

Halla, Martin; Wagner, Alexander F.; Zweimüller, Josef

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## Does immigration into their neighborhoods incline voters toward the extreme right? The case of the freedom party of Austria

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**Does Immigration into Their Neighborhoods  
Incline Voters Toward the Extreme Right?  
The Case of the Freedom Party of Austria**

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May 2012

# **Does Immigration into Their Neighborhoods Incline Voters Toward the Extreme Right? The Case of the Freedom Party of Austria**

**Martin Halla**

*University of Linz  
and IZA*

**Alexander F. Wagner**

*University of Zurich,  
CEPR and Harvard Kennedy School*

**Josef Zweimüller**

*University of Zurich,  
CEPR, CESifo and IZA*

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IZA

P.O. Box 7240  
53072 Bonn  
Germany

Phone: +49-228-3894-0

Fax: +49-228-3894-180

E-mail: [iza@iza.org](mailto:iza@iza.org)

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## ABSTRACT

### **Does Immigration into Their Neighborhoods Incline Voters Toward the Extreme Right? The Case of the Freedom Party of Austria<sup>\*</sup>**

This paper explores one potentially important channel through which immigration may drive support for extreme right-wing parties: the presence of immigrants in one's neighborhood. We study the case of the Freedom Party of Austria (FPÖ). Under the leadership of Jörg Haider, this party increased its share of votes from less than 5 percent in the early 1980s to 27 percent by the year 1999. Using past regional settlement patterns as a source of exogenous variation, we find a significantly positive effect of the residential proximity of immigrants on FPÖ votes, explaining roughly a quarter of the cross-community variance in FPÖ votes. It is the presence of low- and medium-skilled immigrants that drives this result; high-skilled immigrants have no (or even a negative) effect on FPÖ votes.

JEL Classification: P16, J61

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Corresponding author:

Josef Zweimüller  
Department of Economics  
University of Zurich  
Mühlebachstrasse 86  
8008 Zurich  
Switzerland  
E-mail: [josef.zweimueller@econ.uzh.ch](mailto:josef.zweimueller@econ.uzh.ch)

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# 1. Introduction

Voters in many European countries — including Austria, Belgium, Denmark, France, Netherlands, Norway, and Switzerland — have recently expressed strong support for extreme right-wing (ERW) parties. From the 1970s until the mid-1980s, hardly any ERW party had gained more than five percent in a general election. Fifteen years later, some ERW parties in the above-mentioned countries received between ten and twenty-five percent of the 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 to 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 more heterogeneous than other party families, 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 do, in fact, exist, the correlation is 0.51.)

[Insert Figure 1 here]

This correlation is suggestive. What is of particular interest to researchers and policy-makers alike, however, is understanding whether immigration in fact *causes* ERW voting. While a large literature has studied the impact of immigration on labor market outcomes, surprisingly little work has been done to investigate the possible causal relation between immigration and election outcomes.

This paper contributes to closing this gap by investigating the role, in Austria, of immigration as a possible driving force behind the success of the *Freedom Party of Austria* (*Freiheitliche Partei Österreichs*, FPÖ). 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 prevailed over its business-friendly, libertarian wing. After this change, the FPÖ steadily increased its vote share, and the nationalistic approach has characterized the party's platform ever since. In 1999, the FPÖ became the country's second-largest party with a vote share of roughly 27 percent. In 2000, the FPÖ joined with the conservative *Austrian People's Party* (ÖVP) to form a coalition government that was in power until 2006.<sup>1</sup> As suggested by Figure 1 for ERW parties in other European countries, support for the FPÖ seems closely related to its hostility towards immigration.

In this paper, we test the hypothesis that voters in Austrian communities with a higher share of immigrants (residents without Austrian citizenship) are more likely to vote for the FPÖ. The hypothesis is that voting behavior based on anti-immigrant sentiments is (at least partially) shaped by the close geographic proximity of immigrants and natives.

To test this hypothesis, we employ complete, detailed census data, allowing us to sidestep problems of measurement error. Our analysis takes into account the fact that the immigrant share in a given community is not exogenous. The decision of an immigrant as to where to settle is likely to be influenced by the extent of cultural or racial prejudices in a community. Immigrants would rarely settle in communities with a high degree of anti-immigrant sentiments, since it would be more difficult to find housing and a job there. Thus, unobserved xenophobia is an omitted variable, leading to a downward bias in a naïve estimation of the effect of the immigrant share on FPÖ vote shares.

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<sup>1</sup>Internal problems in the FPÖ arose soon after they had become a governing party. These disputes escalated at a special party convention, where three members of the government resigned. As a result of that a new splinter-party, the *Alliance for the Future of Austria*, was established in 2005. Our empirical analysis concerns elections before that date.

Fortunately, the recent history of immigration into Austria offers features that allow us to identify econometrically the effect of the local presence of immigrants on election outcomes. We use historical settlement patterns of immigrants (prior to 1971) as an instrumental variable for the spatial distribution of the immigrant population in later years.<sup>2</sup> This approach is based on the notion that (i) existing social networks are important elements in the settlement choices of current immigrants, and that (ii) the determinants of the historical settlement patterns are arguably uncorrelated with recent (unobserved) factors of voting behavior. We find strong evidence supporting condition (i). Assumption (ii), the identifying assumption, is not testable. However, we argue that historical settlement patterns form a valid instrument in the Austrian case. Settlement patterns prior to 1971 were not driven by anti-immigrant sentiments. In fact, immigrants arriving in the 1960s were greeted enthusiastically because they provided much-needed labor for the rebuilding of Austria’s economy after World War II and during the economic boom of the 1960s.

We also consider that the native population may change residence in response to a high influx of foreigners. We employ various approaches (as suggested by [Peri and Sparber, 2011](#)) to address this issue. It turns out that residential relocations by natives in response to immigration are not a statistically significant phenomenon. This suggests that our results are not biased by any changes in the composition of the native population as a result of immigration.<sup>3</sup>

In sum, using historical settlement patterns as an instrument for the spatial distribution of contemporaneous immigration seems to be a useful identification strategy in the Austrian context.

We document two main results. *First*, as hypothesized, the presence of immigrants in one’s

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<sup>2</sup>Other papers have used related identification strategies to investigate the economic effects of immigration (see, for instance, [Altonji and Card, 1991](#); [Edin, Fredriksson, and Åslund, 2003](#); [Dustmann, Fabbri, and Preston, 2005](#); [Saiz, 2007](#); [Cortes, 2008](#)). We are not aware of any paper that considers this instrumental variable strategy in the context of political outcomes.

<sup>3</sup>Contrary to other countries (such as the U.S.) it is not sufficient for citizenship to be born in Austria; instead, at least one parent has to be an Austrian citizen. While naturalizations are a potential source of contamination of our inferences, they are ultimately unlikely to be important for our results, as we explain further below.

neighborhood has a quantitatively important and statistically significant impact on election outcomes; our baseline 2SLS-estimate suggests that a one percentage point increase in the share of immigrants in a community increases the percentage of FPÖ votes in general elections by about 0.4 percentage points. This implies that a one-standard deviation increase in the share of immigrants leads to a quarter of a standard deviation increase in the FPÖ vote share. This effect is larger than the effect implied by the OLS estimates, confirming the importance of controlling for the endogeneity of settlement decisions. We also find that the *increase* in the share of immigrants had a positive effect on the *increase* in the vote share of the FPÖ. The increase in immigration can also help to explain an important part of the rise over time in the support for the extreme right.

Our *second* main result shows that the skill composition of immigrants matters for voting decisions. We find that the presence of medium-skilled immigrants, and to a lesser extent the presence of low-skilled immigrants, cause Austrian voters to turn to the far right. By contrast, high-skilled immigration either has an insignificant or a negative effect on FPÖ votes. This is consistent with the hypothesis that voters vote in their economic interest: High-skilled immigrants improve living conditions for the native population; medium-skilled immigrants pose the greatest threat through labor market competition; and low-skilled immigrants take on jobs that few Austrian voters are interested in. The results are also consistent with the idea that Austrians worry about adverse effects of immigration on compositional amenities that natives derive from neighborhood, schools and workplaces (Card, Dustmann, and Preston, 2012). Such effects can be expected to play a bigger role with low- and medium-skilled immigration than with high-skilled immigration.

Four guideposts can be used to put this analysis into the context of the existing literature. *First*, a significant amount of research and public discussion considers the implications of immigration for the receiving economy in terms of employment, wages, prices, public finances, or



racial and cultural features of a society.<sup>4</sup> However, so far, little evidence exists regarding the causal effects of immigration on election outcomes.<sup>5</sup>

*Second*, our analysis complements the rich literature, typically based on survey data, on political preferences and attitudes towards immigration. For example, in a recent paper, [Dahlberg, Edmark, and Lundqvist \(2012\)](#) document that immigration reduces preferences for redistribution in Sweden.<sup>6</sup> The obvious advantage of surveys is that researchers can directly ask the questions they are interested in. For Austria, too, these surveys yield interesting suggestive results. For example, analyzing data from the *European and World Values Survey*, we find 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.<sup>7</sup>

*Third*, 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, immigra-

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<sup>4</sup>Indeed, there are now so many reviews of the pertinent literature that it is difficult to cite even all survey papers. An incomplete list of survey articles includes [Borjas \(1994\)](#), [Card \(2005\)](#), [Dustmann, Glitz, and Frattini \(2008\)](#), and [Friedberg and Hunt \(1995\)](#). [Longhi, Nijkamp, and Poot \(2005\)](#) offer a meta-analysis.

<sup>5</sup>Several studies in the political science literature provide suggestive evidence; see, for instance, [Arzheimer and Carter \(2006\)](#); [Arzheimer \(2009\)](#); [Golder \(2003\)](#); [Jackman and Volper \(1996\)](#); [Knigge \(1998\)](#) and [Lubbers, Gijsberts, and Scheepers \(2002\)](#). This literature concludes that high levels of immigration (as well as of unemployment) are positively related to support for ERW parties. However, these empirical findings do not address the endogeneity of immigration and are therefore not able to establish a causal link between immigration and political outcomes. The only exception we are aware of is a study by [Gerdes and Wadensjö \(2008\)](#), who speak to potential causal effects of asylum seekers from outside Europe and the OECD on voting in Denmark.

<sup>6</sup>For studies on attitudes towards immigration see [Card, Dustmann, and Preston \(2012\)](#); [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, see [Citrin, Green, Muste, and Wong \(1997\)](#); [Dülmer and Klein \(2005\)](#); [Knigge \(1998\)](#); [Lubbers and Scheepers \(2000\)](#).

<sup>7</sup>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. Results based on survey data are summarized in the [Supplementary Appendix C](#).

tion policies have been strongly shaped by politico-economic considerations (see, for example, [Facchini, Mayda, and Mishra \(2011\)](#); [Facchini and Steinhardt \(2011\)](#)). Immigration is an issue where there is a particularly thin line between pragmatic economic policy and dogmatic political economics. Anti-immigrant politics may have ideological sources, but politicians may also supply xenophobia because it is instrumental in discrediting political opponents whose policies benefit immigrants ([Glaeser, 2005](#)).

*Fourth*, this paper adds to more general work showing that economic considerations can help explain even otherwise seemingly extreme voting. Much like economic incentives led many voters to turn to the Nazis ([King, Rosen, Tanner, and Wagner, 2008](#)), so have overall economic conditions played a role in the rise of extreme parties in many countries in the beginning of the 20th century ([de Bromhead, Eichengreen, and O'Rourke, 2012](#)).

The remainder of the paper is organized as follows. [Section 2](#) discusses the empirical strategy. [Section 3](#) describes the data. [Section 4](#) presents our findings and [Section 5](#) concludes the paper.

## 2. Empirical model and identification

Our basic approach relates the percentage of votes that the FPÖ obtained in national parliamentary elections to the share of immigrants. The observation unit is the community, indexed by  $i$ .<sup>8</sup> We denote by  $FPÖ_{it}$  the percentage of FPÖ votes in community  $i$  in election year  $t$ ; and by  $IMM_{it}$  the percentage of immigrants in the resident population in community  $i$  at that time  $t$ . Importantly, a simple OLS regression of  $FPÖ_{it}$  on  $IMM_{it}$  suffers from potential endogeneity

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<sup>8</sup>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 available we use a slightly modified version of the territorial boundaries of the year 2001, which leaves us with 2,352 communities (including the 23 municipal districts of Vienna).

of  $IMM_{it}$ . In particular, immigrants are unlikely to be randomly assigned to communities. Instead, immigrants may self-select into communities with low anti-immigration sentiments where jobs and housing are easier to obtain and neighbors are more friendly. 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.

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, but is unrelated to voting decisions except through its effect on immigration shares.

## **2.1 Historical settlement patterns as an instrument for the contemporaneous immigrant presence**

Our identification strategy relies on historical settlement patterns prior to 1971 as an instrument for immigrant shares in later years. We then use variation in current immigrant shares generated by variation in historical settlement patterns to identify the causal impact of immigration on ERW voting. The key identifying assumption is that historical settlement patterns are not correlated with current unobserved factors determining voting behavior. In other words, historical settlement affects voting today only through the location choice of immigrants arriving later. Thus, historical settlement patterns can be excluded from the second-stage regression. While this identifying assumption is by definition not testable, we argue that this assumption is highly plausible given the historical context of migration to Austria.

The argument that historical settlement patterns provide a useful instrument for currently observed regional patterns of immigration was originally proposed by [Altonji and Card \(1991\)](#).

Similar instrumental variable strategies have been applied by scholars studying the effects of immigration on wages (for example, [Card, 2001](#)) and on prices (for example, [Cortes, 2008](#)). However, to our knowledge, this empirical strategy has not been used to identify the impact of immigration on ERW voting. The basic idea is that immigrants settle where they find existing social networks and neighbors with the same cultural and linguistic background ([Bartel, 1989](#); [Åslund, 2005](#); [Jaeger, 2007](#)). Such networks facilitate the job search and the assimilation into the new cultural environment ([Munshi, 2003](#)).<sup>9</sup>

**Historical settlement of immigrants to Austria.** To understand why historical settlement patterns can serve as a valid instrument, it is important to recall the situation of the Austrian economy 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 an influx of Turkish and Yugoslavian workers and their families to Austria began. In 1961, residents with Turkish and Yugoslavian citizenship numbered 271 and 4,565, respectively. By 1971, the numbers had risen to 16,423 and 93,337, respectively. In 1961, the overall number of immigrants was 101,986, equal to 1.4 percent of the overall population. Mainly as a result of the efforts of the Austrian government to attract guest workers, the number of immigrants had risen to 311,689, equal to 4.1 percent of the overall population by 1974. During the 1960s and early 1970s, anti-immigration sentiment was weak. In fact, immigrants were very welcome. The “Zeitgeist” is well captured by the way the first foreign workers from Turkey arriving in 1964 were welcomed in Vienna. Turkish workers were received with cheers of approval and enthusiasm from a large gathering in the Viennese train

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<sup>9</sup>For the importance of networks in general, see [Calvó-Armengol and Jackson \(2004\)](#), [Ioannides and Loury \(2004\)](#), [Lazear \(1999\)](#), and [Montgomery \(1991\)](#).

station. A marching band was playing in their honor and officials handed out flowers to them (*Wiener Zeitung*, 2006/12/30).

In short, settlement decisions of immigrants at the time were not influenced by local cultural or racial prejudices; immigrant labor was funneled into locations where it brought the greatest marginal benefit.

**Further immigration waves and the rise of the FPÖ.** The clearly very positive image of immigration of the 1960s and 1970s started to change in the mid 1970s when the first oil shock pushed Austria into a recession. In response to emerging problems on 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.

A second wave of immigration began with the economic boom in the late 1980s. The immigration wave of the late 1980s coincided with the rise of the FPÖ. (For the joint evolution of immigration and FPÖ vote shares, see Figure A.2 in the [Supplementary Appendix A](#).) After Jörg Haider took over leadership of the FPÖ in 1986, the party increasingly invoked the “dangers” of immigration for the native population in terms of crime, unemployment, and decay of neighborhoods and schools. This was accentuated by an additional immigrant wave during the political crisis in Yugoslavia 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. Under political pressure of increased anti-immigration sentiments, and partly as a reaction to the FPÖs anti-immigration activities, the Austrian government enacted various new tighter immigration rules during the 1990s.

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.<sup>10</sup>

The hypothesis underlying our identification strategy is that the spatial distribution of all these more recent waves of immigrants exhibits strong correlations with the spatial distribution of immigrants from the pre-1971 period. Our first-stage regressions test this hypothesis.

**Additional considerations regarding the validity of the identification strategy.** To further probe the plausibility of the identifying assumption, we consider three additional points.

*First*, we discuss possible internal migration effects in Section 4.3; we do not find any significant evidence of such effects.

*Second*, we note that it is in principle conceivable that even the historical settlement patterns prior to 1971 have direct effects on voting behavior today, violating the identifying assumption. This would be the case if, already in 1971, voters in communities where more immigrants had arrived turned to the FPÖ *and* if there exists intergenerational transmission of voting behavior. As for the first part, the arrival of immigrants was, as discussed above, generally greeted with positive sentiments, as it helped the economy grow. There is no evidence that immigration provided a reason to vote for the FPÖ then. As for the second part, we are not aware of a systematic study of the extent to which voting for the FPÖ is persistent across generations. Perhaps the most direct evidence against this idea is that, in fact, several tectonic shifts have taken place in the Austrian political landscape over the last 50 years. This would not be possible if Austrian voters consistently voted as their parents did. To further address potential time-invariant unobserved heterogeneity, we also estimate a model in differences in Section 4.4.

*Third*, naturalizations are a potential source of contamination of our inferences.<sup>11</sup> However, they are unlikely to be important for our results. We first note that they imply two

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<sup>10</sup>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.

<sup>11</sup>Children of immigrants do not obtain Austrian citizenship automatically.

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, in our sample period, the annual rate of naturalizations was only about 2-3%. Therefore, we do not attempt to account for naturalizations in our analysis.

Overall, historical immigrant settlement patterns provide, arguably, a powerful instrument for contemporaneous immigration in our analysis of ERW voting in Austria. The historical geographical allocation of immigrants was mainly driven by the labor shortages in the various regions of Austria while self-selection by immigrants and selective migration responses by natives are unlikely to contaminate our empirical evidence.

## 2.2 The empirical model

We conduct a standard 2SLS approach. Our main analysis considers pooled panel regressions. In all regressions below, we weight observations by community population size. The first-stage regression is

$$IMM_{it} = \alpha_1 + \beta_1 * IMM_{i,1971} + \mathbf{X}'_{it}\Gamma_1 + \theta_{1t} + \varepsilon_{1it}, \quad (1)$$

where  $IMM_{it}$  denotes the percentage immigrants in community  $i$  in a given year,  $X_{it}$  is a vector of controls,  $\theta_{1t}$  is a full set of year dummies, and  $\varepsilon_{1it}$  is a stochastic error term.  $IMM_{i,1971}$  is our instrumental variable.

The second-stage regression then is

$$FP\ddot{O}_{it} = \alpha_2 + \beta_2 * \widehat{IMM}_{it} + \mathbf{X}'_{it}\Gamma_2 + \theta_{2t} + \varepsilon_{2it}, \quad (2)$$

where  $FP\ddot{O}_{it}$  is the percentage of FPÖ votes in community  $i$  in election year  $t$ ; and  $\widehat{IMM}_{it}$  is

the predicted value of the percentage of immigrants from the first-stage regression (1). Similar to equation (1),  $\theta_{2t}$  is a set of year fixed effects, and  $\varepsilon_{2it}$  is the error term. By including year dummies in both stages, we exploit cross-sectional variation across communities to identify the impact of immigration on ERW voting.

The coefficient of interest is  $\beta_2$ , which captures the effect of the local presence of immigrants (attracted by existing networks established prior to 1971) on ERW voting. Specifically,  $\beta_2$  measures the percentage point change in FPÖ votes that is associated with a one percentage point increase in the immigrant share in a community.

### 3. Data

Disaggregated community-level data on the percentage FPÖ votes in elections to the national parliament are available from official statistics issued by the *Austrian Federal Ministry of the Interior*. Figure A.1 in the [Supplementary Appendix A](#) shows the spatial 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.

*Immigrants* are residents without Austrian citizenship. Data on the share of immigrants (on a community-level) are available from the decennial censuses since 1971. Data from 1971 provide the instrumental variable. Since we do not have census data for each possible election year, we need to impute 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  $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$ . We relate the election results in 1979 and 1983 to the 1981 census data. (Consequently, the first stage for



1979 and 1983, when estimated separately for each year, is identical because all the explanatory variables are identical.) Similarly, the election results in 1990 and 1994 are related to the 1991 census data, and the election results in 1999 and 2002 to the 2001 census data.<sup>12</sup>

We also investigate the extent to which ERW voting is driven by the skill composition of immigrants. We calculate immigrant shares within education groups based on residents 25 years of age or older. We sort immigrants into three groups based on their highest attained education level: *(i) low education* (only compulsory schooling); *(ii) medium education* (completed apprenticeship training or lower secondary school); and *(iii) high education* (higher secondary school or academic degree).

Our main regressions include a parsimonious set of socio-economic control variables: each community's number of inhabitants (and its square), binary indicators for communities in the states of Vienna and Carinthia (traditionally an FPÖ-stronghold), distribution of marital status (share of inhabitants who are single, married and divorced), and the population's age-sex-distribution (in five-year age groups). Further robustness checks reported below show that our results are not sensitive to the inclusion of additional controls such as educational attainment and labor market status.

The immigrant share and all socio-economic control variables are calculated from the universe of all individual-level observations from the decennial Austrian censuses (on-site at *Statistics Austria*). The completeness of the census data affords the great advantage that we can sidestep problems of measurement error, an important concern in the literature that studies labor market effects (Dustmann, Fabbri, and Preston, 2005, p. F329).

Descriptive statistics are in Table 1. Notably, substantial cross-sectional variation exists across communities in Austria both in election outcomes and immigration levels.

[Insert Table 1 here]

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<sup>12</sup>The elections in 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.

## 4. Empirical findings

In this section we present our results. We proceed in four steps. First, Section 4.1 provides results based on pooled community data, taking all election years together. We look at both the impact of overall immigration on FPÖ votes and whether (and how) the skill composition of immigration affects FPÖ votes. In a second step, in Section 4.2 we analyze the various election years separately to see whether the relationship between immigration and FPÖ votes is stable over time. Third, in Section 4.3 we study a potentially important caveat that may invalidate our instrumental variables strategy: migration responses by the native population. In a final step, Section 4.4 reports results of an analysis of the impact of increases in immigration on increases in FPÖ shares.

### 4.1 The impact of immigration on FPÖ votes

**First-stage evidence.** The first stage of our identification strategy claims that historical settlement patterns 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 spatial 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 with a higher share of immigrants back in the year 1971. This is illustrated in the three (population-weighted) scatter-plots in Figure 3. The correlations between the immigrant share in 1971 and the corresponding shares in 1981, 1991, and 2001 are 0.82, 0.68, and 0.67, respectively.

[Insert Figures 2 and 3 here]

Panel A of Table 2 shows the first-stage regressions, including an indication of the set of control variables. The specification in the first column concerns all immigrants, the main focus of our analysis. (The second through the fourth columns deal with immigrants split into groups

by educational attainment; we discuss these results in detail further below.) As expected, the first stage shows a highly statistically significant positive effect of the historical settlement pattern on communities' shares of immigrants in later years.

[Insert Table 2 here]

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

**Second-stage results.** Table 3 presents the main results of this paper.

[Insert Table 3 here]

The first column shows a pooled OLS regression, suggesting a positive relationship between immigration and the success of the ERW movement.

Our main inference is, however, based on the 2SLS regression, shown in third column. Note that the F-statistic on the excluded instrument is well above the critical value suggested by [Stock, Wright, and Yogo \(2002\)](#). We conclude that our instrument is sufficiently strong.

The central finding is that the immigrant presence is a highly significant determinant of the percentage of FPÖ votes. Notice that the 2SLS estimate is larger than the OLS estimate. This is consistent with the idea that immigrants self-select into communities where anti-immigrant sentiments are less prevalent. Ignoring this selection would lead the researcher to underestimate the causal effect of immigration on ERW voting. 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.<sup>13</sup>

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 a one-percentage point higher immigrant share tend to give about 0.4 percentage points more votes to the FPÖ. Thus, a one-standard-deviation increase in the immigrant share drives about a quarter 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,<sup>14</sup> we find important regional variation in the percentage of FPÖ votes; the FPÖ vote share is higher in Carinthia and lower in Vienna. We also find that the FPÖ vote share is significantly affected by community size, the relationship being hump-shaped: up to a population of about 55,000, larger communities tend to vote more for the FPÖ, while for communities beyond this critical level, larger communities tend to vote less for the FPÖ. Moreover, we find that in communities with a comparably high share of prime-age women, and a higher share of older men the FPÖ is more successful. Finally, marital status affects FPÖ votes. Communities with a higher share of divorced (relative to single and married individuals) tend to vote more for the FPÖ.

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<sup>13</sup>Adding community fixed effects in the OLS-regression shown in the first column of Table 3 allows us to remove time-invariant unobserved heterogeneity. The highly significant relationship between immigration and voting also holds in such a fixed effects panel estimation (not shown). However, there may be time-variant unobserved heterogeneity which would not be captured by fixed effects. Moreover, if immigrant levels in community  $i$  in a given year (for example, in 1991) are negatively related to vote shares for the FPÖ in past years (for example, in 1983), then a fixed-effects estimate of current vote shares for the FPÖ on current immigrant levels will be positively biased. In the 2SLS regressions, we cannot include community fixed effects because our instrumental variable does not vary over time. This is not a great limitation as we are primarily interested in the cross-sectional relationship between immigration and voting decisions. We return to the time-series dimension when we consider difference regressions in Section 4.4.

<sup>14</sup>The full regression is shown in Table B.1 in the [Supplementary Appendix B](#).

**The skill composition of immigration.** A natural starting point for understanding voting decisions is the hypothesis that rational and self-interested individuals vote for the party which brings them the greatest utility (Downs, 1957). In particular, theories of economic interest (Lipset, 1963) explain that wage, price, and employment effects would be key to understanding voting behavior. Recent survey evidence suggests that, indeed, numerous economic factors play a role in individuals' attitudes toward immigration (Dustmann and Preston, 2004; Hainmueller and Hiscox, 2007). 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).<sup>15</sup>

*Second*, anti-immigration sentiments based on self-interest are related to school quality and neighborhood quality. Card, Dustmann, and Preston (2012), for instance, find that the natives' assessments of "compositional amenities" that they derive from their neighborhoods, schools, and workplaces are an important source of anti-immigration sentiments. Clearly, the educational background of immigrants is also a crucial determinant of how natives' compositional amenities are affected.

To shed light on this issue, we investigate how the educational levels of immigrants affects voting decisions of natives. Our conjecture is that the natives' voting decisions depend on the skill composition of immigrants either because the intensity of competition for jobs varies across skill levels or because the native population perceives adverse effects on compositional amenities

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<sup>15</sup>The impact of immigration on the size of the consumer base plays a critical role, complicating theoretical predictions of labor-market effects (Borjas, 2009).

when the skill mix of immigrants is tilted towards the low-skilled. We construct three groups of immigrants according to educational attainment: low, medium, and high.

The OLS regression in the second column of Table 3 suggests that low- and medium-education immigrants are associated with higher support for the FPÖ, whereas highly educated immigrants are associated with lower support. Here, too, we apply our instrumental variables strategy to get closer to an estimate of the causal effect. We now have three endogenous variables, which are jointly instrumented by the shares of low-, medium- and high-education immigrants in the year 1971. As can be seen in the first-stage regressions, in columns two to four of Panel A in Table 2, immigrant networks also work powerfully along the skill dimension; in the later census years, more immigrants of a given level of educational attainment tended to live where there were more immigrants of that educational level in 1971. This effect is particularly pronounced for the medium- and high-education groups.

Second-stage results show that the same pattern as in the OLS results also holds in the 2SLS setting, but more powerfully (fourth column of Table 3). It is the presence of medium-skilled immigrants which influenced Austrian voters to lean more to the far right.<sup>16</sup> These results provide evidence for anti-immigration sentiments that derive from threats that immigration causes for the labor market success of natives; the jobs which Austrians and immigrants compete for most fervently are the jobs requiring medium levels of education. Low-skilled jobs are not attractive to Austrians. High-skilled immigrants bring benefits for the average voter, and they compete for jobs mostly with voters who understand the benefits of mobility of labor across boundaries and who, therefore, do not find the anti-immigrant position of the FPÖ attractive.

The evidence is also consistent with an explanation based on compositional amenities. 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

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<sup>16</sup>The difference between the 2SLS and the OLS estimates suggests that self-selection into tolerant communities is a particular concern for medium-skilled immigrants.

medium-skilled, anti-immigration sentiments may become stronger as natives perceive an adverse composition of their neighborhoods. Indeed, additional untabulated results tend to support this interpretation. Specifically, we run 2SLS regressions including the share of high-skilled Austrians (instrumented by its value in 1971) as well as interaction terms of this share with the shares of low-, medium- and high-skilled immigrants (each instrumented by corresponding historical interaction terms). In these regressions, the interaction terms with low- and medium-skilled immigrants are insignificant. This tends to refute an explanation based on labor market competition: If low-skilled and medium-skilled Austrians worried more about equally-skilled immigration, as is the case under the labor market explanation, their votes for the FPÖ would react more than those of high-skilled Austrians. However, the first stage in this expanded specification is relatively weak (we now have seven endogenous variables and seven instruments), with an F-statistic of just above eight, considerably below the threshold (around 17) suggested by [Stock, Wright, and Yogo \(2002\)](#). Therefore, we do not put much emphasis on these results and note that future research is needed to distinguish more explicitly why we observe such strong differences among the effects of different skill groups of immigrants.

**Robustness to inclusion of control variables.** We check whether the above estimates are sensitive to the inclusion of additional controls. Our basic model presented above used a 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). We chose this lean specification because many characteristics of the resident population may themselves be influenced by immigration (for instance, via their participation in the local labor market), constituting, therefore, potentially “bad controls” ([Angrist and Pischke, 2009](#)). Table B.2 in the [Supplementary Appendix B](#) shows that the estimated 2SLS effects of immigration on FPÖ votes vary only very little across specifications where we (i) exclude all control variables, (ii)

add the distribution of educational attainment, or (iii) include in addition the distribution of labor-market status.<sup>17</sup> These specifications also reveal that communities with a higher share of medium- and low-skilled residents tend to lean more towards the FPÖ.

**Robustness to functional form.** 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.

## 4.2 Regressions by election years

Did the relationship between immigration and FPÖ votes change over time, or has it been stable? We consider separate regressions for each election year. These regressions use the same community, family status, and age- and sex-distribution controls as the pooled regressions. The second-stage results are summarized in Panel A of Table 4.<sup>18</sup>

[Insert Table 4 here]

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. Comparing the estimated effects with those from the OLS regressions, shown in Panel B of Table 4, we can again see that the OLS estimates

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<sup>17</sup>The Austrian Census does not collect information on income. However, information on educational attainment and labor-market status should proxy well for income.

<sup>18</sup>The first stages (not shown in Table 4) 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.



tend to be downward biased.<sup>19</sup>

The size of the estimated effect of immigration on the share of votes for the FPÖ varies only little across election years. The highest effect occurred in 1979. In most years since then, the FPÖ received an about 0.3 percentage points higher vote share per additional percentage point immigrant share. In sum, the strength of the relationship between immigration and FPÖ votes seems rather stable over time and does not follow any particular trend.<sup>20</sup>

When we perform the analysis that accounts for the skill composition of immigration, this basic conclusion is also confirmed. The second-stage findings are summarized in Table 5. The overall pattern in these results is quite similar to that of the pooled panel regression. In five out of six years, medium-skilled immigration had by far the strongest effect on Austrians' decisions to vote for the FPÖ. Only in the first year, 1979, do the estimations suggest that voters saw 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 hurt) the ERW movement.

[Insert Table 5 here]

Overall, this analysis shows that the general picture is quite robust and that the same pattern of results that we observed for the pooled sample shows up in (almost) every single election year.

### 4.3 Internal migration of voters

Native voters are free in their residential location choices within the country (and the EU). Hence, our results may be contaminated by internal migration responses of natives. To the

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<sup>19</sup>We obtain similar results for the election years not considered in the main analysis due to their distance from the nearest census.

<sup>20</sup>It is difficult to detect a systematic pattern that could plausibly explain the variation across election years. There seems to be no systematic relationship between the size of the estimated effect and the following possible explanations: (i) the overall share of votes for the FPÖ, (ii) the FPÖ's top candidate, (iii) the major topics in the election campaigns, (iv) any business cycle indicator, or (v) the absolute time lag between the election data and the census year which might give rise to an attenuation bias.

extent that such native residence 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 presence of immigrants (and who are, therefore, more likely FPÖ voters) are more likely to move 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 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  $\beta$  being the interesting parameter. Various scholars have proposed different versions of this model, mainly considering different measurement concepts of dependent and independent variables.

Table 6 summarizes estimation output of three empirical models for our community-level panel data with  $i$  communities over  $t$  years, where  $i = \{1, \dots, 2352\}$  and  $t = \{1971, 1981, 1991, 2001\}$ . Since we are concerned with the whole population (and not only with the labor force), our sample is based on community-year cells and abstracts from the skill dimension. 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 support the validity of our identification strategy.

[Insert Table 6 here]

## 4.4 Estimates based on first differences

Our above analysis aims at explaining the cross-sectional variance across communities to test the hypothesis that immigration caused votes for the extreme right in Austria.

A different, but related, question is whether the rise of the FPÖ can be explained by the increase in immigration. In 1961 only 1.4 percent of the resident Austrian population were foreign citizens; by 1981, this share had almost tripled. From 1981 to 2001 the share of immigrants more than doubled again, from 3.9 to 8.7 percent, with much variation across communities. The development over time of the share of votes for the FPÖ is strikingly similar. Until 1986, the FPÖ had not played a significant role in national elections (despite having been in 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. Figure A.2 shows these two developments.

Making sense of the aggregate correlation is difficult because the observed correlation may be due to other events during the time.<sup>21</sup> We can make progress by analyzing the consequences of the increased presence of immigrants in any particular's community. The question is 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, respectively, FPÖ votes and immigrant shares, we exploit the cross-sectional variation in *changes* of FPÖ votes and immigrant shares. Just as in our basic model above, we rely on settlement patterns in 1971 to instrument the increase in immigration since that year.

[Insert Table 7 here]

The estimation results are summarized in Table 7. The first column shows the (second-stage)

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<sup>21</sup>For example, the Austrian political landscape at the time 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.

results from the pooled panel, whereas the remaining columns show the results by election year. The instrumental variable strategy works very well for the overall average effect of immigration on FPÖ votes. As indicated by the high F-statistic, the first stage is still strong.<sup>22</sup> The 2SLS-estimate is highly significant and quite large, and the implied quantitative effects are substantial. For example, a one percentage point increase in immigration from 1971 until 1999 generates 0.96 percentage points of additional FPÖ votes in 1999 compared to 1971. The increase in the immigrant share in that time period was about 6 percentage points, and the increase in the FPÖ vote share was about 21.5 percentage points. Thus, about a quarter ( $= 6 \times 0.96/21.5$ ) of the total rise of the FPÖ in this time span can be explained by immigration.<sup>23</sup> In sum, the quantitative implications that are obtained from exploiting cross-community variation in increases of immigrant and FPÖ vote-shares are similar to the picture we get from exploiting cross-community variation in immigrant and FPÖ vote-share levels. The remaining columns of Table 7 show the corresponding estimates by election year. For each election year, we find a high and significant impact of increases in immigration on increases in FPÖ voting.

## 5. Conclusions

Political folklore holds that ERW parties attract voters by appealing to anti-immigration sentiments of the voting population. While existing empirical studies in the (predominantly political science) literature provide support for a correlation between immigration and votes for the extreme right, the causal impact of immigration on voting for the extreme right has not yet been established.

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<sup>22</sup>The first-stage  $\beta_1^{2SLS^d}$  is by definition equal to  $\beta_1^{2SLS} - 1$  from the levels regressions in Table 4, implying that growth in the share of immigrants is lower where the initial level of immigrants was high. The results for immigrant influxes sorted by immigrants' skill levels are less clear. Indeed, the first stage performs rather poorly here, with too low F-statistics, indicating that historical settlements do not explain well the growth of immigrant shares of a particular skill level. Therefore, we do not draw inference from these regressions.

<sup>23</sup>The cross-sectional standard deviations of the increases in immigrant shares and FPÖ vote shares, respectively, were 5.2% and 4.9%. Thus, cross-sectional variation in increases implies essentially a one-to-one variation in FPÖ vote shares. Virtually the same results hold when controlling for the initial level of the FPÖ vote share.

This paper contributes to closing this gap. Studying the rise of the right-wing Freedom Party of Austria (FPÖ) that has occurred since the mid-1980s, we establish two main results. *First*, we find that roughly a quarter of the cross-community variation of 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. *Second*, the skill composition of immigrants matters for voting decisions. It is the presence of medium-skilled immigrants, and to a lesser extent the presence of low-skilled immigrants, that causes Austrian voters to turn to the far right. High-skilled immigration either has an insignificant or a negative effect on FPÖ votes.

We obtain these results using an instrumental variables strategy. Specifically, past settlement patterns of immigrants in Austrian communities have great predictive power for the more recent cross-community variation of immigrant shares. Because the historical settlement pattern is unlikely to be related to voting behavior today, it can serve as an instrument for the local presence of immigration in recent election years, allowing identification of the causal effect of local immigration on local FPÖ votes. Further support for the validity of our identification strategy comes from the finding that immigration did not significantly affect native residential choices.

The result that the geographic proximity of immigrants is a significant driver behind the support for the extreme right has important potential policy implications. In particular, the results suggest that policies at the local level deserve significant attention. For example, it is possible that integration policies in the community can help restrict emerging xenophobia. Future work is needed to understand which specific policies are particularly suitable. We also note that while residential proximity of immigrants is a quantitatively important determinant of ERW voting, there are clearly additional possible reasons for the rise of right-wing parties. On the one hand, immigration may affect voting behavior through channels other than the presence of immigrants in the local neighborhood. Anti-immigration slogans typically aim to

generate and support fears of adverse consequences of immigration for society as a whole. Such slogans may be particularly appealing to those who see their future as less bright; their appeal does not necessarily hinge upon residential proximity to many immigrants. On the other hand, immigration is clearly not the only topic that helps ERW parties to gain success in general elections. Other issues such as perceived powerlessness and a fundamental dissatisfaction with the political establishment may help explain the rise of support for the extreme right.

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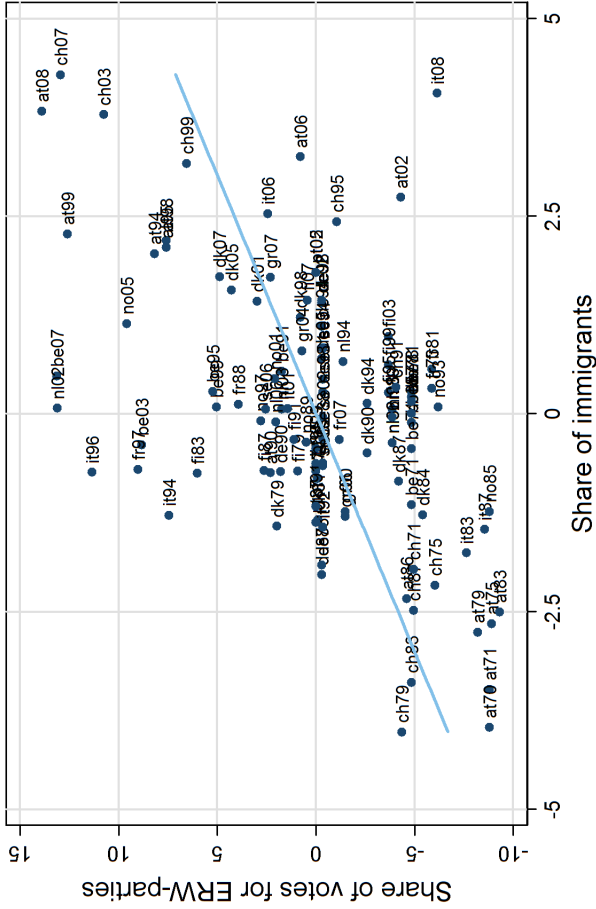
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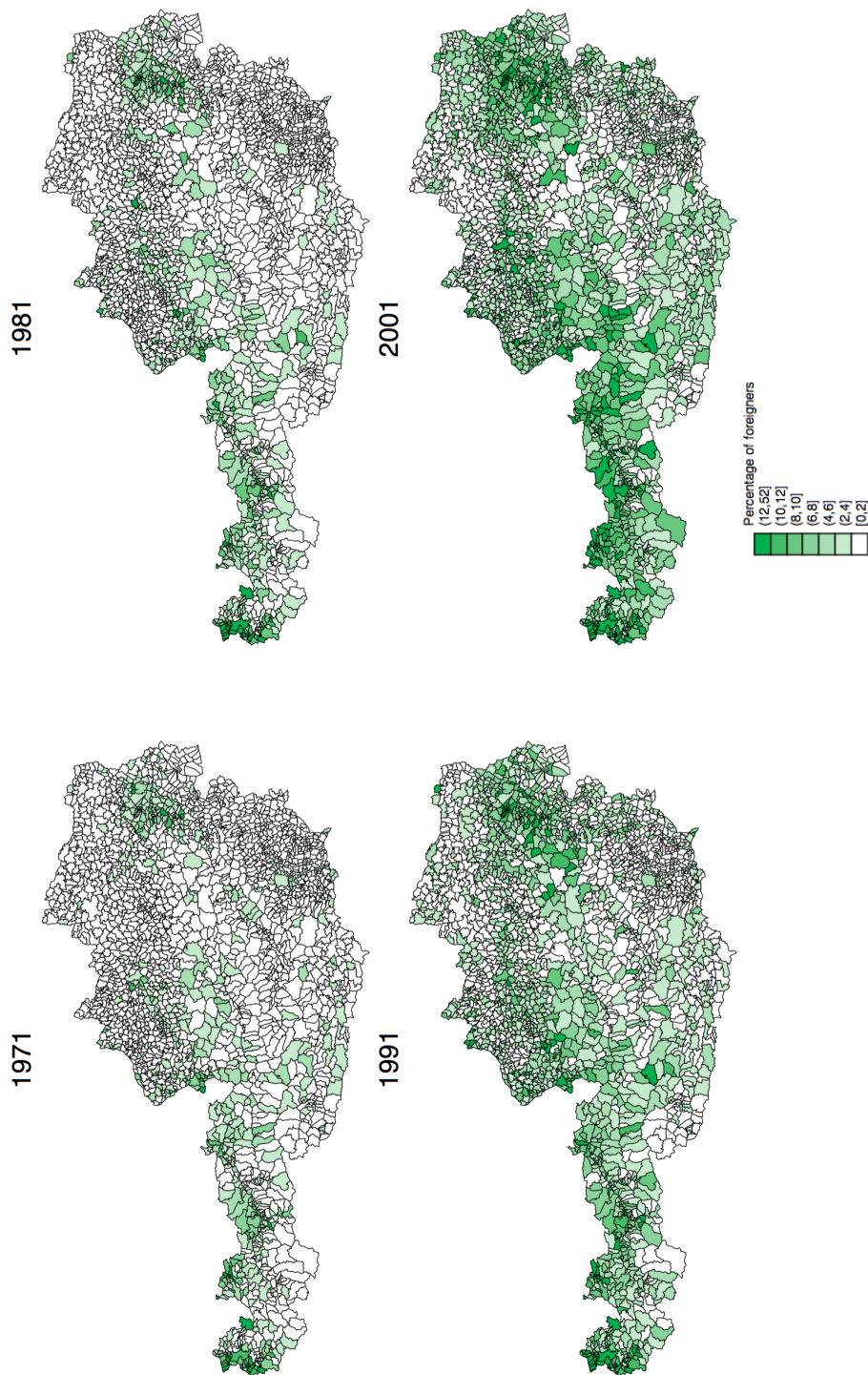
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Figure 1. Immigration and ERW-voting in the EU-15 countries, Norway, and Switzerland, 1970–2008



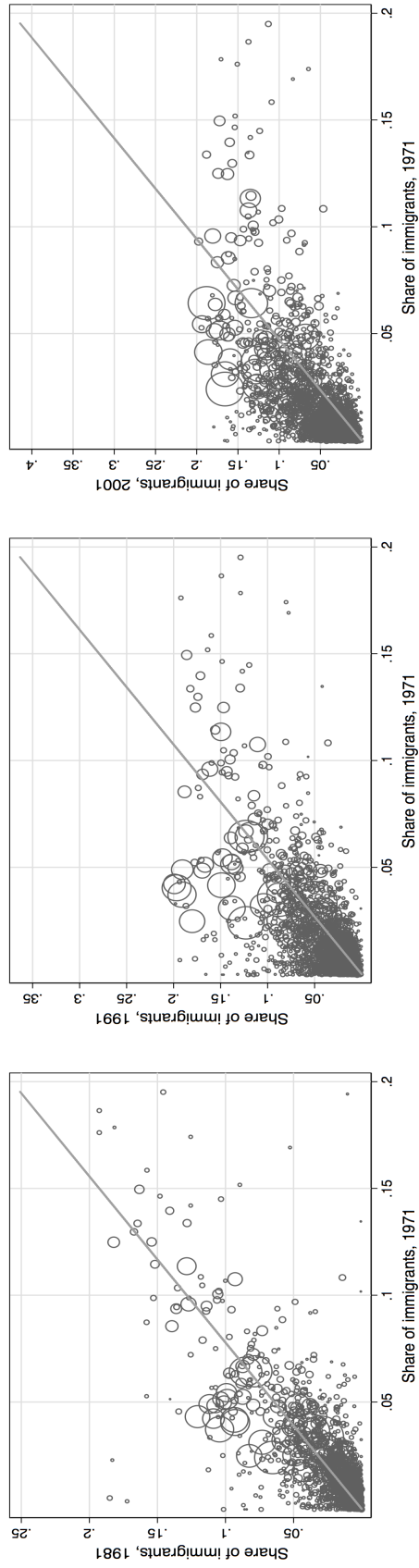
This scatterplot accounts for country fixed effects (i.e., both variables are centered around the respective country-specific mean) and is based on 119 general election years in EU-15 countries, Norway, and Switzerland in the period between 1970 and 2008; only democratic periods are used. 65 elections are not included due to missing information on the absolute number of residents without citizenship. Share of immigrants is defined as the absolute 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 absolute 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) *Fremstridspartiet* founded in 1972, (ii) *Dansk Folkparti* founded 1995 as a splinter from the *Fremstridspartiet*, parliamentary elections (Danish Parliament); Finland: *Suomen maaseutum 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) *Laikos Orthodoxos Synagermós* founded in 2000, Greek legislative election; Ireland: no ERW-parties; Italy: sum of the following two parties: (i) *Movimento Sociale Italiano-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: *Framsøtspartiet* 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, Marlene Gerber and Philipp Leimgruber (see [http://www.ipw.unibe.ch/content/team/klaus\\_armingeon/comparative\\_political\\_data\\_sets/index\\_ger.html](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<sup>a</sup>



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 historical settlement patterns and the later stock of immigrants



These population-weighted scatter-plots (based on Austrian community-level data from the decennial Austrian census) depict the correlation between the share of immigrants in Austrian communities in the year 1971, and in those in the years 1981, 1991 and 2001. For presentational purposes, the graphs exclude communities with more than 20 percent of immigrants. In case of the first graph there are 3, in the second 9, and in the third 17 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<br>(9.70) | 5.49<br>(3.68) | 6.10<br>(3.72) | 5.03<br>(3.18) | 16.68<br>(5.73) | 22.81<br>(5.45) | 27.39<br>(5.99) | 10.23<br>(4.78) |
| % share of immigrants | 6.50<br>(5.67)  | 2.83<br>(2.56) | 3.86<br>(3.75) | 3.86<br>(3.75) | 6.64<br>(5.42)  | 6.64<br>(5.42)  | 8.85<br>(6.30)  | 8.85<br>(6.30)  |
| with low education    | 3.71<br>(3.81)  | 1.85<br>(2.06) | 2.62<br>(3.00) | 2.62<br>(3.00) | 3.78<br>(3.80)  | 3.78<br>(3.80)  | 4.67<br>(4.22)  | 4.67<br>(4.33)  |
| with medium education | 1.49<br>(1.58)  | 0.46<br>(0.64) | 0.59<br>(0.79) | 0.59<br>(0.79) | 1.49<br>(1.41)  | 1.49<br>(1.41)  | 2.34<br>(1.81)  | 2.34<br>(1.81)  |
| with high education   | 1.14<br>(1.39)  | 0.36<br>(0.55) | 0.49<br>(0.76) | 0.49<br>(0.76) | 1.20<br>(1.37)  | 1.20<br>(1.37)  | 1.68<br>(1.60)  | 1.68<br>(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 education are calculated based on residents 25 years of age or older and refer to the highest degree; where low education is compulsory schooling, medium education is an apprenticeship or a lower secondary school, and high education is a higher secondary school or an academic degree. The shares of immigrants on a community-level are only 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.** First stage: Determinants of the share of immigrants (by education)

|  | (1) Share of immigrants overall | (2) Share of immigrants with low education | (3) Share of immigrants with medium education | (4) Share of immigrants with high education |
|--|---------------------------------|--|---|---|
| <b>Panel A: Pooled sample</b>                  |                                 |  |   |   |
| Share of immigrants in 1971 with low education | 0.929*** (0.011)                | 0.680*** (0.010)                           | 0.105*** (0.006)                              | 0.037*** (0.004)                            |
| with medium education                          |                                 | 0.671*** (0.032)                           | 0.557*** (0.018)                              | 0.073*** (0.013)                            |
| with high education                            |                                 | 0.180*** (0.044)                           | -0.016  | 0.689*** (0.018)                            |
| Community <sup>a</sup>                         | Yes                             | Yes  | Yes   | Yes   |
| Family status <sup>b</sup>                     | Yes                             | Yes  | Yes   | Yes   |
| Age-sex-distribution <sup>c</sup>              | Yes                             | Yes  | Yes   | Yes   |
| Year fixed effects <sup>d</sup>                | Yes                             | Yes  | Yes   | Yes   |
| <b>Panel B1: 1981 sample<sup>e</sup></b>       |                                 |  |   |   |
| Share of immigrants in 1971 with low education | 0.929*** (0.016)                | 0.704*** (0.018)                           | 0.109*** (0.008)                              | 0.053*** (0.007)                            |
| with medium education                          |                                 | 0.598*** (0.053)                           | 0.409*** (0.023)                              | 0.052*** (0.020)                            |
| with high education                            |                                 | 0.203*** (0.072)                           | 0.063** (0.032)                               | 0.524*** (0.027)                            |
| <b>Panel B2: 1991 sample<sup>e</sup></b>       |                                 |  |   |   |
| Share of immigrants in 1971 with low education | 0.898*** (0.025)                | 0.693*** (0.025)                           | 0.104*** (0.014)                              | 0.036*** (0.010)                            |
| with medium education                          |                                 | 0.454*** (0.076)                           | 0.458*** (0.041)                              | 0.108*** (0.031)                            |
| with high education                            |                                 | 0.128                                      | 0.129** (0.058)                               | 0.625*** (0.044)                            |
| <b>Panel B3: 2001 sample<sup>e</sup></b>       |                                 |  |   |   |
| Share of immigrants in 1971 with low education | 0.838*** (0.032)                | 0.550*** (0.029)                           | 0.127*** (0.017)                              | 0.055*** (0.012)                            |
| with medium education                          |                                 | 0.617*** (0.090)                           | 0.693*** (0.054)                              | -0.016 (0.036)                              |
| with high education                            |                                 | 0.111                                      | -0.207*** (0.077)                             | 0.652*** (0.051)                            |

This table summarizes estimations of the determinants of the share of immigrants (i. e. residents without Austrian citizenship), the share of immigrants with low education (compulsory schooling), the share of immigrants with medium education (apprenticeship or lower secondary school), and the share of immigrants with high education (higher secondary school or academic degree) in community  $i$  in the year  $t$ , where  $i = \{1, \dots, 2, 352\}$  and  $t = \{1981, 1991, 2001\}$  based on Austrian community-level census data. Details on the calculation of the share of immigrants (by educational attainment) are provided in the notes to Table 1. Method of estimation is OLS with community population weights. Standard errors in parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. <sup>a</sup> Community's number of inhabitants, number of inhabitants squared, and binary variables indicating, communities in Vienna, and Carinthia. <sup>b</sup> Distribution of marital status: shares of inhabitants who are single, married, or divorced. <sup>c</sup> 32 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+. <sup>d</sup> Base year: 1981. <sup>e</sup> 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 3.** The effect of immigration on FPÖ votes: OLS and 2SLS pooled estimations

|  | (1)<br>OLS       | (2)<br>OLS        | (3)<br>2SLS      | (4)<br>2SLS      |
|--|------------------|-------------------|------------------|------------------|
| <i>Immigration</i>                     |                  |                   |                  |                  |
| Share of immigrants with low education | 0.234*** (0.009) | 0.269*** (0.013)  | 0.381*** (0.015) | 0.199*** (0.045) |
| with medium education                  |                  | 0.323*** (0.027)  |                  | 1.156*** (0.148) |
| with high education                    |                  | -0.206*** (0.034) |                  | 0.024 (0.115)    |
| Community <sup>a</sup>                 | Yes              | Yes               | Yes              | Yes              |
| Family status <sup>b</sup>             | Yes              | Yes               | Yes              | Yes              |
| Age-sex-distribution <sup>c</sup>      | Yes              | Yes               | Yes              | Yes              |
| Year fixed effects <sup>d</sup>        | Yes              | Yes               | Yes              | Yes              |
| F-statistic on excluded instruments    | -                | -                 | 7,708.36         | 164.87           |

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) OLS (first two columns) and instrumental variable (third and fourth column) estimations using Austrian community level data. 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  $i = \{1, \dots, 2, 352\}$  and  $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$ . In column (3) the endogenous variable is the share of immigrants in community  $i$  in year  $t$ , which is instrumented by the share of immigrants in community  $i$  in year 1971. In column (4) the endogenous variables are the shares of immigrants with low, medium and high education, which are instrumented by the 1971 shares of immigrants with low, medium and high education. Details on the calculation of the share of immigrants by educational attainment are provided in the notes to Table 1. In column (4) the endogenous variables are the shares of immigrants with low, medium and high educational attainment are provided in the notes to Table 1. Standard errors in parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively. <sup>a</sup> Community's number of inhabitants, number of inhabitants squared, and binary variables indicating, communities in Vienna, and Carinthia. <sup>b</sup> Distribution of marital status: shares of inhabitants who are single, married, or divorced. <sup>c</sup> 32 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+. <sup>d</sup> Base year: 1981.

**Table 4.** The effect of immigration on FPÖ votes: 2SLS and OLS cross-section estimations

| Election year                      | 1979                | 1983                | 1990                | 1994                | 1999                | 2002                |
|------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Panel A: 2SLS regressions</b>   |                     |                     |                     |                     |                     |                     |
| <i>2nd stage:</i>                  |                     |                     |                     |                     |                     |                     |
| $\hat{\beta}_{2SLS}$               | 0.472***<br>(0.033) | 0.260***<br>(0.029) | 0.310***<br>(0.039) | 0.195***<br>(0.044) | 0.308***<br>(0.052) | 0.310***<br>(0.030) |
| F-statistic on excluded instrument | 3,559.90            | 3,559.90            | 1,305.01            | 1,305.01            | 683.93              | 683.93              |
| <b>Panel B: OLS regressions</b>    |                     |                     |                     |                     |                     |                     |
| $\hat{\beta}_{OLS}$                | 0.393***<br>(0.026) | 0.243***<br>(0.023) | 0.266***<br>(0.024) | 0.233***<br>(0.027) | 0.214***<br>(0.025) | 0.165***<br>(0.014) |

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 (panel A) and OLS (panel B) estimations using Austrian community level data. 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  $i = \{1, \dots, 2,352\}$  and  $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$ . The endogenous variable is the share of immigrants in community  $i$  in that year, which is instrumented in the 2SLS estimations by the share of immigrants in community  $i$  in the year 1971. 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 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. The same imputation is used for the other covariates. All regressions control for the community's number of inhabitants, number of inhabitants squared, the distribution of marital status (shares of inhabitants who are single, married, or divorced), the whole age-sex-distribution (32 groups), and binary variables indicating communities in Vienna, and Carinthia. Standard errors in parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively.

**Table 5.** The effect of immigration by education on FPÖ votes: 2SLS cross-section estimations

| Election year                            | 1979                | 1983               | 1990                 | 1994                 | 1999                 | 2002                |
|--|---------------------|--------------------|----------------------|----------------------|----------------------|---------------------|
| <i>2nd stage:</i>                        |                     |                    |                      |                      |                      |                     |
| $\hat{\beta}_2^{2SLS}$ : low educated    | 0.388***<br>(0.102) | 0.181**<br>(0.087) | 0.058<br>(0.112)     | -0.007<br>(0.127)    | 0.273<br>(0.184)     | 0.333***<br>(0.104) |
| $\hat{\beta}_2^{2SLS}$ : medium educated | 0.399<br>(0.392)    | 0.725**<br>(0.337) | 1.902***<br>(0.437)  | 1.892***<br>(0.492)  | 0.988***<br>(0.374)  | 0.473**<br>(0.211)  |
| $\hat{\beta}_2^{2SLS}$ : highly educated | 1.131***<br>(0.304) | -0.018<br>(0.262)  | -1.032***<br>(0.363) | -1.680***<br>(0.409) | -1.510***<br>(0.405) | -0.507**<br>(0.228) |
| F-statistic on excluded instruments      | 36.72               | 36.72              | 19.40                | 19.40                | 18.07                | 18.07               |

This table summarizes the estimated effect of immigration (share of residents without Austrian citizenship with low, medium and high education) 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 equal to the share of votes for the FPÖ in the general election in community  $i$  in the year  $t$ , where  $i = \{1, \dots, 2, 352\}$  and  $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$ . The endogenous variables — for which estimated coefficients and standard errors from the 2nd stage are listed — are the shares of immigrants with low, medium and high education in community  $i$  in that year, which are instrumented by the respective shares of immigrants in community  $i$  in the year 1971. Details on the calculation of the share of immigrants by educational attainment are provided in the notes to Table 1. All regressions control for the community's number of inhabitants, number of inhabitants squared, the distribution of marital status (shares of inhabitants who are single, married, or divorced), the whole age-sex-distribution (32 groups), and binary variables indicating, communities in Vienna, and Carinthia. Standard errors in parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively.

**Table 6.** Empirical models for identifying the internal migration response

| Empirical model        | (1)<br>Card (2007)                      | (2)<br>Cortes (2006) | (3)<br>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          | $\beta_{Card} > 0$                      | $\beta_{Cortes} > 0$ | $\beta_{Borjas} > 0$        |
| $\hat{\beta}(s.t.e.)$  | 0.051<br>(0.032)                        | 0.003<br>(0.002)     | -0.081<br>(0.043)           |
| 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 with  $i$  communities over  $t$  years, where  $i = \{1, \dots, 2, 352\}$  and  $t = \{1971, 1981, 1991, 2001\}$ . 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’. Standard errors are in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively.

**Table 7.** The effect of immigration on FPÖ votes: 2SLS estimations in differences

| Election year                         | Pooled              | $\Delta_{79-71}$   | $\Delta_{83-71}$    | $\Delta_{90-71}$    | $\Delta_{94-71}$    | $\Delta_{99-71}$    | $\Delta_{02-71}$    |
|---------------------------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>2nd stage:</i>                     |                     |                    |                     |                     |                     |                     |                     |
| $\hat{\beta}_2^{2SLS^D}$              | 2.393***<br>(0.389) | 0.608**<br>(0.237) | 3.379***<br>(0.788) | 2.235***<br>(0.606) | 3.243***<br>(0.850) | 0.961***<br>(0.309) | 0.951***<br>(0.242) |
| F-statistic on excluded instrument    | 45.66               | 20.91              | 20.91               | 16.86               | 16.86               | 25.64               | 25.64               |
| Average change in FPÖ votes           | 9.28                | 0.61               | -0.47               | 11.18               | 17.05               | 21.46               | 4.56                |
| Average change in share of immigrants | 3.64                | 1.03               | 1.03                | 3.81                | 3.81                | 6.02                | 6.02                |

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 absolute change in the share of votes for the FPÖ in the general election in community  $i$  in the year  $t$  compared to 1971, where  $i = \{1, \dots, 2, 352\}$  and  $t = \{1979, 1983, 1990, 1994, 1999, 2002\}$ . The pooled regression pools these vote share changes. The endogenous variables — for which estimated coefficients and standard errors from the 2nd stage are listed — are the absolute changes in the share of immigrants in community  $i$  in the year  $t$  compared to the year 1971, which are instrumented by the shares of immigrants in community  $i$  in the year 1971. All regressions control for the community's number of inhabitants, number of inhabitants squared, the distribution of marital status (shares of inhabitants who are single, married, or divorced), the whole age-sex-distribution (32 groups), and binary variables indicating communities in Vienna, and Carinthia. Each estimation is based on 2, 352 observations. Standard errors in parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10-percent level, 5-percent level, and 1-percent level, respectively.