Cultural Distance and Attitudes Towards Immigration: Evidence from Swiss Voting Results

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Abstract

We combine census data with outcomes of national votes about various immigration issues in Switzerland to estimate the causal effect of the local immigrant density on natives' attitudes towards immigration. We categorize immigrants into two groups according to the cultural values and beliefs of their source country to understand how the cultural distance between natives and immigrants affects this relationship, and we apply an instrumental variable approach to take the endogenous settlement pattern of both natives and foreigners into account. We find that the share of culturally different immigrants is a significant and sizable determinant of anti-immigration votes, while the presence of culturally similar immigrants does not affect natives' voting behavior at all in most specifications. The cultural distance between immigrant and native residents thus appears important in explaining the causal effect of immigration on natives' attitudes towards immigration.

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1 Introduction

Globalization and the internationalization of labor markets, accompanied and made possible in part by enhanced and massively cheapened transport and communication technology, have made the emigration from less developed and even the most remote countries possible in recent years. As a result, international migration is increasing not only in scale, but also in the cultural diversity of the groups involved in that movement (Hugo, 2005; OECD, 2001, 2013). As a consequence, many host countries are faced with increasing levels of social and cultural diversity that may cause social tensions and stir up anti-immigration sentiments among native residents. Indeed, recent survey data show that negative attitudes towards immigration are widespread in many European countries (e.g. Card *et al.*, 2012). Moreover, a couple of recent empirical studies, discussed in more detail below, have shown that immigrant inflows have boosted the support for right-wing parties, which have set more restrictive immigration policies on their agenda and which, in some cases, even try to deliberately fuel anti-immigration feelings among natives, in several European countries (Gerdes and Wadensjö, 2008; Halla *et al.*, 2012; Harmon, 2012; Otto and Steinhardt, 2012).

In this paper, we add to this important discussion and present new estimates of the causal effect of immigrant density and heterogeneity on natives' attitudes towards immigration. To this end, we combine community-level results from various votes covering a wide range of immigration policies – ranging from initiatives that aimed at directly restricting the number of immigrants to the vote about signing the bilateral agreement with the European Union regulating the free movement of persons – that were held sometime between 1970 and 2010 in Switzerland with a rich set of community characteristics, computed from the universe of individual-level data of the Swiss census covering essentially the same time period. Moreover, we pay close attention to the issue of potentially endogenous residential choices which render conventional estimates of the relation between immigration and attitudes inconsistent. Specifically, to take the potential endogeneity of residential choices of both natives and immigrants into account, we follow the approach suggested by Dustmann and Preston (2001) and instrument the immigrant share within a municipality with the immigrant share in the local labor market the municipality belongs to (i.e. each local labor market encompasses several municipalities). We believe that this is a credible instrument in the context of our study, as we will

discuss in more detail below. Moreover, we will also present corroborating empirical evidence based on natives' residential mobility patterns which is consistent with the identifying assumption. To be sure, however, we will also present estimates based on an alternative identification strategy which uses immigrants' past settlement pattern in a community as instrument for the current immigrant density in that community.

Our study expands previous empirical evidence primarily on the following two dimensions. First, and foremost, instead of using attitudinal survey data, we take advantage of Switzerland's system of direct democracy, where citizens are regularly asked to vote on specific immigration issues and policies. We transform these voting results into a share of anti-immigration votes and use them as a direct measure of attitudes towards immigration. Using actual voting outcomes instead of stated attitudes has not only the advantage of bypassing the so-called hypothetical bias, it has also the advantage of not being subject to social desirability.[1] Moreover, note that our outcome measure is not subject to potential interpretational difficulties due to policy bundling either.[2] This feature also distinguishes our analysis from studies that use election outcomes, i.e. vote shares in favor of right-wing parties, as the dependent variable in the empirical analysis. As we will show later on, the distinction turns out to be quantitatively, though not qualitatively, important, at least in the case of Switzerland. The second key feature of our study is that we focus on understanding how natives' cultural identity, and the cultural distance between immigrants and natives, might help us understand this relationship. For this purpose, we differentiate between immigrants with a value system similar to Swiss natives, culturally similar immigrants, and immigrants with a different value system, culturally different immigrants. We hypothesize that immigrants are perceived as a threat to natives' national and cultural identity (which we understand as including their language, their system of values

[1]Hypothetical bias circumscribes the fact that individuals have virtually no incentive to reveal their true preferences in the absence of real consequences, such as in a typical survey setting (e.g. Miguet, 2008). One might also argue that the political discussion preceding a vote enables individuals to make a better informed decision on the issue than when asked to answer an abstract survey item (Benz and Stutzer, 2004). Moreover, when faced with hypothetical evaluations, individuals may decide to stick with answers that they think are socially accepted (e.g. Bertrand and Mullainathan, 2001). Both effects are likely to work in favor of finding (too) positive attitudes to immigration. In contrast, it is much more likely that voting results reflect true sentiments toward immigration because the result is binding and thus has real consequences and because, moreover, voting is anonymous.

[2]Votes in favor of right-wing parties may be a blurred measure of natives' attitudes towards immigration in case that individuals have different motives for supporting these parties. Most importantly, most right-wing parties which lobby for stricter immigration polices also distinctly try to cut back redistributive polices, which may make it difficult to distinguish between attitudes to immigration and attitudes to redistribution (Lee and Roemer, 2006).

and beliefs, as well as their way of life in general) and that the perceived threat increases in the cultural distance between natives and immigrants. Under this assumption, we expect that Swiss citizens residing in municipalities with a higher immigrant share are more likely to vote in favor of a more restrictive immigration policy, and that this effect is more pronounced the larger the fraction of culturally different immigrants among the overall immigrant population.

Our study adds to and expands previous evidence on the impact of immigration and attitudes towards immigrants. In terms of outcomes, our focus on voting results on immigration policies as a direct measure of natives' attitudes towards immigration is almost unique. In fact, we are only aware of one single study which also investigates the relationship between immigrant density and voting results (Tolbert and Hero, 1996). This study analyzes the voting results about California's illegal immigration initiative and finds that, somewhat surprisingly perhaps, not only counties with large Latino populations, but also counties with predominantly white population strongly supported the initiative. It is important to note, however, that this study does not address the endogeneity of local immigration shares and does, therefore, not establish credible evidence of a causal relationship.[3] In fact, a similar concern applies to most previous, primarily sociological, studies that have tried to estimate the impact of immigration on natives' attitudes to ethnic minorities or immigration (e.g. Meuleman *et al.*, 2009; Quillian, 1995; Schneider, 2008; Semyonov *et al.*, 2006). As a consequence, one should be cautious when interpreting the findings of this strand of the literature (the general finding in this literature is a positive association between immigrant shares and anti-foreigner sentiments among natives). Other authors have been more aware of, and sensitive to, these identification issues, however. The most notable exception amongst the studies working with attitudinal data is Dustmann and Preston (2001), who find that the bias resulting from the neglect of the endogeneity of residential choices is negative and quantitatively important, as estimates that take endogenous locational choices into account are up to four times larger than naive estimates. A similar emphasis on carefully dealing with identification issues due to endogenous locational choices has been given in a couple of closely related empirical studies on the impact of local immigrant shares on natives' support for right-wing parties which are generally, and often fiercely, pushing more restrictive immigration policies. Both Gerdes and Wadensjö (2008) and Harmon

[3]Besides the difference in the empirical approach, note that Tolbert and Hero (1996) focus on one specific vote, while we have assembled data on 27 different votes about diverse immigration, naturalization, and asylum policies (as discussed in more detail below), spread across five consecutive decades.

(2012) study the impact of local immigrant densities on votes in favor of right-wing parties in Denmark, and both studies find that increases in local immigrant populations lead to corresponding increases in the support for anti-immigration parties. A similar finding is reported in a study of city districts in Hamburg, Germany, by Otto and Steinhardt (2012), who find that increases in local immigrant shares lead to significant increases in the number of right-wing votes, as well as by Halla *et al.* (2012), who present evidence of a significant positive link between local immigrant shares and votes in favor of the right-wing FPÖ at elections of the national parliament in Austria.

Our paper also relates to a literature which studies why immigration affects natives attitudes to immigration, especially to more recent studies arguing that less tangible factors beyond concerns about increased labor-market competition from immigration or welfare concerns are presumably crucial factors in forming anti-immigration sentiments among natives. Indeed, the available evidence on the importance of economic concerns turns out to be surprisingly ambiguous. While some studies find that fears about increased labor market competition strongly shape individual attitudes towards immigrants, such as Mayda (2006) or Scheve and Slaughter (2001), other studies find either no or only weak evidence for this channel (Card *et al.*, 2012; Hainmueller and Hiscox, 2010; O'Connell, 2011), or that such concerns are not a significant determinant of natives' attitudes to immigration once unobserved cultural values and beliefs are taken into account (Hainmueller and Hiscox, 2007; Müller and Tai, 2010).[4] The finding that fears related to welfare concerns (i.e. immigrants entering the social welfare system) play an important role in the formation of attitudes appears less contentious in the existing literature (Dustmann and Preston, 2006, 2007; Müller and Tai, 2010). Finally, there is also more recent empirical evidence showing that natives' opposition towards further immigration is increasing in the ethnic distance between natives and immigrants (Card *et al.*, 2012; Dustmann and Preston, 2007). In our own analysis, we will build on this evidence and study whether the cultural distance between immigrants and natives might help us to understand how the presence of immigrants shapes natives' attitudes towards immigrants.

The remainder of this paper is organized as follows. In the following section we briefly review our argument that the cultural distance between immigrants and natives may turn out

[4]The fact that the evidence with respect to the importance of labor market competition in shaping natives' attitudes to immigration is ambiguous squares well with the fact that many empirical studies tend to find modest or weak average labor-market effects of immigration.

to be important in shaping natives' attitudes towards immigration and describe how we implement this concept empirically. In section 3 we discuss the sources and the structure of our data, as well as the construction of our key variables. We also present some descriptive statistics for the key variables in this section, highlighting the most salient features of immigration to and natives' anti-immigration sentiments in Switzerland. Section 4 presents the econometric framework and explains our main identification strategy. In that section, we also present evidence on natives' residential choices that supports our main identifying assumption. In section 5 we present and discuss our estimates regarding the relation between local immigrant shares and natives' attitudes towards immigration, along with a variety of alternative specifications and different robustness checks. In section 6 we summarize our findings and discuss potential implications.

2 Cultural distance between natives and immigrants

While increased labor-market competition due to immigration, whether real or perceived, may be important in shaping natives' attitudes towards immigration, we believe that a more direct, and potentially much more powerful, mechanism acts through natives' identity (Akerlof and Kranton, 2000, 2010). In the context of how native residents feel and think about immigrants, we argue that individuals's cultural or national identity is, first and foremost, tied to their language, their lifestyle, their customs, as well as their set of cultural values and beliefs. Accordingly, a native's identity of him- or herself may be threatened by the mere presence of immigrants because they challenge his or her system of cultural values and beliefs, which is otherwise taken-for-granted (i.e. in the absence of immigrants). Recent empirical evidence on the importance of compositional amenities (Card *et al.*, 2012), such as concerns about the composition of one's residential neighborhood and especially compositional concerns related to school and class composition of one's children (Cascio and Lewis, 2012), in shaping natives' attitudes to immigrants appears perfectly consistent which such a line of argument. In what follows, we thus presume that immigrants threaten natives' identity because they speak a different language, have a distinct lifestyle, and because they adhere to cultural values and beliefs different from those of native residents, which in turn may manifest itself in negative attitudes towards immigration among native residents. Moreover, we also hypothesize that

the threat to natives' identity is the more salient and the more intense the greater the cultural distance between immigrants and natives. For this reason, we expect the negative impact of local immigrant inflows to increase in the cultural distance between immigrants' country of origin and Switzerland.[5]

Obviously, there are various ways to empirically explore the potential importance of the cultural distance between natives and immigrants, but for the main part of our analysis we will rely on a simple binary classification of immigrants derived from the key findings of an influential study by Inglehart and Baker (2000). Using data from the Word Value Survey, they isolate two major value dimensions from a large variety of cultural items and locate each country on these two value dimensions, explaining roughly 70% of the variation in country averages of the underlying attitudinal survey items. The first dimension reflects the importance of traditional – as opposed to secular-rational – values, with the former emphasizing the importance of religion, parent-child-ties, and a general deference to authority. The second dimension is linked to the rise of a postindustrial society in which an increasing share of the population grows up taking survival for granted and which, as a consequence, attaches increasing emphasis on subjective well-being, personal self-fulfillment and self-expression (survival vs. self-expression values).

In our own empirical analysis, we will separate immigrants into two different groups based on the cultural heritage of their country of origin.[6] The first group of immigrants, culturally similar immigrants in what follows, encompasses immigrants from historically protestant and catholic non ex-Communist countries as well as immigrants from the English-speaking OECD countries. According to the findings of Inglehart and Baker (2000), these countries share Swiss natives' values and beliefs by and large, and they are both characterized by the relative importance of secular-rational (as opposed to traditional) and self-expression (as opposed to survival) values. While the former reflects a high emphasis on gender equality, tolerance of human di-

[5]Note that the proposed mechanism presupposes that there is a substantial degree in intergenerational persistence in immigrants' cultural identity (similar to, for example, Fernández and Fogli, 2006). A recent study by Casey and Dustmann (2010) presents direct evidence of strong intergenerational persistence of identity among immigrants in Germany.

[6]For the main part of the analysis, we simply differentiate between two groups of immigrants: immigrants with a similar value system as Swiss natives and immigrants who contrast with the Swiss value system, on at least one of the two mentioned dimensions. In one of the robustness checks presented below, we further decompose the latter group depending on whether their values and beliefs differ on only one or on both of the two dimensions (see section 5.2).

versity (e.g. tolerance of homosexuality) and high levels of trust as opposed to traditional roles and absolute norms, the latter reflects the relative importance of postmaterialist values (see Inglehart and Baker, 2000, for details). The second group of immigrants, culturally different immigrants, is composed of the remaining immigrants from countries that differ on either or on both of the two cultural dimensions from Swiss natives' value system, and it includes immigrants from former Communist countries, such as former Yugoslavia, as well as immigrants from Afria, Asia, or South America.

For the most part of the empirical analysis, we will rely on the simple binary categorization of immigrants just described. When discussing the robustness of our main results, however, we will also show results that use slightly different categorizations of immigrants, based on either the linguistic or, alternatively, the religious distance between immigrants and natives. In the former case, we will contrast immigrants speaking one of Switzerland's native languages also spoken in other countries (i.e. either German, French, or Italian) with those speaking any other language; in the latter case we will contrast immigrants from countries with a predominantly Christian denomination (Switzerland's main denomination is Protestantism in some, Catholicism in other parts of the country) with those from any other religion.

3 Data

We draw data from two different sources. First, we use the official results from various national votes on specific immigration policies in Switzerland, which are available at the level of the community, as our direct measure of natives' attitudes towards immigration. Our second source of information is the universe of individual-level data from the decennial Swiss census. We use the census data to compute local immigrant shares as well as various other municipality-level characteristics, which can then be merged with the voting results. However, while votes may take place on any given year, census data are only available every ten years. To still be able to exploit the whole range of votes, we decided to merge each vote to the year of the nearest census (for example, we merge the results on a vote held in 1974 with census data from the year 1970). Obviously, there are alternative ways of merging the two data sources together, due to their distinct longitudinal structure, but fortunately our results turn out to be insensitive to

the exact way we merge the two data sources together.[7]

3.1 National votes on immigration policies and natives' attitudes towards immigration

Voting outcomes are available at the municipality-level from 1970 onwards, and they contain information on the percentage share of affirmative votes as well as on voter turnout.[8] Table 1 presents some information on all the 27 votes about immigration policies that were held at the national level and in the time period considered. Note that the different votes deal with very diverse issues, even though there are several recurrent themes (i.e. immigration control, legislation ruling naturalization, and asylum law). What all these votes have in common, however, is that the outcome of the vote has potentially far-reaching consequences for resident and/or prospective immigrants and, in many cases, for natives as well.

Table 1

In what follows, we will use the community-level results of all the votes from table 1 to construct our measure of natives' attitudes to immigration. As apparent from the table, however, acceptance of a vote sometimes means a liberal opinion towards immigration, sometimes it means the opposite. To make the various votes comparable, we thus use the share of anti-immigration votes, i.e. the share of votes in favor of a more restrictive immigration policy, as our dependent variable (for each vote, column five of table 1 therefore indicates whether or not an affirmative vote implies support for a more restrictive immigration policy).[9]

[7]Specifically, we obtain similar results when votes taking place in the 1970s are merged with the 1970 census, and similarly for the other decades (results not shown). More importantly, however, we also get very similar results when we aggregate all data by decade (see section 5.2 below for details).

[8]The Swiss foundation for research in social sciences provides the results of all national votes that took place in Switzerland between 1970 and 1981. Starting in 1981, voting results are provided by official statistics from the Federal Statistical Office (FSO). Voting results prior to 1981 could no longer be reconstructed on the municipal, but only on the cantonal level for three (Aargau, Freiburg and Tessin) of the 26 cantons (i.e. Swiss states).

[9]While our measure of natives' attitudes to immigration has a couple of important advantages compared to other measures used in the literature, especially those based on survey items, we acknowledge that there are a few potential concerns as well. A first and obvious concern relates to the simple fact that the votes deal with different subjects and that, for this reason, it may not be suitable to combine the different votes into one and the same dependent variable. A closely related issue is that not only the level, but also the variation in a community's approval of a vote may vary across votes (reflecting that some votes are more controversial than others, for example). A more subtle issue concerns the the fact that voter turnout does also vary across votes, implying that there might be an issue with varying sample composition across the different votes. We will tackle all of these potential issues later on in section 5.2.

3.2 Community characteristics from the Swiss population census

We complement the municipality-level voting results on immigration policies with local immigrant shares as well as with various other community-level characteristics calculated from the universe of individual-level data of the decennial Swiss population census. The census data are by definition virtually complete, and the high quality of the data allows us to neglect problems of measurement error.[10]

In addition to extensive information on individual socio-economic characteristics (such as age, gender, employment status, or religious affiliation), the population census reports the country of origin for each foreign born person residing in Switzerland. In the following, and in accordance with Swiss legislation, an immigrant is defined as any resident without Swiss citizenship.[11] In the empirical analysis below, we focus on either the overall immigrant share or on culture-specific immigrant shares, as conceptualized in section 2.

Spatial structure of the data

We will also use variables representing information that has been aggregated using different geographical units in the econometric analysis. It is therefore helpful to briefly discuss the spatial structure of our data (see Schuler *et al.*, 2005, for details). Our basic unit of observation is the community, the smallest spatial unit with some degree of political autonomy in Switzerland. We deal with changes in the municipality structure over time (mainly due to smaller communities merging with each other) by creating a balanced panel of municipalities based on a slightly modified version of the territorial boundaries of the year 2000, thus keeping the definition of geographic units constant across time. Our final dataset represents a strongly balanced panel encompassing a total of 2,544 communities and a total of 68,688 observations (= 27 votes $\times$ 2,544 municipalities).

[10]The main drawback of the census data is a structural break between 2000 and 2010 because the Federal Statistical Office decided to switch to an annual survey starting in 2010, mainly drawing on existing information from administrative data (in practice, one expects structural breaks in at least some of the variables). Moreover, because the data were not yet available when preparing this paper, we decided to impute the missing values of the control variables with their values from the preceding census of the year 2000. Importantly, however, note that we work with actual, not imputed, immigrant shares because this information was already available from official statistics at our desired level of aggregation. See section 5.2 below for corresponding robustness tests.

[11]In contrast to other countries, such as the United States, citizenship in Switzerland does not depend on place of birth. Thus many of those legally defined as immigrants are actually born in Switzerland, at least in more recent years. In this context, it is interesting to point out that several of the votes listed in table 1 have tried to either ease or tighten the rules governing access to Swiss citizenship.

While communities represent our primary units of observation, we also use information based on broader geographical units. First, there are so-called ms-regions (ms stands for "mobilité spatiale", or spatial mobility), which are defined based on the observed level of economic interactions and actual commuting patterns of the workforce, and thus they may be best thought of as representing local labor markets. Switzerland is divided into 104 such regions, each encompassing an average of 24 communities. Unlike ms-regions, cantons are subnational entities with far-reaching autonomy in, for example, both taxation and educational policy. There are 26 cantons in Switzerland, each encompassing an average geographical area of about four ms-regions and 98 communities. Finally, the seven NUTS-2 regions represent larger catchment areas of Switzerland's main economic centers, each encompassing more than 360 communities on average (for example, the metropolitan region of Zurich represent one such region).

3.3 Descriptives

Figure 1 visualizes the two most salient features of Switzerland's immigration experience since the 1970s (cf. Gross, 2006, 2012). First, as illustrated in the upper panel of figure 1, the overall immigrant share in Switzerland has substantially increased over the considered period, starting from an already high level in the 1970s (in comparison to most other Western European countries), from 17.2% in 1970 to 22.5% in 2010.

Figure 1

The second important feature, evident from the lower panel of figure 1, is the large increase in the relative number of culturally different immigrants. Indeed, the fraction of culturally different immigrants has been low in most Swiss communities in 1970, with an overall average fraction of culturally different immigrants of about 8.6% only. Until the year 2010, however, this number has more than quadrupled, to an overall average of about 37.5%. Thus Switzerland has indeed, like many other European countries with net immigrant inflows, experienced a significant and substantial change towards increased ethnic diversity in the composition of its immigrant population.

Table 2

Table 2 has a closer look at how the composition of immigrants has changed over time and, to this end, shows the distribution of immigrants according to their country or region of origin (upper panel A) as well as overall and culture-specific immigrant densities (lower panel B).[12] Looking at the regional composition of immigrants first, one notable feature is that immigrants from a few countries made up the vast majority of all immigrants in 1970. Also, there were only few immigrants from outside Europe, accounting for a only 3.8% of all immigrants in that year. This picture has significantly changed over time, however. The most notable shifts in the composition of immigrants relate to a large influx of immigrants from former Yugoslavia during the Balkan wars, as well as the significant increase in the share of immigrants from both Germany and Portugal in more recent years. The increase in the heterogeneity of immigrants to Switzerland is perhaps best illustrated by the huge increase in the percentage share of immigrants from outside Europe, however, which has increased more than five-fold within our observation period – from a mere 3.8% in 1970 to slightly more than 21% in 2010.

Panel B of table 2 shows that these changes in the composition of immigrants are associated with substantial increases in the cultural distance between immigrants and natives. In fact, the share immigrants with a different cultural background has increased considerably faster than the overall immigrant share (the fraction of culturally different immigrants among all immigrants has increased from 8.3% in 1970 to 38.8% in 2010).

Figure 2

Moving on to natives' attitudes to immigration, figure 2 shows the spatial distribution of anti-immigration votes in both 1970 and 2010. Again, several features stand out very clearly. First, anti-immigration votes have significantly increased over time, starting from a mean level of anti-immigration votes of about 41% in 1970 to a mean of about 52% in 2010. Second, while higher levels of anti-immigration votes have largely been confined to rural areas in 1970 (mainly, but not exclusively, Central Switzerland), this is not true anymore in more recent years. As of 2010, anti-immigration votes appear to be much more broadly spread across the country, except for the larger urban areas such Berne or Zurich. Moreover, in the year 2010, there is another obvious trench in anti-immigration votes between the French-speaking part

[12] Interestingly, the classification of immigrants' country/region of origin used by the Federal Statistical Office has changed over time as well, paralleling the increasing heterogeneity of immigrants. The classification used in table 2 is essentially based on the classification of immigrants that was used in the 1970 census.

of the country (located in the East) the German- and Italian-speaking part of Switzerland (located in the West and the South of the country).

4 Econometric framework

4.1 Estimating the impact of immigration on natives' attitudes

We next discuss the econometric framework which we use to eventually pin down the causal effect of local immigrant shares on natives' anti-immigration attitudes. We initially start with the assumption that locational choices of both native and immigrant residents are exogenous, implying that immigrant shares can be treated as exogenous in the empirical analysis, but we will relax this critical assumption soon after. Our initial regression model takes the following basic form:

$$AIV_{jv[t]} = \alpha + \beta^c I^c_{jT[t]} + \gamma Z_{jT[t]} + \delta X_{jT[t]} + \psi_{n[j]v[t]} + \epsilon_{jv[t]}, \tag{1}$$

with $AIV_{jv[t]}$ denoting the share of anti-immigration votes in municipality j with respect to vote v taking place in year t (note that we have to distinguish between votes and years since there are several occasions with more than one vote in the same year; cf. table 1). $I^c_{jT[t]}$ denotes the inclusion of either the overall or, alternatively, the two culture-specific local immigrant shares, as defined in section 2, in municipality j in census year T which is closest to the year t in which vote v effectively took place. Thus β^c is the parameter (vector) of key interest, capturing the partial effect of the local immigrant share(s) on the share of anti-immigration votes among native residents (note that a positive sign of $\widehat{\beta}^c$ implies that high immigrant shares are associted with more intense anti-immigration votes).

The full-blown version of equation (1) serves as our baseline specification and contains a variety of control variables. First, $Z_{jT[t]}$ comprises several residential area characteristics which can best be thought of as basically fixed locational characteristics of community j. Specifically, $Z_{jT[t]}$ includes the fraction of a community's area which is urbanized, the shares of its resident population speaking one of the Swiss native languages (i.e. German, French, Italian, or Romansh), and whether municipality j is a border community (i.e. whether community

j borders a foreign country).[13] In addition, vector $X_{jT[t]}$ includes a number of variables describing a community's native residents. It contains the following aggregated socio-economic characteristics of Swiss citizens: the distribution of labor market status (the share of individuals employed, unemployed, or not employed); the distribution of occupational status (the share of individuals who are self employed, employed by a family member, a trainee, in a management or non-management position); the distribution of highest educational attainment (the share of individuals with primary-, secondary- or tertiary-level education); the distribution of marital status (the share of individuals who are single, married, and widowed or divorced); mean age and mean age squared; the share of female individuals; the distribution of religious affiliation (the share of Protestants, Catholics, Jews, Moslems, and individuals with any other or no denomination at all) and the share of foreign born Swiss citizens. The full-blown version of equation (1) also includes NUTS-2 specific vote fixed effects, denoted by $\psi_{k[j]v[t]}$, with k indexing the NUTS-2 region a given community j makes part of. This eliminates all time-varying unobserved heterogeneity between the seven catchment areas of Switzerland's main economic centers and is expected to already eliminate even much of the potential bias due to unobserved and time-variant variables.

Finally, we weight the observations with the size of the local native voting population in most specifications, and we cluster standard errors by municipality throughout due to the fact that the key regressor varies at a higher aggregation level than the dependent variable (Moulton, 1990) as well as to allow for arbitrary serial correlation in the error term across votes (i.e. across time) within the same community (Bertrand *et al.*, 2004).

4.2 Endogenous locational choices

However, because individuals are free to choose their neighborhood, local immigrant shares in an individuals' municipality are unlikely to be exogenous in the presence of identiy concerns. Quite in contrast, it seems in fact much more reasonable to assume that xenophobic natives are unlikely to locate in municipalities with a large immigrant population and to outflow of communities with a high immigrant density. By the same token, it also seems unlikely that immigrants will decide to settle in areas where they expect racial discrimination. In fact, there

[13] Almost all of these variables have autocorrelation coefficients close to 1, which empirically underlines our claim that they represent basically fixed characteristics of the community itself, and not so much characteristics of a community's residents.

is ample empirical evidence in support of endogenous locational choice of both natives and immigrants (Card *et al.*, 2008; Damm, 2009; Saiz and Wachter, 2011; Wong, 2013). In such circumstances, it is well understood that ordinary least-squares (OLS) estimates of parameter β^c in equation (1) are likely to be downward biased and inconsistent, even in the presence of fixed effects.

Immigrant share in local labor markets as instrument

In order to obtain a consistent estimate of the impact of immigration on voting results in spite of endogenous settlement choices, we thus apply an instrumental variable approach in the second step of our empirical analysis. Following Dustmann and Preston (2001), we instrument the municipal immigrant share with the immigrant share in a broader geographical area, i.e. in an area which encompasses several communities. More specifically, we use the immigrant shares in the local labor markets (i.e. ms-regions) as our instrument because they are based on actual commuting patterns and thus best comply with the requirements for a valid instrument, as will soon become clear. Our first-stage regression thus looks as follows:

$$I^c_{jT[t]} = \pi_0 + \pi^c_1 I^c_{l[j]T[t]} + \pi_2 Z_{jT[t]} + \pi_3 X_{jT[t]} + \psi_{n[j]v[t]} + \varepsilon_{jv[t]}, \tag{2}$$

with $I^c_{lT[t]}$ representing the cultural-specific immigrant share in census year T and local labor market l to which municipality j belongs to (note again that the number of local labor markets, L, is smaller than the number of communities, J). The list of controls and the weighting scheme are exactly the same as when estimating equation (1) by OLS. In contrast to above, however, we cluster standard errors by local labor markets when estimating equation (1) using 2SLS because the instrument varies at that level of aggregation only.

The key identifying assumption underlying the outlined procedure is that the immigrant share in the larger geographic region (i.e. local labor markets) is determined by factors other than by native residents' anti-immigration attitudes. Put differently, we must assume that racially motivated mobility only exists within but not across local labor markets. One way to argue in favor of this assumption is that individuals, when choosing their place of residence, first decide upon a larger geographic region based primarily on the availability of job opportunities or the closeness of one's family and friends. Crucially, however, residential choice must

not depend on attitudes towards immigration at this stage. Only later, when it comes to decide upon the local neighborhood within the larger settlement region, may the immigrant composition become part of the decision. While the identifying assumption is not directly testable, we can still probe its potential validity to some limited extent because some implications of the identifying assumption are empirically testable with the data at hand. We will provide such as test in section 4.3 below, estimating the impact of changes in the municipal immigrant share on natives' residential mobility (i.e. outflow pattern). The findings from this test lead us to conclude that the immigrant share in the ms-region is uncorrelated with natives' migration pattern. Consequently, we believe that $I^c_{l[j]T[t]}$ is a valid instrument for $I^c_{jT[t]}$ because sorting within local labor markets, which is that part of the settlement decision that can depend on attitudes, does not alter the overall ethnic composition within local labor markets.

Identification further requires that the instrument has no direct effect on natives' voting behavior, and that the instrument is partially correlated with the endogenous variable. The latter assumption simply implies that π^c_1 in equation (2) must be nonzero (which can easily be checked when actually estimating the first-stage regression), while the former implies that an individual's attitude toward immigration must depend solely on the immigrant concentration in the immediate vicinity (i.e. municipality), but not on the immigrant share within the local labor market. We will perform different checks to support the plausibility of this assumption later on. For instance, we will use the immigrant share within a local labor market ten years earlier as alternative instrument because a direct effect is less likely to exist for immigrant shares that existed one decade earlier.

Immigrants' historical settlement pattern as an alternative instrument

Complementing our main estimates, we will also present additional estimates that use an alternative instrument, namely the historical settlement pattern of immigrants (e.g. Altonji and Card, 1991; Card, 2001). This instrument takes advantage of the fact that ethnic networks are important for recent immigrants' locational choices and that immigrants are more likely to settle in areas where there are already people with a similar ethnic background (Damm, 2009; Wong, 2013).

Note, however, that this instrumental variable strategy does not allow for any residential mobility response of natives across municipality-borders. As a result, using historical migration

patterns as an instrument may produce downward biased estimates because the negatively affected individuals are more likely to move elsewhere. Another drawback of this instrument is that we lose all observations from the first decade because immigrant shares are only available on a decennial basis (i.e. we lose all observations from the 1970s). Considering that our sample covers five different decades only, this is a relatively large loss of information. Nonetheless, we do provide these additional estimates as well because we think that they will provide useful insights regarding the plausibility of our main identification strategy.

4.3 Assessing instrument validity

As we have just been discussing, identification using immigrant shares at the level of local labor markets as instrument implies, inter alia, that racially motivated mobility by the native population only exist within, but not across, local labor markets. Because the census does not only report individuals' place of residence at the time of the survey, but also five years earlier, we can actually test this specific implication of the key identifying assumption by running the following simple regression model:

$$\mathbf{1}(r_{iT} \neq r_{i(T-5)}) = \alpha + \beta \Delta I^{o}_{j[i]T} + \gamma_o Z^{o}_{j[i]T} + \gamma_d Z^{d}_{j[i]T} + \delta X_{iT} + \psi_{k[r]T} + \epsilon_{iT}, \text{ for } r \in \{j, l\}, \tag{3}$$

where the dependent variable is an indicator function taking on the value one if individual i moved within the last five years (i.e. between census year T and $T-5$), and zero otherwise. We study both movements across municipalities (i.e. $r = j$) as well as across local labor markets (i.e. $r = l$). Note that the parameters of equation (3), in contrast to above, are estimated using individual-level data. The two vectors $Z^{o}_{j[i]T}$ and $Z^{d}_{j[i]T}$ contain a few area characteristics (i.e. the unemployment rate, the fraction of the area of a community which is urbanized, and an indicator for whether community j is a border area) of both an individual's origin and destination region of residency, respectively. We also include include individual socio-economic characteristics, denoted by X_{it} (see the description of equation (1) for details).

Parameter β is of main interest as it captures how a change in the immigrant share during the last decade in an individual's original resident municipality, $\Delta I^{o}_{j[i]T}$, affects the probability of having left one's municipality ($r = j$) or one's local labor market ($r = l$), respectively,

within the past five years (i.e. between T, the year of the census, and $T-5$). If the identifying assumption holds true, β should be (close to) zero in the case of residential mobility across local local labor markets, while we expect the estimate of β to be significantly different from zero in the case of mobility across communities because we expect an outflow of natives in case of large immigrant inflows into any given community.

Table 3

The resulting coefficient estimates are shown in table 3, and these results indeed suggest that an increase in the share of culturally different immigrants causes natives to leave their original municipality of residence, but they provide no evidence for racially motivated mobility effects across local labor markets at the same time.[14] We interpret this finding as strong evidence in favor of the validity of our identification strategy. Note that this result also implies that instruments that do not allow for mobility responses across municipalities, like the historical settlement pattern of immigrants, may underestimate the true effect (in principle, however, this drawback can be mitigated by using the historical settlement pattern at a higher aggregation level; see section 5.2 below).

5 The impact of immigration on natives' attitudes

5.1 Main results

Table 4 presents our baseline estimates of the impact of local immigrant shares on natives' attitudes to immigration. The table reports estimates of the overall immigrant share (panel A) as well as of the two culture-specific immigrants shares (panel B) on natives' anti-immigration votes; the first three columns report OLS estimates, the remaining three columns 2SLS estimates. All specifications include vote fixed effects to net out overall differences in the share of anti-immigration votes due to differences in the subject of the various votes (obviously, any time trend in natives' attitudes to immigration is also netted out this way) and, as mentioned before, all estimates shown in table 4 are weighted by the native voting population size of the municipalities. The first and the fourth column report estimates from a simple specification

[14] Not surprisingly, the table also shows that the estimates are essentially the same, when comparing marginal effects, regardless of whether equation (3) is estimated by OLS or using a Probit model.

that includes immigrant shares and vote fixed effects only. We add the controls for local area and socio-economic characteristics in columns three and five, and we further allow for unobserved heterogeneity within votes between different NUTS-2 regions in the remaining columns three and six.

Table 4

We first discuss the estimates for the overall immigrant share as main regressor. The first column shows that there is a strong negative and statistically signifcant correlation between anti-immigration votes and the overall immigrant share (net of any differences in attitudes due to differences in the subject of the votes as well as due to any aggregate time trend), implying that anti-immigration votes are more prevalent in communities with lower immigrant density. Once we control for community characteristics, however, the coefficient estimate on the overall immigrant share becomes small and statistically insignificant. When we further add NUTS-2 specfic vote fixed effects, we get a statistically significant and positive coefficient estimate of 0.048 (with a robust t-value of about 2.18). Instrumenting the local immigrant share yields a similar pattern in qualitative terms, but note that the 2SLS point estimate of the full-blown specification is considerably larger than its OLS counterpart, with a significant, but also much less precise, point estimate of 0.459 (with a robust t-value of about 2.3). This implies an appromximate elasticity of anti-immigration votes with respect to the overall immigrant share of about 0.167 (evaluated at mean values). Comparing the estimates from column 6 with column 3 suggests that, in line with Dustmann and Preston (2001) and many others, endogenous residential choices are quantitatively important, and that ignoring this issue may lead to severely downward biased estimates of the impact of immigration on natives' attitudes towards immigration.

Panel B, in contrast, shows parameter estimates for the impact of both culturally similar and culturally different immigrants on the local share of anti-immigration votes among natives. Across the different specifications, the share of culturally different immigrants turns out to be a significant determinant of natives' anti-immigration votes. Both OLS and 2SLS estimates are positive and statistically significant, but the 2SLS estimates turn out to be considerably larger than the corresponding OLS estimates. However, not surprisingly, they are also much less precisely estimated. The estimates for the share of culturally similar immigrants reveal a

slightly different pattern. The point estimates are initially negative, irrespective of the chosen estimation method, but they turn small and statistically insignificant in most specficiations when we include additional controls.

Our baseline estimates using the full set of controls from the last column of table 4 imply that anti-immigration votes within a community increase by a significant 1.153 percentage points when experiencing a one percentage point increase in the share of culturally different immigrants. This estimate implies an elasticity of anti-immigration votes with respect to the share of culturally different (similar) immigrants of about 0.14 (0.05) if evaluted at mean values. As for the overall immigrant share, the large positive difference between corresponding 2SLS and OLS estimates is consistent with the idea that settlement decisions are endogenous. Moreover, comparing the estimates from panel A and B clearly shows that ignoring the cultural distance between natives and immigrants masks important differences in the impact on natives' attitudes between different groups of immigrants. Focusing on the last column of table 4 shows that the positive effect of the overall immigrant share on anti-immigration attitudes in our preferred specidication appears to be driven almost entirely by the positive effect of the share of culturally different immigrants.

Finally, table 4 also reports robust F-statistics from the first-stage regressions associated with each of the endogenous variables, quantifying the strength of the association of the instruments with the endogenous variables. Note that, in all specifications, the F-statistics are always well above the rule-of-thumb critical value of 10 suggested by Staiger and Stock (1997), thus alleviating potential weak-instrument concerns.[15]

5.2 Robustness

We next provide a series of various robustness checks. A first check tests the sensitivity of our estimates with respect to slightly different covariate and fixed effects specifications as well as to the use of alternative instruments. We then provide some additional robustness checks related to data issues such as potential endogeneity of part of the controls or alternative weighting schemes. Third, we check whether our main findings also hold for single votes (this may also be understood as a test of time-varying coefficients). A final check looks at some alternative

[15]We have also checked that the reduced form effects exist (and thus that the 2SLS estimates are not only driven by a strong first-stage). These results are not reported in the paper to save space, but they are available upon request.

classification schemes of immigrants.

Specification checks and alternative instruments

Table 5 presents the results for various checks with respect to the specification of the controls as well as to alternative instruments. Column 2 reports a first specification check, using an alternative specificiation of the socio-demographic controls. It differs from the baseline model in allowing for interaction effects between gender, age, and education. More precisely, it includes the gender-age-education distribution with four education categories and seven ten-year age categories. The resulting point estimates are again virtually idential with our baseline estimates. We next add, in column 3, canton-specific fixed effects to our baseline specification. As expected, this drives down the point estimate on the share of culturally different immigrants, which remains large and statistically significant, however.

Table 5

The last four columns of table 5 use the same specification of control variables, but they use alternative instruments. Specifically, column 4 uses the 1970 settlement pattern of immigrants at the community level. As expected, the point estimate is considerably smaller than in our baseline specification. In the fifth column we use immigrants' historical settlement pattern as instrument, but we construct the instrument at the level of local labor markets instead of communities, thus combining in a way the logic of the two instruments. This yields an even larger, but also much less precise, point estimate on the share of culturally different immigrants of 5.795 (with a robust t-value of 1.733), while the estimate on the share of culturally similar immigrants remains statistically insignificant. The final two columns use instruments constructed at the cantonal level (note that the number of cantons is considerably smaller than the number of local labor markets), and they confirm our previous findings. Column 6, which reports estimates that use cantonal immigrant shares as instruments, yields substantially larger estimates than our baseline specification. Finally, the last column instruments the communal immigrant shares with the cantonal immigrant shares in the year 1970. This yields a point estimate which is close in size to the one from column 5.

Data issues

Table 6 presents some additional robustness checks, which take up the most important data issues that have already been brought up in previous sections. A first data issue that has been raised is that there are different ways of merging the voting results with the census data. The second column thus first shows estimates that use data which have been aggregated by decade. While this massively reduces the number of observations, to less than 20% of the overall sample, the key estimates remain virtually unchanged.

Table 6

A potentially more important issue relates to the fact that most of the control variables (exept immigrant shares) have been imputed for the year 2010 due to the structural break in the collection of the data (as explained in footnote 10). For this reason, we exclude all socio-demographcic controls in column 3. This yields a considerably smaller, but still significant point estimate on the share of culturally different immigrants of 0.657 (with a robust t-value of 1.676). As an additional check in this respect, we also re-estimate our baseline specification excluding the data from 2010 altogether. As shown in column 4, this does not change the point estimate of the share of culturally different immigrants by much, but it yields a significant point estimates on the share of culturally similar immigrants of 0.389, in contrast to our baseline estimates. Note, however, that this may also be due to time-varying coefficients (an issue that we tackle in more detail below).

Column 5 reports estimates using standardized anti-immigration votes as the dependent variable to take into account that, since the votes cover very different subjects, the cross-sectional variation in anti-immigration votes may differ across votes (remember that we net out any differences in the mean values of attitudes across votes by including vote fixed-effects in all specifications). In part by construction, this yields a much larger point estimate than our baseline specification. Computing the corresponding semi-elasticity of anti-immigration votes with respect to the share of culturally different immigrants, in terms of the standard deviation of the dependent variable, however shows that this yields an even stronger result. Our baseline specification implies a semi-elasticity of about 0.15 (0.42) standard deviations for the share of culturally similar (different) immigrants, while column 5 yields corresponding semi-elasticities of about 0.24 (0.67).

The last two columns of table 6 finally check the robustness of our main results with respect to the weighting scheme. We re-estimate our baseline specification without any weighting in column 6, and we use a slightly alternative weighting scheme in the final column of table 6. In the case of unweighted observations, we find that both the share of culturally different and the share of culturally similar immigrants impact the share of anti-immigration votes positively. A similar result is shown in the final column, where the observations are weighted with the local native population instead of the local voting population. This specification may be understood as approximating the counterfactual situation of full voter turnout, assuming that there is no participation bias (we take up this issue in more detail in section 5.3 below).

Single-vote results

Considering that the different votes cover widely varying topics, as evident from table 1, it further appears necessary to examine whether the results also hold for single votes. This is done by simply re-running our baseline specification for each single vote. Results are depicted graphically in figure 3, with the vertical axis indicating the corresponding 2SLS point estimate along with its 95% confidence interval, and the horizontal axis indicating the number of the vote, in chronological order. For the ease of comparison, the figure also shows the overall effect when pooling the votes together (corresponding to our baseline 2SLS estimates from table 4).

Figure 3

As evident from panel (a), point estimates turn out positive for almost all single votes and they are statistically significantly different from zero in the majority of cases. Turning to panel (b), the single-vote results again confirm that there is no strong evidence of a relationship between voting results and the share of culturally similar immigrants, even though the share of culturally similar immigrants turns out positive in a few instances. Taken together, figure 3 suggests that our baseline estimates are robust and that the same pattern also holds for single votes (and thus for different points in time as well).

Cultural classification of immigrants

A final robustness check relates to the classification of immigrants into different cultural groups. In this context, a first thing to note is that there is a lot of heterogeneity in cultural values

and beliefs within the group of immigrants defined as culturally different from natives. In fact, as mentioned in section 2 above, the latter includes societies that differ only on the first value dimension (i.e. they place high emphasis on survival instead of self-expression values) as well as societies that differ on both dimensions (i.e. societies that further attach great importance to traditional rather than secular-rational values).

A first check thus aims to investigate whether the effect of the share of culturally different immigrants is driven by one of these two value dimensions. For this purpose we re-run the baseline model with three instead of two groups of immigrants: culturally similar immigrants, culturally different immigrants who differ only on one, and culturally different immigrants who differ on both dimensions. Column 2 of table 7 presents the resulting 2SLS estimates. Not surprisingly, the coefficient on the share of culturally similar immigrants remains small and statistically insignificant. More interestingly, both estimates on the two disticnt shares of culturally different immigrants are positive and statistically significant.

Table 7

The remaining columns show estimates that classify immigrants based on either the (dominant) language or dominant religion of their source country, instead of it's set of values and beliefs. Specifically, in column 3 we split immigrants based on the dominant language of their home country, distinguishing between immigrants from countries with a dominant language which is also a native language in Switzerland (i.e. German, French, or Italian) and all other immigrants. In column 4 we use a more restrictive version classification based on language, defining only those immigrants as culturally similar who speak a region's dominant language (e.g. German immigrants who reside in the German-speaking part of Switzerland). Both specifications yield estimates very similar to our baseline model. The last column shows estimates that classify immigrants according to the dominant religion in their home country. In this case we define immigrants from Christian countries as culturally similar immigrants.

5.3 Voter turnout and external validity

An important issue which we have ignored so far is that voting is not compulsory (anymore) in Switzerland (with the exception of the canton of Schaffhausen, as discussed in more detail below). Consequently, all findings presented so far are based on the voting behavior of those

individuals who actually decided to participate in the voting process only. Given that voter turnout hovers around 50% in votes about immigration topics (cf. last column of table 1), and given that there is some evidence that this may be a selected group of individuals, the question arises of whether our results in part reflect participation bias or whether they extend to the overall native population.[16] While this does not affect the internal validity of our empirical approach, participation bias may however constrict the external validity of our findings. We approach this issue using three different strategies.

Stratifying communities by voter turnout

Our first strategy to tackle the issue of voter turnout is to re-estimate our baseline specification for subsamples characterized by different voter turnout. Specifically, we divide our overall sample into 100 subsamples, each containing observations (i.e. municipality×vote cells) with a particular turnout percentile. We then re-estimate our baseline specification within each of these subsamples.[17]

Figure 4

The resulting estimates are plotted in figure 4, with panel A (panel B) referring to the share of culturally different (similar) immigrants. In each figure, the vertical axis indicates the point estimates of the impact of the culture-specific immigrant share (in percentage points), while the horizontal axis depicts the corresponding turnout percentile.[18] Consider the effect of culturally different immigrants first. Interestingly, the results do not provide any indication of a systematic relationship between the size of the parameter estimates and the voter turnout (unless perhaps for observations with very high voter turnout). For each turnout subsample,

[16] According to Miguet (2008) who uses post-vote datasets for two of the votes from table 1 (vote number 355 and 467), participation is significantly more likely for highly educated and married persons, and for individuals with views at the political extreme. Similar results are reported by Krishnakumar and Müller (2012), who study vote number 467 as well. Note, however, that these two studies focus on single votes only, while we pool results across 27 different votes.

[17] One way to motivate such an analysis is that we expect the estimated effects would apply equally to all individuals if no unobserved characteristic were to exist that simultaneously influences anti-immigration attitudes and voting probability. Conversely, if there is a systematic relationship between participation decision and attitudes towards immigration that observed individual characteristics do not explain, one would expect to find a correlation between the size of the estimated effects and the voter turnout.

[18] The observed variation in voter turnout across communities and over time is quite large. The median turnout equals 47.8%, the 5th and the 95th percentile correspond to a voter turnout of 26.5% and 72.3%, respectively.

2SLS estimates are statistically significant and vary between 0.75 and 2.5 – with exception of the upper turnout decile. For those observations, the estimated effect is considerably larger (up to 4.75 percentage points), but so is the associated standard error. The estimates for the share of culturally similar immigrants again suggest no causal effect from the share of culturally similar immigrants on natives' attitudes towards immigration.

Close votes

An alternative strategy starts from the observation that we expect that voter turnout partially depends on the specific subject of a vote (one important characteristic of a vote in this regard is the anticipated impact in the case of acceptance or rejection, respectively).[19] Thus one way to see whether the estimated impact of local immigrant shares varies with turnout is see whether the estimated parameters vary across votes, depending on how controversial, and thus how mobilizing, a specific vote has been. We use two slightly different measures of the closeness of a vote. Our first measure focuses on the overall approval rate of a vote (as shown in column 7 of table 1), and we define those votes with an overall approval between 45% and 55% as close votes. Alternatively, our second measure defines those instances as close votes when the approval rate of more than 30% of the communities were between 45% and 55%.

Table 8

Columns 2 and 3 of table 8 show the resulting estimates for the two alternative definitions of a close vote. In both cases, and consistent with the estimates from previous figure 4, the point estimate on the share of culturally different immigrants gets slightly larger than in the overall sample (point estimate of 1.441 and 1.354, respectively, versus 1.153 in the overall sample), but the difference with the baseline estimates is, once again, not significantly different from zero.

[19]Typically, there are several votes taking place at the same time, covering very different issues. As a consequence, turnout may thus also be influenced by the specific combination of votes taking place at the same time.

Mandatory voting in the canton of Schaffhausen

Yet another strategy relies on the fact voting is still mandatory in the canton of Schaffhausen.[20] In our third strategy, we restrict the sample to communities from the canton of Schaffhausen and its two neighboring cantons, Thurgau and Zurich, and then instrument voter turnout with a dummy for mandatory voting (which is equivalent to a dummy variable for all communities belonging to the canton of Schaffhausen).[21] The last three columns of table 8 report the relevant estimates for this small subsample of observations.

Before discussing the corresponding estimates, however, it is worth pointing out that a naive regression approach yields an insignificant coefficient estimate on voter turnout (as shown in column 4). Next, column 5 replicates our baseline specification, using the restricted sample of communites from the three cantons only. The estimates of the two immigrant shares turn out very similar as when using the overall sample (compare with column 1). Including voter turnout as an exogenous regressor, as done in column 6, yields a positive and statistically significant estimate on voter turnout, which whould imply that that a higher turnout is associated with more intense anti-immigration votes. However, turnout can hardly be considered exogenous, and the last column of table 8 shows that the effect of turnout on anti-immigration votes becomes very small and statistically insignificant when we instrument for it (note that the instrument is very strong though, with a large robust F-value of about 124).

Summing up the evidence on participation bias and external validity

Taken together, the findings from the three different strategies yield a suprisingly consistent pattern, and we draw two main conclusions from these findings. First, all three strategies suggest that higher voter turnout is associated with more intense anti-immigration votes. This finding is consistent with previous studies focusing specifically on voter turnout in Switzerland (Krishnakumar and Müller, 2012; Miguet, 2008). Second, and more importantly, it also appears that our results are only marginally influenced by particpation bias, and that the qualitative

[20] Interestingly, voter turnout in Schaffhausen is consistently and significantly higher than in all other parts of Switzerland even though the monetary sanction for non-participation is of symbolic nature only (there is a fine of three Swiss Francs, roughly equivalent to about 2.5 €, for each vote missed). See Schwegler (2009) for interesting details.

[21] We focus on this subset of cantons only because the dummy would probably pick up [xxx]. We get similar results when we use a subsample containing all communities from the NUTS-2 region to which the canton of Schaffhausen belongs to.

pattern does not depend at all on selective participation in the corresponding votes. There is thus not much doubt that our results are representative of the native population more generally.

5.4 The rise in the support of Switzerland's right-wing party

Similar to many other European countries, Switzerland has recently experienced a distinct rise in the vote share in favor of the Swiss People's Party ("Schweizerische Volkspartei", SVP for short), a party known for its fierce anti-immigration program (McGann and Kitschelt, 2005).[22] This last section aims at investigating whether the local presence of immigrants with different cultural values and beliefs is a similarly important determinant of the percentage of right-wing voters as it is of the percentage of anti-immigration votes. Moreover, a comparison with our earlier results on the impact of local immigrant shares on natives' anti-immigration votes [xxx] may also help to clarify the practical importance of policy bundling mentioned in the introduction (cf. footnote 2). This, in turn, may clarify the external validity of estimates from studies which relate local immigrant shares with votes in favor of right-wing parties mentioned in the introduction (and whose estimates are potentially blurred by the issue of policy bundling).

To explore this question empirically, we additionally draw on results of from the elections of the members of the National Council ("Nationalrat") within our sample period.[23] We then apply the same estimation strategy as before, only that now the dependent variable is the share of votes in favor of the SVP, instead of the share of anti-immigration votes among native residents.[24]

Table 9

[22] From 1970 until 1991, the votes shares in favor of the SVP in elections of the national parliament equalled about 10 percent. In subsequent years, however, the party gained more and more support and reached its highest share of votes in 2007 with about 27 percent. This corresponds to an increase of almost three hundred percent over a period of just 16 years. The rapid rise of the SVP levelled off in the 2011 elections, when the party even had to record a slight decrease compared to the previous election period.

[23] As the parliamentary elections take place every four years, the election years do not perfectly coincide with the census years. We therefore merge the 1971 election results to the 1970 census, the 1979 election results to the 1980 census, the 1991 election results to the 1990 census, the 1999 election results to the 2000 census and finally, the 2011 election results to the 2010 census.

[24] The cross-section of communities is somewhat smaller than in the main part of the empirical analysis because a slightly different version of the municipality boundaries that is used in order to record election results. As a consequence, 24 out of the total of 2,544 municipalities cannot be merged to the census data when working with the election results.

Table 9 presents the corresponding estimates (because we now use a different dependent variable, we show both OLS and 2SLS estimates again). The first two columns simply replicate our baseline estimates from table 4. The next two columns show the results from estimating our baseline specification on the national-elections sample, i.e. the same sample that is available in the case of the election results. The final two columns show the estimated impact of the culture-specific immigrant shares on the local proportion of votes in favor of the SVP. For ease of comparison, the table also shows approximate elasticites, evaluated at mean values, in curly brackets.

First note that we get very similar results when the estimation sample is restrict to those observations that can be used to analye vote shares in favor of the SVP. Looking at the results for the votes in favor of the SVP, note that the general pattern of estimates is basically the same for SVP-votes than for anti-immigration attitudes. We find a small and statistically insignificant effect for the share of culturally similar immigrants, but a large and statistically significant effect for the share of culturally different immigrants. Also, the instruments remain strong for the two endogenous variables. The most striking and also most interesting result from a comparison of the estimates for natives' anti-immigration votes and for the vote share in favor of the SVP is that vote shares turn out to be far more elastic with respect to the share of culturally different immigrants than anti-immigration votes. Specifically, the curly brackets in table 9 show that the elasticity of votes in favor of the SVP (elasticity of 0.309 evaluated at mean values) is about twice as large as the corresponding elasiticy of anti-immigration votes (elasticity of 0.141).

[more detailed discussion]

6 Conclusions

In this paper, we combine census data with outcomes of national votes about immigration policies in Switzerland between 1970 and 2010 to analyze the causal impact of local immigrant shares and natives' attitudes towards immigration. Moreover, we focus on understanding how this relationship is affected by the level of dissimilarity in cultural values and beliefs between Swiss citizens on the one and immigrants on the other hand. The classification of Swiss immigrants into different cultural groups is done based on previous findings using data from the

World Value Surveys. To take the potentially endogenous settlement pattern of both natives and foreigners into account, we instrument the immigrant share within a community with the immigrant share of the local labor market the community belongs to. The key identifying assumption underlying this procedure is that residential mobility motivated by ethnic concerns exists only within, but not between local labor markets.

We find that it is not so much the overall concentration of immigrants, but predominantly the presence of immigrants with a different cultural background that affects the voting behavior of Swiss citizens. More specifically, the local share of culturally different immigrants turns out to be a significant and sizable determinant of the percentage of anti-immigration votes while, in contrast, the presence of culturally similar immigrants does not seem to affect natives' voting behavior at all. Our baseline estimates imply that a one percentage point increase in the local share of culturally different immigrants results in a 1.15 percentage point increase in anti-immigration votes in an average national vote about immigration. These estimates imply an approximate elasticity of natives' anti-immigration attitudes with respect to the share of culturally different immigrants of about 0.14. This results turns out to be robust to a variety of robustness checks, including different classifications of immigrants. Additional analysis of participation rates suggests that the effects are not driven by unobserved characteristics of individuals who opt to participate in the voting process. The estimates in fact turn out to be independent of voter turnout if we control for observed individual characteristics. This implies that the main results of this study would still apply, even if voting had been mandatory. Finally, exploiting election results for the right-wing party SVP reveals a further interesting finding. The percentage share of right-wing votes is thus even more sensitive to the share of culturally different immigrants than the percentage of anti-immigration votes.

As we have emphasized throughout the paper, our preferred explanation for the large positive effect of culturally different immigrants on natives' anti-immigration attitudes relates to cultural concerns among native residents. More specifically, (part of) the native population may perceive culturally different immigrants as threatening to their national culture, their language, religion, and their way of life in general. However, since cultural values and beliefs are not the only difference between the two groups of immigrants considered in the empirical analysis, we can not rule out the possibility that other mechanisms are also important. At the same time, it seems unlikely that there exists any other explanation that would rule out that

cultural distance is itself of no importance.

We believe that our findings have important implications for the ongoing debate about immigration policy in Switzerland, as well as in many other immigration countries.

[discussion of potential implications, tbd]

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Table 1: National votes on immigration topics in Switzerland, 1970–2010

Nr.	Date of vote	Decade	Title/description of the vote	Impact	Result	Approval	Turnout
220	07.06.1970	1970	PI "Against foreign infiltration"	tightening	rejected	46.0%	74.7%
242	20.10.1974	1970	PI "Against foreign infiltration and overpopulation"	tightening	rejected	34.2%	70.3%
265	13.03.1977	1980	PI "Against foreign domination"	tightening	rejected	29.5%	45.2%
266	13.03.1977	1980	PI "For the limitation of naturalizations"	tightening	rejected	33.8%	45.2%
310	06.06.1982	1980	Modifications in the aliens act	easing	rejected	49.6%	35.2%
314	04.12.1983	1980	FR on modifications of civil right regulations in the federal constitution"	easing	accepted	60.8%	35.8%
315	04.12.1983	1980	FR on easing certain naturalizations	easing	rejected	44.8%	35.9%
320	20.05.1984	1980	PI "Against selling-off our homeland"	tightening	rejected	48.9%	42.5%
344	05.04.1987	1990	Modifications in the asylum law	tightening	accepted	67.3%	42.4%
345	05.04.1987	1990	FL on the stay and settlement of foreigners	tightening	accepted	65.7%	42.2%
355	04.12.1988	1990	PI "For the limitation of immigration"	tightening	rejected	32.7%	52.8%
411	12.06.1994	1990	FR on loosening naturalization regulations for young foreigners"	easing	rejected	52.8%	46.8%
417	04.12.1994	1990	FL on sanctions in aliens law	tightening	accepted	72.9%	44.0%
432	01.12.1996	2000	PI "Against illegal immigration"	tightening	rejected	46.3%	46.7%
454	13.06.1999	2000	Adaptations of the asylum law	tightening	accepted	70.6%	45.6%
455	13.06.1999	2000	FR on matter of urgencies as regards immigration and asylum	tightening	accepted	70.8%	45.6%
464	21.05.2000	2000	FR on the bilateral agreements between Switzerland and the EU	easing	accepted	67.2%	48.3%
467	24.09.2000	2000	PI "For an immigration regulation"	tightening	rejected	36.2%	45.3%
491	24.11.2002	2000	PI "Against abuse of asylum right"	tightening	rejected	49.9%	47.9%
511	26.09.2004	2000	FR on the acquisition of civil liberty for foreigners of the 3rd generation	easing	rejected	48.4%	53.8%
519	25.09.2005	2010	FR on the expansion of the FMA to the new EU countries, and on the revision of the underpinning measures	easing	accepted	56.0%	54.4%
524	24.09.2006	2010	FR on foreigners	tightening	accepted	68.0%	49.0%
525	24.09.2006	2010	Change in the asylum law	tightening	accepted	67.8%	49.1%
532	01.06.2008	2010	PI "For democratic naturalizations"	tightening	rejected	36.2%	45.2%
540	08.02.2009	2010	FR on the permission to continue with the FMA's and to additionally apply it to Bulgaria and Romania	easing	accepted	59.6%	51.4%
547	29.11.2009	2010	PI "Against the building of minarets"	tightening	accepted	57.5%	53.8%
551.1	28.11.2010	2010	PI "Deportation initiative"	tightening	accepted	52.9%	52.9%

Notes: This table lists all national votes on immigration topics between 1970 and 2010. Abbreviations are as follows: FR: federal resolution, FL: federal law, PI: popular initiative; FMA: free mobility agreement. Additional information is available from the homepage of the Swiss Federal Administration, but only in German (http://www.admin.ch/ch/d/pore/va/vab_2_2_4_1.html).

Table 2: Immigrant heterogeneity and density, 1970–2010

	1970	1980	1990	2000	2010
Panel A: Distribution of immigrants by country/region of origin					
Europe					
Austria	4.14	3.40	2.42	2.00	2.10
Czechia and Slovakia	1.20	1.52	0.50	0.38	0.64
Former Yugoslavia	2.31	6.45	13.87	24.23	17.79
France	5.17	5.03	4.23	4.19	5.42
Germany	10.95	9.30	6.92	7.51	14.91
Hungary	1.07	0.68	0.39	0.25	0.37
Italy	54.06	44.34	30.77	21.54	16.26
Netherlands	1.00	1.07	0.98	0.98	1.09
Portugal	0.34	2.00	8.86	9.52	12.04
Spain	11.23	11.38	9.97	5.65	3.63
Turkey	1.13	4.09	6.56	5.57	4.07
UK	1.37	1.63	1.44	1.49	2.11
Rest of Europe	2.54	3.29	3.44	3.53	4.79
Rest of the World					
Africa	0.48	1.17	1.99	3.34	4.05
Asia and Oceania	0.86	2.48	5.14	6.36	6.50
Asia	0.76	2.33	5.00	6.16	6.27
North America	1.32	1.20	1.14	1.28	1.45
South America	0.39	0.96	1.30	2.14	2.77
Panel B: Overall and culture-specific immigrant shares					
Overall immigrant share	17.24	14.86	18.13	20.53	22.47
Share of culturally similar immigrants	15.81	12.15	12.50	11.54	13.76
Share of culturally different immigrants	1.43	2.71	5.63	8.99	8.72

Notes: Panel A shows the distribution of immigrants across their country/region of origin (the number add up to 100% within each decade, apart from rounding error). Panel B shows the overall immigrant share (i.e. the total number of immigrants over the total resident population) as well as the shares of culturally similar and culturally different immigrants (as defined in section 2).

Table 3: Residential mobility of natives (individual-level data)

Movement across	Municipalities		Local labor markets	
Mean	0.326	0.326	0.119	0.119
Standard deviation	0.469	0.469	0.324	0.324
$\Delta I_{j^o t}$	−0.056	−0.191	0.012	0.072
	(0.179)	(0.562)	(0.238)	(1.275)
		[−0.067]		[0.012]
$\Delta I_{j^o t}^{\text{different}}$	0.367**	1.160**	0.088	0.470
	(0.184)	(0.571)	(0.155)	(0.890)
		[0.406**]		[0.079]
$\Delta I_{j^o t}^{\text{similar}}$	−0.273	−0.903	−0.027	−0.130
	(0.235)	(0.737)	(0.315)	(1.650)
		[−0.316]		[−0.022]
Estimation method	OLS	Probit	OLS	Probit
Area characteristics (Z_{j^o} and Z_{j^d})	Yes	Yes	Yes	Yes
Individual-level controls	Yes	Yes	Yes	Yes
NUTS-2×year FEs	Yes	Yes	Yes	Yes
Number of observations	13,047,163	13,047,163	13,047,163	13,047,163

Notes: ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. Note that the place of residence five years before is only known for the first four decades (i.e. 1970 to 2000). Robust standard errors are given in parentheses and are clustered by municipalities. Marginal effects (evaluated at sample means of the covariates) are reported in square brackets.

Table 4: Main results, OLS and 2SLS estimates

	Anti-immigration votes							
Mean	0.496	0.496	0.496	0.496	0.496	0.496	0.496	0.496
Standard deviation	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165
Panel A: Overall immigrant share								
$I_{jT[t]}$	−0.289***	0.084***	0.010	0.048**	−0.456***	0.074	0.258	0.459**
	(0.037)	(0.029)	(0.021)	(0.022)	(0.081)	(0.280)	(0.202)	(0.200)
					[1856.948]	[32.611]	[97.763]	[91.797]
Panel B: Culture-specific immigrant shares								
$I^{\text{similar}}_{jT[t]}$	−0.560***	−0.025	−0.072**	0.014	−0.757***	0.001	−0.095	0.205
	(0.042)	(0.033)	(0.035)	(0.032)	(0.106)	(0.299)	(0.176)	(0.193)
					[3435.547]	[101.576]	[127.763]	[82.750]
$I^{\text{different}}_{jT[t]}$	0.284***	0.237***	0.149***	0.104***	0.642**	0.827*	1.336***	1.153***
	(0.073)	(0.056)	(0.038)	(0.032)	(0.320)	(0.429)	(0.299)	(0.310)
					[707.907]	[63.785]	[52.250]	[40.847]
Vote FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Residential controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
NUTS-2 FEs	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Socio-demographic controls	No	No	Yes	Yes	No	No	Yes	Yes
NUTS-2×vote FEs	No	No	No	Yes	No	No	No	Yes
Number of observations	68,688	68,688	68,688	68,688	68,688	68,688	68,688	68,688

Notes: Robust standard errors are given in parentheses and are clustered by communities (OLS) and by local labor markets (2SLS), respectively. Robust first-stage F-statistics testing the strength of the instrument(s) are given in brackets. ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. The table reports the unweighted number of observations (defined over community×vote).

Table 5: Robustness checks, 2SLS estimates only

	Anti-immigration votes						
Mean	0.496	0.496	0.496	0.507	0.507	0.496	0.507
Standard deviation	0.165	0.165	0.165	0.168	0.168	0.165	0.168
$I_{jT[t]}^{\text{similar}}$	0.205	0.065	−0.051	−0.055	0.800	0.537	0.230
	(0.193)	(0.171)	(0.217)	(0.114)	(0.735)	(0.367)	(0.858)
	[82.750]	[74.684]	[71.759]	[297.490]	[13.606]	[36.652]	[14.959]
$I_{jT[t]}^{\text{different}}$	1.153***	1.156***	0.822**	0.343*	5.795*	2.249***	6.693*
	(0.310)	(0.347)	(0.419)	(0.198)	(3.344)	(0.558)	(3.829)
	[40.847]	[27.578]	[29.531]	[106.755]	[1.464]	[26.640]	[1.751]
Baseline controls included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Altenative specification of socio-demographic controls	No	Yes	No	No	No	No	No
Canton × vote FEs	No	No	Yes	No	No	No	No
Instrument	$I_{l[j]T[t]}$	$I_{l[j]T[t]}$	$I_{l[j]T[t]}$	I_{j1970}	$I_{l[j]1970}$	$I_{k[j]T[t]}$	$I_{k[j]1970}$
Number of observations	68,688	68,688	68,688	63,600	63,600	68,688	63,600

Notes: Robust standard errors are given in parentheses and are clustered by local labor markets (columns 1 to 5) and by cantons (columns 6 and 7), respectively. Robust first-stage F-statistics are given in brackets. ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. The first column replicates the baseline estimates from table 4 (column 6, panel B).

Table 6: Additional robustness checks, 2SLS estimates only

	Anti-immigration votes						
Mean	0.496	0.481	0.496	0.485	0.000	0.507	0.494
Standard deviation	0.165	0.102	0.165	0.166	1.000	0.178	0.165
$I_{jT[t]}^{\text{similar}}$	0.205	−0.053	0.222	0.389**	2.019	0.504**	0.345*
	(0.193)	(0.171)	(0.294)	(0.194)	(1.946)	(0.221)	(0.181)
	[82.750]	[79.968]	[99.143]	[46.158]	[82.750]	[61.273]	[62.392]
$I_{jT[t]}^{\text{different}}$	1.153***	1.057***	0.657*	1.043***	10.952***	2.050***	1.061***
	(0.310)	(0.317)	(0.392)	(0.323)	(3.055)	(0.349)	(0.276)
	[40.847]	[44.785]	[71.334]	[76.713]	[40.847]	[40.017]	[72.491]
Baseline controls included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data aggregated by decade	No	Yes	No	No	No	No	No
Socio-demographic controls excluded	No	No	Yes	No	No	No	No
Observations from 2010 excluded	No	No	No	Yes	No	No	No
Dependent variable standardized	No	No	No	No	Yes	No	No
Unweightd data	No	No	No	No	No	Yes	No
Alternative population weights	No	No	No	No	No	No	Yes
Number of observations	68,688	12,720	68,688	50,880	68,688	68,688	68,583

Notes: Robust standard errors are given in parentheses and are clustered by local labor markets. Robust first-stage F-statistics are given in brackets. ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. The first column replicates the baseline estimates from table 4 (column 6, panel B).

Table 7: Alternative classifications of immigrants, 2SLS estimates only

	Anti-immigration votes				
Mean	0.496	0.496	0.496	0.496	0.496
Standard deviation	0.165	0.165	0.165	0.165	0.165
$I_{jT[t]}^{\text{similar}}$	0.205	0.162	−0.275	−0.507	0.302
	(0.193)	(0.186)	(0.208)	(0.354)	(0.191)
	[82.750]	[60.042]	[79.651]	[112.003]	[62.078]
$I_{jT[t]}^{\text{different}}$	1.153***		1.259***	0.631***	0.968***
	(0.310)		(0.212)	(0.183)	(0.232)
	[40.847]		[38.406]	[55.005]	[80.269]
$I_{jT[t]}^{\text{different–1}}$		0.769***			
		(0.242)			
		[111.804]			
$I_{jT[t]}^{\text{different–2}}$		1.982**			
		(0.861)			
		[14.882]			
Baseline controls included	Yes	Yes	Yes	Yes	Yes
Cultural (dis)similarity assessed by	Values	Values	Language	Language	Religion
Number of observations	68,688	68,688	68,688	68,688	68,688

Notes: Robust standard errors are given in parentheses and are clustered by local labor markets. Robust first-stage F-statistics are given in brackets. ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. The first column replicates the baseline estimates from table 4 (column 6, panel B). $I_{jT[t]}^{\text{different–1}}$ ($I_{jT[t]}^{\text{different–2}}$) denotes the share of culturally different immigrants who differ on one (both) [xxx].

Table 8: Voter turnout and external validity, 2SLS estimates only

	Anti-immigration votes					
Mean	0.496	0.491	0.470	0.510	0.510	0.510
Standard deviation	0.165	0.111	0.096	0.159	0.159	0.159
$I_{jT[t]}^{\text{similar}}$	0.205	0.260	0.096	0.031	0.051	0.023
	(0.193)	(0.212)	(0.176)	(0.267)	(0.271)	(0.284)
	[82.750]	[70.750]	[83.566]	[54.273]	[54.458]	[49.475]
$I_{jT[t]}^{\text{different}}$	1.153***	1.441***	1.354***	1.616**	1.560**	1.639**
	(0.310)	(0.372)	(0.337)	(0.696)	(0.675)	(0.668)
	[40.847]	[48.275]	[39.133]	[7.424]	[8.627]	[5.423]
Voter turnout					0.062**	−0.025
					(0.028)	(0.078)
						[123.590]
Baseline controls included	Yes	Yes	Yes	Yes	Yes	Yes
Close vote (overall result)	No	Yes	No	No	No	No
Close vote (number of close communities)	No	No	Yes	No	No	No
Small sample (TG, SH, ZH)	No	No	No	Yes	Yes	Yes
Δ voter turnout	–	0.035	0.060	0.171	0.171	0.171
Number of observations	68,688	20,352	12,720	7,002	7,002	7,002

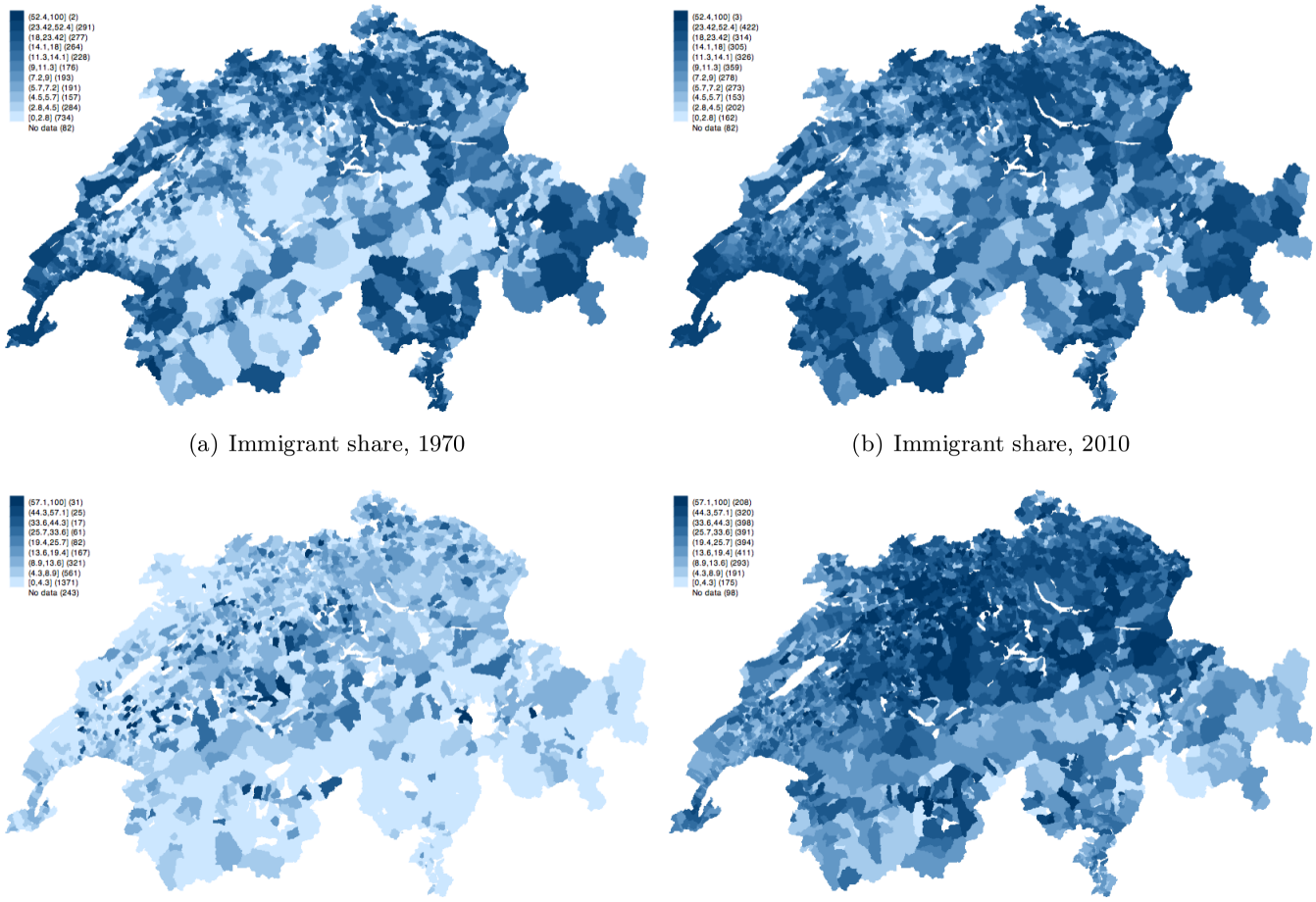
Notes: Robust standard errors are given in parentheses and are clustered by local labor markets. Robust first-stage F-statistics are given in brackets. ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. The first column replicates the baseline estimates from table 4 (column 6, panel B).

Table 9: Support for the Swiss People's Party (SVP)

	Anti-immigration votes				SVP-votes	
Mean	0.496	0.496	0.465	0.465	0.168	0.168
Standard deviation	0.165	0.165	0.134	0.134	0.155	0.155
$I_{jt[T]}^{\text{similar}}$	0.014	0.205	−0.041	−0.019	−0.009	−0.083
	(0.032)	(0.193)	(0.027)	(0.166)	(0.038)	(0.270)
		[82.750]		[79.972]		[79.357]
ε ($I_{jt[T]}^{\text{similar}}$)	{0.003}	{0.050}	{−0.011}	{−0.005}	{−0.007}	{−0.063}
$I_{jt[T]}^{\text{different}}$	0.104***	1.153***	0.020	0.960***	0.253***	1.031**
	(0.032)	(0.310)	(0.040)	(0.289)	(0.055)	(0.463)
		[40.847]		[44.770]		[44.800]
ε ($I_{jt[T]}^{\text{different}}$)	{0.013}	{0.141}	{0.002}	{0.103}	{0.076}	{0.309}
Residential controls	Yes	Yes	Yes	Yes	Yes	Yes
Socio-demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Vote FEs	Yes	Yes	No	No	No	No
NUTS-2×vote FEs	Yes	Yes	Yes	Yes	Yes	Yes
Nuts-2×year FEs	No	No	Yes	Yes	Yes	Yes
Number of observations	68,688	68,688	12,719	12,719	12,601	12,601

Notes: Robust standard errors are given in parentheses and are clustered by communities (OLS) and by local labor markets (2SLS), repsectively. Robust first-stage F-statistics are given in brackets. ***, **, and * denote statistical significance on the 1%, 5%, and 10% level, respectively. The first column replicates the baseline estimates from table 4 (columns 3 and 6, panel B). Elasticities evaluated at mean values are given in curly brackets.

Figure 1: Spatial distribution of immigrants and ethnic diversity of immigrants



(a) Immigrant share, 1970

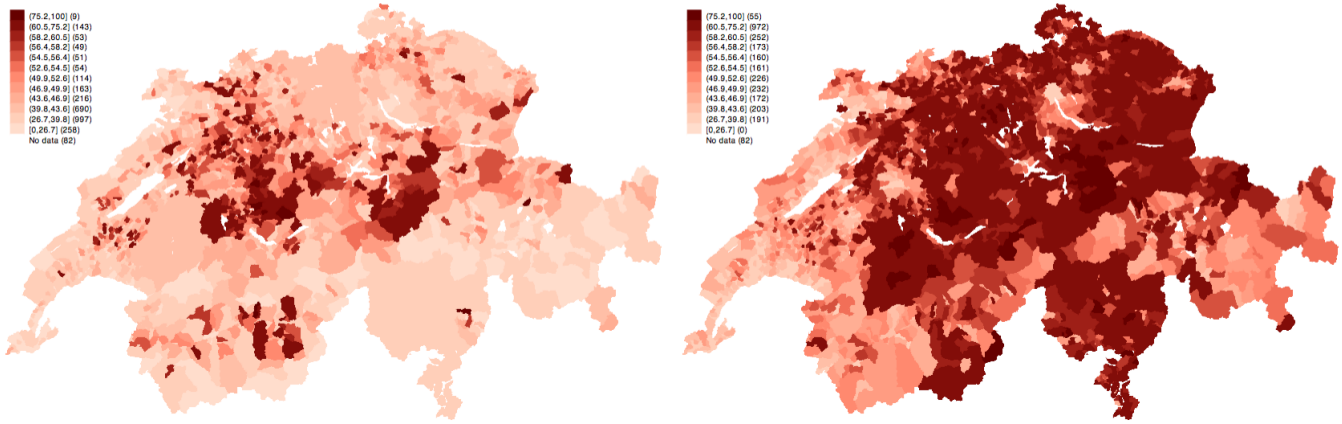
(b) Immigrant share, 2010

(c) Share of culturally different immigrants, 1970

(d) Share of culturally different immigrants, 2010

Notes:

Figure 2: Spatial distribution of natives' attitudes towards immigration

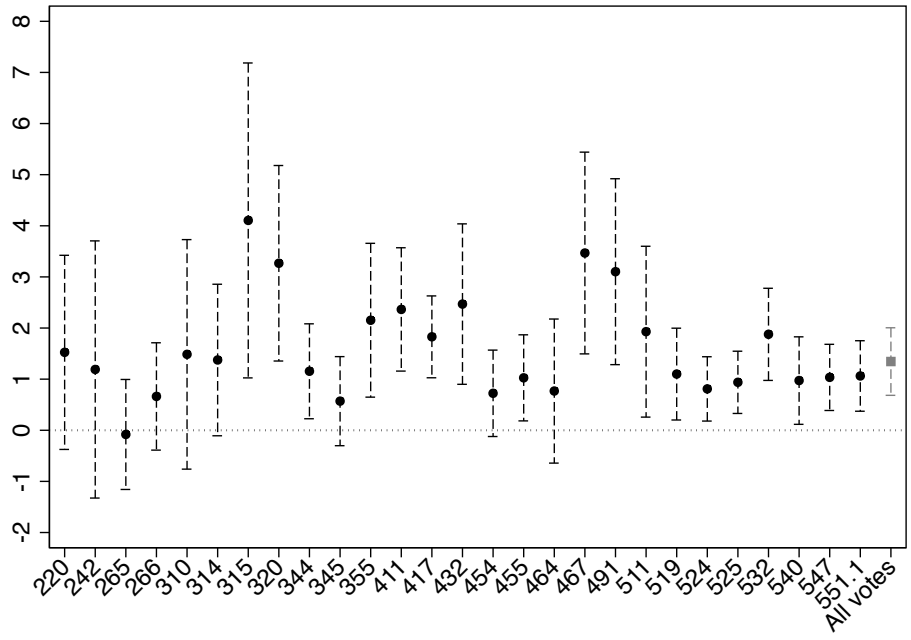


(a) Anti-immigration votes, 1970

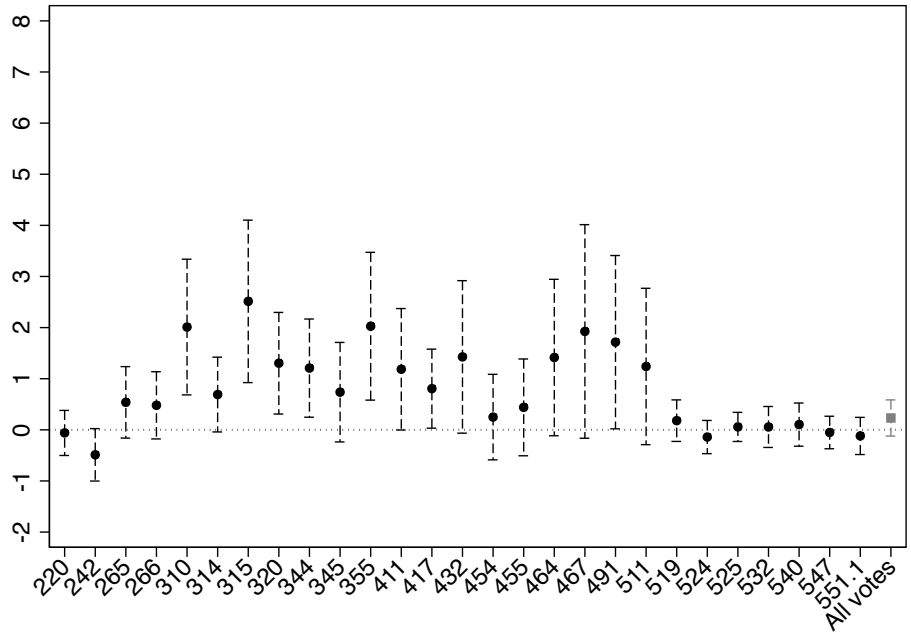
(b) Anti-immigration votes, 2010

Notes:

Figure 3: Single-vote results, 2SLS estimates



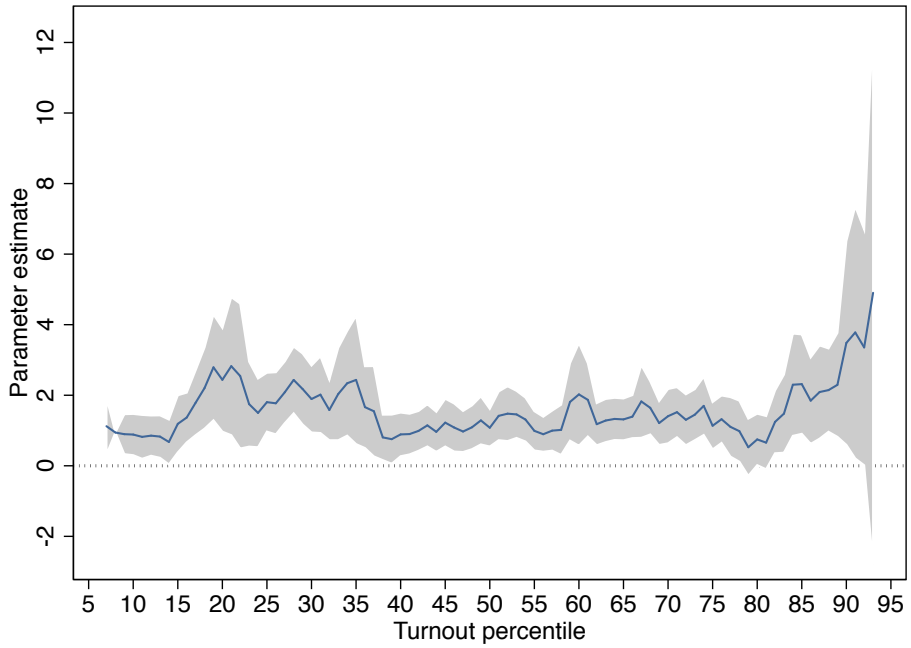
(a) Culturally different immigrants



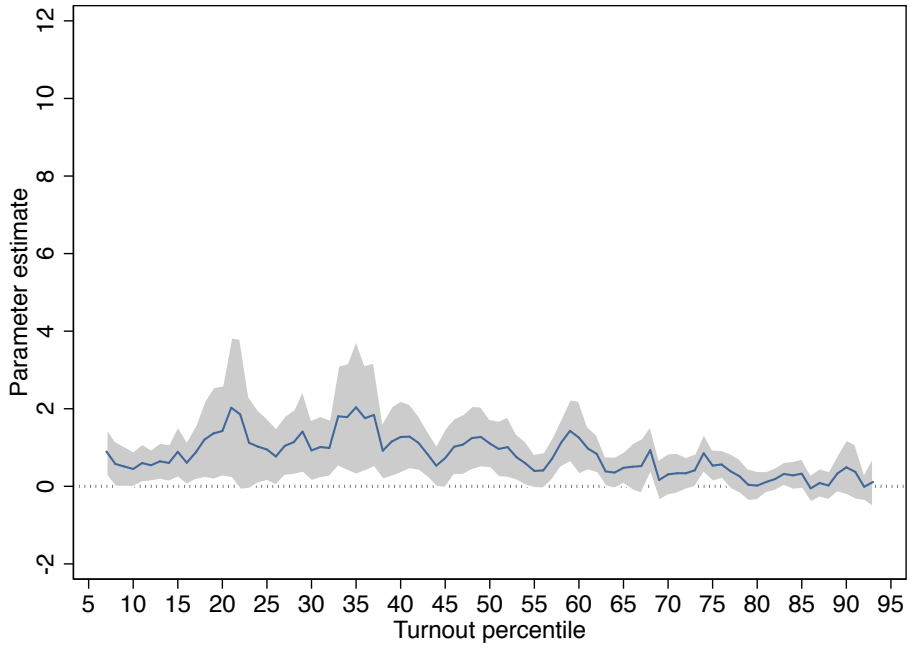
(b) Culturally similar immigrants

Notes: The figure shows 2SLS point estimates, along with their corresponding 95% confidence intervals, using our baseline specification for each single vote (the vote numbers are shown on the x-axis and they correspond to the numbers used in table 1). The upper (lower) figure shows coefficient estimates of the share of culturally similar immigrants (culturally different immigrants). The rightmost estimate ("All votes") corresponds to our baseline estimates from column 6 of table 4.

Figure 4: Estimates by voter-turnout percentile, 2SLS estimates



(a) Culturally different immigrants



(b) Culturally similar immigrants

Notes: The figures show 2SLS point estimates of the culture-specific immigrant shares using our baseline specification within subsamples defined over voter turnout. The shaded area depicts the corresponding 95% confidence band (based on robust standard errors). The effects are estimated for each turnout percentile using a moving average over two percentiles.