Immigration and Voting for the Extreme Right*

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Does the presence of immigrants in one's neighborhood affect voting for extreme right-wing parties? We study the case of the Freedom Party of Austria (FPÖ) which, under the leadership of Jörg Haider, increased its vote share from less than 5 percent in the early 1980s to 27 percent by the end of the 1990s. To identify the causal impact of immigration on voting for the extreme right, we exploit Austria's immigration inflow in the 1960s and the resulting settlement patterns, which provide a source of exogenous variation in the spatial distribution of more recent immigrants. We find that the percentage immigrants in a community has a significant and quantitatively important impact on the community's voting share for the FPÖ, explaining roughly a sixth of its regional variation. Our results suggest that voters worry about a changing ethnic and cultural composition in their neighborhoods and schools, thus pointing to the importance of "compositional amenities." The evidence is less conclusive as to whether labor market effects of immigration drive voting outcomes.

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1 Introduction

Voters in many European countries — including Austria, Belgium, Denmark, France, Netherlands, Norway, and Switzerland — have expressed strong support for extreme right-wing (ERW) parties in recent elections. From the 1970s until the mid-1980s, hardly any ERW party had gained more than five percent in a general election. Fifteen years later, ERW parties received between ten and twenty-five percent in these votes. History reminds us that the rise of extreme parties within a democratic environment can put democracy itself at risk (Almond and Verba, 1965; Dahl, 1989). Although few political movements today are direct analogues of the *National Socialist German Workers' Party* (NSDAP), it is worth recalling that the Nazis did not come to power through a coup, but through regular elections. Explaining the success of ERW parties is, therefore, clearly an important issue.

While ERW parties are quite heterogeneous, they share a number of ideological features (Mudde, 1996). In particular, they all have fierce anti-immigration programs, which often become their main focus. Thus, immigration is a natural candidate for explaining the success of ERW parties. Indeed, Figure 1 suggests a positive relationship between the share of immigrants in a population and the support for ERW parties. Taking country fixed effects into account, the correlation between the immigrant share and the ERW vote share is 0.48. When considering only countries where ERW parties exist, the correlation is 0.51.

[Insert Figure 1 here]

This paper investigates whether immigration in voters' neighborhoods is a driving force of the rise of extreme right-wing parties. We look at the case of the *Freedom Party of Austria* (*Freiheitliche Partei Österreichs*, FPÖ), which generated substantial international attention. Until the early 1980s, the FPÖ was a small party with a vote share (in elections to the national parliament) of around 5 percent. When Jörg Haider became the party leader in 1986, the nationalists within the party, favoring an anti-immigration stance, prevailed over its business-friendly, libertarian wing. A nationalistic and anti-immigration

approach has characterized the party's platform ever since. From 1986 onwards, the FPÖ steadily increased its vote share and became the country's second-largest party by the end of the 1990s. In the national elections of 1999 the FPÖ gained almost 27 percent of the votes. In 2000, the FPÖ joined with the conservative *Austrian People's Party* (ÖVP) to form a coalition government that was in power until 2006. In 2002, this coalition enacted a set of more restrictive immigration laws (including, for example, requirements that immigrants study German).

To test whether Austrian voters are indeed more likely to vote for the FPÖ when there are more immigrants in their neighborhood, we use community-level data. Community characteristics are taken from population census data, covering the universe of the Austrian population, thus minimizing measurement problems.

We begin by estimating an OLS regression with the FPÖ's vote share in a community as the dependent variable and the community's percentage of immigrants (the percentage of residents without Austrian citizenship) as the explanatory variable. Controlling for a range of community factors, such as industry structure, labor market conditions, and other socioeconomic characteristics, our results point to a positive association between the presence of immigrants and voting for the extreme right. This association remains highly significant when we account for community fixed effects, thus removing time-invariant unobserved heterogeneity.

While illustrative, this evidence — much like the above cross-country correlations of Figure 1 — does not establish a causal relationship. To identify the causal impact of immigration on voting for the FPÖ we rely on specific features of the history of immigration into Austria and the resulting historical settlement patterns. Historical immigrant settlement patterns have been used as the basis for instrumental variables in various labor economics settings (see, for instance, Altonji and Card, 1991; Card, 2001; Dustmann, Fabbri and Preston, 2005; Saiz, 2007; Cortes, 2008). We argue that, in the present setting, this approach is particularly appealing. After WWII, very few immigrants lived in Austria. The booming economy of the 1960s led to increasing labor shortages inducing the Austrian government to forge bilateral agreements with southern and southeastern

European states to recruit "guest" workers. After an agreement with Turkey in 1964 and an agreement with Yugoslavia 1966 a significant influx of Turkish and Yugoslavian workers to Austria began. The number of residents with Turkish and Yugoslavian citizenship increased within a decade by factors 60 and 20, respectively. Most of the guest workers continued to stay in Austria permanently.

The immigrants of the 1960s established settlement patterns and social networks that were initially strengthened by induced migration of family members, joining early (predominantly male) guest workers. In the following decades, particularly during the Yugoslavian political crisis in 1990 and the war in 1992, a massive influx of new immigrants took place, with a spatial distribution determined by existing settlement patterns. Thus, Austrian immigration history provides us with a set-up that calls for the instrumental variable strategy proposed by Card (2001): Based on the number of newly arriving immigrants from various source countries we calculate, for each community, the hypothetical (predicted) stock and the hypothetical (predicted) inflow of immigrants that would have emerged under settlement patterns identical to the ones established in the 1960s. Arguably, settlement patterns of the 1960s generate exogenous variation in the spatial distribution of more recent immigrants. The "supply-push" component of immigration into communities can, thus, serve as a valid instrumental variable for actual immigration.

Our analysis does not only control for a range of variables potentially affecting demand for immigration and voting outcomes in election years, but we also account for the role of economic factors potentially affecting the location choice of immigrants back in the 1960s. In particular, we control for labor market conditions and industry structure in the 1960s. However, our results do not depend on controlling for these factors. Moreover, Austrian archival government documents reveal that allocations of incoming immigrants in the 1960s were not systematically related to labor market statistics. Taken together, the evidence suggests that local conditions of the 1960s did not have a systematic impact on spatial settlement patterns that emerged at that time further supporting our identifying assumption that spatial settlement patterns in the 1960s are a valid instrument for the spatial distribution of more recent immigration.

We document two main results. *First*, the presence of immigrants in one's neighborhood has a quantitatively important and statistically significant impact on voting support for the FPÖ. We also document that the *increase* in the percentage of immigrants had a positive effect on the *increase* in the vote share of the FPÖ. Our baseline 2SLS-estimate suggests that a one percentage-point increase in the immigrant percentage in a community increases the FPÖ vote share in the community by about 0.25 percentage points. This implies that a one-standard-deviation increase in the local share of immigrants leads to a sixth of a one-standard-deviation increase in the FPÖ vote share.

We provide two falsification checks to test the validity of our empirical strategy. First, we consider the possibility that the native population may change residence in response to a high influx of immigrants. Employing various approaches (as suggested by Peri and Sparber, 2011), it turns out that residential relocations by Austrian voters in response to immigration are not a statistically significant phenomenon. Second, we examine the concern that initial immigrants' location choices may have been driven by local attitudes towards immigration. Archival evidence documents that the cohorts of guest workers that arrived in the 1960s were everywhere warmly welcome and that, more importantly, their location choices were mainly affected by institutional idiosyncrasies. We calculate the correlation between the immigrant share in 1971 and a proxy for long-standing anti-immigrant sentiments, namely, the vote shares for the *Deutsche Nationalsozialistische Arbeiterpartei* (DNSAP, the Austrian counterpart of the German NSDAP) from a 1930 election, the only Austrian election in which the Nazis participated. We do not find a significant relationship, consistent with the idea that local attitudes towards immigration are not prime determinants of immigrants' location choices.

The *second* main result concerns the channels that induce voters to increase their support of the extreme right in response to more local immigration. To shed light on potential channels, we explore whether the immigration effects are heterogeneous (i) across groups of immigrants and (ii) across communities. As for (i), we find that a higher percentage of low- and medium-skilled immigrants — but not of a higher percentage of high-skilled immigrants — causes Austrian voters to turn to the extreme right. Moreover, we find that

immigrants' cultural distance to Austrian society mattered at the beginning of the sample period: For example, Muslim immigrants brought about a strong tilt towards the FPÖ in the 1979 election. As for (ii), the immigration effect is stronger in communities with a high percentage of immigrant children and where Austrians are relatively high-skilled. By contrast, the extent of skill overlap and labor market competition between Austrians and immigrants does not explain variation in the impact of immigration. Overall, this evidence supports the evidence that voters worry about adverse effects of immigration on the compositional amenities that natives derive from their neighborhoods and schools (Card *et al.*, 2012).

Three guideposts can be used to put this analysis into the context of the existing literature. *First*, our analysis is related to a rich literature studying political preferences and attitudes towards immigration.[1] This literature is typically based on survey data, while only little evidence exists which studies attitudes towards immigration as revealed in elections outcomes. Hence our results are complementary to the attitudes-towards-immigration literature by studying to which extent support for the extreme right is related to the presence of immigrants.[2]

Second, our work is related to the literature that studies the political economy of immigration policies. Even in countries where so far no important ERW parties have emerged, immigration policies have been strongly shaped by politico-economic considerations.[3] Immigration is an issue with a particularly thin line separating pragmatic economic

[1]For studies on attitudes towards immigration see Card *et al.* (2012); Dustmann and Preston (2004, 2007); Facchini and Mayda (2009); Hainmueller and Hiscox (2007, 2010); Krishnakumar and Müller (2012); O'Rourke and Sinnott (2006); Scheve and Slaughter (2001). For studies related to preferences for political parties and/or policies, see Citrin *et al.* (1997); Dahlberg *et al.* (2012); Dülmer and Klein (2005); Knigge (1998); Lubbers and Scheepers (2000).

[2]Several studies in the political science literature provide suggestive evidence; see, e.g., Arzheimer and Carter (2006); Arzheimer (2009); Golder (2003); Jackman and Volper (1996); Knigge (1998) and Lubbers, Gijsberts and Scheepers (2002). These studies do not address the endogeneity of immigration and are, therefore, not able to establish a causal link between immigration and political outcomes. More recently, Gerdes and Wadensjö (2008) rely on arguably random assignment of refugees in Denmark; also studying the case of Denmark, Harmon (2014) argues that the share of high rise buildings in a community in 1970 provides a valid instrument for the increase in ethnic diversity from 1981 to 2001, which is in turn associated with more votes for the extreme right; and Otto and Steinhardt (2014) examine potential causal effects of immigration in Hamburg using a historical settlement pattern strategy. Relatedly, Malgouyres (2014) identifies in French community-level data a relationship between low-wage country imports competition on the local vote share for the ERW *Front National*.

[3]See, for example, Facchini *et al.* (2011); Facchini and Steinhardt (2011).

policy from dogmatic political economics. Anti-immigrant politics may have ideological sources, but politicians may also supply xenophobia because they find it instrumental in discrediting political opponents whose policies benefit immigrants (Glaeser, 2005).

Third, this paper adds to more general work showing that economic considerations can help explain voting patterns which otherwise seem extreme. Much as economic concerns led many voters to turn to the Nazis (King *et al.*, 2008), so have overall economic conditions played a role in the rise of extreme parties in many countries at the beginning of the 20th century (de Bromhead *et al.*, 2012). It is also related to the literature on vote and popularity functions (Nannestad and Paldam, 1995).

The remainder of this paper is organized as follows. Section 2 describes the political background of Austria and the data used for our analysis. Section 3 discusses our identification strategy and presents the main empirical results. This section also examines various concerns towards our identification strategy and addresses potential channels that might explain an effect of immigration on ERW votes. Section 4 concludes.

2 Background and Data

2.1 Immigration and the FPÖ

While the primary focus of our analysis is on explaining the cross-sectional variation in voting patterns, it is useful to start with an examination of the aggregate time-series pattern of immigration and FPÖ vote shares; see Figure A.1 in Supplementary Appendix A. In 1961, only 1.4 percent of the resident Austrian population were foreign citizens. Due to the guest-worker programs and the ensuing influx of further immigrants, this share had almost tripled by 1981. In response to emerging problems in the labor market, the Austrian government enacted the Aliens Employment Act (1975), which regulated immigration and reduced the influx of foreign workers. This resulted in a period of return-migration and a temporarily stagnating immigrant share. From 1981 to 2001, the share of immigrants more than doubled again, from 3.9 to 8.7 percent, with much variation across communities. Turkey and (former) Yugoslav are the two most important sending

countries. In 2001, 63.2 percent of the total foreign resident population came from former Yugoslavia (45.3 percent) and Turkey (17.9 percent). The majority of immigrants from Turkey are Muslim. Immigrants from (former) Yugoslavia comprise Muslims, Orthodox Christians and Catholics.

The immigration wave of the late 1980s coincided with the rise of the FPÖ.[4] After Jörg Haider took over leadership of the FPÖ in 1986, the party increasingly invoked the "dangers" to the native population of immigration in terms of crime, unemployment, and decay of neighborhoods and schools. Until 1986, the FPÖ had not played a significant role in national elections (despite having been a junior partner in a government coalition). In the national elections of 1986, however, the FPÖ attracted 9.7 percent of the votes. Thereafter, support for the FPÖ grew at a steady rate, passing the 15 percent and 20 percent hurdles in 1990 and 1994, respectively, and reaching more than 25 in the late 1990s. The development was accentuated by an additional immigrant wave during the Yugoslavian political crisis in 1990 and the war in 1992.

In 1993, the FPÖ launched an "Anti-Foreigner Referendum," and 416,531 Austrian voters (7.35% of the electorate) approved this referendum. The cross-district correlation between the support for this referendum and the share of votes for the FPÖ in the national parliamentary elections in October 1994 is 0.83. More generally, in the election years that we study, the FPÖ is widely recognized as having the most restrictive immigration policy platform, while the main competitors, the *Social Democratic Party of Austria* and the *Austrian People's Party* had a much softer stance. In short, it is clear that a vote for the FPÖ represents a vote against immigration.[5] Internal problems in the FPÖ arose soon

[4]We emphasize that other events also took place in that time period. For example, the Austrian political landscape in the 1990s was also characterized by a general dissatisfaction with the governing parties. The *Social Democratic Party of Austria* and the *Austrian People's Party* had been governing as a grand coalition since 1987. We include time fixed effects in our analysis.

[5]This is not to say that the other parties were completely passive. Under political pressure of increased anti-immigration sentiments, and partly as a reaction to the FPÖs anti-immigration activities, the Austrian government introduced various new tighter immigration rules during the 1990s. While Austria's entrance into the EU in 1995 opened the borders to immigration from former EU-15 member states, in 2002, the center-right coalition of the *Austrian People's Party* and the FPÖ enacted a set of more restrictive immigration laws. These laws included requirements that immigrants study German; restrictions on the temporary workers' ability to obtain permanent residence; and, at the same time, a relaxation of procedures for Austrian firms that were hiring high-skilled immigrants of key importance in certain industries. Further rules were put into place to shield Austria's labor market from excessive immigration from the poor, neighboring, new EU member states after the EU expansions of 2004 and 2007.

after they had become a governing party. As a result of these disputes a new splinter party, the *Alliance for the Future of Austria*, was established in 2005. Due to the discontinuation of the Austrian census (see below), our empirical analysis concerns elections before that date. After the internal problems were resolved, the Austrian ERW-movement re-gained strength and is close to a 30 percent vote share again in 2013. No significant ultra-left-wing party emerged in Austria during this period.

Just like in other countries (see the studies cited in the introduction), survey evidence for Austria yields interesting results. For example, analyzing data from the *European and World Values Survey*, we find in Supplementary Appendix C that those who prefer that scarce jobs be given to native citizens or who even want a complete halt to labor immigration are more likely to be in favor of the FPÖ, as are those who do not care about the living conditions of immigrants or are not willing to do something to improve these conditions. However, surveys also present some problems, sometimes making it difficult to interpret results. In particular, surveys are not anonymous, and survey respondents are unlikely to answer completely truthfully.[6]

2.2 Main variables, data sources, and descriptive statistics

We use disaggregated community-level data. Our observation unit is the community, indexed by i. In Austria, a community is part of a political district, which is in turn part of one of the nine federal states. The community is the lowest administrative level. In 2001, Austria encompassed $2,359$ communities in 99 political districts. Vienna is the largest community, with about 1.5 million inhabitants in 2001. For our empirical analysis we divide Vienna into its 23 so-called municipal districts and treat these as separate communities. The smallest community, with 60 inhabitants (in 2001), is Gramais in the federal state of Tyrol. The average community (excluding Vienna) had about $2,800$ inhabitants. The number of communities and their territorial boundaries have changed over our sample period. In order to have a balanced panel of communities (and due to

[6]For example, according to the *European and World Values Survey*, done shortly before the 1999 general election, the FPÖ could expect to obtain about 20 percent of votes, whereas, in the election, the FPÖ scored about 27 percent.

some limitations of the industry structure data), we use a modified version of the territorial boundaries of the year 2001, which leaves us with 2,106 communities (including the 23 municipal districts of Vienna).

Data on the percentage of FPÖ votes in elections to the national parliament are available from official statistics issued by the *Austrian Federal Ministry of the Interior*.[7] Figure A.2 in the Supplementary Appendix A shows the geographic distribution of the share of votes for the FPÖ for six general elections. With the exception of a very strong base of support for the FPÖ in the state of Carinthia (located in the south of Austria where former party leader Jörg Haider was leading the local government) no other particular geographical patterns (over time) are evident.

Our key database for computing the percentage of immigrants and all socio-economic control variables on the community level is the universe of all individual-level observations from the decennial Austrian censuses (on-site at *Statistics Austria*), which is available to us in electronic form for 1971, 1981, 1991, and 2001, but not for earlier years. The Austrian census was abolished after 2001.[8] The completeness of the census data affords the great advantage that we can minimize problems of measurement error, an important concern in the literature that studies labor-market effects (Dustmann *et al.*, 2005, p. F329).

We do not have census data for each possible election year, so we need to infer the relevant immigrant share (as well as the socio-economic control variables) in those election years that we wish to analyze. To minimize measurement error, the main analysis focuses on elections that took place at most three years from the time of the nearest census, that is, we consider $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$.[9] We relate the election results of 1979 and 1983 to the 1981 census data.[10] Similarly, the election results of 1990 and 1994 are related to the 1991 census data, and the election results of 1999 and 2002 to the 2001

[7] We focus on federal elections as in Austria the most important aspects of economic policy, including immigration policy, are set at the federal level.

[8] Some data on community characteristics are available for 2011 from a compilation of data by *Statistics Austria*. However, these data do not contain information on degrees earned abroad (which we need for calculating the skill proxies), religion, and other factors.

[9] The elections of 1986 and 1995 are not included in the main analysis as they are relatively far from the census dates. However, our results also hold for these years.

[10] Consequently, the first stages for 1979 and 1983, when estimated separately for each year, are identical because all the explanatory variables are identical.

census data. We pool the data to construct a panel (though we also conduct year-by-year investigations).

For the primary analysis, *immigrants* are residents without Austrian citizenship. We also investigate the extent to which ERW voting is driven by particular kinds of immigrants. First, we calculate immigrant shares within education groups based on residents 25 years of age or older. There are four education levels: (i) compulsory schooling, (ii) completed apprenticeship training or lower secondary school; (iii) higher secondary school, and (iv) academic degree. We sort immigrants into two groups, based on their highest attained education level: *(i) low and medium education* (levels (i) and (ii)); and *(ii) high education* (levels (iii) and (iv)). Second, we vary the definition of what is an immigrant. Specifically, in addition to using Austrian citizenship as the defining characteristic, we also consider separately the effects of Muslim, Turkish, and Yugoslav immigrants. As covariates we calculate from the census data each community's number of inhabitants (and its square), the distribution of the labor market status (shares of inhabitants who are employed, unemployed, retirees, children below 15, and others),[11] the distribution of marital status (shares of inhabitants who are single, married, divorced, and widowed), and the population's age-sex-distribution (in five-year age groups). We also calculate the population's educational attainment distribution. While only Austrians vote, their voting behavior may well be affected by the composition of the overall population in a community. We use overall population variables in the main analysis.

Based on data from the *Austrian Social Security Database* — a matched employer-employee data set covering the labor market history of the entire Austrian workforce (Zweimüller *et al.*, 2009) — we calculate the industry structure. In particular, the industry structure is calculated as the relative share of employees in 31 different sectors on a community level.

Unemployment data for 1961 are available on a political district level as reported by

[11]The Austrian Census does not collect information on income. However, information on educational attainment and labor-market status should proxy well for income.

the regional offices of the *Public Employment Service Austria*.[12]

Finally, for our investigation of heterogeneity of effects across communities, we split the sample at the medians of (1) the unemployment rate of natives, (2) the average educational attainment of natives, based on four-point scale drawing on the same four levels described above, (3) the number of immigrant children to all children, and (4) an index of the extent of labor market competition between Austrians and immigrants (described further below). All these variables are calculated based on census data.

Table 1 reports descriptive statistics on the main variables used in the empirical analysis below. As the columns for the individual election years show, substantial cross-sectional variation exists across communities in Austria, both in election outcomes and immigration levels. Unreported results show that communities without any immigrants in 1971 (mostly rural areas) had essentially the same average unemployment rate, in both 1961 and 1971, as those that did have immigrants in 1971.

[Insert Table 1 here]

3 Estimating the impact of immigration on FPÖ votes

We begin our analysis by presenting simple OLS estimates (Section 3.1). Then we describe our identification strategy (Section 3.2). We present our main results in Section 3.3, which also contains robustness checks of the main estimates. We then address potential further concerns with our identification strategy (Section 3.4). Finally, potential channels that might lead to an impact of immigration on ERW votes are discussed (Section 3.5).

3.1 OLS results

Column (1) of Table 2 summarizes a baseline OLS regression. The dependent variable is $FP\ddot{O}_{it}$, the percentage of FPÖ votes in community i in election year t. The explanatory of primary interest is IM_{it}, the percentage of immigrants in the resident population in

[12] A potential source for unemployment rates on the community level would have been the 1961 Austrian census. However, as confirmed by *Statistics Austria*, the only published source which lists variables on the community level reports only the *sum* of the absolute number of employed and unemployed individuals.

community i at that time t.[13]

This regression (and all our main regressions) include (1) unemployment in 1961 and (2) the industry structure in 1972 as well as the following contemporaneous controls (see Section 2 for the timing convention): (3) each community's number of inhabitants (and its square), (4) the distribution of the labor market status, (5) the industry structure, (6) the distribution of marital status, and (7) the population's age-sex-distribution. We also include (8) binary indicators for communities in the states of Vienna and Carinthia (traditionally an FPÖ-stronghold). (9) By including year dummies, we exploit cross-sectional variation across communities. We discuss robustness checks with more or fewer controls below.

The evidence strongly suggests a positive relationship between immigration and the success of the ERW movement (see Columns (1)). In fact, the correlation holds in each election year (see Columns (3) to (8)).

[Insert Table 2 here]

This cross-community evidence within Austria parallels the cross-country evidence in Figure 1. However, importantly, a simple OLS regression of $FP\ddot{O}_{it}$ on IM_{it} suffers from potential endogeneity of IM_{it}. For example, immigrants may self-select into communities with low anti-immigration sentiments where jobs and housing are easier to obtain and neighbors are friendlier. If voters with anti-immigrant sentiments are more likely to vote for the FPÖ, ignoring endogeneity of the immigrant share leads to a downward bias of the estimated immigration effect on ERW voting. Alternatively, there may be unobserved factors (beyond the variables that we control for) that are positively associated with both FPÖ votes and immigrant shares, inducing an upward bias. For example, it may be that some communities are just more business-friendly, and they would lean towards the FPÖ, but at the same time there would be higher demand for immigrants.

In Column (2), we, therefore, add community fixed effects, which control for time-

[13] In all regressions in this paper, we weight observations by community population size (and very similar results obtain when we use the log of the population to determine the weights). Standard errors are robust to heteroskedasticity of unknown form, and in the case of panel regressions clustered on the community level.

invariant unobserved heterogeneity. The highly significant relationship between immigration and voting continues to hold. Thus, factors such as an unobserved degree of business-friendliness cannot fully explain the results; and factors such as an unobserved degree of xenophobia are unlikely to lead to an understated effect in the OLS regressions.

Even a fixed-effects regression does not sufficiently ensure identifying a causal effect, however, as there may be time-variant unobserved heterogeneity.

To identify the causal effect of immigration on voting outcomes, we need to compare the voting behavior of Austrian citizens in community i after immigration with the counterfactual outcome that would have been observed had immigration not taken place. In observational data, the causal effect can be identified using an instrumental variable, that is, a variable that significantly affects current immigrant shares, while being unrelated to voting decisions except through its effect on immigrant shares. We develop an argument for such a variable in the next section.

3.2 Identification strategy

3.2.1 Background

Our identification strategy relies on historical settlement patterns of the initial wave of "guest workers" as a source of exogenous variation for immigrant shares in later years. While the idea of using historical settlement patterns as an instrument, originally proposed by Altonji and Card (1991), is not per se novel in the analysis of the effects of immigration, we argue that in the Austrian context and for the purposes of estimating causal effects on voting behavior, this identification strategy is quite attractive.

Historical settlement into Austria is characterized by a sudden, large inflow of immigrants in the 1960s. Until the early 1960s very few non-Austrians lived in Austria (except a base stock of Germans whose overall size remained essentially unchanged for the following 30 years). However, in the 1950s and 1960s, the post-war boom of the Austrian economy led to a growing demand for labor amid increasing labor shortages. In the 1960s, the Austrian government began to forge bilateral agreements with southern and southeastern European states to recruit temporary workers. A 1964 agreement with Turkey and a 1966

agreement with Yugoslavia attracted Turkish and Yugoslavian "guest workers" into the country. Recruitment offices in those countries were established, and a substantial influx of Turkish and Yugoslavian workers to Austria began. Some raw numbers illustrate the significance of this new regime. In 1961, residents with Turkish and Yugoslavian citizenship numbered 271 and 4,565, respectively. By 1971, the numbers had risen 60-fold and 20-fold to 16,423 and 93,337, respectively. These guest workers were supposed to stay, by way of rotation, only for a short period of time to cover specific demand for labor. However, they usually wanted to stay longer, and Austrian employers wanted to avoid the cost of labor fluctuations. Thus, in effect, most of the guest workers remained in Austria permanently.

Naturally, immediate family members later joined the predominantly male guest workers. However, in the following decades (for example, during the Yugoslavian political crisis in 1990 and the war in 1992) a massive influx beyond immediate family members took place. A large literature has established that immigrants settle where they find existing social networks and neighbors with the same cultural and linguistic background (Bartel, 1989; Åslund, 2005; Jaeger, 2007). Therefore, we expect that immigrants today are highly likely located in areas where the first wave of guest workers settled down in the 1960s.[14]

Following Card (2001), therefore, we use the spatial distribution of immigrants in the census-year 1971 — which reflects the settlement patterns of the first wave of guest workers — to decompose the actual stock/inflow of immigrants into an exogenous so-called supply-push component and into a residual component reflecting any departures from the historical pattern. Put differently, the idea is to exploit the differential location choices of immigrants from different countries in the 1960s to predict the settlement decisions of immigrants from the same country at later points in time. This predicted share of immigrants should be free from local contemporary demand factors and as such serve as a valid source of exogenous variation.

[14]Empirical papers show that such networks facilitate the job search and assimilation into the new cultural environment (Munshi, 2003). For the importance of networks in general, see Calvó-Armengol and Jackson (2004), Ioannides and Loury (2004), Lazear (1999), and Montgomery (1991).

3.2.2 Instrumental variable construction

Formally, in the basic analysis, the instrumental variable IV for community i in the year t is

$$IV_{it} = (\sum_{g} S_{gi} + M_{gt} \cdot \lambda_{gi})/P_{it} \tag{1}$$

where S_{gi} is the number of immigrants from source country g residing in community i in the year 1971, M_{gt} is the number of immigrants from source country g who enter Austria between 1971 and t, λ_{gi} is the fraction of immigrants from the pre-1971 cohort of immigrants from source country g who resided in community i in 1971, and P_{it} is the total population (i. e., immigrants plus natives) in community i in the year t. The groups g are: immigrants from Ex-Yugoslavia, Turkey and others. We thus calculate time-varying instruments for $t = 1981, 1991, 2001$ (and assign them to election years per the timing convention described in Section 2). Our first stage regressions test the hypothesis that predicted immigrant shares are associated significantly with actually observed immigrant shares.

3.2.3 Controlling for covariates

We are mindful of the possibility that in the 1960s guest workers may have settled in or have been allocated to regions that had a particular emphasis on certain industries for which immigrant workers were used. Then, if industry structure is persistent, not controlling for this effect could introduce a bias into our estimations. For example, if industries that did well in post World War II Austria later saw a decline later on, voters in areas where those industries were important in 1971 might be more likely to turn to the extreme right in later time periods as the economic situation worsened for them. More generally, economic factors may be correlated with determinants of future voting behavior and with the instrumental variable.

We directly address this concern by controlling for the 1961 unemployment rates as well as for industry structure in 1972. We caution that because we do not have data

on the industry structure in the 1960s, a potential limitation of our control variable is that it does not eliminate any impacts of elements of the industry structure that were simultaneously non-persistent and correlated with both immigrant allocations in the 1960s and voting decisions in recent years. However, given that we find in the data that the industry structure is very persistent over time, we believe that this is ultimately a minor concern.

In fact, our results do not depend on controlling for the historical (pre-immigrant inflow) industry structure and unemployment rates. Consistent with this observation, unreported results show no significant relation between our instrumental variable and the unemployment rate in the year 1961.

This finding also squares well with archival information regarding how allocations of guest workers were made in the 1960s. Specifically, the actual number of guest workers in a given community arises out of a combination of two factors: First, the maximum number of guest workers a specific industry in a given region was allocated (the quota); and second, the usage of that quota. The quota was the outcome of regional and industry-specific negotiations between representatives of the *Austrian Economic Chambers* and the trade unions. The Austrian Institute of Economic Research (*Wirtschaftsforschungsinstitut, WIFO*) provides an analysis of how this worked for the year 1963 (WIFO, 1963). They find that there does not appear to be a clear pattern in the extent to which quotas were set and used. They note that this may have to do with the institutional peculiarities of the various labor markets and that *"subjective factors such as negotiation skills"* apparently played a role (p. 413, translation by the authors). Moreover, studying the relationship between industry structure and immigrant quotas, they conclude that *"the quota size was apparently only partially determined based on labor market data. Quotas are neither positively related to the percentage of vacancies, nor are they negatively related with the unemployment rate"* (p. 413). As regards unemployment in 1961, the WIFO analysis (based on regional data) suggests that quotas for immigrants were higher for regions were unemployment was low. To be on the safe side, we do control for the historical unemployment rate.

Similarly, because contemporaneous unemployment itself is highly positively correlated with FPÖ vote shares, omitting the control for labor market status would, if anything, tend to introduce a downward bias into our second-stage estimates. Nonetheless, we control for the whole contemporaneous labor market distribution.

In sum, suitably controlling for economic factors, immigrant settlement patterns in the 1960s provide a plausible source of exogenous variation in the more recent spatial distribution of immigrants.[15]

3.3 The impact of immigration on FPÖ votes: 2SLS estimation results

Our main analysis considers panel regressions. As in the OLS case, we weight observations by community population size. Standard errors are robust to heteroskedasticity of unknown form, and in the case of panel regressions clustered on the community level.

3.3.1 First-stage evidence

The first stage of our identification strategy claims that historical settlement patterns of guest workers are an important predictor of the contemporaneous immigrant share in a community. To shed light on this issue we first provide some descriptive graphical evidence. The geographic distribution of immigrants by census year is depicted in Figure 2. Visual inspection strongly suggests that the share of immigrants in later years is higher in communities that had a higher share of immigrants in the year 1971. This is utilized more elaborately by our instrumental variable approach, which predicts the share of immigrants based on the supply-push component. This is illustrated in the three (population-weighted) scatter plots in Figure 3. The correlations between the predicted immigrant shares and the corresponding actual shares in 1981, 1991, and 2001 are 0.84, 0.70, and 0.72, respectively.

[15] In specific circumstances, related to policies regarding refugees, researchers can arguably get even closer to random assignment and internal validity than we can in our setting (see, for example, Edin, Fredriksson and Åslund (2003), Damm (2009), Glitz (2012), and Dahlberg *et al.* (2012)). Strict exogeneity is not definitely guaranteed even in these settings. In reality, authorities consider at least the location of family members or ethnic clusters. Also, in Austria, for example, communities may deny to provide (or to find) housing for assigned refugees. Moreover, these cases represent a quantitatively less important phenomenon, and it may be more difficult to generalize findings from the refugee assignment approach to a situation where economic migrants decide independently where to settle.

[Insert Figures 2 and 3 here]

Panel A of Table 3 shows the first-stage regressions, including an indication of the set of control variables.[16] The specification in the first column concerns all immigrants, the main focus of our analysis. (The second and third columns deal with immigrants split into groups by educational attainment; we discuss these results further below.) As expected, the first stage shows a highly statistically significant positive effect of the predicted share of immigrants on communities' actual shares of immigrants. In the pooled sample, an increase in the predicted immigrant share by one percentage point is associated with a 0.3 percentage points higher actual immigrant share. Naturally, Panels B1 to B3 show that the quantitative effect decreases as one moves from the 1981 census to the 2001 census.

[Insert Table 3 and 4 here]

The strong correlation between initial settlement patterns and more recent immigrant shares establishes the relevance of the instrument and alleviates weak-instrument concerns.

3.3.2 Second-stage results

Table 4 presents the second-stage results. The central finding is that the immigrant presence is a highly significant determinant of the percentage of FPÖ votes.

Notably, our 2SLS estimates are almost as precise as the OLS estimates, reflecting that the first stage yields a strong prediction of current immigrant shares. Indeed, the high F-statistics on the excluded instrument suggest that our instrument is sufficiently strong.[17]

[16] The full regression is shown in Table B.1 in the Supplementary Appendix B.

[17] For the one-instrument case we report Wald F-statistics based on the Cragg-Donald statistic and the Kleibergen-Paap rk statistic. The Cragg-Donald F-statistic is a basic reference point in 2SLS-regressions; Stock, Wright and Yogo (2002) provide critical values for strong instruments (8.96 in the case of one instrument). However, this statistic requires an assumption of i.i.d. errors. In the presence of clustering and heteroskedasticity, the Kleibergen-Paap rk statistic is, therefore, typically considered additionally in practice. No study appears to exist that provides threshold values that the rk statistic should exceed for weak identification not to be considered a problem, but researchers usually use a value of 10 as an indication of a strong instrument in this case, following the general proposal of Staiger and Stock (1997) for a threshold for the first-stage F-statistic. The cutoff values do not provide a mechanical rule. On the one hand, there is no absolute security that an instrument whose F-statistic exceeds 10 is, indeed, strong; on the other hand, Angrist and Pischke (2009) point out that even F-statistics as low as 2.0 "may not be fatal" (p. 215). In our main analysis, presented in Table 4, the Kleibergen-Paap statistics are between 133 and 359, far above conventional thresholds.

Immigration is not only a statistically significant but also a quantitatively important predictor of FPÖ votes in the cross-section of Austrian communities. The estimates imply that communities with an immigrant share that is one percentage point higher tend to give about 0.26 percentage points more votes to the FPÖ. Thus, a one-standard-deviation increase in the immigrant share drives about one sixth of a one-standard-deviation increase in the ERW vote share. Note that this local average treatment effect refers only to immigrants attracted by existing networks; immigrants who settled in a certain community for other reasons may have a separate effect on FPÖ votes.

In terms of control variables,[18] we find important regional variation in the percentages of FPÖ votes; the FPÖ vote share is higher in Carinthia and lower in Vienna. Moreover, we find that, in communities with a comparably high share of prime-age women and men above the age of 70, the FPÖ is more successful. Communities with a higher share of married (relative to single) individuals tend to vote less for the FPÖ. While unemployment is univariately strongly positively associated with FPÖ voting, including socioeconomic controls reverses the sign. Historical and contemporaneous industry structure does not seem to play a major role. Numerous checks confirm that the estimates of the impact of immigration on FPÖ voting are not sensitive to the inclusion of additional or omission of some controls and/or some cities. For example, Table B.2 in the Supplementary Appendix B shows that the estimated 2SLS effects of immigration on FPÖ votes vary only very little if we add educational attainment proxies.[19]

[18] The full regression is shown in Table B.1 in the Supplementary Appendix B.

[19] While including a large set of controls as in our main specifications clearly has the advantage of mitigating the possibility that an important variable remains omitted, it does have a drawback: Some characteristics of the resident population may themselves be influenced by immigration (for instance, via their participation in the local labor market). We, therefore, also reestimate our models using a more parsimonious specification (with community characteristics: the number of residents and its square, and a dummy of Carinthia and Vienna; the age-sex distribution of the resident population; the distribution of marital status among residents; and election-year fixed effects). Table B.2 in the Supplementary Appendix B shows that the results continue to hold for this minimal specification. We further confirmed the robustness of our results to the exclusion of observations from Vienna (and other larger cities). The results are also robust to the exclusion of the Carinthia and Vienna dummies. Finally, we also consider several different functional forms to model the impact of immigration on FPÖ votes. For example, we add a quadratic term of the immigration share to our model. Alternatively, we try a flexible specification based on binary variables capturing quartiles of the share of immigrants. While the (adapted) first stage is again very strong in each case, we do not find economically relevant, systematic non-linearities in the second-stage estimation. We conclude that the simple linear model captures the immigration effect quite well.

3.3.3 Results by election years

Has the relationship between immigration and FPÖ votes changed over time, or has it been stable? The second-stage results for each election year are summarized in columns (2) to (7) of Table 4.[20] In each election year we find a significant positive effect of the share of immigrants in a community on the share of votes for the FPÖ. [21]

The size of the estimated effect of immigration on the share of votes for the FPÖ varies modestly across election years. We are careful not to interpret too much into this variation, also because the differences are hardly significant. A tentative interpretation can be attempted by noting that the highest effect occurred in 1979, when the immigration of foreigners was still a relatively new phenomenon; by contrast, in 1994, at the time of the war in the Balkan countries, Austrians did not feel so negatively about immigrants (a large fraction of immigrants had come from the affected countries); see also the findings presented later for specific groups of immigrants. The year 1983 is special in that immigration explains less of the variation in FPÖ votes in this election. Towards the end of the sample period, when Jörg Haider was in power, the impact on ERW voting grew again as the FPÖ intensified its anti-foreigner stance.[22]

3.3.4 Estimates based on first differences

In this subsection, we ask whether the *rise* in FPÖ votes is concentrated in communities that experienced a disproportionate *increase* in immigration. In other words, rather than exploiting the cross-sectional variation in *levels* of FPÖ votes and immigrant shares, we exploit the cross-sectional variation in *changes* in FPÖ votes and immigrant shares. This approach also addresses the potential concern that there may be deep, long-standing differences between communities that are associated with both immigrant shares and

[20] The first stages remain strong. Note that the first-stage regressions for election year pairs $\{1979, 1983\}$, $\{1990, 1994\}$, and $\{1999, 2002\}$ are identical because we match election year data to the census closest to the respective election years.

[21] We obtain similar results for those election years which were not considered in the main analysis because of their distance from the nearest census.

[22] There seems to be no systematic relationship between the size of the estimated effect and the major topics in the election campaigns, any business cycle indicator, or the absolute time lag between the election data and the census year (which might give rise to an attenuation bias).

voting behaviors. (We present another analysis addressing this issue further below, and we note that the fixed effects regressions presented earlier already indicate that any such effect is very unlikely to fully explain the association between immigration and FPÖ vote shares.)

Formally, we wish to explain the change in FPÖ vote share in community i from t_1 to t_2 by the change in the immigrant share in the same time period. We instrument the increase in immigration since any given base year t_1 by the change in the predicted share of immigrants from t_1 to t_2. The predictions are based on the spatial distribution of immigrants (from Ex-Yugoslavia, Turkey, and other countries) across communities in the year 1971 and the subsequent group-specific inflow. Thus, using the same notation is before, the instrumental variable now is

$$IV_{it_2t_1} = (\sum_g S_{gi} + M_{gt_2} \cdot \lambda_{gi})/P_{it_2} - (\sum_g S_{gi} + M_{gt_1} \cdot \lambda_{gi})/P_{it_1}. \tag{2}$$

In addition to the covariates used in the previous section, we also control for $P_{it_2} - P_{it_1}$. Thus, after partialing-out differences in the two denominators in (2), our instrumental variable approach essentially relies on variation in $\sum_g \lambda_{gi} (M_{gt_2} - M_{gt_1})$. As such, the identifying assumption is now weaker than above. We have to assume only that the initial distribution λ_{gi} of immigrant groups (but not the levels S_{gi}) and the subsequent overall inflows to Austria are exogenous.

The estimation results are summarized in Table 5. We use various time differences to probe the robustness of the analysis. In columns (2), (3), and (4), respectively, we examine the impact of a change in immigration over a 20-year time interval (of which we only have one, from 1981 to 2001) on the change in FPÖ votes over an approximately 20-year time interval (of which we have three versions, from 1979 to 2002, from 1979 to 1999, and the somewhat shorter interval from 1979 to 1994). Columns (5) to (8) instead consider 10-year time intervals. Thus, column (6) presents the effect of the change in immigration from 1981 to 1991 on the change in FPÖ votes from 1979 to 1990; column (7) looks at the effect of the change in immigration from 1991 to 2001 on the change in FPÖ votes from 1990 to 2002, and column (8) looks at the effect of the change in

immigration from 1991 to 2001 on the change in FPÖ votes from 1990 to 1999. Columns (1) and (2) contain the results when pooling all three respective changes over 20-year and 10-year periods. Generally, the first stages in this analysis also perform well, although they are less strong than in the levels-based regressions.

[Insert Table 5 here]

Out of 8 coefficients, 7 are statistically significant in the expected direction, and none have the opposite sign. The quantitative implications that are obtained from exploiting cross-community variation in increases of immigrant shares and FPÖ vote shares are similar to the picture we get from exploiting cross-community variation in levels of immigrant shares and FPÖ vote shares. For example, a one-percentage-point increase in immigration from 1981 to 1999 generates 1.1 percentage points of additional FPÖ votes in 1999, compared to 1979. The increase in the immigrant share in that time period was about 5.1 percentage points, and the increase in the FPÖ vote share was about 21.2 percentage points. Thus, about a third ($= 5.1 \times 1.4/21.2$) of the total rise of the FPÖ in this time span can be explained by immigration.[23]

In sum, the analysis based on changes of immigration and FPÖ votes yields the same conclusion as the analysis based on levels of immigration and FPÖ votes. These findings are consistent with the fixed effects estimations conducted above. They suggest that our analysis indeed effectively draws on the random component of location choices of immigrants in 1971 (and the ensuing inflow of immigrants) and that unobserved characteristics of communities (such as a pro-business attitude, or simply xenophobia) are unlikely to explain the effect of the presence of immigrants on FPÖ vote shares.

[23]The cross-sectional standard deviations of the increases in immigrant shares and FPÖ vote shares, respectively, were around 5.2% and 8.5%. Thus, over the whole sample period cross-sectional variation in increases implies essentially a one-to-one variation in FPÖ vote shares. Using 1983 as the base year leads to less significant results. As seen in the cross-sectional analysis, immigration played a somewhat less important role in that election, which makes it more difficult to explain the changes after that particular election with changes in immigration.

3.4 Concerns with identification

Using historical settlements as an instrument is based on the notion that (i) existing social networks are important elements in the settlement choices of current immigrants, that, suitably controlling for covariates, (ii) historical settlement patterns do not directly affect recent voting, and (iii) the determinants of the historical settlement patterns are uncorrelated with recent (unobserved) factors of voting behavior. As discussed above, controlling for a series of historical economic factors mitigates the concern that correlations between the instrumental variable and economic determinants of voting behavior could play a role. In this section, we address two potential further concerns with our identification strategy.

3.4.1 Correlation with omitted variables: Non-economic factors

Immigrant workers were welcome in Austria in the 1960s. The Zeitgeist is well captured by the way the first foreign workers arriving from Turkey in 1964 were welcomed in Vienna. Turkish workers were received with cheers of approval and enthusiasm from a large gathering in the Viennese train station. A marching band was playing in their honor and officials handed out flowers to them (*Wiener Zeitung*, 2006/12/30).

Despite this generally warm reception, it is possible that the cross-section of settlement patterns was determined by pre-existing local cultural or racial prejudices. Existing research documents strong inertia in beliefs and values (Voigtländer and Voth, 2012; Spolaore and Wacziarg, 2013). If settlement patterns prior to 1971 are associated with historical anti-foreigner attitudes, and if these attitudes are determinants of recent voting behavior, this violates the identifying assumption underlying our approach described in Section 3.3.2, which uses the instrumental variable described in equation (1).

To test this idea, we use voting results from a 1930 election, the only Austrian election in which the Nazis participated. In Table 6, we regress the share of immigrants in the year 1971 (a component of our instrumental variable, $\sum_g S_{gi}$), on vote shares in the year 1930 for the *Deutsche Nationalsozialistische Arbeiterpartei* (DNSAP, the Austrian counterpart of the German NSDAP). The unit of observation here is a political district (because communities have changed so much across the forty years that a close matching is

impossible). We find no significant association between these two variables, ameliorating the concern that historical attitudes invalidate the exogeneity of our instrumental variable. We do, however, find a positive correlation between DNSAP voting and FPÖ voting, consistent with evidence in Voigtländer and Voth (2012).

[Insert Table 6 here]

3.4.2 Exclusion restriction: Internal migration of voters

Austrian voters are free in their residential location choices within the country (and the EU). If immigration has a direct effect on internal migration responses of Austrians, this violates the exclusion restriction.

To the extent that such voter relocations are important, our results are likely to *underestimate* the true effect of immigration on FPÖ voting. This is because the voters whose welfare is negatively affected by the proximity of immigrants (and who would, therefore, more readily gravitate to the FPÖ) are more likely to have moved elsewhere.

To test for the importance of native internal migration responses, we follow Peri and Sparber (2011). The question is how many natives (N) respond to the arrival of immigrants (I) by leaving their place of residence i. To estimate the quantitative importance of such migration responses, the following model is estimated: $\Delta N_{i,t} = \alpha + \beta \cdot \Delta I_{i,t} + u_{i,t}$ with β being the interesting parameter. Various scholars have proposed different versions of this model, mainly considering different measurement concepts of dependent and independent variables.

Table 7 summarizes the estimation output of three empirical models for our community-level panel data, with i communities over t years, where $i = \{1, \ldots, 2,106\}$ and $t = \{1971, 1981, 1991, 2001\}$. Specification (1), a slightly modified specification of Card (2001, 2007), is the preferred specification of Peri and Sparber (2011). This specification provides no evidence for any internal migration response of Austrians. Even based on specifications (2) and (3) — which Peri and Sparber (2011) verify to be biased towards an attraction and a displacement effect, respectively — we do not find any statistically significant effect. This evidence is in line with the common stereotype that the Austrian population is very

rooted. Overall, these findings mitigate the concern that internal migration confounds our inferences.[24]

[Insert Table 7 here]

3.5 Why does immigration lead to ERW voting?

We have established an economically significant average impact of geographical proximity of immigrants and natives on voting for the extreme right. In this section, we aim to understand why this impact arises.

A natural starting point for understanding voting decisions is the hypothesis that rational and self-interested individuals vote for the party which promises them the greatest utility (Downs, 1957). We focus on two ideas.

First, basic economic theory suggests that immigration hurts those native individuals who supply production factors that are close substitutes for factors supplied by immigrant workers. In contrast, individuals who supply complementary factors will gain from immigration. ERW parties present anti-immigration platforms. If voters are self-interested, those who lose from immigration should, thus, favor ERW parties in elections. The empirical labor-market impact of immigration is strongly debated; some studies (for example, Borjas, 2003) find strong negative effects on native wages, while others do not find strong effects (for example, Card, 2005, 2009).[25] In this paper, we study the effects of the local presence of immigrants; consistent with this focus we consider local labor market effects. To the extent that voters worry about labor market competition with immigrants in other

[24] A third potential factor that violates the exclusion restriction derives from naturalizations in that they lead to a mechanical relationship between immigration and the composition of the voting population. Contrary to the policies of other countries (such as the U.S.), being born in Austria does not automatically confer citizenship; instead, a child born in Austria must have at least one parent who is an Austrian citizen in order to be entitled to citizenship. However, naturalizations are unlikely to be important for our results. We first note that they imply two countervailing effects. On the one hand, immigrants who receive Austrian citizenship may still be regarded as immigrants by the "original" Austrian population, so that the immigrant share in our data understates the actual perceived immigrant share in a neighborhood. On the other hand, naturalized immigrants are unlikely to vote for the FPÖ. Second, during the 1970*s*, 1980*s*, and 1990*s*, the annual rate of naturalizations was between 0.1% and 0.3% of the native population in most years. Therefore, we do not attempt to account for naturalizations in our analysis.

[25] The impact of immigration on the size of the consumer base plays a critical role, complicating theoretical predictions of labor-market effects (Borjas, 2009).

communities (which may arise if labor markets span multiple communities), additional effects of immigration on voting behavior may occur.

Second, the natives' assessments of the impact of immigration on "compositional amenities" that they derive from their neighborhoods, schools, and workplaces can be an important source of anti-immigration sentiments, as documented in Card *et al.* (2012). (See also Hainmueller and Hiscox (2010) and Dustmann and Fabbri (2003).)

To shed light on this issue, we use three approaches. First, we investigate whether controlling for the current unemployment rate plays a role. Second, we consider how different types of immigration matter. Third, we study how the effects of immigration vary across communities. At the end of this subsection, we offer an interpretation of the findings.

3.5.1 The role of current unemployment

Recall that in our main analysis, we control, among other things, for the current unemployment rate in each community. A straightforward approach to isolating any non-economic aspect of immigration is to investigate what happens to the estimates when we omit this control. Table B.2 in the Supplementary Appendix B shows that the results in this case are virtually identical to the main results, providing a first indication that, on average, labor market concerns do not play a major role.

3.5.2 Heterogeneous effects by immigrant groups

We first investigate how the educational levels of immigrants affect voting decisions of natives. We construct two groups of immigrants according to educational attainment, distinguishing between low- and medium-education immigrants on the one hand and high-education immigrants on the other hand.

We now have two endogenous variables, which are jointly instrumented by the predicted shares of low/medium- and high-education immigrants for the respective years. Analogously to before, these shares are calculated from the spatial distribution of immigrants from the respective skill groups across communities in 1971 and the subsequent

skill-group-specific inflow. As can be seen in the first-stage regressions, in columns (2) and (3) of Panel A in Table 3, immigrant networks also work powerfully along the skill dimension. In the later census years, the communities tended to attract and house immigrants of the same educational level as they did before 1971.

Second-stage results are in Table 8.[26] We find that it is the proximity of low- and medium-skilled immigrants which influenced Austrian voters to lean more to the far right. The remaining columns in this table show that this finding also holds across the years. In all years, low- and medium-skilled immigration had a significantly positive effect on Austrians' decisions to vote for the FPÖ. For high-skilled immigration, the estimations for the first year, 1979 suggest (albeit insignificantly) that voters may have seen high-skilled immigration as a reason to turn to the FPÖ, whereas in later years more high-skilled immigration did not benefit (and in fact tended to hurt) the ERW movement.

[Insert Table 8 here]

Next, we analyze possible cultural and ethnic effects. A primary factor could be religion. When the first Muslim immigrants started arriving in Austria, Austria was a deeply catholic country, and the inflow of immigrants with a visibly different religion may have been particularly upsetting to some Austrians.[27] The first-stage is again powerful: We observe that the predicted share of Muslims (based on the historical settlement pattern prior to 1971) is highly correlated with the actual share of Muslims. In the second stage we find that Muslim immigration had a comparable stronger impact on ERW voting in the 1979 election, but the impact has since subsided.

We also analyze the impact of Turks and Yugoslavs, who are the historically most important immigrant groups for Austria, but who are also among those most often exposed to public verbal attacks by right-wing extremists. In untabulated results we find a similar pattern as for Muslims: A strong impact occurred in the early elections, but the impact

[26] In the case of multiple endogenous variables, as in our analysis of the role of skill composition, we report the Angrist-Pischke multivariate F-test of excluded instruments. Again, 10 is a threshold value usually employed in practice. In our main analysis, Table 8 shows that the test statistic is far above this level.

[27] Evidence from the UK suggests that Muslims integrate less and more slowly than non-Muslims (Bisin *et al.*, 2008).

was not different from average later on. In 1994, at the time of the war in the Balkan countries, the impact of Yugoslav immigration was particularly small.

In unreported results, we find that language skills (or the lack of thereof) do not appear to be the primary issue driving voters to favor the FPÖ in an election.

3.5.3 Heterogeneous effects across communities

An alternative perspective concerns heterogeneity across communities. In Table 9, we consider four sample splits along the dimensions of unemployment among natives, labor market competition between immigrants and natives, ratio of immigrant kids to native kids, and average educational attainment of natives.[28] In columns (1) and (2), we find that the impact of immigration does not vary with the level of unemployment of Austrians. In columns (3) and (4) we more directly consider the intensity of competition between immigrants and Austrians.[29] We find no evidence that the impact of immigration is stronger where immigrants and Austrians are more likely to be in competition.

[Insert Table 9 here]

Columns (5) and (6) instead document that proximity of immigrants is especially strongly related to ERW voting where there are many immigrant children compared to Austrian children, indicating that Austrians worry about the quality and cultural composition of their schools. Finally, columns (7) and (8) document that the impact of

[28] We caution that the sample splits themselves may be subject to endogeneity concerns. However, instrumenting the four corresponding variables and their interaction with the immigrant share would require an instrument for each of the variables.

[29] Specifically, following Card (2001), we compute the following index C. Let f_j^A and f_j^I denote the fractions of Austrians (A) and immigrants (I) with education level j. For the calculation of this index, we use all six education levels compulsory schooling, completed apprenticeship training, lower secondary school, higher secondary school or academic degree separately. Let f_j denote the fraction of the overall workforce with this education level. Consider an increase in the population of immigrations that generates a 1-percentage-point increase in the total workforce. Assuming that the new immigrants have the same education distribution as the existing immigrants, the percentage increase in the workforce of skill level j is f_j^I/f_j. For Austrians, the weighted average increase in the supply of labor to their education-specific labor markets is given by $C_{A,I} = \sum_j f_j^A f_j^I / f_j$, which is the competition index. This index is 1 if Austrians and immigrants in a particular community have the same distribution of education levels. It can be greater than 1 if they have similar education level distributions, and if both Austrians and immigrants are concentrated in a subset of education levels. The index is 0 if Austrians and immigrants have completely different education levels.

immigration on ERW voting is more pronounced where Austrians are highly educated.[30]

3.5.4 Interpretation

To summarize, the results presented in this section provide evidence for anti-immigration sentiments that derive from threats that immigration poses to compositional amenities: First, in communities where immigration is high-skilled, adverse effects on compositional amenities for the native population are unlikely; in contrast, when immigration is predominantly low- and medium-skilled, anti-immigration sentiments may become stronger as natives perceive an undesired composition of their neighborhoods. Second, immigration has a stronger impact where Austrians are more highly educated and where there are more immigrant children. Third, at least in some elections, the presence of immigrants from different cultural backgrounds (in particular, Muslim immigrants and those from Turkey and Yugoslavia) engendered stronger than average responses in terms FPÖ votes.

The above findings on the role of the skill composition of immigrants is also consistent with the labor-market competition channel. However, the analysis of the cross-community heterogeneity of effects does not produce additional support for this explanation.

4 Conclusions

Political folklore holds that extreme right-wing parties attract voters by appealing to anti-immigration sentiments of the voting native population. While existing empirical studies provide support for a positive correlation between immigration and votes for the extreme right, empirical evidence establishing a causal link between immigration and voting for the extreme right is still rather scarce.

This paper studies the effect of the presence of immigrants in one's neighbourhood on the local election support for the extreme right. We look at the 'Freedom Party of Austria

[30] We have also investigated to which extent the degree of interaction between immigrants and natives on the community level matters. To do so, we have calculated, from voting precinct data, measures of segregation for each community. It is, however, not clear in which direction any effect should go theoretically. Austrians may worry more if they are in more contact with immigrants; or they may worry more if immigrants only live in narrowly defined areas of a given community. We do not find robust evidence that the degree of segregation explains variation in the impact of immigration on ERW voting.

(FPÖ) which, under the leadership of Jörg Haider, increased its vote share from less than 5 percent in the early 1980s to 27 percent in the late 1990s. To identify the causal effect of immigration on FPÖ voting, we exploit specific features of Austria's immigration history. We argue that the sudden, large inflow of immigrant workers of the 1960s generated settlement patterns of immigrants that were not driven by anti-immigrant sentiments. Suitably controlling for economic factors, immigrant settlement patterns in the 1960s, therefore, provide a plausible source of exogenous variation in the more recent spatial distribution of immigrants.

We establish two main results. *First*, we find that roughly a sixth of the cross-community variation in the percentage of (FPÖ) votes can be attributed to cross-community variation in the presence of immigrants. We also find that the increase in the local share of immigrants had a positive effect on the increase in the local vote share of the FPÖ. Our *second* main result shows that the composition of immigrants affects voting decisions. We document that a high percentage of low- and medium-skilled immigrants causes Austrian voters to turn to the far right, while more high-skilled immigration either has an insignificant or a negative effect on FPÖ votes. This result could be either due to labor market competition or due to a concern that immigration imposes externalities on the native population by a deterioration of compositional amenities that they derive from the ethnic and cultural composition of their neighbourhoods, workplaces and schools. Our additional empirical results are consistent with the compositional amenities channel. The effects of immigration are stronger where there are many immigrant children, where Austrians are more educated, and where immigration is more low-skilled. Our results are less conclusive regarding the extent to which the immigration effect is driven by the concern that immigration has adverse labor market consequences for native voters.

Immigration is necessary for developed countries, as persistently low fertility rates and increases in life expectancy let societies age. However, immigration is not a smooth process, and it can generate tensions and conflicts that can drive support for extreme-right-wing parties. Our paper shows that the geographic proximity of immigrants is a statistically significant and quantitatively important driver behind the support for the

extreme right. In particular, low-skill immigration is seen as more problematic by voters than high-skill immigration. A policy implication of this result is that fostering high-skilled immigration or the education of currently low-skilled immigrants may be important also from the point of view of political stability. Another conclusion of our analysis is that policies mitigating perceived negative effects on compositional amenities by fostering the integration of immigrants into local communities may be important.

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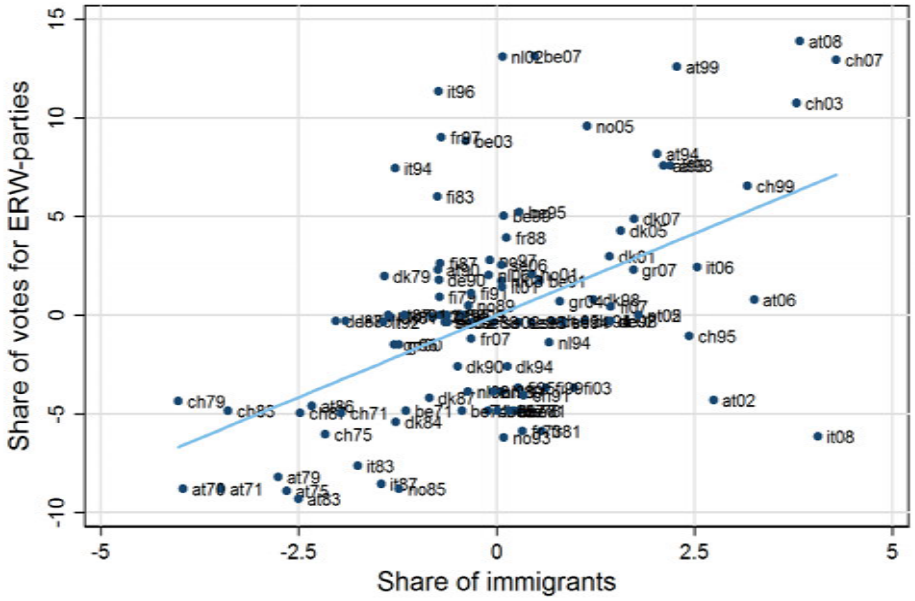
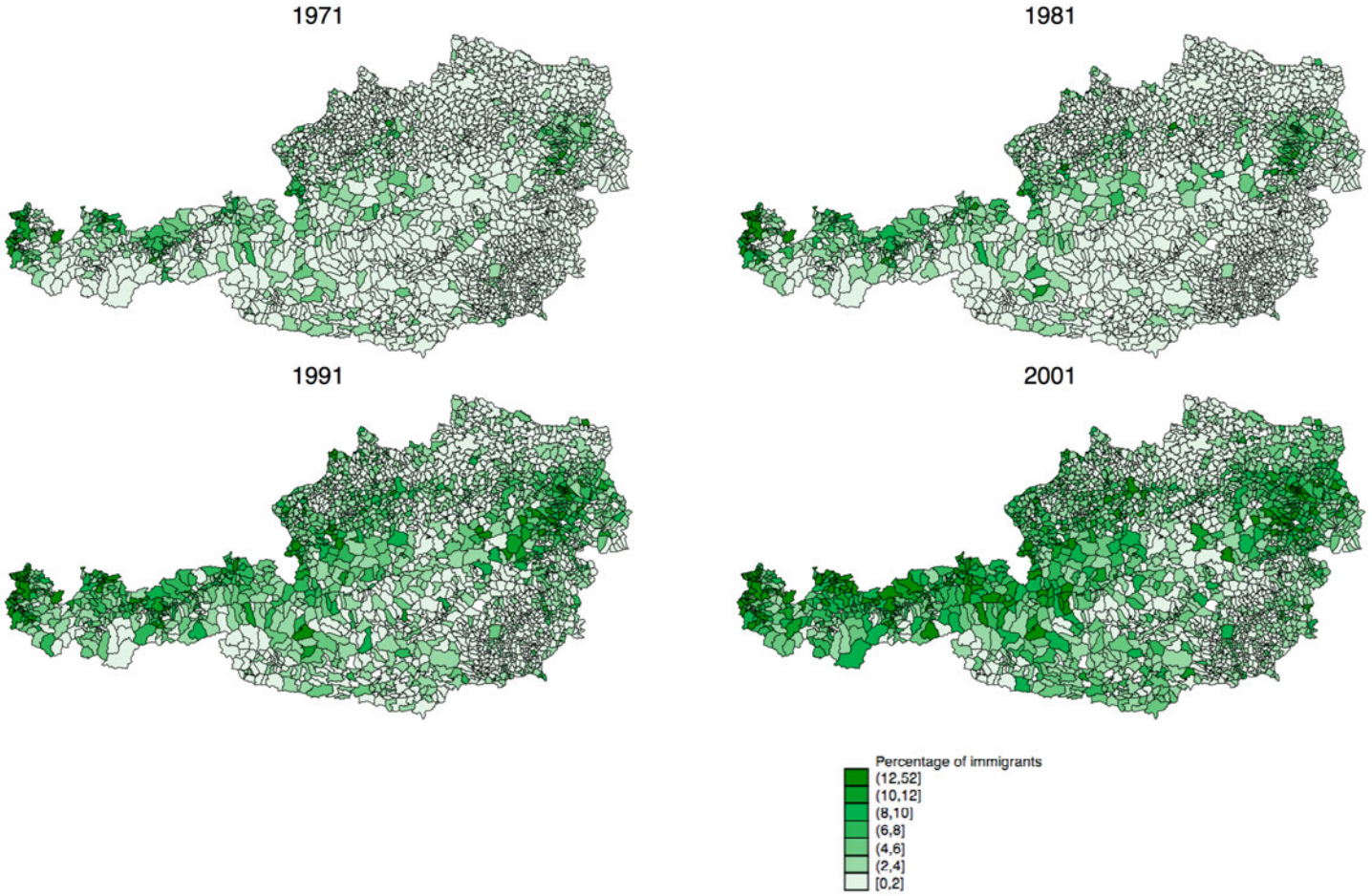
Figure 1. Immigration and ERW-voting in the EU-15 countries, Norway, and Switzerland, 1970–2008



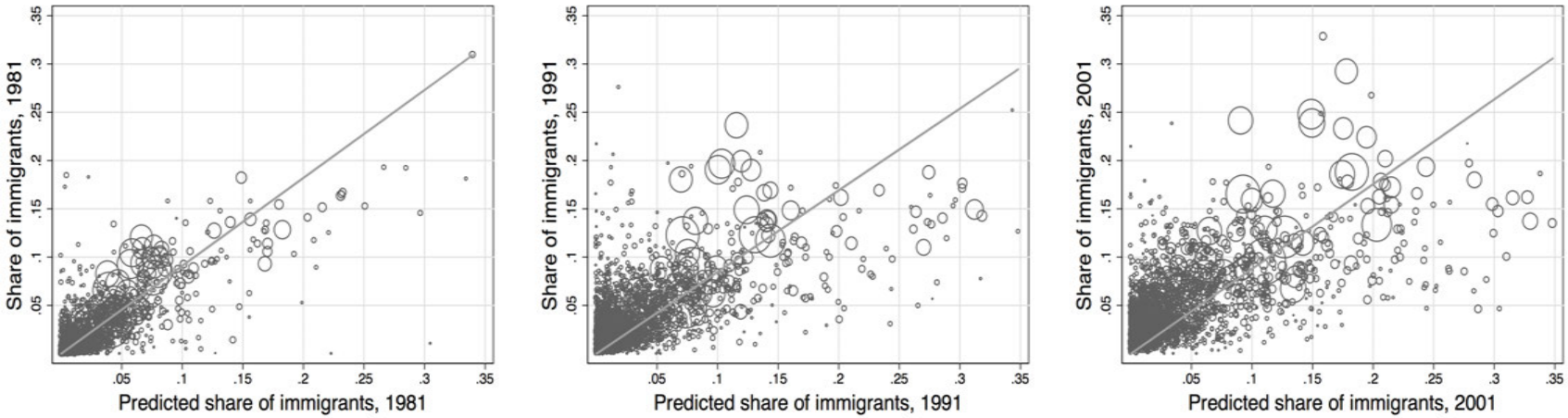
This scatterplot accounts for country fixed effects (i. e., both variables are centered around the respective country-specific mean) and is based on 119 general election years in EU-15 countries, Norway, and Switzerland in the period between 1970 and 2008; only democratic periods are used. 65 elections are not included due to missing information on the number of residents without citizenship. Share of immigrants is defined as the number of residents without citizenship relative to all residents. Data on the total number of residents is from the database of *Eurostat*. Information on the number of residents without citizenship is from various national sources; details are available upon request. Share of votes for extreme-right wing (ERW) parties include the following parties: Austria: sum of the following two parties: (i) *Freiheitliche Partei Österreichs* founded in 1956, (ii) *Bündnis Zukunft Österreich* founded 2005 as a splinter from the *Freiheitliche Partei Österreichs*, parliamentary elections (National Council of Austria); Belgium: sum of the following three parties: (i) *Vlaams Blok* founded in 1978 and succeeded by the *Vlaams Belang* in 2004, (ii) *Le Front national* founded in 1985, (iii) *Lijst Dedecker* founded in 2007, general elections (Belgian Chamber of Representatives); Denmark: sum of the following two parties: (i) *Fremskridtspartiet* founded in 1972, (ii) *Dansk Folkeparti* founded 1995 as a splinter from the *Fremskridtspartiet*, parliamentary elections (Danish Parliament); Finland: *Suomen maaseudun puolue* founded in 1959, dissolved *de facto* in 1995 (*de jure* in 2003), and succeeded by *Perussuomaliset* founded in 1995, Finnish parliamentary elections; France: *Front National* founded in 1972, French legislative elections (first round votes); Germany: sum of the following two parties (i) *Nationaldemokratische Partei Deutschlands – Die Volksunion* founded in 1964, (ii) *Die Republikaner* founded in 1983, German federal elections; Greece: sum of the following two parties: (i) *Ethniki Parataxis* founded in the late 1970s, (ii) *Laikós Orthódoxos Synagermós* founded in 2000, Greek legislative election; Ireland: no ERW-parties; Italy: sum of the following two parties: (i) *Movimento Sociale Italiano-Destra Nazionale* founded in 1946, dissolved in 1995, and transformed into the *Alleanza Nazionale* (dissolved 2009), (ii) *Lega Nord* founded in 1991, Italian general elections; Luxembourg: no ERW-parties; Netherlands: sum of the following three parties: (i) *Centrumpartij* founded in 1980 and dissolved in 1986, (ii) *Lijst Pim Fortuyn* founded in 2002 and dissolved in 2008, (iv) *Partij voor de Vrijheid* founded in 2006, Dutch general elections; Norway: *Framstegspartiet* founded in 1973, Norwegian parliamentary elections; Portugal: *Partido Popular Monárquico* founded in 1974, Portuguese legislative elections; Spain: no ERW-parties; Sweden: *Sverigedemokraterna* founded in 1988, Swedish general elections; Switzerland: *Schweizerische Volkspartei* founded in 1971, Swiss federal elections; United Kingdom: no ERW-parties. Data on election results are obtained from the *Comparative Political Data Set I (23 OECD Countries)* provided by Klaus Armingeon, Sarah Engler, Panajotis Potolidis, Marléne Gerber and Philipp Leimgruber (see http://www.ipw.unibe.ch/content/team/klaus_armingeon/comparative_political_data_sets/index_ger.html). Information on founding years is from *Wikipedia*.

Figure 2. The spatial distribution of immigrants by census year[a]



These figures depict the share of immigrants (defined as the number of residents without Austrian citizenship as a percent share of all residents) in Austrian communities in the census years 1971, 1981, 1991, and 2001. The number of communities and their territorial boundaries has changed over the sample period. In order to have a balanced panel of communities, a slightly modified version of the territorial boundaries of the year 2001 with 2,352 communities (including the 23 municipal districts of Vienna) is used.

Figure 3. The spatial correlation between predicted and actual shares of immigrants



These population-weighted scatter-plots (based on Austrian community-level data from the decennial Austrian census) depict the correlation between the predicted and the actual shares of immigrants in Austrian communities in the years 1981, 1991 and 2001. The predictions are based on the spatial distribution of immigrants (from Ex-Yugoslavia, Turkey and other countries) across communities in the year 1971 and the subsequent group-specific inflow. For presentational purposes, the graphs exclude communities with a (predicted) share of immigrants of 35 percent or more. In case of the first graph there are 3, in the second 15, and in the third 26 of such outliers. These observations are included in the empirical analysis.

Table 1. Descriptive statistics on variables of primary interest

Election year	Pooled	1971	1979	1983	1990	1994	1999	2002
% share of FPÖ-votes	14.84	5.49	6.10	5.03	16.68	22.81	27.39	10.23
	(9.70)	(3.68)	(3.72)	(3.18)	(5.73)	(5.45)	(5.99)	(4.78)
% share of immigrants	6.50	2.83	3.86	3.86	6.64	6.64	8.85	8.85
	(5.67)	(2.56)	(3.75)	(3.75)	(5.42)	(5.42)	(6.30)	(6.30)
with low and medium skills	5.20	2.30	3.21	3.21	5.27	5.27	7.01	7.01
	(4.92)	(2.45)	(3.47)	(3.47)	(4.74)	(4.74)	(5.50)	(5.50)
with high skills	1.14	0.36	0.49	0.49	1.20	1.20	1.68	1.68
	(1.39)	(0.55)	(0.76)	(0.76)	(1.37)	(1.37)	(1.60)	(1.60)

This table summarizes population-weighted means and standard deviations (in parentheses below) for the variables of primary interest based on Austrian community-level data. The share of votes for the FPÖ is from general elections; these figures might differ slightly from official election results due to overseas voters and varying turnout of voters across communities. The share of immigrants (with a certain level of education) is equal to the number of residents without Austrian citizenship (with the respective educational attainment) as a fraction of all residents. Shares by skill are calculated based on residents 25 years of age or older and refer to the highest attained educational degree. Low and medium education is compulsory schooling, an apprenticeship or a lower secondary school. High education is a higher secondary school or an academic degree. The shares of immigrants on a community-level are available in the years 1971, 1981, 1991 and 2001 (census years). The shares of immigrants in the years 1979 and 1983 are imputed with information from the year 1981, the data in the years 1990 and 1994 are imputed with information from the year 1991, and the data in the years 1999 and 2002 are imputed with information from the year 2001.

Table 2. Immigration and FPÖ votes: OLS and panel fixed-effects estimations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Election year	Pooled	Pooled (FE)	1979	1983	1990	1994	1999	2002
IM_{it}: share of immigrants	0.240***	0.176***	0.307***	0.186***	0.247***	0.241***	0.236***	0.192***
	(0.024)	(0.058)	(0.052)	(0.038)	(0.040)	(0.038)	(0.034)	(0.020)
Unemployment rate 1961[a]	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure 1973[b]	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
No. of inhabitants (squared)[c]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labor-market-status[d]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure[e]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status[f]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age-sex-distribution[g]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carinthia, Vienna[h]	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects[i]	Yes	Yes	No	No	No	No	No	No
Adj. R-squared	0.869	0.940	0.495	0.463	0.668	0.553	0.523	0.748
Number of observations	12,632	12,632	2,104	2,104	2,105	2,105	2,107	2,107

This table summarizes the estimated effect of immigration (share of residents without Austrian citizenship) on the share of votes for the FPÖ based on a series of weighted (community population weights) and OLS estimations using Austrian community level data. The dependent variable ($FP\ddot{O}_{it}$) is equal to the share of votes for the FPÖ in the general election in community i in the year t, where $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$. The shares of immigrants IM_{it} in community i are available in the years 1981, 1991 and 2001. The share of immigrants in the years 1979 and 1983 is imputed with information form the year 1981, the data in the years 1990 and 1994 are imputed with information form the year 1991, and the data in the years 1999 and 2002 are imputed with information from the year 2001. The same imputation is used for the other covariates. Robust standard errors (allowing for clustering on the community level and/or heteroskedasticity of unknown form) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively.[a] Unemployment rate in 1961. [b] Industrial structure in 1973: 31 variables that capture the share of workers employed in a certain industry relative to the sum of all workers in a given community. [c] Community's number of inhabitants and number of inhabitants squared. [d] Distribution of labor market status: share of inhabitants who are employed, unemployed, retired or a child. [e] Industrial structure. [f] Distribution of marital status: shares of inhabitants who are single, married, divorced or widowed. [g] 34 variables that capture the share of the total population of sex s and in age-group a, where a is one of sixteen age groups 0-5, 5-10, ..., 70-75, 80+. [h] Binary variables indicating communities in Vienna and Carinthia. [i] Base year: 1979.

Table 3. First stage: Determinants of the share of immigrants

	(1) Share of immigrants overall		(2) Share of immigrants with low-& medium skills		(3) Share of immigrants with high skills	
Panel A: Pooled sample						
Predicted share of immigrants	0.314***	(0.021)				
with low- & medium skills			0.367***	(0.020)	0.023***	(0.005)
with high skills			−0.018	(0.078)	0.169***	(0.018)
Unemployment rate 1961[a]	Yes		Yes		Yes	
Industrial structure 1973[b]	Yes		Yes		Yes	
No. of inhabitants (squared)[c]	Yes		Yes		Yes	
Labor-market-status[d]	Yes		Yes		Yes	
Industrial structure[e]	Yes		Yes		Yes	
Marital status[f]	Yes		Yes		Yes	
Age-sex-distribution[g]	Yes		Yes		Yes	
Carinthia, Vienna[h]	Yes		Yes		Yes	
Year fixed effects[i]	Yes		Yes		Yes	
Panel B1: 1981 sample[j]						
Predicted share of immigrants in 1981	0.560***	(0.030)				
with low- & medium skills			0.610***	(0.029)	0.037**	(0.016)
with high skills			0.158	(0.101)	0.334***	(0.052)
Panel B2: 1991 sample[j]						
Predicted share of immigrants in 1991	0.318***	(0.023)				
with low- & medium skills			0.384***	(0.024)	0.019***	(0.007)
with high skills			0.028	(0.086)	0.152***	(0.023)
Panel B3: 2001 sample[j]						
Predicted share of immigrants in 2001	0.245***	(0.021)				
with low- & medium skills			0.281***	(0.022)	0.020***	(0.006)
with high skills			0.047	(0.080)	0.119***	(0.022)

This table summarizes estimations of the determinants of the share of immigrants (i. e. residents without Austrian citizenship), the share of immigrants with low and medium education, and the share of immigrants with high education in community i in the year t, where $i = \{1, \ldots, 2,106\}$ and $t = \{1981, 1991, 2001\}$ based on Austrian community-level census data. Details on the calculation of the actual share of immigrants (by educational attainment) are provided in the notes to Table 1. The explanatory variables of primary interest are the respective predicted shares of immigrants. The prediction of the overall share of immigrants is based on the spatial distribution of immigrants (from Ex-Yugoslavia, Turkey and other countries) across communities in the year 1971 and the subsequent group-specific inflow. The prediction of the skill-specific share of immigrants is based on the spatial distribution of immigrants from the respective skill groups across communities in the year 1971 and the subsequent group-specific inflow. Method of estimation is OLS with community population weights. Robust standard errors (allowing for clustering on the community level and/or heteroskedasticity of unknown form) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. [a] Unemployment rate in 1961. [b] Industrial structure in 1973: 31 variables that capture the share of workers employed in a certain industry relative to the sum of all workers in a given community. [c] Community's number of inhabitants and number of inhabitants squared. [d] Distribution of labor market status: share of inhabitants who are employed, unemployed, retired or a child. [e] Industrial structure. [f] Distribution of marital status: shares of inhabitants who are single, married, divorced or widowed. [g] 34 variables that capture the share of the total population of sex s and in age-group a, where a is one of sixteen age groups 0-5, 5-10, ..., 70-75, 80+. [h] Binary variables indicating communities in Vienna and Carinthia. [i] Base year: 1979. [j] The first stages for the three individual years 1981, 1991, and 2001 include the same control variables as the pooled sample regression (except year fixed effects).

Table 4. The effect of immigration on FPÖ votes: 2SLS estimations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Election year t	Pooled	1979	1983	1990	1994	1999	2002
Share of immigrants	0.264***	0.367***	0.192***	0.241***	0.173***	0.270***	0.301***
	(0.044)	(0.061)	(0.042)	(0.059)	(0.061)	(0.063)	(0.043)
Unemployment rate 1961[a]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure 1973[b]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of inhabitants (squared)[c]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labor-market-status[d]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure[e]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status[f]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age-sex-distribution[g]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carinthia, Vienna[h]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects[i]	Yes	No	No	No	No	No	No
Number of obervations	12,632	2,104	2,104	2,105	2,105	2,107	2,107
Cragg-Donald Wald F	5,520	2,500	2,500	929	929	600	600
Kleibergen-Paap rk Wald F	231	359	359	186	186	133	133

This table summarizes the estimated effect of immigration (share of residents without Austrian citizenship) on the share of votes for the FPÖ based on a series of weighted (community population weights) instrumental variable estimations using Austrian community level data. The dependent variable is in each case the share of votes for the FPÖ in the general election in community i in the year t, where $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$. The endogenous variable is the share of immigrants in community i in that year, which is instrumented by the predicted share of immigrants. The predictions are based on the spatial distribution of immigrants (from Ex-Yugoslavia, Turkey and other countries) across communities in the year 1971 and the subsequent group-specific inflow until t. The shares of immigrants in community i are available in the years 1981, 1991 and 2001. The share of immigrants in the years 1979 and 1983 is imputed with information form the year 1981, the data in the years 1990 and 1994 are imputed with information form the year 1991, and the data in the years 1999 and 2002 are imputed with information from the year 2001. The same imputation is used for the other covariates. Robust standard errors (allowing for clustering on the community level and/or heteroskedasticity of unknown form) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. [a] Unemployment rate in 1961. [b] Industrial structure in 1973: 31 variables that capture the share of workers employed in a certain industry relative to the sum of all workers in a given community. [c] Community's number of inhabitants and number of inhabitants squared. [d] Distribution of labor market status: share of inhabitants who are employed, unemployed, retired or a child. [e] Industrial structure. [f] Distribution of marital status: shares of inhabitants who are single, married, divorced or widowed. [g] 34 variables that capture the share of the total population of sex s and in age-group a, where a is one of sixteen age groups 0-5, 5-10, ..., 70-75, 80+. [h] Binary variables indicating communities in Vienna and Carinthia. [i] Base year: 1979.

Table 5. 2SLS estimations in differences: The effect of the change in immigration on the change in FPÖ votes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		20-year difference				10-year difference		
Election years (t_2 - t_1)	Pooled	Δ02-79	Δ99-79	Δ94-79	Pooled	Δ90-79	Δ02-90	Δ99-90
Change in share of immigrants (t_2 - t_1)	1.367**	0.928**	1.113***	2.610**	1.205**	1.859**	0.454	0.898*
	(0.573)	(0.364)	(0.415)	(1.015)	(0.540)	(0.876)	(0.384)	(0.480)
Unemployment rate 1961[a]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure 1973[b]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of inhabitants in t_2 (squared)[c]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Change in no. of inhabitants (t_2 - t_1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labor-market-status[d]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure[e]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status[f]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age-sex-distribution[g]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carinthia, Vienna[h]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects[i]	Yes	No	No	No	Yes	No	No	No
Number of observations	6,319	2,107	2,107	2,105	6,319	2105	2107	2107
Cragg-Donald Wald F	74	37	37	19	34	19	23	23
Kleibergen-Paap rk Wald F	9	12	12	9	9	9	9	9
Av. change in FPOE votes	13.94	4.08	21.17	16.63	4.83	10.54	-6.48	10.61
Av. change in immigrant share	4.38	5.12	5.12	2.84	2.50	2.84	2.34	2.34
Av. change in predicted immigrant share	4.35	5.10	5.10	2.82	2.48	2.82	2.32	2.32

This table summarizes the estimated effect of the change in the share of immigrants (share of residents without Austrian citizenship) on the change in the share of votes for the FPÖ based on a series of weighted 2SLS estimations using Austrian community level data. In the by-year regressions, the dependent variable is equal to the change in the share of votes for the FPÖ in the general election in community i between t_2 and t_1. The pooled regressions pools these vote share changes. The endogenous variables — for which estimated coefficients and standard errors from the 2nd stage are listed — are the changes in the share of immigrants in community i between t_2 and t_1. This variable is instrumented by the changes in the predicted share of immigrants in community i between t_2 and t_1. The predictions is based on the spatial distribution of immigrants (from Ex-Yugoslavia, Turkey and other countries) across communities in the year 1971 and the subsequent group-specific inflow. Robust standard errors (allowing for clustering on the community level and/or heteroskedasticity of unknown form) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. [a] Unemployment rate in 1961. [b] Industrial structure in 1973: 31 variables that capture the share of workers employed in a certain industry relative to the sum of all workers in a given community. [c] Community's number of inhabitants and number of inhabitants squared in t_2. [d] Distribution of labor market status in t_2: share of inhabitants who are employed, unemployed, retired or a child. [e] Industrial structure in t_2 [f] Distribution of marital status in t_2: shares of inhabitants who are single, married, divorced or widowed. [g] 34 variables that capture the share of the total population of sex s and in age-group a in t_2, where a is one of sixteen age groups 0-5, 5-10, ..., 70-75, 80+. [h] Binary variables indicating communities in Vienna and Carinthia. [i] Base year: 1979.

Table 6. Relationship between votes for DNSAP in 1930 & share of foreigners in 1971

	(1)	(2)
Share of votes for DNSAP	−0.001	−0.034
	(0.068)	(0.065)
Vienna	Yes	Yes
Carinthia	Yes	Yes
Inhabitants 1971	No	Yes
No. of observations	111	111
R-squared	0.16	0.26

This table presents regressions of the share of immigrants in 1971 in political district i, where $i = \{1, \ldots, 111\}$, on vote shares for the *Deutsche Nationalsozialistische Arbeiterpartei*, the Austrian counterpart of the German NSDAP, in 1930.

Table 7. Empirical models for identifying the internal migration response

	(1)		(2)		(3)	
Empirical model	Card (2007)		Cortes (2006)		Borjas (2006)	
Dependent variable	$(N_t - N_{t-1})/(N_{t-1} + F_{t-1})$		$ln(N_t)$		$(N_t - N_{t-1})/\bar{N}$	
Explanatory variable	$(F_t - F_{t-1})/(N_{t-1} + F_{t-1})$		$ln(F_t)$		$F_t/(N_t + F_t)$	
Displacement if	$\beta_{Card} < 0$		$\beta_{Cortes} < 0$		$\beta_{Borjas} < 0$	
Attraction if	$\beta_{Card} > 0$		$\beta_{Cortes} > 0$		$\beta_{Borjas} > 0$	
$\beta(s.e.)$	0.051	(0.042)	0.003	(0.002)	-0.081	(0.054)
Number of observations	7,056		9,408		7,056	

This table summarizes estimation output of empirical models for identifying the internal migration response as discussed and evaluated by Peri and Sparber (2011) (henceforth PS). The estimations are based on Austrian community-level panel data for the years 1971, 1981, 1991 and 2001. The specifications are equivalent to a subset of specifications presented in Table 7 of PS. Each specification controls for community and year fixed effects. Specification (1) is equal to the preferred specification of PS — a slightly modified specification of Card (2001, 2007) — which they describe/recommend on page 90. Specification (2) is denoted by PS as the 'Cortes (2006) alternative', and specification (3) is called the 'Borjas (2006) alternative'. Robust standard errors (allowing for clustering on the community level) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively.

Table 8. The role of education and religious affiliation in the effect of immigration on FPÖ votes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Election year	Pooled	1979	1983	1990	1994	1999	2002
Panel A: by education							
Share of immigrants by skills							
with low- & medium	0.383***	0.262***	0.188***	0.341***	0.287***	0.371***	0.345***
	(0.051)	(0.099)	(0.058)	(0.072)	(0.073)	(0.089)	(0.052)
with high	−0.710***	1.104	0.005	−0.625	−1.100**	−0.338	−0.017
	(0.268)	(0.739)	(0.501)	(0.549)	(0.525)	(0.554)	(0.281)
Unemp. rate 1961[a]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industr. structure 1973[b]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of inhabitants[c]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labor-market-status[d]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure[e]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status[f]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age-sex-distribution[g]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carinthia, Vienna[h]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects[i]	Yes	No	No	No	No	No	No
Number of observations	12,632	2,104	2,104	2,105	2,105	2,107	2,107
Cragg-Donald Wald F	555	106	106	52	52	45	45
Angrist-Pischke[j]	237/87	324/38	324/38	186/43	186/43	95/28	95/28
Panel B: Muslims[k]							
Share of muslims	0.330***	0.622***	0.360***	0.282**	0.240**	0.200	0.291***
	(0.098)	(0.144)	(0.116)	(0.116)	(0.114)	(0.131)	(0.086)
Number of observations	12,632	2,104	2,104	2,105	2,105	2,107	2,107
Cragg-Donald Wald F	3,540	2,469	2,469	896	896	419	419
K-P rk Wald F	117	173	173	84	84	84	84

This table summarizes the estimated effect of different types of immigrants on the share of votes for the FPÖ based on a series of weighted (community population weights) instrumental variable estimations using Austrian community level data. In each Panel the dependent variable is equal to the share of votes for the FPÖ in the general election in community i in the year t, where $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$. Estimations summarized in Panel A distinguish between share of residents without Austrian citizenship with low and medium & high skills. These two endogenous variables — for which estimated coefficients and standard errors from the 2nd stage are listed — are instrumented with the respective predicted share. The prediction of the skill-specific share of immigrants is based on the spatial distribution of immigrants from the respective skill groups across communities in the year 1971 and the subsequent group-specific inflow. Details on the calculation of the share of immigrants by educational attainment are provided in the notes to Table 1. Panel B defines immigrants as Muslims. This endogenous variables is instrumented with the predicted share of Muslims. The prediction is based on the spatial distribution of Muslims across communities in the year 1971 and the subsequent inflow of Muslims. Robust standard errors (allowing for clustering on the community level and/or heteroskedasticity of unknown form) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. [a] Unemployment rate in 1961. [b] Industrial structure in 1973: 31 variables that capture the share of workers employed in a certain industry relative to the sum of all workers in a given community. [c] Community's number of inhabitants and number of inhabitants squared. [d] Distribution of labor market status: share of inhabitants who are employed, unemployed, retired or a child. [e] Industrial structure. [f] Distribution of marital status: shares of inhabitants who are single, married, divorced or widowed. [g] 34 variables that capture the share of the total population of sex s and in age-group a, where a is one of sixteen age groups 0-5, 5-10, ..., 70-75, 80+. [h] Binary variables indicating communities in Vienna and Carinthia. [i] Base year: 1979. [j] Angrist-Pischke multivariate F-test of excluded instruments. [k] The estimations in Panel B include the same control variables as the respective estimations in Panel A. [l] Kleibergen-Paap rk Wald F.

Table 9. The role of labor market concerns and of compositional amenities in the effect of immigration on FPÖ votes

Sample split criterion		(1) Unemployment rate among Austrians		(2) Labor market competition		(3) Ratio of immigrant to all kids		(4) Av. educ. level among Austrians	
	Full Sample[a]	Below 25th percentile	Above 75th percentile	Below 50th percentile	Above 75th percentile	Below 25th percentile	Above 75th percentile	Below 25th percentile	Above 75th percentile
Share of immigrants	0.264***	0.225***	0.235***	0.256***	0.257***	−0.127	0.305***	0.104	0.346***
	(0.044)	(0.067)	(0.060)	(0.066)	(0.070)	(0.865)	(0.054)	(0.146)	(0.055)
Unemployment rate 1961[a]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure 1973[b]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of inhabitants (squared)[c]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labor-market-status[d]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure[e]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status[f]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age-sex-distribution[g]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carinthia, Vienna[h]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects[i]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	12,632	3,182	3,152	5,940	3,276	2,836	3,346	2,956	3,308
Cragg-Donald Wald F	5,520	1,927	1,133	1,583	1,787	43	972	646	1,174
Kleibergen-Paap rk Wald F	231	65	106	22	113	22	105	65	147
Mean of split var.		0.01	0.07	0.14	1.17	0.00	0.10	1.38	1.92
S.d. of split var		0.00	0.03	0.29	0.30	0.00	0.05	0.08	0.13

This table summarizes the estimated effect of immigration (share of residents without Austrian citizenship) on the share of votes for the FPÖ based on a series of weighted (community population weights) instrumental variable estimations using Austrian community level data. The first column shows the average effect (as seen in Table 4). The remaining columns consider sample splits at the medians of the variable stated at the header of each column. The construction of the labor market competition index follows Card (2001) and is explained in detail in the text. The dependent variable in all regressions is the share of votes for the FPÖ in the general election in community i in the years t pooled sample where $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$. The endogenous variable is the share of immigrants in community i, which is instrumented with the predicted share of immigrants. The predictions is based on the spatial distribution of immigrants (from Ex-Yugoslavia, Turkey and other countries) across communities in the year 1971 and the subsequent group-specific inflow. The shares of immigrants in community i are available in the years 1981, 1991 and 2001. The share of immigrants in the years 1979 and 1983 is imputed with information form the year 1981, the data in the years 1990 and 1994 are imputed with information form the year 1991, and the data in the years 1999 and 2002 are imputed with information from the year 2001. The same imputation is used for the other covariates. Robust standard errors (allowing for clustering on the community level) are in parentheses. *, ** and *** indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. [a] Unemployment rate in 1961. [b] Industrial structure in 1973: 31 variables that capture the share of workers employed in a certain industry relative to the sum of all workers in a given community. [c] Community's number of inhabitants and number of inhabitants squared. [d] Distribution of labor market status: share of inhabitants who are employed, unemployed, retired or a child. [e] Industrial structure. [f] Distribution of marital status: shares of inhabitants who are single, married, divorced or widowed. [g] 34 variables that capture the share of the total population of sex s and in age-group a, where a is one of sixteen age groups 0-5, 5-10, ..., 70-75, 80+. [h] Binary variables indicating communities in Vienna and Carinthia. [i] Base year: 1979.

Please note: The following supplementary appendices are not meant for publication in print. They can be made available on a Journal website and the authors' websites upon publication.

Supplementary Appendix A Additional graphs

Time series of FPÖ vote shares and immigrants in Austria

Austria has witnessed several waves of mass (labor) immigration, which increased the share of immigrants (i. e., residents without Austrian citizenship), shown on the right axis in Figure A.1, dramatically over time.

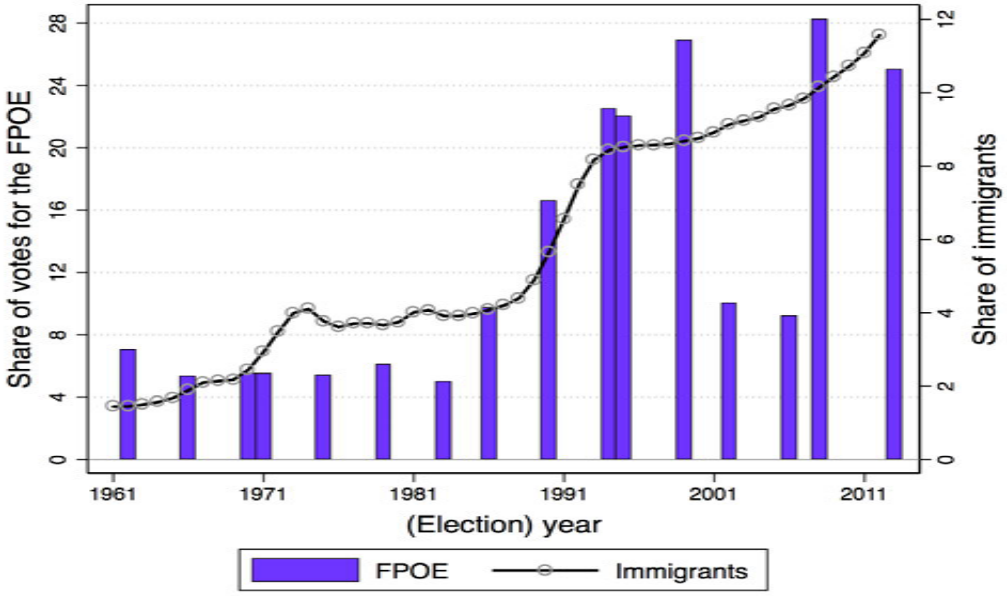
[Insert Figure A.1 here]

The spatial distribution of FPÖ votes over time

Figure A.2 shows the spatial distribution of the share of votes for the FPÖ in the six general elections under consideration. In line with Figure A.1 we see that the share of votes for the FPÖ increases between 1979 and 1999, and drops in 2002. With the exception of a very strong base of support for the FPÖ in the state of Carinthia (located in the south of Austria) no other particular geographical patterns (over time) are evident.

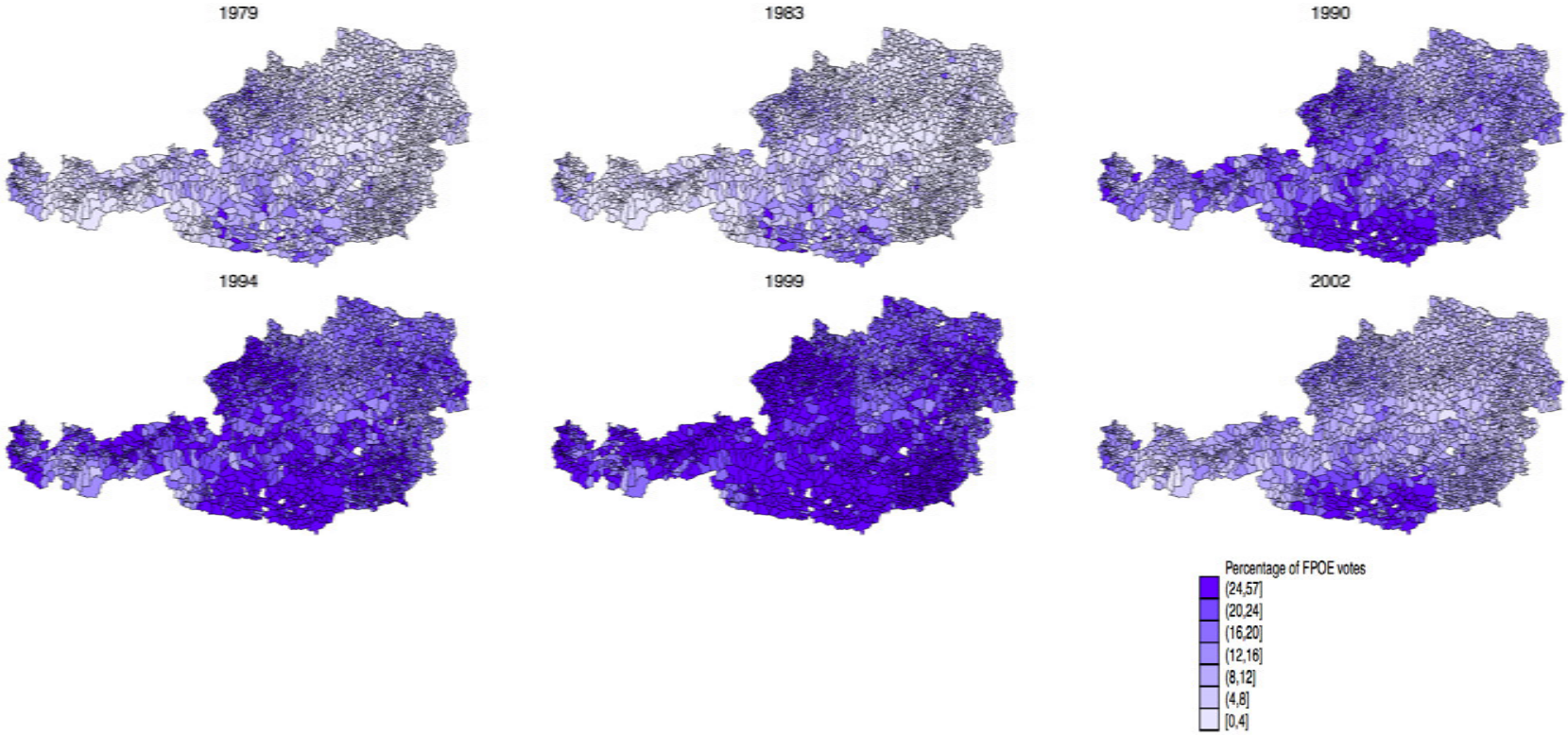
[Insert Figure A.2 here]

Figure A.1. Share of votes for the FPÖ and the share of immigrants, 1961–2013



The share of votes for the *Freedom Party of Austria* (FPÖ) is from parliamentary elections. After 2005 this figure also includes the votes for the newly-established *Alliance for the Future of Austria* (BZÖ), a splinter from the FPÖ. Share of immigrants captures the share of residents without Austrian citizenship. Own calculations based on data from *Statistics Austria*.

Figure A.2. The spatial distribution of the share of votes for the FPÖ in general elections



These figures depict the share of votes for the FPÖ in Austrian general elections on a community-level for the following election years 1979, 1983, 1990, 1994, 1999, and 2002. The number of communities and their territorial boundaries has changed over the sample period. In order to have a balanced panel of communities, a slightly modified version of the territorial boundaries of the year 2001 with 2,352 communities (including the 23 municipal districts of Vienna) is used.

Supplementary Appendix B Additional Tables

Table B.1 shows estimation output with all controls. Table B.2 summarizes robustness to inclusion of control variables. These results are commented in the text.

[Insert Table B.1 here]

[Insert Table B.2 here]

Table B.1. Full estimation output for the 2SLS estimation based on the pooled sample

	First stage: Share of immigrants in t		*Second stage*: Share of FPÖ votes in t	
Predicted share of immigrants in t	0.314***	(0.021)		
Share of immigrants in t			0.264***	(0.044)
Unemployment rate in 1961	−0.274***	(0.083)	−0.623***	(0.101)
Industrial structure 1973[a]				
Agriculture and forestry	−0.012*	(0.006)	0.037***	(0.011)
Fishery	−0.072	(0.126)	−0.091	(0.172)
Coal mining, oil and gas	0.019	(0.024)	0.003	(0.022)
Ore mining	0.003	(0.009)	0.009	(0.018)
Foodstuffs, drinks, and tobacco	0.008	(0.009)	−0.007	(0.010)
Textiles and clothing	0.007	(0.009)	−0.006	(0.009)
Leather and shoes	−0.005	(0.019)	0.021	(0.027)
Wood processing	0.007	(0.007)	0.010	(0.011)
Paper conversation; printing	0.003	(0.017)	0.001	(0.016)
Coking plants; petroleum processing	0.007	(0.022)	−0.083	(0.058)
Chemical products	0.043**	(0.019)	−0.012	(0.023)
Rubber and plastics	−0.001	(0.019)	0.007	(0.023)
Glass, stone, and earth working	0.005	(0.010)	0.004	(0.012)
Metal production	−0.003	(0.010)	−0.000	(0.012)
Engineering	−0.017	(0.015)	−0.007	(0.017)
Production of business machines, data processing	−0.014	(0.020)	0.018	(0.015)
Vehicle manufacturing	0.003	(0.017)	−0.037**	(0.019)
Production of furniture, musical instruments, sports tools	0.008	(0.009)	0.023*	(0.013)
Energy and water supply	0.032	(0.020)	0.019	(0.026)
Construction	0.003	(0.007)	−0.004	(0.008)
Trade	0.012	(0.008)	−0.001	(0.009)
Hotels and restaurants	0.026***	(0.010)	0.025***	(0.009)
Transport and communication	0.010	(0.010)	0.004	(0.010)
Loans and insurance industry	0.004	(0.016)	−0.010	(0.014)
Real estate; entpreneurial services	0.020	(0.017)	0.037	(0.024)
Education	0.007	(0.017)	0.034	(0.023)
Health and social services	0.002	(0.031)	−0.017	(0.021)
Other public or personal services	−0.004	(0.012)	0.002	(0.016)
Private housholds	−0.001	(0.011)	−0.015	(0.023)
Extraterritorial organizations	−25.209	(15.927)	2.223	(3.659)
Unkown	0.006	(0.006)	0.012*	(0.006)
Community characteristics				
No. of inhabitants	0.003**	(0.001)	0.000	(0.001)
(No. of inhabitants)^2	−0.000***	(0.000)	0.000	(0.000)
Vienna	0.006	(0.008)	−0.028***	(0.005)
Carinthia	−0.007*	(0.004)	0.115***	(0.004)
Labor market status[b]				
Share of unemployed	0.740***	(0.137)	−0.343***	(0.088)
Share of retirees	−0.089	(0.056)	0.071	(0.080)
Share of children below 15	−0.650***	(0.143)	0.323**	(0.162)
Share of others	−0.078**	(0.033)	−0.083**	(0.036)

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Industrial structure[c]				
Agriculture and forestry	−0.008	(0.015)	−0.003	(0.013)
Fishery	0.014	(0.168)	0.634**	(0.275)
Coal mining, oil and gas	−0.016	(0.027)	0.015	(0.022)
Ore mining	−0.002	(0.016)	0.011	(0.021)
Foodstuffs, drinks, and tobacco	−0.013	(0.018)	0.014	(0.013)
Textiles and clothing	0.009	(0.017)	0.027	(0.018)
Leather and shoes	0.000	(0.021)	0.067***	(0.024)
Wood processing	−0.016	(0.015)	−0.010	(0.013)
Paper conversation; printing	0.001	(0.020)	0.002	(0.017)
Coking plants; petroleum processing	−0.047	(0.034)	0.023	(0.030)
Chemical products	−0.079**	(0.033)	0.038	(0.030)
Rubber and plastics	0.006	(0.016)	0.006	(0.016)
Glass, stone, and earth working	−0.021	(0.017)	0.014	(0.017)
Metal production	−0.022	(0.016)	0.028*	(0.014)
Engineering	0.006	(0.017)	0.042**	(0.018)
Production of business machines, data processing	−0.058***	(0.018)	0.004	(0.015)
Vehicle manufacturing	−0.026	(0.021)	0.031	(0.024)
Production of furniture, musical instruments, sports tools	−0.013	(0.016)	0.037**	(0.015)
Energy and water supply	−0.021	(0.036)	−0.011	(0.039)
Construction	−0.010	(0.016)	0.030***	(0.011)
Trade	−0.019	(0.016)	0.025**	(0.011)
Hotels and restaurants	−0.002	(0.016)	0.028**	(0.012)
Transport and communication	−0.026	(0.016)	0.022	(0.016)
Loans and insurance industry	0.012	(0.045)	0.025	(0.020)
Real estate; entpreneurial services	0.018	(0.019)	−0.037**	(0.017)
Education	−0.032	(0.052)	−0.049	(0.032)
Health and social services	−0.030	(0.037)	−0.002	(0.022)
Other public or personal services	−0.005	(0.030)	−0.014	(0.020)
Private housholds	−0.031	(0.024)	0.049	(0.041)
Extraterritorial organizations	−0.371	(0.669)	−2.935***	(0.791)
Unkown	−0.002	(0.014)	0.004	(0.011)
Marital status[d]				
Share of married	−0.027	(0.023)	−0.112***	(0.023)
Share of widows	−0.088**	(0.039)	−0.080*	(0.042)
Share of divorced	0.254***	(0.062)	−0.036	(0.055)

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Age-sex-distribution[e]				
Share of females between 0 and 5	0.634***	(0.170)	0.294	(0.212)
Share of females between 5 and 10	0.034	(0.176)	−0.111	(0.183)
Share of females between 10 and 15	−0.254*	(0.150)	0.009	(0.190)
Share of females between 15 and 20	−0.739***	(0.141)	0.134	(0.159)
Share of females between 20 and 25	−0.312*	(0.178)	0.379**	(0.165)
Share of females between 25 and 30	−0.420**	(0.174)	0.413**	(0.171)
Share of females between 30 and 35	−0.907***	(0.186)	0.770***	(0.189)
Share of females between 35 and 40	−0.953***	(0.183)	1.026***	(0.176)
Share of females between 40 and 45	−1.155***	(0.246)	1.062***	(0.186)
Share of females between 45 and 50	−0.936***	(0.198)	1.756***	(0.195)
Share of females between 50 and 55	−1.049***	(0.239)	0.840***	(0.201)
Share of females between 55 and 60	−0.517***	(0.150)	0.939***	(0.177)
Share of females between 60 and 65	−0.513***	(0.183)	0.889***	(0.185)
Share of females between 65 and 70	−0.460**	(0.180)	0.398**	(0.186)
Share of females between 70 and 75	−0.459**	(0.206)	0.650***	(0.177)
Share of females between 75 and 80	−0.281	(0.197)	−0.605***	(0.202)
Share of females between 80 and 100	0.030	(0.029)	−0.062*	(0.037)
Share of males between 5 and 10	−0.088	(0.170)	−0.125	(0.196)
Share of males between 10 and 15	−0.346***	(0.133)	0.020	(0.170)
Share of males between 15 and 20	−0.670***	(0.139)	0.060	(0.150)
Share of males between 20 and 25	−0.438***	(0.152)	0.260	(0.164)
Share of males between 25 and 30	−0.170	(0.175)	−0.069	(0.161)
Share of males between 30 and 35	0.133	(0.178)	0.061	(0.186)
Share of males between 35 and 40	0.536***	(0.201)	0.280*	(0.163)
Share of males between 40 and 45	0.415**	(0.168)	−0.345**	(0.158)
Share of males between 45 and 50	0.121	(0.185)	0.430**	(0.197)
Share of males between 50 and 55	−0.316*	(0.164)	−0.713***	(0.177)
Share of males between 55 and 60	−0.403**	(0.167)	−0.582***	(0.199)
Share of males between 60 and 65	−1.348***	(0.183)	−0.619***	(0.195)
Share of males between 65 and 70	−1.484***	(0.220)	−0.063	(0.231)
Share of males between 70 and 75	−1.222***	(0.213)	0.661***	(0.211)
Share of males between 75 and 80	−1.178***	(0.238)	1.058***	(0.281)
Share of males between 80 and 100	0.046	(0.043)	0.022	(0.054)
Election years[f]	yes		yes	

The estimations presented provide the full estimation output for the first specification summarized in Table 3 and the first specification summarized in Table 4. Number of inhabitants is measured in 10.000. [a] Base group: Unknown. [b] Base group: Share of employed. [c] Base group: Unknown. [d] Base group: Share of singles. [e] Base group: Share of males between 0 and 5. [f] Binary indicators for the election years 1983, 1990, 1994, 1999 and 2002. Base group: 1979.

Table B.2. Robustness to less/further controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Election year	Pooled	1979	1983	1990	1994	1999	2002
2nd stage:							
Minimal controls	0.215***	0.392***	0.199***	0.185***	0.099	0.155**	0.268***
	(0.049)	(0.065)	(0.049)	(0.071)	(0.066)	(0.068)	(0.044)
No labor labor market status	0.255***	0.400***	0.212***	0.219***	0.127**	0.201***	0.283***
	(0.045)	(0.062)	(0.043)	(0.062)	(0.060)	(0.064)	(0.043)
Baseline specification	0.264***	0.367***	0.192***	0.241***	0.173***	0.270***	0.301***
	(0.044)	(0.061)	(0.042)	(0.059)	(0.061)	(0.063)	(0.043)
+Educational attainment	0.316***	0.322***	0.173***	0.268***	0.221***	0.329***	0.316**
	(0.040)	(0.057)	(0.039)	(0.057)	(0.057)	(0.063)	(0.043)

The estimations presented in this table should be compared to those presented in Table 4 in the paper. The estimations in the first row control only for the following basic control variables: All regressions control for the unemployment rate in 1961, contemporaneous values of the community's number of inhabitants, number of inhabitants squared, the distribution of marital status (shares of inhabitants who are single, married, divorced, and widowed), the age-sex-distribution (34 groups), and binary variables indicating communities in Vienna and Carinthia. The estimations in the second row control in addition for the industry structure (31 sectors) in 1971 and in the current year. The estimations presented in the third row control in addition for the distribution of labor market status (share of inhabitants who are employed, unemployed, retirees, children below 15, and others). This specification is equivalent to the baseline specification used throughout the paper. The estimations presented in the fourth row control in addition for the distribution of educational attainment of the total resident population 25 years of age or older; which is captured by the share with no degree, with an apprenticeship, with a lower secondary school, with a higher secondary school or with an academic degree.

Supplementary Appendix C Survey results

We employ data on Austrian respondents from the *European and World Values Survey* (E/WVS).[1] In the years 1990 and 1999 Austrian respondents were asked the question 'If there were a national election tomorrow, for which party on this list would you vote?'

[Insert Table C.1 here]

Table C.1 compares the resulting distribution of stated voting plan among parties in the survey with the actual voting results in the elections closely following the survey dates. We distinguish between *Sample* 1 which includes all respondents who answered the question on their voting behavior and *Sample* 2 which includes only the respondents who provided all the information we use in our subsequent estimation analysis. The results are quite similar for the two samples.

For both years, the survey significantly underestimates the actual vote share that the FPÖ obtained. The difference is particularly pronounced in 1999: According to the E/WVS, we would have expected about 20 percent of FPÖ voters, whereas in the election the FPÖ scored almost 27 percent of the votes. This finding is consistent with the idea that many voters do not honestly declare that in the voting booth they are voting for an extreme party. (Given the timeliness of the survey poll, it is unlikely that the FPÖ managed to mobilize and/or gain voters to such a great extent in the run-up to the election.)

Bearing the limitations of survey data in mind, we next consider the correlates of preferences for the FPÖ. We construct a binary variable, which is equal to one if a respondent answers 'FPÖ', to the above question and zero otherwise. We then run probit regressions of this variable on a set of demographic variables as well as variables capturing more specifically attitudes toward immigration. Tables C.2 and C.3 contain the results.

[Insert Tables C.2 and C.3 here]

In Table C.2, we find that, by and large, younger, male, less educated, and unemployed individuals as well as those out of the labor force are more likely to have a preference for the FPÖ. Table C.3 demonstrates that several facets of attitudes toward immigrants are strongly associated with voting preferences. For example, those who prefer that scarce jobs are given to native citizens or who even want a complete labor immigration stop are more likely to be in favor of the FPÖ, as are those who do not care about the living conditions of immigrants or are not willing to do something to improve these conditions. These results are broadly consistent with the findings of Lubbers *et al.* (2002) in their analysis of extreme right-wing parties in Western Europe. By contrast, Mayda (2006) and O'Rourke and Sinnott (2006) find that the old are more anti-immigrant than the young. It is difficult to directly compare these studies due to partially different controls.

[1] The E/WVS is an academic project organized as a network of social scientists coordinated by a central body, the *World Values Survey Association*. The survey provides data from representative national samples (based on face-to-face interviews) of more than 80 countries. To date, four waves have been conducted: in 1981-1984, 1990-1993, 1995-1997, and 1999-2004.

Table C.1. Comparison of survey polls with election results

	Election results Oct 7, 1990	Survey data (E/WVS) Apr to Jun, 1990		Election results Oct 3, 1999	Survey data (E/WVS) Aug to Oct, 1999	
		Sample 1 (N=1,052)	Sample 2 (N=1,014)		Sample 1 (N=1,041)	Sample 2 (N=888)
FPÖ[a]	16.60	15.30	15.09	26.90	20.27	20.20
SPÖ[b]	42.80	43.25	44.08	33.20	33.05	34.96
ÖVP [c]	32.10	32.70	32.25	26.90	31.32	30.53
GRÜNE[d]	6.80	8.56	8.38	7.40	9.70	9.31
Other	1.70	0.19	0.20	5.60	5.67	4.99
	100.00	100.00	100.00	100.00	100.00	100.00

[a] *Freiheitliche Partei Österreichs* (Freedom Party of Austria) [b] *Sozialdemokratische Partei Österreichs* (Social Democratic Party of Austria) [c] *Österreichische Volkspartei* (Austrian People's Party) [d] *Die Grünen – Die Grüne Alternative* (The Greens – The Green Alternative; also called the Austrian Green Party).

Table C.2. Determinants of claimed preference for FPÖ, part I

	(1) 1990		(2) 1999a		(3) 1999b		(4) 1999c		(5) 1990 & 1999a	
Age	−0.001	(0.001)	−0.003***	(0.001)	−0.003***	(0.001)	−0.003***	(0.001)	−0.002***	(0.001)
Female	−0.049**	(0.025)	−0.078***	(0.027)	−0.083***	(0.027)	−0.082***	(0.027)	−0.062***	(0.018)
Married	−0.026	(0.026)	0.026	(0.030)	0.028	(0.030)	0.030	(0.030)	0.000	(0.020)
No. of children	−0.007	(0.009)	−0.004	(0.011)	−0.002	(0.011)	−0.001	(0.011)	−0.006	(0.007)
School leaving age	−0.005	(0.003)	−0.009**	(0.004)	−0.009**	(0.004)	−0.009**	(0.004)	−0.008***	(0.003)
Household income	0.003	(0.005)	0.002	(0.005)	0.002	(0.005)	0.002	(0.005)	0.002	(0.004)
Self-employed	0.099*	(0.054)	−0.064	(0.051)	−0.060	(0.052)	−0.058	(0.052)	0.036	(0.039)
Unemployed	−0.005	(0.082)	0.197*	(0.101)	0.215**	(0.104)	0.206**	(0.103)	0.102	(0.070)
Out of labor force	−0.025	(0.031)	0.067*	(0.036)	0.071**	(0.036)	0.066*	(0.036)	0.016	(0.023)
Town, $2,001 - 5,000$	0.057	(0.040)	0.038	(0.042)	0.040	(0.042)	0.034	(0.042)	0.047	(0.029)
Town, $5,001 - 50,000$	0.035	(0.038)	0.052	(0.043)	0.054	(0.043)	0.052	(0.044)	0.037	(0.028)
Town, $> 50,000$	0.099**	(0.048)	0.060	(0.054)	0.062	(0.054)	0.058	(0.053)	0.081**	(0.036)
Austrian citizen					0.120**	(0.060)	0.114*	(0.064)		
Interview in 09/99							0.045	(0.031)		
Interview in 08/99							0.101*	(0.055)		
Year is 1999									0.038**	(0.017)
Federal state FE	Yes		Yes		Yes		Yes		Yes	
Observations	1,014		942		939		939		1,956	
Pseudo R^2	0.058		0.069		0.072		0.077		0.054	

Estimations based on survey data from the E/WVS. The dependent variable is equal to one if an individual stated that she or he would vote for the FPÖ and zero otherwise. The table reports marginal effects. Robust standard errors are in parentheses. *, ** and *** indicate statistical significance at the 10-percent, 5-percent , and 1-percent levels, respectively.

Table C.3. Determinants of claimed preference for FPÖ, part II

	(1)		(2)		(3)	
	1990		1999		1990 & 1999	
Would not like to have as neighbors:						
People of different race	0.044	(0.047)	0.106*	(0.056)	0.073**	(0.037)
Muslims	0.004	(0.032)	0.144***	(0.041)	0.072***	(0.027)
Immigrants	0.008	(0.028)	0.201***	(0.046)	0.084***	(0.026)
Observations	1,014		939		1,956	
When jobs are scarce, employers should give priority to natives over immigrants.						
	0.055**	(0.025)	0.140***	(0.024)	0.094***	(0.018)
Observations	967		936		1,906	
Not at all concerned about the living conditions of immigrants.						
			0.137***	(0.026)		
Observations			923			
Absolutely not prepared to actually do something to improve the conditions of immigrants.						
			0.186***	(0.058)		
Observations			923			
Government should prohibit people from other countries coming here to work.						
			0.190***	(0.067)		
Observations			923			

Estimations based on survey data from the E/WVS. The dependent variable is equal to one if an individual stated that she or he would vote for the FPÖ and zero otherwise. The table reports marginal effects. Robust standard errors are in parentheses. *, ** and *** indicate statistical significance at the 10-percent, 5-percent , and 1-percent levels, respectively.