zero otherwise). Column (1) replicates the main probit results with the full set of municipal controls (see Table 7, column (4)). Columns (2)–(9) add measures for further potential channels of persistence separately (equivalent to Table 4). Significance levels: *** 0.01, ** 0.05, * 0.10 (Robust Standard Errors).

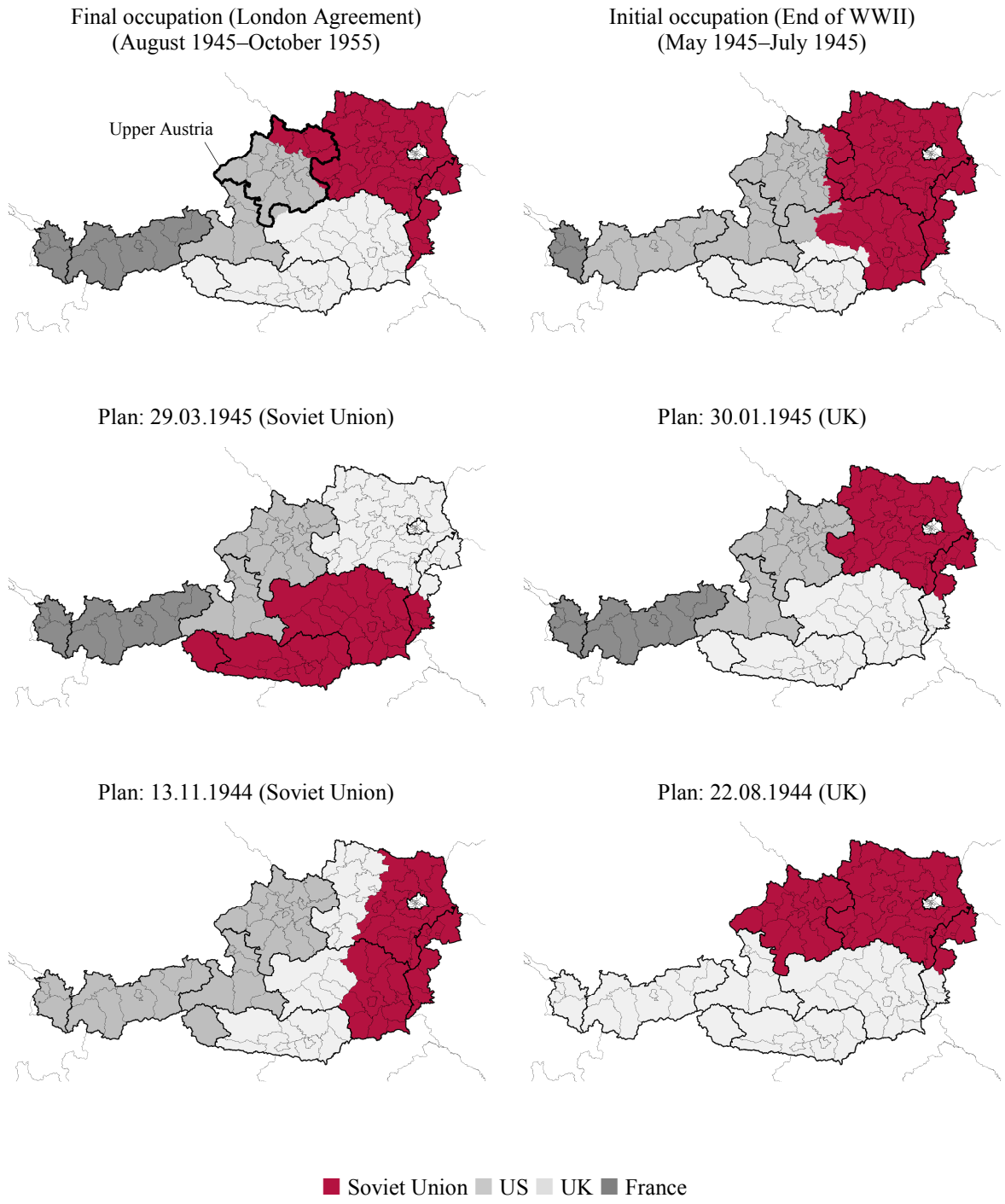

FIGURE A.1. LIBERATION, AND OCCUPATION OF POST-WWII AUSTRIA

Notes: These figures depict the occupation zones from 1945–1955 (upper-left figure), the liberation and initial occupation of Austria from May 9, 1945 until July 1945, and prior occupation plans for Austria by the Allies after WWII. Thin lines within Austrian external borders depict districts, and bold lines show the nine Austrian states. The date that corresponds to each map indicates the day on which the plan was shared (for the most part in secret) by the Ally in brackets with the other Allies. The last and final occupation plan by the Soviet Union from April 1945 (but not published until July 1945) was the first plan to outline the division of Upper Austria.

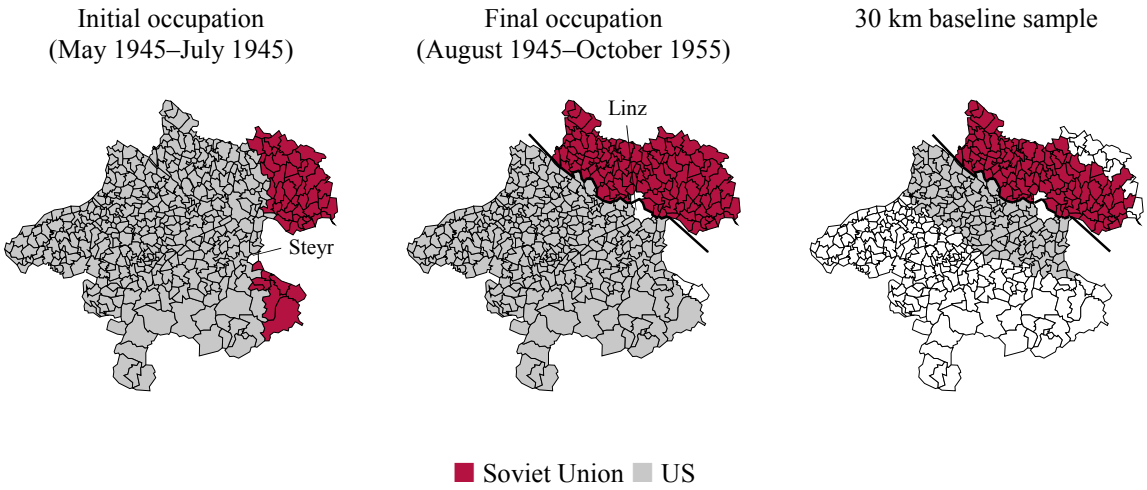

FIGURE A.2. ALLIED OCCUPATION OF POST-WWII UPPER AUSTRIA

Notes: These figures depict the temporary and final occupation of Upper Austria by the Red Army and US Army after WWII (left-hand and centre map). During the temporary occupation period, the city of Steyr was divided at the Enns River. In the final occupation period, the Upper Austrian capital Linz was divided at the Danube River (bold black line). Until 1955, two small municipalities in southwestern Upper Austria (Maria Neustift, Gaflenz) remained divided due to geographic constraints. We drop divided municipalities in our analysis. The right-hand map shows the sample of municipalities we use in our baseline specification (located ± 30 km to the Danube River).

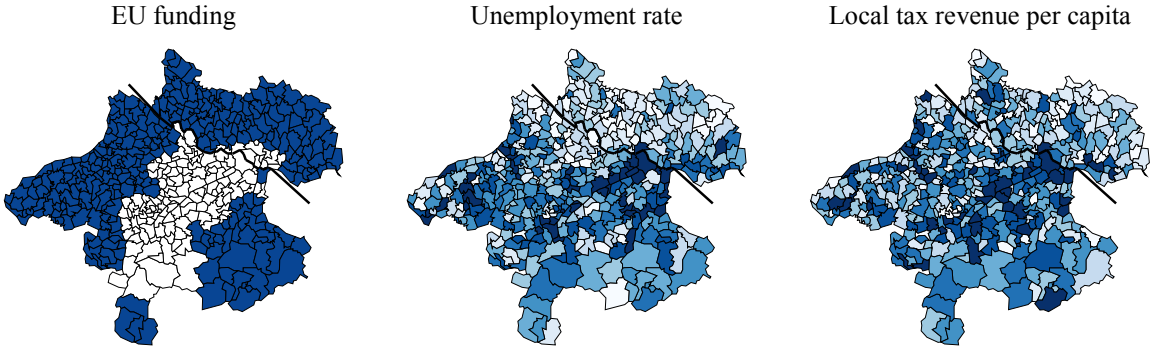

FIGURE A.3. ILLUSTRATION OF 2013 CONTROLS

Notes: These figures provide a geographical illustration of additional controls for the 2013 national elections employed in Table 3 (column (10)). EU funding shows municipalities eligible under Objective 2 or Phasing-out in the EU structural funds 2000–2006 (blue coloured). The intensity of the dark dyeing shows municipal unemployment rate and local tax revenues (the higher a value the darker the display). The bold line represents the Danube River.

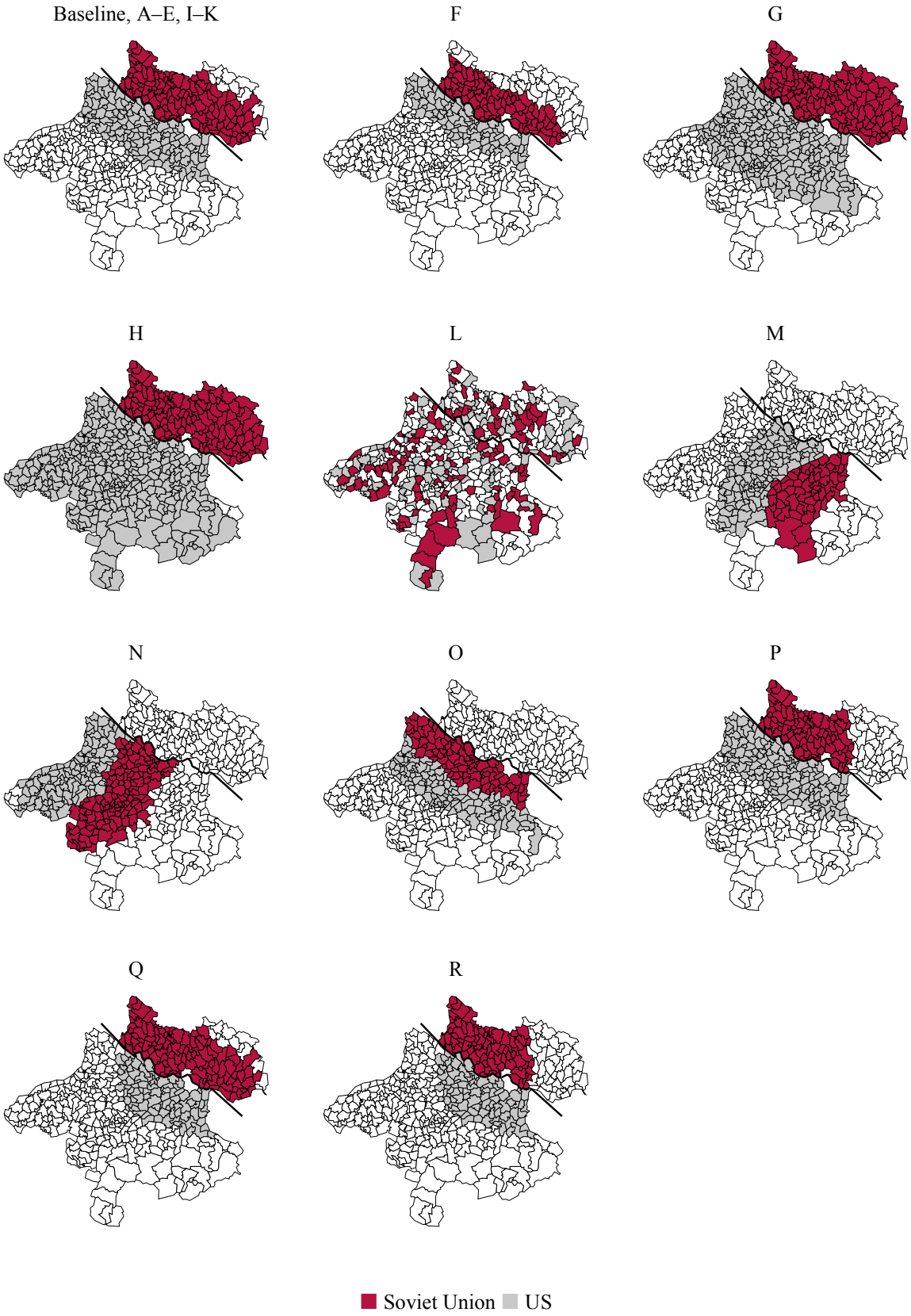

FIGURE A.4. ILLUSTRATION OF ROBUSTNESS TESTS

Notes: These figures provide a geographical illustration of the robustness tests employed in Table A.4. The red (grey) colour shows the municipalities included in the respective robustness check attributed to the Soviet (US). Blank municipalities have been left out. The bold line represents the Danube River.

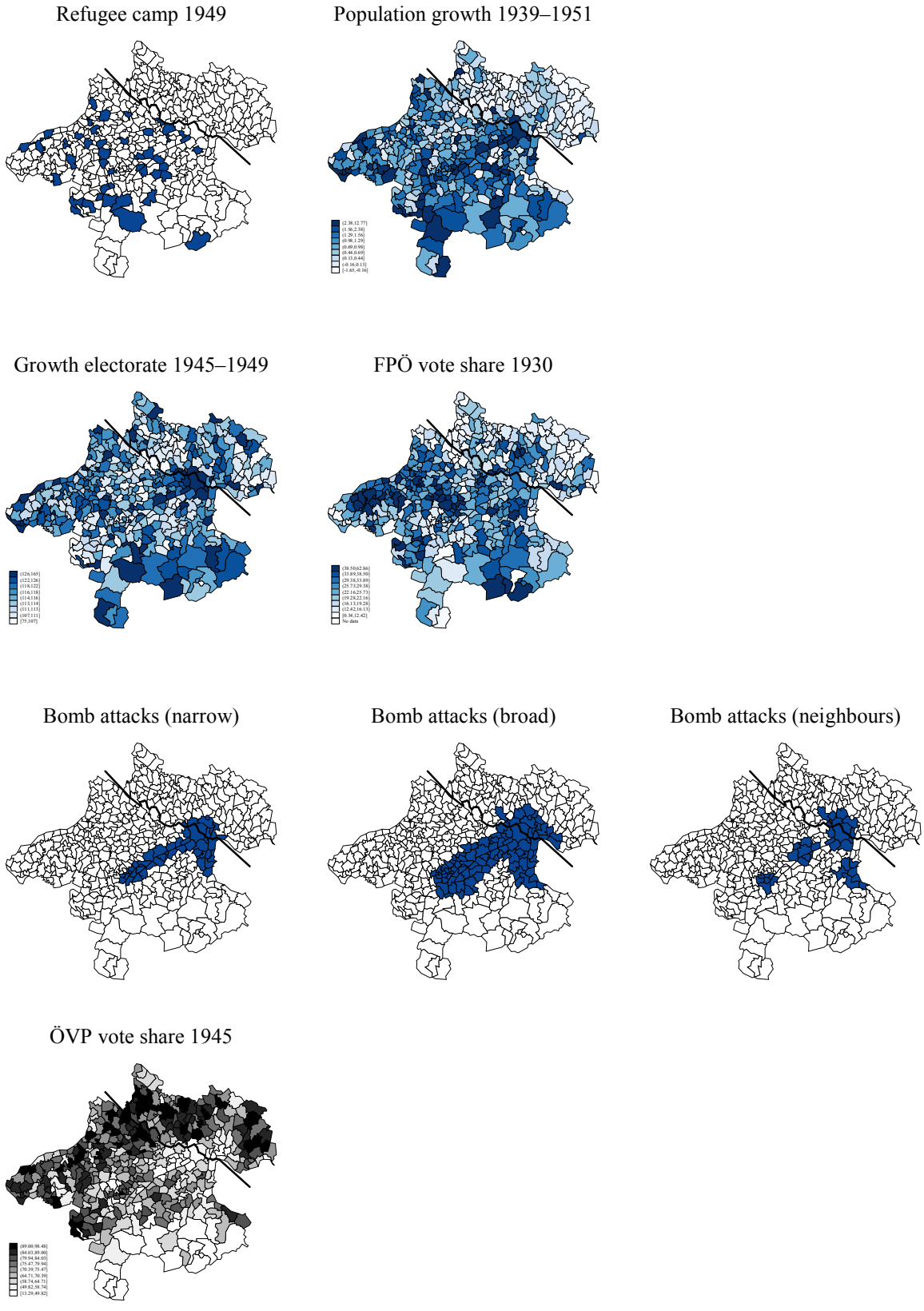

FIGURE A.5. ILLUSTRATION OF CONTROL FOR OTHER CHANNELS

Notes: These figures provide a geographical illustration of the control for further channels employed in Table 4 and Table A.8. The bold line represents the Danube River.

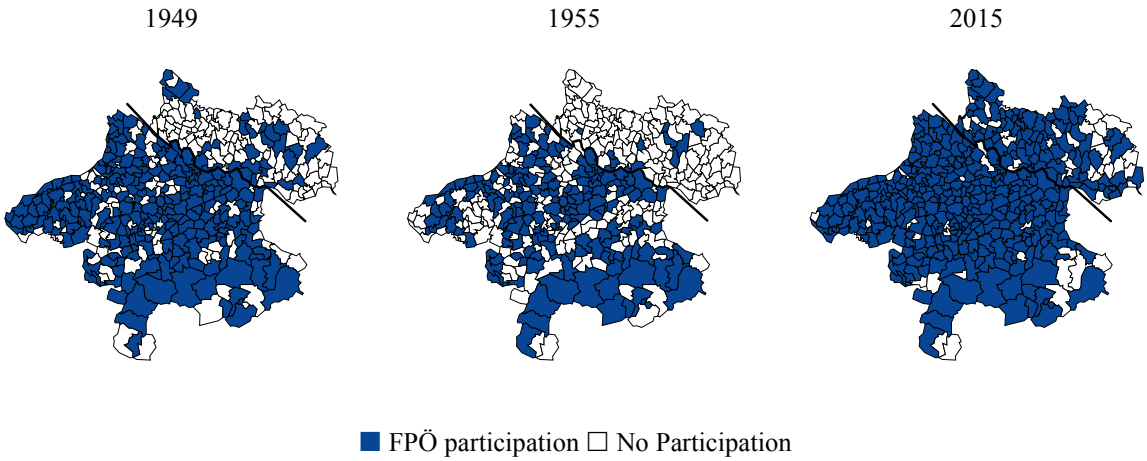

FIGURE A.6. FPÖ PARTICIPATION IN LOCAL COUNCIL ELECTIONS 1949, 1955, AND 2015

Notes: The figures depict whether the FPÖ (1949: VdU) participates in municipal council elections in Upper Austria in 1949 (left-hand side), 1955 (centre) and in 2015 (right-hand side). Participation is given when at least one voter casts a vote for the FPÖ. No participation indicates that the FPÖ gets zero votes. The bold line represents the Danube River, which was the border between the US and Soviet zone from 1945 to 1955.

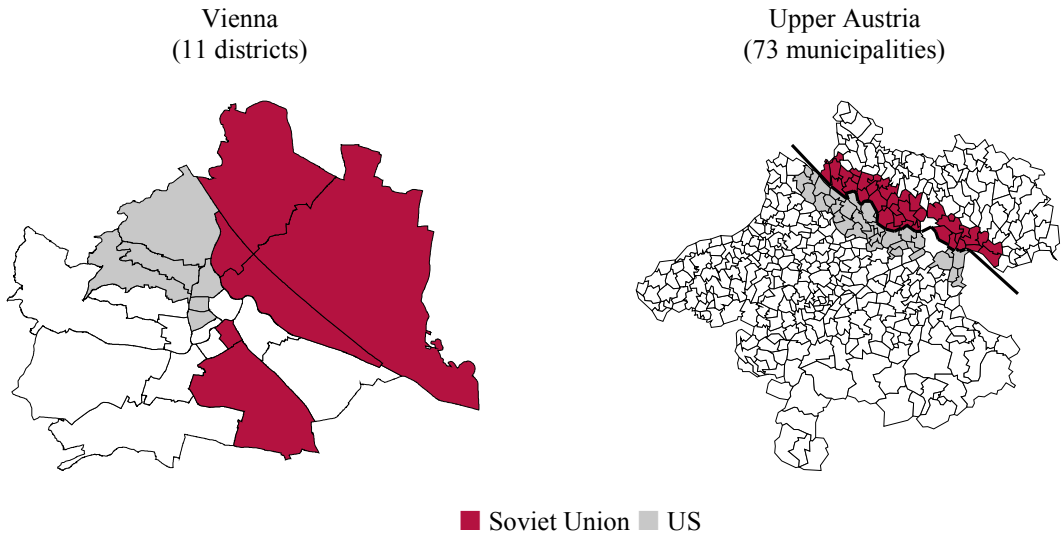

FIGURE A.7. ILLUSTRATION OF CONTROL FOR DIFFERENCES IN OCCUPATION POLICY

Notes: The left-hand map depicts the districts of Vienna occupied by the Soviet Union (red) and by the US (grey colour). The maximum distance to the "district border" between the US and Soviet zones is approximately 10km. The right-hand map shows municipalities with a maximum distance of 10km to the Danube River.

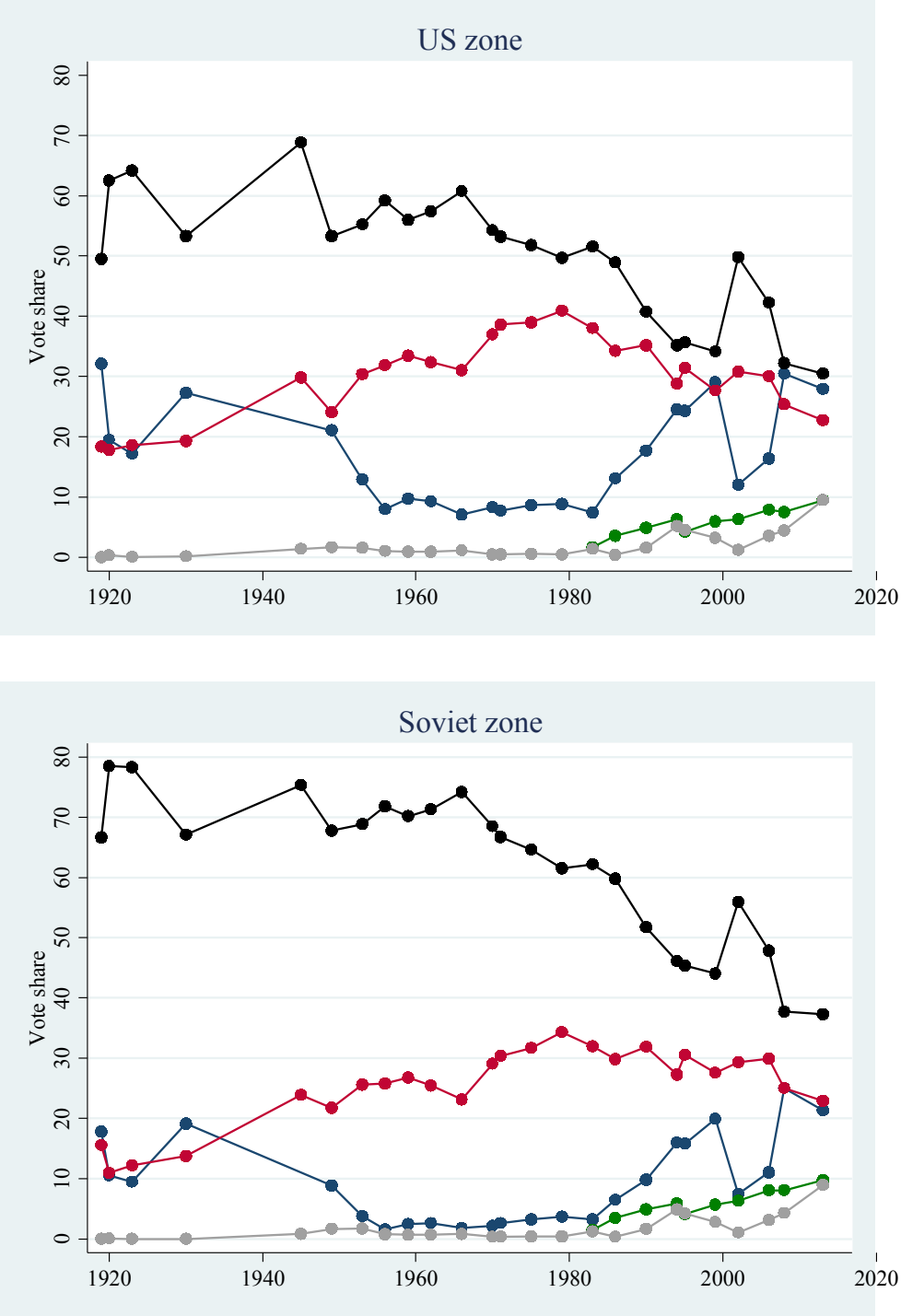

FIGURE A.8. VOTE SHARES IN THE 1945–1955 US ZONE AND SOVIET ZONE

Notes: The figures show the vote shares for all parties in Upper Austria in national elections from 1919 to 2013 separated for municipalities in the US zone (southern Upper Austria, upper figure) and the Soviet zone (northern Upper Austria, lower figure). No elections were hold between 1930 and 1945. Other parties prior to the 1970s are mainly the Communist Party KPÖ of Austria. From 1980 onwards, other parties mainly consists of KPÖ, Liberales Forum (LIF), Team Stronach (TS) and NEOS.

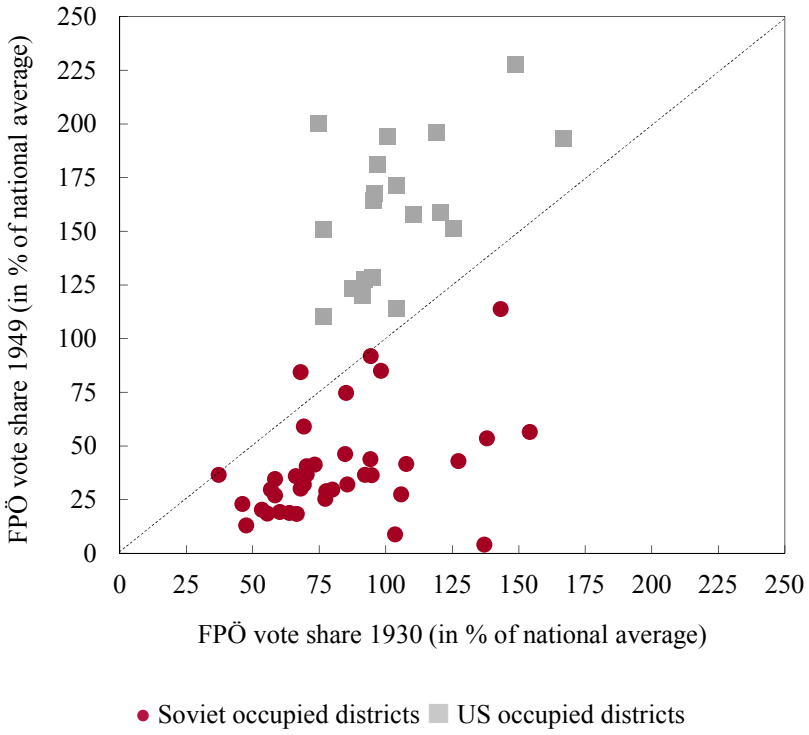

FIGURE A.9. DISTRICT-LEVEL FPÖ VOTE SHARES 1930 AND 1949 (IN % OF NATIONAL AVERAGE)

Notes: The figures show the vote shares for the right-wing camp (FPÖ) in the 1930 and the 1949 national election at the level of districts. Red shaded bullets indicate Soviet occupied districts; gray shaded bullets represent US occupied districts.