Does Direct Democracy Hurt Immigrant Minorities? Evidence from Naturalization Decisions in Switzerland

Jens Hainmueller – Massachusetts Institute of Technology
Dominik Hangartner – London School of Economics & University of Zurich

March 2012

Abstract

Do minorities fare worse under direct democracy than under representative democracy? We provide new evidence by studying naturalization requests of immigrants in Switzerland, which were typically decided at the municipal level in citizen' assemblies. Using panel data from 1,400 municipalities for the 1990-2010 period, we exploit recent Federal court rulings that led most municipalities to transfer the naturalization decision to an elected municipality council. We show that naturalization rates surged by 50% once legislatures, rather than citizens in popular referenda, decided on local naturalization applications. While citizens face no constraints against voting their prejudice, rejections are more costly for accountable legislators who are forced to justify potentially arbitrary rejections. Consistent with this mechanism, we find that the increase in naturalization rates caused by switching from direct to representative democracy was much stronger in areas where voters held stronger anti-immigrant preferences and among more marginalized immigrant groups from Yugoslavia and Turkey. Taken together our results suggest that direct democracy should no longer be used for naturalization decisions in order to reduce the risk of discriminatory rejections.

Jens Hainmueller, Department of Political Science, 77 Massachusetts Avenue, Cambridge, MA 02139. E-mail: jhainm@mit.edu. Dominik Hangartner, Methodology Institute, Houghton Street, London WC2A 2AE, and Institute of Political Science, Affolternstrasse 56, 8050 Zurich. E-mail: d.hangartner@lse.ac.uk.

We thank participants in seminars at IMT Lucca, MIT, University of Bern, University of Essex, and University of Geneva for helpful comments. For excellent research assistance we thank Matthias Christen, Roman Kuster, Fabian Morgenthaler, Emilia Pasquier, Giuseppe Pietrantuono, Rocco Pietrantuono, Livio Raccuia, Mirjam Rütsch, Laura Schmid, and Tess Wise. We would especially like to thank Marc Helbling and Marco Steenbergen for their valuable support, Eva Andonie for expert legal counsel, and Didier Ruedin and Catherine de Vries for detailed comments. Funding for this research was generously provided by Swiss National Science grant no. 100017_132004. The usual disclaimer applies.

I. Introduction

Does direct democracy hurt minorities? This fundamental question has divided scholars of political theory, from the birth of Athenian democracy in the 5th century BC to current day controversies over the initiative process in U.S. states or popular referenda in Switzerland and other European countries. While many praise the virtues of direct democracy as the most democratic means of enacting legislation, others have long cautioned that do-it-yourself government by citizens threatens the interests of political, economic, ethnic, racial, religious, or sexual minorities. In the Federalist Papers, Madison famously advocated representative over direct democracy, which he believed to result in majority dictatorship since it contains "nothing to check the inducements to sacrifice the weaker party or an obnoxious individual" (Madison; 1961, pg. 133). Harvard law professor Bell put it even more strongly when he claimed that because "direct democracy [...] enables voters' racial beliefs and fears to be recorded and tabulated in their pure form, the referendum has been the most effective facilitator of that bias, discrimination, and prejudice which has marred American democracy from its earliest day" (Bell Jr; 1978, pg. 14).

Despite these stern warnings and much scholarly work on the topic, we still have a very limited understanding of how different forms of democratic governments affect minority interests. While some studies of direct democracy provide evidence for majority tyranny (Gamble; 1997; Haider-Markel et al.; 2007; Hajnal; 2009), others suggest that direct democratic decisions do not systematically suppress minorities or may even help them to protect their interests (Zimmerman and Francis; 1986; Cronin; 1989; Frey and Goette; 1998; Donovan and Bowler; 1998; Hajnal et al.; 2002). In a recent review of the literature, Tolbert and Smith (2006, pg. 32) conclude that the "scholarly debate over the consequences for minority rights in direct democracy contests is far from settled." Another review by Matsusaka (2005, pg. 201) summarizes that "there is no convincing evidence – anecdotal or statistical – that minority rights are undermined by direct democracy with a greater regularity than by legislatures."

One important reason for the absence of "convincing evidence" on the effects of direct democracy on minority outcomes is that – just as with other political institutions – identifying the causal effect of direct democracy is a challenging empirical enterprise. Most existing studies

simply count how often minority positions lose in popular votes, but they lack a control group to infer if minorities would have fared better or worse had the same decisions been taken under representative democracy (Gerber and Hug; 2001; Matsusaka; 2005). A small number of studies go further and conduct cross-sectional comparisons that compare minority outcomes in jurisdictions with and without direct democratic provisions, but this raises common concerns about endogeneity and omitted variable bias since jurisdictions that adopt direct democracy mechanisms differ from non-adopting jurisdictions along many dimensions that may independently affect minority outcomes, but are difficult to control for in cross-sectional statistical analysis (Green and Shapiro; 1994; Acemoglu; 2005; Przeworski; 2007; Sekhon; 2010). Moreover, since cross-sectional studies do not allow for a clear separation of control and outcome variables that are measured before and after the adoption of direct democracy respectively, such studies are vulnerable to the problem of post-treatment bias as there are many factors one may like to control for, but these factors could themselves be affected by direct democracy (King; 2010; Green et al.; 2010; Imai et al.; 2012).

Common strategies to deal with omitted variable bias, such as fixed effects estimation with panel data, are scant, because constitutional provisions about direct democracy rarely change over time. To our knowledge, natural experiments that exploit plausibly exogenous changes in direct democracy to identify its impact on minority outcomes are so far absent from the literature. This lack of reliable knowledge about the impact of direct democracy on minority outcomes is somewhat troubling from a policy perspective, as direct democracy has become increasingly in vogue in recent decades. More than half of all American states and cities already provide for initiatives and referenda, and many Western European and Post-Soviet countries nowadays frequently use referenda for a wide range of important public policy decisions at the federal, regional, or local level (Hug; 2003; Matsusaka; 2005; Blume et al.; 2009).

In this study we address this gap and advance a natural experiment that considers the effect of direct democracy on the naturalization rates of immigrant minorities in Switzerland. Naturalization rates are an important minority outcome, because naturalization is the pathway through which immigrant minorities obtain the right to vote, the right to stay in the host country indefinitely, and - as multiple correlational studies have shown - access to better jobs,

higher wages, and higher levels of social integration (see for example Fibbi et al. (2003); Ohlsson (2008); OECD (2011)).

Eligible immigrants that seek Swiss citizenship have to apply with the municipality in which they reside. Following a processing period of about four to five years, their applications are eventually put to a vote. Municipalities use two main types of institutional regimes to vote on naturalization applications: (1) direct democracy where citizens vote on the applications using referenda at the citizens assembly or the polling place and (2) representative democracy where elected legislators vote on the applications in the municipality council. Over time, this unique configuration has generated a wealth of data that allows us to examine whether immigrant minorities fare better or worse if their requests are decided by the people or by legislatures. We collected an original annual panel dataset that combines information about the local institutional regimes and naturalization rates for a representative sample of $1,400$ municipalities for the 1991-2009 period. Our identification strategy exploits a series of rulings by the Swiss Federal Court in 2003-2005 that trigged a large scale institutional change from direct to representative democracy in up to 600 municipalities. This unusually large amount of over time institutional variation allows us rule out heterogeneity bias, because we can identify the effect of direct democracy based only on within-municipality variation.

Using a series of fixed effects regression, we find that the transition from direct to representative democracy sharply increased naturalization rates by about 50%. A conservative back-of-the-envelope calculation yields that, in the switching municipalities alone, about 12,000 fewer immigrants would have been naturalized over the last five years had these municipalities not switched to representative democracy. This effect is robust to various specification checks including time-varying covariates, linear and quadratic municipality specific time trends to account for smooth local trends in unobserved confounders, and other alternative model specifications. Moreover, given the processing time of about four to five years before an application is put to the vote, applicants could not anticipate the institutional change and therefore the sharp increase in naturalization rates cannot be driven by sudden changes of the applicant pool. Essentially, unlucky immigrants whose applications were still voted in the citizens assembly had much lower odds of being approved for the Swiss passport compared to similar

lucky applicants who had applied in the same municipality a few months later, such that their applications were voted on by the municipality council. Consistent with this design, placebo tests confirm that we find no differential trends in naturalization rates for each of the five years prior to the institutional switch, but much higher naturalization rates for each of the three years following the switch from direct to representative democracy.

What explains the large negative effect of direct democracy? Drawing upon semi-structured interviews with over 160 head secretaries of a random sample of the switching municipalities, we argue that minority interests substantially benefited from the representational filters that accompany the transition of decision power from popular referenda to legislatures. While direct democracy allows citizens to vote on their prejudice without facing accountability, representative democracy requires that accountable legislators publicly justify their application decisions. This institutional constraint makes it politically more costly to arbitrarily reject applicants on the basis of prejudicial or discriminatory judgments, even if the median legislator is just as prejudiced as the median voter. Consistent with this accountability mechanism, further quantitative tests confirm that the negative effect of direct democracy on the naturalization rate strongly interacts with the strength of the xenophobic preferences of the local electorate, which we measure using vote shares for the main right wing party (the Swiss People's Party). In the least xenophobic municipalities, switching from direct to representative democracy has no significant effect on the naturalization rate. But in areas where the median voter is more xenophobic, the switch from direct to representative democracy has a large positive effect on the naturalization rate as the xenophobic preference of the median voter no longer directly translates into policy. Moreover, we find that the effect of switching from direct to representative democracy varies across different origins groups; increases in naturalization rates are strongest for applicants from former Yugoslavia and Turkey (effect size of 65-90%) compared to the less marginalized group of applicants from southern or richer European countries (effect sizes of 20-40% and 40-55% respectively).

Taken together, the results present perhaps the cleanest evidence to date that – when faced with the exact same policy decision – direct democracy disadvantages minorities with greater regularity than legislatures. Immigrants systematically fare worse if the people, rather than

legislatures, evaluate their naturalization applications, and this disadvantage is concentrated in areas where the median voter holds stronger anti-immigrant preferences and among more marginalized immigrant groups. The fact that naturalization rates rise sharply under representative democracy while the applicant pool remains unchanged implies that voters in naturalization referenda systematically discriminate against a significant fraction of immigrants that would be approved if legislators were to vote on the same naturalization applications. This evidence suggests that direct democracy should no longer be used for naturalization decisions to decrease the risk of discriminatory rejections. In the conclusion we further elaborate on the theoretical and policy implications of our findings.

II. Direct Democracy and Minorities

A sizable literature has investigated the relationship between direct democracy and minority interests in the U.S., Switzerland, and other European countries. Early analysts of direct democratic legislation in U.S. states often voiced concerns that popular votes might harm the interests of minority groups (Barnett; 1915; Lowell; 1919; Key and Crouch; 1939). Such concerns were corroborated by initiatives which targeted ethnic and racial minorities around the turn of the century, such as an Oklahoma initiative that disenfranchised black citizens or a California initiative that limited property the rights of Japanese (Matsusaka; 2005). More recently, several high-profile cases have reinforced concerns among some observers that direct democracy enables a self-interested white majority to infringe on the interests of nonwhite minorities (Seeley; 1970; Bell Jr; 1978; Grofman and Davidson; 1992; Guinier; 1994; Sabato et al.; 2001; Ellis; 2002; Schrag; 2004). Such cases include recent initiatives in California that denied social services to undocumented immigrants and their children, ended affirmative action programs, or eliminated bilingual education (Alvarez and Butterfield; 2000). Such controversies are bound to grow fiercer in the years ahead as many U.S. states and localities fight direct democratic battles over gay and lesbian rights. In Switzerland, voters recently passed several referenda that have been widely criticized as anti-minority, including a constitutional amendment that banned the construction of new minarets and new legislation that provided for the deportation of criminal foreigners.

While such examples are suggestive of the idea that minorities face a threat from raw, unchecked majoritarianism, more systematical empirical studies have found only mixed support for this proposition. While early studies concluded that direct legislation in America does not systematically disadvantage minorities (Magleby; 1984; Zimmerman and Francis; 1986; Cronin; 1989), Gamble (1997) later showed that state initiatives that restrict the civil rights of minorities pass more regularly than other types of initiatives. However, Frey and Goette (1998) found no such anti-minority bias in a sample of local, cantonal, and federal referenda in Switzerland. Similarly, drawing upon a large sample of California ballot initiatives, Hajnal et al. (2002) concluded that there is little overall anti-minority bias under direct democracy, but that minorities often lose on racially targeted propositions. Moore and Ravishankar (2009) challenged this conclusion by demonstrating that minorities lose more often than whites across all propositions. Donovan and Bowler (1998) argued that direct democracy threatens minorities only in small jurisdictions, a finding that was later challenged by Haider-Markel et al. (2007) who found little support for a mediating role of jurisdiction size, but argued that minorities are generally more likely to end up on the losing side of direct democratic contests. Other studies claimed that minorities are primarily threatened in areas with high racial diversity (Tolbert and Hero; 2001; Tolbert and Grummel; 2003). Vatter and Danaci (2010), who analyzed all federal and cantonal level popular votes in Switzerland that concerned minorities between 1960-2007, found no support for a mediating role of population size or heterogeneity. Instead, they argued that the negative effects of direct democracy vary by target – with foreigners and religious minorities being more affected than disabled or homosexual citizens – and the direction of the referendum – negative effects are stronger for proposals that extend, rather than restrict, minority rights.

While existing studies provide deep insights into the general understanding of modern direct democracy, the empirical designs mostly just count how often minorities gain or lose in direct democratic contests. This counting-up approach does not provide reliable knowledge about the causal effect of direct democracy on minority outcomes, because we lack information about the missing counterfactual. To conduct causal inference, we need to learn how well the same minorities would have fared if the same decisions had been taken under representative

democracy (Gerber and Hug; 2001; Matsusaka; 2004; Haider-Markel et al.; 2007). And while critics of direct democracy are quick to point to cases where popular votes have infringed on the interests of minorities, supporters of direct democracy argue that such decisions are often simply window dressing, since legislatures would have passed similar measures even in the absence of the direct democratic vote. As Matsusaka (2005, pg. 201) points out, "legislatures have harmed minorities, too – almost all Jim Crow laws throughout the South were brought about by legislatures – and elected representatives, not direct democracy, interned Japanese-American citizens during World War II." Similarly, Arizona's legislature recently passed a far reaching immigration enforcement law (Arizona Senate Bill 1070) which some have criticized as violating the rights of immigrants and entailing racial profiling.[1] Moreover, while many initiatives were used to ban gay marriage, legislatures in many states have adopted similar measures (Haider-Markel et al.; 2007).

The important, and largely unanswered, question is is whether representative democracy is systematically better at protecting minority rights than direct democracy. Very few studies have compared minority outcomes under different policy venues. Schildkraut (2001) and Preuhs (2005) examined whether initiative states are more likely to adopt official-English laws than non-initiative states, with mixed findings. Haider-Markel et al. (2007) counted the outcomes of gay rights legislation in direct democracy contests and state legislative bills and amendments and found that legislatures are more likely to pass pro-gay measures. Matsusaka (2010) compared initiative states and non-initiative states and found that initiative states are more likely to adopt conservative social policies such as bans of same sex marriage. Vatter and Danaci (2010) considered whether referenda votes in Switzerland at the the federal or cantonal level that involved minority issues overturned or confirmed prior decisions taken by the Swiss parliament and found that direct democratic votes rarely erode minority rights (see also Bolliger (2007)). And most closely related to our study, Helbling and Kriesi (2004) and Helbling (2008) examined naturalization requests of immigrants in a sample of about 100 Swiss municipalities in the year 2004 and found that an indicator for direct democracy was positively

[1]For example, Mexican President Felipe Calderón characterized the law as a "violation of human rights." Booth, William (April 27, 2010). "Mexican officials condemn Arizona's tough new immigration law." The Washington Post.

correlated with rejection rates.[2]

The fundamental problem with the few existing comparative studies is that they are purely correlational and lack an explicit identification strategy that allows them to rule out alternative explanations. In particular, the studies are limited to static, cross-sectional comparisons which leave ample room for selection bias and deviate substantially from the ideal experiment that the observational study is trying to approximate (Angrist and Pischke; 2008). In the ideal experiment, we would randomly assign jurisdictions to direct and representative democracy such that any difference in policy outcomes could be attributed to the effect of direct democracy per se. However, since direct democratic institutions such as the initiative in U.S. or popular votes in Swiss municipalities are not exogenously assigned, but result from endogenous and complex historical processes, jurisdictions that established direct democracy differ in many ways from jurisdictions that did not; including important geographic, cultural, economic, and political differences that are potentially correlated with minority related policy outcomes. For example, in the U.S. the initiative is much less common in the South, and this geographic imbalance is correlated with a variety of policies towards ethnic and racial minorities.

The selection bias that results from the endogeneity of political institutions is difficult to control for in purely cross-sectional study designs, since important confounding variable are not measured, and even if they are measured one quickly runs out of comparison cases when dealing with small samples of comparable jurisdictions (Green and Shapiro; 1994; Acemoglu; 2005; Przeworski; 2007). Apart from omitted variable bias, cross-sectional designs also suffer from potential post-treatment bias since they do not allow for a clear distinction between control and outcome variables. If direct democracy causes minorities to be worse off, then controlling for measures that capture the disadvantages of minorities induces post-treatment bias, because

[2]There are several key differences between Helbling and Kriesi (2004) and our study. Our sample covers about 1,400 compared to 100 municipalities. Our time period covers 1991-2009 and therefore captures the large scale switch away from direct democracy in the post 2005 period, which is missed in the single year cross-sectional sample used by Helbling and Kriesi (2004) that predates the major institutional change. Moreover, we use official information on the number of naturalizations as collected by the Swiss Statistical Office, while Helbling and Kriesi (2004) rely on self reports by municipality clerks to measure the rejection rates (in our survey we also collected such self reports and found them to be unreliable, presumably because municipality clerks have an incentive to deflate the number of rejections). Another difference is that we use a more fine grained institutional coding and also examine the interaction between institutional effects and voter preferences and naturalization rates for different immigrant origin groups.

we are controlling away the consequences of the treatment variable (direct democracy). The direction of this bias is usually unknown. On the other hand, omitting controls for the pre-existing disadvantages of minorities leads to omitted variable bias. This conundrum is difficult to resolve with cross-sectional data (King; 2010; Green et al.; 2010; Imai et al.; 2012). Common strategies to deal with time-invariant unobserved confounders such as fixed-effects and differences-in-differences approaches have not been applied for studies that examine minority outcomes since direct democratic institutions rarely change over time.[3]

Taken together, our review of the literature reveals that the existing evidence on the effect of direct democracy on minority outcomes is limited and inclusive (Lupia and Matsusaka; 2004; Matsusaka; 2005; Tolbert and Smith; 2006; Haider-Markel et al.; 2007). Most studies have examined how well minorities fare in popular votes with mixed findings, but this still leaves open the question of whether minorities would have achieved better or worse results under representative democracy. The few comparative studies that exist have been limited to cross-sectional comparisons which provide suggestive correlational evidence, but are particularly vulnerable to selection and post-treatment bias. In this study we address this issue by advancing a natural experiment that allows us to exploit plausibly exogenous over-time variation in direct democratic institutions.[4]

III. Naturalizations in Switzerland

The goal of our study is to examine the relationship between direct democracy and minority outcomes in the area of naturalizations in Swiss municipalities. We first provide some background on the Swiss naturalization system and then describe the natural experiment that results in institutional change from direct to representative democracy.

[3]For example, when trying to identify the effect of the initiative in the sample of U.S. states there are only four institutional changes since 1960, and only one since 1970 – Mississippi in 1992 – which prohibits the use of state fixed effects to remove bias from time invariant unobserved heterogeneity, such as differences in political culture and historical legacies.

[4]We are aware of only a small number of studies that have exploited natural or actual experiments to estimate the effects of direct democracy on other outcomes such as government spending. Olken (2010) uses a field experiment in Indonesian villages to identify the effect of direct democracy on the provision of local public goods. Hinnerich and Pettersson-Lidbom (2010) use a regression discontinuity design to identify the effect of town hall meetings on spending among Swedish local governments between 1919-1950. Funk and Gathmann (2011) use a fixed effects regression using over time variation in the signature requirement for referenda in Swiss cantons to examine the effect of direct democracy on spending.

A. Background

Naturalization is an important outcome for immigrant minorities, because citizenship gives immigrants access to several direct and indirect benefits. First, only naturalized immigrants obtain the right to vote, the right to stay in the host country indefinitely, and to apply for jobs of all public employers. Second, children born to resident aliens do not automatically receive Swiss citizenship at birth, but have to apply through regular naturalization procedures. Third, several correlational studies suggest that naturalization allows immigrants to obtain higher wages, better jobs, and higher levels of social integration (see Fibbi et al. (2003); Ohlsson (2008); OECD (2011)). As Bellamy (2008, pg. 12) argues, citizenship marks the dividing line between being tolerated as a foreign resident and full membership of the host society which entitles one to have his voice "heard on an equal basis."

For historical reasons, Switzerland employs a system of triple citizenship, which defines Swiss citizenship on the basis of citizenship in a municipality, a canton, and the Confederation. This three-tiered system is rather unique in that it delegates the responsibility for the ultimate naturalization decision to the municipal level (see Hainmueller and Hangartner (2011) for more details). Applying for Swiss citizenship is a lengthy process. Immigrants have to complete a residency requirement of at least twelve years, after which they can submit their naturalization application to the municipality in which they reside. The municipality then forwards the application to the federal and cantonal authorities that check if the applicant fulfills the basic eligibility requirements such as the residency period and a clean criminal record.[5] If the outcome of this evaluation is positive, the municipality eventually invites the applicant for an interview to asses the applicant's language skills, integration status, and financial situation. If the outcome of this local assessment is also positive, the application is submitted to the local naturalization institution for the vote on the final decision. The length of this application process varies somewhat by municipality and canton, but usually between four and six years elapse from the submission of the first application form to the final vote. As we explain below,

[5]The main requirements for Swiss citizenship are as follows: residency of 12 years, clean criminal record, some evidence of financial self-sufficiency, integration into the Swiss context, familiarity with the Swiss way of life, respect for the legal order, and demonstrated mastery of at least one of the country's official languages. See Hainmueller and Hangartner (2011) for details.

this lengthy delay in the application process helps us in the empirical analysis because it rules out the possibility that applicants could have anticipated the changes in the institutions that were used to vote on their naturalization request.

Municipalities use different institutional arrangements to vote on naturalization applications. In the period under investigation (1991-2009), municipal decision-making systems for naturalization requests ranged from direct democratic variants such as popular votes at the polling place or voting in citizens' assemblies by hand-raising, to delegation of the naturalization decisions to legislative or executive bodies like the municipality council, or even a commission with appointed officials. Following Helbling and Kriesi (2004) and Helbling (2008) the application regimes can be roughly classified into the following categories:

Direct Democracy: Under direct democracy the naturalization requests are decided by popular referenda in which citizens vote and applications are decided by majority rule. In most municipalities, the voting takes place at the citizens' assembly, which meets in regular intervals to decide over a range of municipal matters. All Swiss residents of voting age are eligible to attend and votes are commonly cast by hand-raising. Prior to 2003, in a very small number of municipalities, which we refer to as ballot box municipalities, the voting also took place at the polling place. Citizens received leaflets that informed them about the pending naturalization requests and then voters cast secret ballots to approve or reject the applications (see Hainmueller and Hangartner (2011) for a detailed analysis of these secret ballot referenda).[6]

Representative Democracy: Under representative democracy the naturalization requests are not decided by voters, but by elected legislators in the legislative or executive branch of the municipality council (in larger municipalities the legislative branch is called the municipality parliament).[7] Legislators are typically elected to serve in the council for a tenure of four years and there are typically no term limits; a small number of municipalities elect council members for six years and or restrict the tenure to a maximum of three terms.

Appointed commissions: In a small number of municipalities, decisions are taken by appoin-

[6]Some municipalities also use burghers' assemblies where only old-established citizens of the municipality have the right to vote.

[7]A similar institution is the Burgher's council, which is the executive branch of the Burgher's assembly, where only old-established citizens have the right to vote.

ted naturalization commissions. Naturalization commissions either operate at the municipal or in some cases the cantonal level and the members of these quasi-judicial naturalization panels are typically appointed by the municipality or cantonal council. The members may include a mix of local politicians and regular citizens. Panel members in the naturalization commissions have no direct accountability to voters, they are typically appointed for long, and sometimes even unlimited tenures and can typically not be impeached.

B. Court Rulings and Institutional Change

In order to identify the effect of direct democracy on naturalization rates, we exploit a series of landmark rulings by the Swiss Federal Court that triggered large scale institutional change from direct to representative democracy. Throughout the 1990s almost 80% of municipalities used direct democracy to vote on naturalization applications, including the large group of municipalities that voted in the citizens assembly and the very small group of ballot box municipalities that voted at the polling place using secret ballots. In the early 2000s, the latter practice sparked political debates following some media reports about seemingly discriminatory rejection of applicants. One such case was brought before the Swiss Federal Court, which in July 2003 ruled that secret ballot voting for naturalization referenda violates the Swiss Constitution (BGE 129 I 232 and BGE 129 I 217).

The Federal Court argued on two different levels. The key reason for ruling out secret ballot naturalization referenda was that immigrants have the right to appeal rejected applications and therefore the decision-making body is obligated to provide justifications for the rejection (BGE 129 I 217). Since it lies in the very nature of closed ballots that voters do not have to justify their decisions, the court reasoned that such procedures cannot be used for naturalizations. The court emphasized two important additional considerations: First, it explicitly mentioned the danger that in secret ballot referenda voting, an applicant may be rejected simply because of her affiliation to a certain "ethnic-cultural group" (BGE 129 I 232: 241) which violates the anti-discrimination clause provided by the Swiss Constitution.

Second, the court argued that referenda voting for naturalization applicants in general was highly problematic because of privacy concerns. In order to make an informed decision

(not based on stereotyping), local voters require access to very detailed information about the applicant, including his assessed integration status, language skills, criminal record, financial situation, etc. At the same time, providing and distributing this sensitive personal data to all eligible voters of the municipality constitutes a severe intrusion into the applicant's privacy. The court argued that the preferred solution for this dilemma is to not let the voters decide on naturalization requests. Importantly, these additional considerations did not only affect the very small number of municipalities that decided naturalization referenda by secret ballot voting, but also extended to the large group of direct democracy municipalities that voted on naturalization referenda using public votes in the citizens assembly.

Through these two 2003 rulings the Federal Court considerably narrowed the range of permissible institutional regimes that municipalities could use to vote on naturalization applications. As an immediate response, most of the ballot box municipalities transferred the authority for naturalization decisions to the municipality council within less than a year. Many of the other direct democratic municipalities that voted at the citizens' assembly initially tried to accommodate the court rulings - which requires municipalities to provide a justification for rejections - by arguing that any concerns that were raised about applicants during the assembly meeting could be used as an ex-post justification for rejections. However, in 2004 the Federal Court issued another ruling (BGE 130 I 140) and argued that such a practice of providing ex-post justifications was highly constitutionally problematic and made it clear that it would be tolerated only as a temporary solution until municipalities and cantons revised their naturalization procedures.

This last ruling triggered a much larger institutional change as most direct democratic municipalities that voted at the citizens' assembly saw themselves forced to transfer their decision power over naturalization requests to the municipality council. Several cantons, mainly larger ones with a high number of naturalization requests, drafted new laws regulating the institutional procedures for granting municipal citizenship. In particular, the cantons of Bern and Vaud issued laws in 2005 which harmonized current local practice and specified that naturalizations be processed by the municipal council (executive). In the same year, the canton of Zurich enacted a law stating that naturalizations could no longer be processed by the

Burgher's assembly, forcing municipalities to switch from direct to representative democracy or appointed commissions. Overall, over 60% of all direct democratic democratic municipalities switched to representative democracy within the next few years. This large scale institutional change provides us with a suitable natural experiment to identify the causal effect of direct democracy.

Figure 1 summarizes the historical trends by displaying the fraction of municipalities that used direct democracy, representative democracy, and appointed commissions over the 1990-2010 sample period. A detailed breakdown for the different regime subtypes is provided in Appendix B. The data is based on our own survey of a representative sample of about $1,400$ municipalities (below we provide more details about the survey). The trends make clear the large scale institutional change that resulted from the Federal Court rulings. In the early 90s, almost 80% of the municipalities used direct democratic institutions, 20% used representative democracy, and only about .1% used appointed commissions to vote on naturalization requests. There is not much institutional change over time until about 2005, when – triggered by the Federal Court rulings – most municipalities transfer the decision power from voters to legislators. By the end of our sample period in 2010, only about one third of the municipalities still used direct democracy, while 60% use representative democracy, and about 3% use appointed commission. Overall our sample captures about 600 municipalities that switch from direct to representative democracy. Figures B.1 in appendix B show maps for the years 1990 and 2010 respectively and clearly visualize this massive shift in the institutional landscape over time.

The map for 2010 shows that the 30% of municipalities that did not (yet) make the transition from direct to representative democracy are concentrated in a few of the most conservative cantons, including Aargau, Solothurn, Schwyz, and Thurgau, which so far have not revised their regulations. Notice that since our identification rests only on municipalities that switch their regime, the non-switching municipalities will not influence the internal validity of our effect estimates. However, the lack of compliance among some of the most conservative municipalities may influence the external validity of our estimates. In particular, the estimated increase in naturalization rates that we obtain from the sample of switching municipalities may provide an underestimate of the (potentially) larger effect that we would expect if all municipalities –

including the more conservative ones – were to switch to representative democracy (below we show that the effect size is larger in areas with higher vote share for right-wing parties).

IV. Empirical Test

A. Data, Sample, and Methodology

To estimate the effect of direct democracy on the naturalization rate, we collected a panel dataset that for each year from 1991-2009 contains the naturalization rates and institutional data on the local decision making body for a large sample of Swiss municipalities. To measure the institutional data we fielded a survey to the *Gemeindeschreiber* (head secretaries) of all Swiss municipalities to collect information about the history of the local naturalization process.[8] This survey yielded an overall response rate of about 60% for a total sample size of 1,477 municipalities, 965 from the German, 417 from the French, and 90 from the Italian language region respectively.[9] The non-response analysis suggests that our sample is very representative of the relevant target population. The non-response was concentrated among the smallest municipalities with very few or no naturalization requests during our sample period. Overall the sampled municipalities capture about 82% of the total population or 75% of municipalities with at least 10 naturalizations in 2000; the sample includes all municipalities with more than 10,000 residents. The coverage is fairly balanced across the language regions, the sample municipalities capture 82%, 84%, and 76% of total population in the German, French, and Italian language region respectively.

The outcome of interest in our analysis is the annual local naturalization rate, which for each municipality i in a given year t is defined as the number of naturalizations that occurred during year t divided by the number of eligible foreigners that resided in municipality i at the beginning of year t. We compute the local naturalization rates using the detailed PETRA

[8]We fielded the survey using an online interface during the summer of 2010. The questionnaire is available upon request. We conducted extensive cross-validation by calling and visiting a random sample of municipalities and conducting interviews with a variety of canton officials to verify the institutional codings. We found reporting mistakes in less than 4% of sampled municipalities. Notice that we collected the institutional data for the 1990-2010 period, but naturalization rates are only available for 1991-2009.

[9]For tractability, we include the municipalities from the Romansh language region, which make up less than 1 % of the Swiss population, with the German language region for the analysis. Our results are substantively similar if we exclude the Romansh region.

register data provided to us by the Swiss Federal Statistical Office.[10] Appendix A provides a detailed list of sources for all variables used in the analysis. To guard against outliers we exclude from the estimation sample a small number of municipalities where the naturalization rate in a given year exceeded 50% (equivalent to the 99th percentile); this exclusion only affects municipalities that have very small foreign born populations such that a small number of naturalizations can create steep increases in the annual naturalization rate. The results are very similar if these outlier municipalities are included.

The key independent variable is the institutional regime that municipalities use to decide on their naturalization applications. To capture this we use two binary variables, *Direct Democracy* and *Appointed Commission*, that are coded as 1 if a municipality used direct democracy or an appointed commission respectively as of January 1 in a given year, and zero otherwise. Representative democracy serves as the reference category. Notice that measuring the institutional regime as of January 1 is the most conservative coding that, if anything, biases the results against finding a negative effect of direct democracy on naturalization rates. For example, if a municipality switched from direct to representative democracy on January 2, 2005, then 2005 is still coded as direct democracy in our data, despite the fact that representative democracy was used for almost the entire year. If naturalization rates increase in 2005 due to representative democracy, this increase is credited to direct democracy in our coding and therefore leads to downward bias. Since only three municipalities switch from representative to direct democracy, this timing bias only works against finding a negative effect of direct democracy.[11]

In order to estimate the effect of direct democracy on the naturalization rate we use a standard fixed effects regression given by

$$Y_{it} = \eta_i + \delta_t + \alpha \,\text{Direct Democracy}_{it} + \gamma \,\text{Appointed Commission}_{it} + X'_{it}\beta + \varepsilon_{it},$$

where Y_{it} is the local naturalization rate, η_i is a municipality fixed effect that controls for time-invariant unobserved factors, δ_t is a year fixed effect to control for common shocks,

[10] Eligible foreigners are defined as foreigners that have completed the residence requirement, which is 12 years, but years between age 10-20 count double.

[11] The results are robust to the exclusion of these three municipalities that switched from representative to direct democracy in the early 1990s from the estimation sample.

Direct Democracy$_{it}$ and Appointed Commission$_{it}$ are our institutional measures, X_{it} is a vector of time-varying covariates including a constant, and ε_{it} is an idiosyncratic error term with $E[\varepsilon|\eta, \delta, D, X] = 0$. α is the key quantity of interest, it captures the effect of switching the institutional regime from direct to representative democracy. Notice that in this specification, the effect of direct democracy is identified based on the within-municipality variation of naturalization rates among municipalities that switch their regimes over time. By design, this rules out unobserved municipality characteristics that are time invariant or very slow moving, such as a municipality's geographic features, its local political culture and history, or its structural demographic, economic, and social composition.

In the robustness checks we further relax the model specification and estimate

$$Y_{it} = \eta_{0i} + \eta_{i1}t + \eta_{i2}t^2 + \delta_t + \text{Direct Democracy}_{it} + \gamma\,\text{Appointed Commission}_{it} + X'_{it}\beta + \varepsilon_{it},$$

where t is a time trend variable. This model includes municipality fixed effects, year fixed effects, as well as municipality specific linear and quadratic time trends. Compared to the standard fixed effects model above, this specification further rules out potential sources of bias since, apart from the municipality and year fixed effects and the time-varying covariates, it also captures smooth trends in any unobserved factors that vary over time at the municipality level, such as local trends in voter preferences, ethnic heterogeneity, or migration patterns. This helps to ensure that the variation in naturalization rates captured by α is attributable to the effect of switching from direct to representative democracy, rather than trends in unmeasured confounders.

To account for potential serial correlation and heteroscedasticity, we cluster the standard errors at the municipality level. In order to avoid potential posttreatment bias, we present the results both with and without including time-varying covariates.

V. Results

A. Descriptive Statistics and Graphical Analysis

Before we turn to the panel regressions, we present descriptive statistics and conduct a graphical analysis of the effect of direct democracy on the naturalization rate. Table 1 reports the average naturalization rates (alongside their 95 % confidence intervals) under the three insti-

tutional regimes, pooled over the 1991-2009 period. The results lend initial support to the hypothesis that immigrant minorities fare worse under direct democracy. In municipalities where citizens decide over citizenship requests, the average naturalization is 2% while the rate is 3% – about 50% higher – in municipalities where elected officials decide on applications in the municipality councils. The rates are even higher at 4.2% in the small group of municipalities that use an appointed naturalization commission. These difference, while highly statistically significant, could be driven by many factors.

In Figure 2 we conduct a non-parametric graphical analysis that – akin to a regression discontinuity design (Thistlethwaite and Campbell; 1960) – seeks to isolate how much of the differences in naturalization rates can be attributed to the effect of direct democracy. For each of the 598 switching municipalities, we plot as grey dots the naturalization rates for the seven years before and after the municipality switched from direct to representative democracy (the values are jittered horizontally). Year 0 refers to the first year in which the municipality used representative democracy to decide on naturalization requests as of January 1. The solid and dashed lines summarize the average naturalization rate in the years under direct and representative democracy respectively (based on a loess fit with 95% piece-wise confidence intervals).

The results provide clear evidence that the switch from direct to representative democracy resulted in substantially higher naturalization rates. While the average naturalization rates under direct democracy stabilized in the years leading up to the switch, they surged sharply by about .7 percentage points right after the decision power was transitioned from the people to the municipal council, and continued to rise in the years following the transition; a signed rank test comparing the naturalization rates to the left and the right of the threshold reveals that this jump is significant at conventional levels (p-val$<$ .03). The fact that the jump in the naturalization rates coincides with the institutional switch, suggests that the effect is attributable to the change from direct to representative democracy as opposed to other confounding factors. Given that it takes about four to five years of processing time before a submitted application is put to the vote, immigrants had no way of anticipating the switch in the institutional regime and the jump therefore cannot be accounted for by a sudden increase

in the quality of the applicant pool.

B. Main Results: Direct Democracy and Naturalization Rates

In this section we formally estimate the effect of direct democracy using panel regressions. Table 2 presents the results from the standard fixed effects specification. Model 1, which uses just the *Direct Democracy* indicator to capture the institutional effect, reveals that switching from direct to representative democracy increased naturalization rates by 1.23 percentage points on average. This effect is very precisely estimated, with a t-value of about 6.8, and large in substantive terms. The last three rows in the table report the estimated percent increase over the average naturalization rate under direct democracy to give some sense of the substantive magnitude of the effect. We find that the switch from direct to representative democracy resulted in about a 62% increase in the average naturalization rate with a .95 confidence interval from $[44\%, 79\%]$.

Model 2 adds a second indicator for the very small group of municipality years where applications were decided in *Appointed Commission*. The effect of direct democracy remains virtually unaffected, which confirms that the previous effect is indeed driven by the difference in naturalization rates between direct and representative democracy. The coefficient on *Appointed Commission* suggests that naturalization rates are higher under this regime compared to representative democracy. However, this effect is based on a very small number of municipalities and is not per se identified by our natural experiment. Not surprisingly, it is also not robust across specifications.

Models 3 and 4 replicate the same two models while restricting the sample to municipalities in the German language region, where the large majority of institutional switches occurred.[12] The results are very similar with slightly larger effect sizes; changing from direct with representative democracy increased naturalization rates by about 78% $[57\%; 98\%]$ on average. Taken together these findings imply that applicants fare much better if elected officials in municipal councils, rather than the citizens in town hall meetings, evaluate naturalization requests. A back-of-the-envelope calculation suggests that, in the switching municipalities alone, about

[12]Notice that, consistent with the absence of major institutional shifts before 2009, we find no effect of direct democracy if the regressions are estimated for the French or Italian subsamples alone.

12,000 fewer immigrants would have been naturalized over the last five years had these municipalities not switched to representative democracy (based on the estimate in model 1). This is a rather conservative estimate, since it only focuses on the switching municipalities and – as we will see below – the switch had even larger long term effects.

C. Robustness Checks

How robust are these findings? Table 3 presents the results from various robustness checks for both the full sample (top panel) and the German language region (bottom panel). In each panel the first two models replicate the main fixed effects specifications, but we also add a set of time-varying covariates. This set includes economic shocks, captured by the local unemployment rate, demographic shocks, captured by the log population and the lagged ratio of Swiss to foreign born population, and preference shocks, captured by the municipality level vote shares for the Swiss People's Party (SVP). This latter variable provides a good proxy for the xenophobic preferences of the local electorate, because the SVP is the main right-wing party in Switzerland and its main political agenda is almost exclusively anti-immigration (Kriesi et al.; 2005; Skenderovic; 2007). In particular, the SVP has repeatedly campaigned against "mass naturalizations" of immigrants, using campaign posters that portray black, yellow, and brown hands grabbing Swiss passports.[13] The next two models omit the time-varying covariates but add a full set of municipality specific linear and quadratic time trends. Finally, the last two models add both the time-varying covariates and the municipality specific time trends. For both sub-samples, the results are highly robust across these specifications; on average direct democracy decreases naturalization rate by about 53-78%, and this effect is precisely estimated across models. The fact that the coefficients change very little with the inclusion of municipality specific time trends reassures us that the effect of direct democracy is not driven by local trends in unobserved confounders.

Appendix B presents a variety of additional robustness checks. Table B.2 investigates

[13] We compute the SVP vote share at the local level for each federal election in our sample period. Elections are staggered every four years and the local SVP vote shares are highly correlated over time. We linearly interpolate the vote shares to obtain a measure on an annual basis; we set the SVP vote share to zero for municipalities in cantons where the SVP did not stage candidates. We acknowledge the possibility that this measure may be affected by the effect of direct democracy if the increased number of naturalizations fueled support for the SVP. All results are substantively very similar if the SVP vote share variable is omitted.

whether the results are sensitive to the fact that some municipalities do not change the regime over the time period. For both the full sample and the German language region we replicate the benchmark model for two sub-samples which consist of (1) the municipalities in cantons where the majority of municipalities switched (models 1-2 and 5-6), and (2) only the municipalities that switched (models 3-4 and 7-8). The results are very similar to the main results across all models with effect sizes ranging from 56-79%. Given that the municipalities that did not (yet) switch are concentrated in some of the most conservative cantons, our estimates from the switching municipalities are likely to be a lower bound of the overall effect that we would expect if all municipalities where to take the naturalization decisions out of the reach of the citizens' assembly.

Table B.3 replicates the benchmark model, but instead of using municipality fixed effects, we include a lagged dependent variable and the time-varying covariates. This alternative identification strategy yields very similar results. The effect estimates are slightly smaller compared to the fixed effects model with effect sizes ranging from 26-61%; all estimates remain highly significant. The slightly lower magnitude may be expected given that the fixed effects specification used in the main models is likely to be more effective in removing the influence of unobserved confounders and therefore the coefficients from the lagged dependent variable are likely biased towards zero (Angrist and Pischke; 2008).

As a another robustness check, we estimate a dynamic panel model where instead of the binary indicator for direct democracy, we code an indicator that captures the change from direct to representative democracy and add three leads and five lags of this indicator to capture potential effects in the five years before and the three years following the actual switch (the model also includes a full set of municipality and year fixed effects). The effects for the leads and lags (with their 95 % confidence intervals) are plotted in Figure 3. The results provide strong evidence that the transition from direct to representative democracy strongly increased naturalization rates. We find no significant "placebo" effects for the five years leading up to the switch, which suggests the absence of omitted variables that lead to differential trends prior to the adoption of representative democracy. Notice that the (insignificant) positive difference we find for the year immediately prior to the reform ($t = -1$) is partly driven by the

reform itself and therefore mostly an artefact of our conservative coding.[14] Most importantly, significant differences in naturalization rates emerge right after the regime change and these differences grow considerably larger with estimated increases of up to 115-130% in the three years following the transition. This suggest that replacing direct with representative democracy results in much higher naturalization rates in the long term.

As a final robustness check, in Table 4 we replicate our benchmark fixed effects model using the rate of facilitated naturalizations in the municipality as the dependent variable. This measure provides an ideal placebo outcome, because facilitated naturalizations, which only persons that have been married to a Swiss national for at least five years can apply for, are processed at the federal level by the federal agency for migration, and the municipalities are not involved in the process. The results suggest that the switch from direct to representative democracy had no effect at all on the rate of facilitated naturalizations, the point estimates are precisely estimated zeros across models which corroborates the claim that the main results are not driven by shocks in unmeasured confounders.

Taken together the results from the various robustness checks provide strong evidence that direct democracy is as a significant barrier to access to citizenship for immigrant minorities.

VI. Why Do Immigrants Fare Worse Under Direct Democracy?

A. *Mechanism*

What explains this strong negative effect of direct democracy on the naturalization rate? In order to investigate possible mechanism we conducted over 160 semi-structured follow up interviews with the head secretaries (*Gemeindeschreiber*) of a random sample of the switching municipalities. Head secretaries usually have an intricate knowledge of the local naturalization process because they organize and attend the citizen assembly and / or municipality council meetings and are closely involved with the administrative processing of the naturalization applications.[15]

[14]Since we measure the institutional regime on January 1 of each year, year 0 refers to the first full year under representative democracy and year -1, while coded as preceding the switch, is in fact a hybrid that includes several municipalities that switched early or in the middle of the year such that their naturalization rates for year -1 already include many naturalizations that were decided in the municipality council.

[15]Head secretary is a non-partisan position. The interviews were conducted between January-March 2012; respondents were promised anonymity.

The results from these interviews suggest that minorities mostly benefit from the representational filters that accompany the transfer of the decision making power from the people to a legislature. Under direct democracy, the naturalization referenda are decided by the preferences of the median voter (Gerber; 1996; Matsusaka; 2004); and if the median voter is prejudiced against particular immigrants then these preferences will more or less directly translate into policy. Given the absence of any direct accountability mechanism, citizens are free to vote on their prejudice and reject immigrant applicants without having to bear the costs of providing an explicit justification for their decision. That is, even if the anti-discrimination clause in the Swiss constitution prohibits the rejection of applicants based on specific attributes such as origin, ethnicity, or religion, public referenda contain no accountability mechanism that assures that voters do not act upon their prejudice and discriminate against applicants.

If the naturalization requests are decided in municipal councils instead, the decision making environment provides some explicit representational filters that act in favor of minority interests (Gillette; 1988; Maskin and Tirole; 2004). Even if the median legislator is equally prejudiced as the median voter, the legislative environment makes it more costly for legislators to act upon their distastes for particular immigrants. Due to the nature of holding an elected office, legislators have to publicly explain, justify, and document their votes, which makes it considerably more difficult to arbitrarily reject applicants on discriminatory grounds. This higher level of public accountability results in more transparent and rational decisions and lowers the probability of rejections, in particular for applicants that may belong to more marginalized groups, such as applicants from former Yugoslavia or Turkey, which are often the target of SVP anti-immigration campaigns.

Many head secretaries explicitly mentioned this public accountability mechanism in the interviews. For example, when asked about whether they think it is more difficult or easier for immigrants to get naturalized now that the decision has switched from the citizen assembly to the municipality council (without being prompted about our results), one secretary said that "chances got much better for immigrants, because the application decisions in the council are fairer, more objective, and more transparent than in the assembly." Another said that "I am not sure if chances improved, but I can imagine that it was at least theoretically possible

to reject applicants in the citizens assembly based on arbitrary reasons and this might have happened quite a bit in other municipalities, but probably not in ours." Another head secretary put it more bluntly: "in the assembly some applicants were rejected on arbitrary grounds because the majority simply decided and if somebody claimed he 'knew something' about an applicant and made a case against him, the other citizens often followed along and voted to reject the applicant." Another respondent reported that "because we are a rather conservative municipality, the assembly meetings about naturalization decisions were often heated and emotional, which is no longer the case now that the decision is being made in the council." In a similar vein, one head secretary suggested that "in the citizens' assembly, legitimate applicants were sometimes rejected purely based on stereotypes such as 'we like Italians, but not applicants from Kosovo', while in the municipality council, there is much less discrimination based on such arbitrary factors because legislators have to provide a valid justification for rejections and thus have to look at the facts."

There are at least two observable implications of the public accountability mechanism that we can further test with quantitative data. The first implication of this argument is that the effect of direct democracy on the naturalization rate should depend on the anti-immigrant preferences of the median voter. The second is that the effect of direct democracy may vary across immigrant groups since more marginalized groups such as applicants from former Yugoslavia may face a larger disadvantage. We test these implications below.

B. Tests

The first implication is that in areas where the median voter holds strong anti-immigrant preferences, we would expect that the transfer of decisions power from the people to legislatures leads to the largest increases in naturalization rates, because the institutional constraints renders it more difficult for prejudiced agents to reject applicants on arbitrary grounds. In contrast, in areas where the electorate holds no or weak anti-immigrant preferences we would expect that the institutional regime makes much less of a difference for determining naturalization rates. To test this mechanism, we use the local vote share for the Swiss People's Party (SVP) in the federal elections as a proxy for the xenophobic preferences of the local electorate and interact it

with our institutional measures in the benchmark model to allow the effect of direct demoracy to vary depending on the strength of the anti-immigrant preferences. Notice that we use the SVP vote share from the 1991 election as a time-invariant measure of xenophobic preferences for this interaction, to rule out the possibility that the SVP vote share is endogenous to the number of naturalizations.[16]

Table 5 presents the results from our tests. The first six models replicate the benchmark fixed effects regression for both the full sample and the German language region. Models 1-4 use a linear specification where we interact the SVP vote share variable with both institutional dummies (notice that the lower order term for the SVP vote share is subsumed in the municipality fixed effects). The results suggest that there is a strong positive interaction effect across all models which supports the claim that direct democracy is most detrimental for minorities in the most xenophobic areas. To facilitate the interpretation, the upper panel in Figure 4 simulates the marginal effect of direct democracy (with 95 % confidence intervals) based on our preferred model 2 with the binary *Direct Democracy* measure. The grey shaded area in the bottom panel visualizes the marginal distribution of SVP vote shares (the red lines indicate the 25th, 50th, and 75th percentile). Consistent with the accountability mechanism, switching from direct to representative democracy has no or only a small effect in the least xenophobic municipalities with very low SVP vote share. However, the negative effect of direct democracy is large and significant in more xenophobic areas with higher SVP vote shares and continues to grow even further in the most xenophobic municipalities. Models 5-8 in Table 5 allow for non-linearity in the interactive effect and break the SVP vote share into three equal sized bins for low, medium, and high vote shares and interact them as dummy variables with the institutional measures. Again, the estimates suggest a clear interaction across all models. The lower panel in Figure 4 shows the simulated effect switching from direct to representative democracy based on model 5. We see that the effect is insignificant at low SVP vote share levels, negative and significant at medium levels of SVP vote share, and even stronger at high levels of SVP vote share, which confirms that direct democracy is most detrimental for immigrant applicants

[16]Some have argued that higher naturalization rates may fuel anti-immigrant sentiment among voters (Dancygier; 2010). Our results are similar if we use a – possibly endogenous – time-varying measure of annual SVP vote shares instead.

in the most xenophobic areas.

A second observable implication of the accountability mechanism is that direct democracy may be more disadvantageous for more marginalized immigrant groups that face stronger prejudice from the median voter. Some evidence for this emerged in the qualitative interview where head secretaries, when asked about whether they think that some immigrant groups have benefitted more from removing direct democracy than others, often mentioned immigrants from (former) Yugoslavia and Turkey. As one head secretary put it "immigrants from Yugoslavia and Turkey have a 'bad press' among the people so they tended to be more at risk of arbitrary and emotional rejections in the referenda." In order to test for this, Table 6 replicates the benchmark fixed effect model with country of origin specific naturalization rates. Following Hainmueller and Hangartner (2011) we distinguish three groups including immigrant applicants from (former) Yugoslavia and Turkey, applicants from southern European countries (Italy, Spain, Portugal), and other richer European countries (mostly Germany, France, U.K., etc.).[17] These groups account for the largest share of naturalizations, but the three origin groups vary broadly in the degree to which they face anti-immigrant sentiments. While there is a long tradition of immigration from southern European origins in Switzerland, immigration from (former) Yugoslavia and Turkey surged sharply in the late 80s and early 90s and these groups have been repeatedly the target of anti-immigration campaigns by the SVP, which often portrays such immigrants as an ethnic outgroup that is culturally incompatible with Swiss values and traditions. We therefore may expect that removing direct democracy had a stronger positive effect for this group of applicants than for applicants from the more traditional source countries. Applicants from other richer European countries may fall somewhere in between, given that immigrant from these origins has been fairly steady over the last decades, but very recently there has been some public backlash against immigrants from Germany.

Table 6 presents the results where the upper panel refers to the sample of all municipalities and the lower panel to the sample of municipalities in the German language region. The

[17]We compute the origin specific naturalization rates from the PETRA data using the same methodology as above where we divide the number of naturalization by the number of eligible immigrants. We exclude from the estimation sample a very small number of municipalities where the naturalization rate in a given year exceeded 100%. Notice that the samples size drops somewhat as a result of this disaggregation, because we lose municipalities which have no eligible immigrants for a specific group.

effect estimates for the different groups are also visualized in Figure 5. Consistent with the accountability mechanism, we find that applicants from Yugoslavia and Turkey gained the most from switching from direct to representative democracy, as naturalization rates increased by about 60% in the full sample and even 90% in the German language region. In contrast, removing direct democracy has no significant effect for applicants from Southern European origins in the full sample and only a smaller effect, about 40%, in the German language region. The effect estimates for the two groups are statistically significantly different at the $p< .05$ level. The effects for applicants from Rich European origins fall in between with about a 40-55% increase. These results are consistent with Hainmueller and Hangartner (2011) who find that immigrants from Yugoslavia and Turkey fare worst when naturalizations are decided by secret ballot referenda in the ballot box municipalities.

Taken together, the results from the qualitative interviews and these additional quantitative tests are consistent with the accountability mechanism which suggests that the negative effect of direct democracy is concentrated in the most xenophobic areas and among the most marginalized immigrant groups.

VII. Conclusion

Direct democracy is rapidly becoming a popular tool for policy-making in modern democracies, as countries are increasingly adopting direct democratic mechanisms at the local, regional, and federal level of government. According to some observers "legislatures are gradually being eclipsed as the primary creators of public policy." (Matusuka; 2005, pg. 157). While there are some obvious attractions in bringing policy-making closer to the people, one important concern is that the trend towards direct democracy threatens the interests of minorities who are vulnerable to the tyranny of the majority. Political scientists are just beginning to rigorously grapple with this important issue. While a large correlational literature has investigated the relationship between direct democracy and minority outcomes, we still lack causal evidence that direct democracy systematically disadvantages minorities compared to representative democracy.

In this study we address this gap and advance a natural experiment that allows us to exploit

plausibly exogenous institutional change from direct to representative democracy. Using panel regressions for the 1990-2009 period, we find that immigrant minorities in Switzerland fare much better if their naturalization applications are decided in legislatures, rather than popular referenda in citizens' assemblies. Qualitative evidence suggests that this effect is driven by the different ways in which referenda and legislatures aggregate preferences into policy. While voters in direct democratic contests are free to reject immigrant applicants without having to provide any viable justification, accountable legislators, even if they are similarly prejudiced as the median voter, have to publicly explain and defend their decisions. This makes it more costly for them to reject immigrants on discriminatory grounds. Consistent with this accountability mechanism, we find direct democracy is most disadvantageous for immigrant applicants in areas where the electorate has stronger xenophobic preferences (compared to more liberal areas) and for applicants from (former) Yugoslavia and Turkey (compared to less marginalized immigrants from southern and richer European countries).

Our findings have several important implications. With respect to the Swiss context, the results demonstrate that direct democracy acts as a significant barrier for access to citizenship. The fact that naturalization rates increase sharply with the transition from direct to representative democracy while the quality of the applicant pool remains constant implies that voters in naturalization referenda discriminate against qualified applicants that would be approved if accountable legislators - who have to publicly justify and defend their decisions - were to vote on the same applications. In other words, under direct democracy a significant fraction of legitimate immigrant applicants are rejected on arbitrary grounds and discriminatory voter tastes. In this sense, our results are consistent with Hainmueller and Hangartner (2011) who demonstrate that immigrants face strong origin based discrimination when naturalizations are decided by secret ballot referenda. Overall, then, the empirical evidence suggests that direct democracy should no longer be used for naturalization decisions in order to lower the risk of discriminatory rejections. This is a pressing policy concern, given that today about 30% of all municipalities still rely on referenda voting in citizens assemblies to decide on naturalization applications.

More broadly, our results underline the importance of the interplay between voter pref-

erences and political institutions in generating policy outcomes. Our study provides perhaps the most direct evidence to date that when faced with the exact same policy decision, direct democracy does suppress minority interests with greater regularity than representative democracy. Moreover, the evidence suggests that direct democracy is most harmful for the most marginalized minorities. This supports warnings by opponents of direct democracy (Bell Jr; 1978; Magleby; 1984; Gillette; 1988; Gamble; 1997; Haider-Markel et al.; 2007) and contradicts the claims of its supporters who argue that there exists no rigorous evidence that direct democracy harms minority interests (Zimmerman and Francis; 1986; Cronin; 1989; Frey and Goette; 1998; Matsusaka; 2004, 2005).

While it would be unwise to conclude from our our results that direct democracy is generally harmful for minorities, our results show that at least in the important minority domain of naturalizations, where the causal effect of direct democracy can be isolated empirically, minorities suffer substantially if their requests are decided by citizens who hold anti-minority preferences. Moreover, there is no theoretical reason to expect that the same mechanism that translates prejudices into policy does not operate in other countries or for other minorities such as religious, sexual, or economic minorities. And while much more research on the causal effects of direct democracy in other countries and minority domains is clearly needed before one should come to a definitive conclusion, our results provide a cautionary tale that for minorities, the harmful effects of direct democracy can be real when faced with a prejudiced electorate.

References

Acemoglu, D. (2005). Constitutions, politics, and economics: A review essay on persson and tabellini's the economic effects of constitutions, *Journal of Economic Literature* **XLIII**: 1025–1048.

Alvarez, R. and Butterfield, T. (2000). The resurgence of nativism in california? the case of proposition 187 and illegal immigration, *SOCIAL SCIENCE QUARTERLY-AUSTIN-* **81**(1): 167–179.

Angrist, J. and Pischke, J. (2008). *Mostly Harmless Econometrics*, Princeton Univ Pr.

Barnett, J. (1915). *The operation of the initiative, referendum and recall in Oregon*, Macmillan Company.

Bell Jr, D. (1978). Referendum: Democracy's barrier to racial equality, the, *Wash. L. Rev.* **54**: 1.

Bellamy, R. (2008). *Citizenship: a very short introduction*, Oxford University Press, USA.

Blume, L., Müller, J. and Voigt, S. (2009). The economic effects of direct democracya first global assessment, *Public Choice* **140**(3): 431–461.

Bolliger, C. (2007). *Direkte Demokratie. Bestandsaufnahmen und Wirkungen im internationalen Vergleich*, Berlin: Lit, chapter Minderheiten in der direkten Demokratie: Die Medaille hat auch eine Vorderseite, p. 419446.

Cronin, T. (1989). *Direct democracy: The politics of initiative, referendum, and recall*, Harvard University Press Cambridge, MA.

Dancygier, R. (2010). *Immigration and conflict in Europe*, Cambridge Univ Pr.

Donovan, T. and Bowler, S. (1998). Direct democracy and minority rights: an extension, *American Journal of Political Science* pp. 1020–1024.

Ellis, R. (2002). *Democratic delusions: The initiative process in America*, University Press of Kansas (Lawrence).

Fibbi, R., Kaya, B. and Piguet, E. (2003). Le passeport ou le diplome? etude des discriminations a l'embauche des jeunes issus de la migration., *Neuchatel: SFM* .

Frey, B. and Goette, L. (1998). Does the popular vote destroy civil rights?, *American Journal of Political Science* **42**(4): 1343–1348.

Funk, P. and Gathmann, C. (2011). Does direct democracy reduce the size of government? new evidence from historical data, 1890–2000*, *The Economic Journal* **Forthcoming**.

Gamble, B. (1997). Putting civil rights to a popular vote, *American Journal of Political Science* pp. 245–269.

Gerber, E. (1996). Legislative response to the threat of popular initiatives, *American Journal of Political Science* **40**(1): 99–128.

Gerber, E. and Hug, S. (2001). *Referendum democracy: Citizens, elites, and deliberation in referendum campaigns*, New York: Palgrave., chapter Minority rights and direct legislation: Theory, method and evidence.

Gillette, C. P. (1988). Plebiscites, participation, and collective action in local government law, *Michigan Law Review* **86**(930).

Green, D., Ha, S. and Bullock, J. (2010). Enough already about 'black box' experiments: Studying mediation is more difficult than most scholars suppose, *Annals of the American Academy of Political and Social Science* **628**: 200–08.

Green, D. and Shapiro, I. (1994). *Pathologies of rational choice theory: A critique of applications in political science*, Cambridge Univ Press.

Grofman, B. and Davidson, C. (1992). *Controversies in Minority Voting: The Voting Rights Act in Perspective*, Brookings Institution Press.

Guinier, L. (1994). *The tyranny of the majority: Fundamental fairness in representative democracy*, Free Press New York.

Haider-Markel, D., Querze, A. and Lindaman, K. (2007). Lose, win, or draw? a reexamination of direct democracy and minority rights, *Political Research Quarterly* **60**(2): 304.

Hainmueller, J. and Hangartner, D. (2011). Who gets a swiss passport? a natural experiment in immigrant discrimination, *MIT Working Paper* .
URL: *http://ssrn.com/abstract=1898927*

Hajnal, Z. (2009). Who loses in american democracy? a count of votes demonstrates the limited representation of african americans, *American Political Science Review* **103**(1): 37–57.

Hajnal, Z., Gerber, E. and Louch, H. (2002). Minorities and direct legislation: Evidence from California ballot proposition elections, *Journal of Politics* **64**(1): 154–177.

Helbling, M. (2008). *Practising citizenship and heterogeneous nationhood: naturalisations in Swiss municipalities*, Amsterdam Univ Pr.

Helbling, M. and Kriesi, H. (2004). Staatsbuürgerverständnis und politische mobilisierung: Einbürgerungen in schweizer gemeinden, *Swiss Political Science Review* **10**(4): 33–58.

Hinnerich, B. T. and Pettersson-Lidbom, P. (2010). Democracy, redistribution, and political participation: Evidence from sweden 1919-1950, *Working Paper Stockholm University* .

Hug, S. (2003). *Voices of Europe: citizens, referendums, and European integration*, Rowman & Littlefield Pub Inc.

Imai, K., Keele, L., Tingley, D. and Yamamoto, T. (2012). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies, *American Political Science Review* .

Key, V. and Crouch, W. (1939). *The initiative and the referendum in California*, Vol. 6, University of California press.

King, G. (2010). A hard unsolved problem? post-treatment bias in big social science questions, *Talk at the Hard Problems in Social Science Symposium, Harvard University 4/10/2010* . **URL:** *http://gking.harvard.edu/talks/bigprobP.pdf*

Kriesi, H., Lachat, R., Selb, P., Bornschier, S. and Helbling, M. (2005). *Der Aufstieg der SVP. Acht Kantone im Vergleich*, Zürich: NZZ-Verlag.

Lowell, A. (1919). *Public opinion and popular government*, Longmans, Green.

Lupia, A. and Matsusaka, J. (2004). Direct democracy: New approaches to old questions, *Annu. Rev. Polit. Sci.* **7**: 46382.

Madison, J. (1961). *The Federalist*, Belknap Press of Harvard University Press, chapter The Same Subject Continued: The Union as a Safeguard Against Domestic Faction and Insurrection.

Magleby, D. (1984). *Direct legislation: Voting on ballot propositions in the United States*, Johns Hopkins University Press Baltimore.

Maskin, E. and Tirole, J. (2004). The politician and the judge: Accountability in government, *The American Economic Review* **94**(4): 1034–1054.

Matsusaka, J. (2004). *For the Many or the Few*, University of Chicago Press.

Matsusaka, J. (2005). Direct democracy works, *Journal of Economic Perspectives* **19**(2): 185–206.

Matsusaka, J. G. (2010). Popular control of public policy: A quantitative approach, *Quarterly Journal of Political Science* **5**: 133167.

Matusuka, J. (2005). The eclipse of legislatures: Direct democracy in the 21st century, *Public Choice* **124**: 157177.

Moore, R. and Ravishankar, N. (2009). Differential disadvantage: The political misfortunes of minority voters in direct democracy, *Working Paper Harvard University* .

OECD (2011). *Naturalisation: A Passport for the Better Integration of Immigrants?*, OECD Publishing.

Ohlsson, M. (2008). The impact of becoming Swedish citizen on labor earnings and employment, *Technical report*, Mimeo School of Management and Economics, VaxjöUniversity.

Olken, B. (2010). Direct democracy and local public goods: Evidence from a field experiment in indonesia, *American Political Science Review* **104**(2).

Preuhs, R. R. (2005). Descriptive representation, legislative leadership, and direct democracy: Latino influence on english only laws in the states, 1984-2002, *State Politics & Policy Quarterly* **5**(3): 203–224.

Przeworski, A. (2007). *Oxford Handbook of Comparative Politics*, New York: Oxford University Press, chapter Is the Science of Comparative Politics Possible?

Sabato, L., Larson, B. and Ernst, H. (2001). *Dangerous democracy?: the battle over ballot initiatives in America*, Rowman & Littlefield Pub Inc.

Schildkraut, D. J. (2001). Official-english and the states: Influences on declaring english the offical, *Political Research Quarterly* **54**(2): 445–457.

Schrag, P. (2004). *Paradise lost: California's experience, America's future: updated with a new preface*, Univ of California Pr.

Seeley, J. (1970). The public referendum and minority group legislation: Postscript to reitman v. mulkey, *Cornell L. Rev.* **55**: 881–905.

Sekhon, J. (2010). Opiates for the matches: Matching methods for causal inference, *Annual Review of Political Science* **12**: 487508.

Skenderovic, D. (2007). Immigration and the radical right in switzerland: ideology, discourse and opportunities, *Patterns of Prejudice* **41**(2): 155–176.
URL: *http://www.tandfonline.com/doi/abs/10.1080/00313220701265528*

Thistlethwaite, D. and Campbell, D. (1960). Regression-Discontinuity Analysis: An Alternative to the Ex Post Facto Experiment, *Journal of Educational Psychology* **51**: 309–17.

Tolbert, C. and Grummel, J. (2003). Revisiting the racial threat hypothesis: White voter support for california's proposition 209, *State Politics & Policy Quarterly* pp. 183–202.

Tolbert, C. and Hero, R. (2001). Dealing with diversity: Racial/ethnic context and social policy change, *Political Research Quarterly* **54**(3): 571.

Tolbert, C. and Smith, D. (2006). Representation and direct democracy in the united states, *Representation: Journal of Representative Democracy* **42**(1): 25–44.

Vatter, A. and Danaci, D. (2010). Mehrheitstyrannei durch volksentscheide?, *Politische Vierteljahresschrift* **51**: 205–222.

Zimmerman, J. and Francis, J. (1986). *Participatory democracy: Populism revived*, Praeger.

Tables

Table 1: Average Naturalization Rates by Regime

	Naturalization Rate (%)			
Regime Type	Mean	LB	UB	Observations
Appointed Commission	4.23	3.67	4.79	520
Representative Democracy	3.06	2.89	3.22	7,648
Direct Democracy	2.00	1.90	2.10	16,309
Full Sample	2.38	2.29	2.47	24,498

Note: Average naturalization rates by regime, pooled over the 1991-2009 period. LB and UB refer to upper and lower bound of 95 % confidence interval (based on standard errors clustered by municipality).

Table 2: Effect of Direct Democracy on Naturalization Rates

Outcome	Naturalization Rate (%)			
Mean (Direct Democracy)	2.00		2.20	
Sample	All Municipalitites		German Language	
Model	(1)	(2)	(3)	(4)
Direct Democracy	-1.23	-1.21	-1.72	-1.71
	(0.18)	(0.18)	(0.22)	(0.23)
Appointed Commission		0.51		0.11
		(0.58)		(0.71)
Constant	1.81	1.79	2.41	2.41
	(0.16)	(0.16)	(0.23)	(0.23)
Municipality FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
Observations	24,477	24,477	15,597	15,597
Municipalities	1,360	1,360	874	874
Effect Size (% Δ)	62	61	78	78
95% CI LB	44	43	59	57
95% CI UB	79	78	98	98

Note: OLS panel fixed effects regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The outcome variable is the municipal rate for ordinary naturalizations, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), and Appointed Commission (1 for appointed commission, 0 otherwise). Representative Democracy is the baseline. The last three rows summarize the increase when switching from direct democracy to representative democracy as the percent change over the average naturalization rate (under direct democracy). LB and UB refer to upper and lower bound of 95 % confidence interval. Models 1-2 refer to the sample of all municipalities and models 3-4 restrict the sample to municipalities in the German language region.

Table 3: Robustness Checks: Effect of Direct Democracy on Naturalization Rates

Outcome:	Naturalization Rate (%) (mean: 2.00)					
Sample	All Municipalities					
Model	(1)	(2)	(3)	(4)	(5)	(6)
Direct Democracy	-1.31	-1.29	-1.06	-1.08	-1.10	-1.11
	(0.18)	(0.18)	(0.31)	(0.31)	(0.31)	(0.32)
Appointed Commission		0.47		-0.35		-0.35
		(0.58)		(0.66)		(0.66)
Constant	10.15	10.14	0.06	0.08	1.49	1.47
	(4.10)	(4.09)	(0.27)	(0.27)	(10.05)	(10.05)
Municipality FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓
Quadratic Time Trends			✓	✓	✓	✓
Covariates	✓	✓			✓	✓
Observations	23,741	23,741	24,477	24,477	23,741	23,741
Municipalities	1,348	1,348	1,360	1,360	1,348	1,348
Effect Size	66	65	53	54	55	56
95% CI LB	48	47	23	24	25	24
95% CI UB	83	82	83	84	85	87

Outcome:	Naturalization Rate (%) (mean: 2.20)					
Sample	German Language					
Model	(7)	(8)	(9)	(10)	(11)	(12)
Direct Democracy	-1.71	-1.70	-1.45	-1.48	-1.44	-1.48
	(0.23)	(0.23)	(0.39)	(0.41)	(0.40)	(0.42)
Appointed Commission		0.13		-0.48		-0.52
		(0.70)		(0.96)		(0.95)
Constant	12.26	12.27	0.53	0.58	14.25	14.04
	(6.20)	(6.19)	(0.42)	(0.44)	(15.36)	(15.38)
Municipality FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓
Quadratic Time Trends			✓	✓	✓	✓
Covariates	✓	✓			✓	✓
Observations	15,271	15,271	15,597	15,597	15,271	15,271
Municipalities	868	868	874	874	868	868
Effect Size	78	77	66	67	66	67
95 LB	57	57	31	31	30	30
95 UB	98	98	101	104	101	105

Note: OLS panel fixed effects regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The outcome variable is the municipal naturalization rate, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), and Appointed Commission (1 for appointed commission, 0 otherwise). Representative Democracy is the baseline. The last three rows summarize the increase when switching from direct democracy to representative democracy as the percent change over the average naturalization rate (under direct democracy). LB and UB refer to upper and lower bound of 95 % confidence interval. Models 1-6 refer to the sample of all municipalities and models 7-12 restrict the sample to municipalities in the German language region. In each panel, the first two models include our set of time-varying covariates (log population, lagged ratio of foreign to Swiss population, the local unemployment rate, and the SVP vote share), the next two models include municipality specific linear and quadratic time trends, and the last two models include both covariates and municipality specific linear and quadratic time trends.

Table 4: Effect of Direct Democracy on Facilitated Naturalization Rates (Placebo Outcome)

Outcome	Facilitated Naturalization Rate (%)			
Mean (Direct Democracy)	2.14		2.00	
Sample	All Municipalitites		German Language	
Model	(1)	(2)	(3)	(4)
Direct Democracy	0.02	0.01	0.02	0.01
	(0.13)	(0.13)	(0.15)	(0.15)
Appointed Commission		-0.39		-0.19
		(0.27)		(0.31)
Constant	0.14	0.15	0.12	0.13
	(0.12)	(0.12)	(0.16)	(0.16)
Municipality FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
Observations	24,206	24,206	15,594	15,594
Municipalities	1,301	1,301	837	837
Effect Size	-1	0	-1	0
95 LB	-13	-12	-15	-15
95 UB	11	11	13	14

Note: OLS panel fixed effects regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The placebo outcome variable is the municipal rate for facilitated naturalizations, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), and Appointed Commission (1 for appointed commission, 0 otherwise). Representative Democracy is the baseline. The last three rows summarize the effect of switching from direct democracy to representative democracy as the percent change over the average facilitated naturalization rate (under direct democracy). LB and UB refer to upper and lower bound of 95 % confidence interval. Models 1-2 refer to the sample of all municipalities and models 3-4 restrict the sample to municipalities in the German language region.

Table 5: Interaction of Direct Democracy and Voter Preferences

Outcome	Naturalization Rate %							
Mean (Direct Democracy)	2.00		2.20		2.00		2.20	
Interaction	Linear Interaction				Nonlinear Interaction			
Sample	All Municipalities		German Language		All Municipalities		German Language	
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Direct Democracy	-0.504	-0.411	-1.099	-0.961	-0.172	-0.068	-0.312	-0.105
	(0.286)	(0.285)	(0.380)	(0.388)	(0.361)	(0.346)	(0.486)	(0.471)
Appointed Commission		1.557		1.533		1.142		1.379
		(0.722)		(0.984)		(0.812)		(1.226)
Direct Democracy · SVP Vote Share	-0.027	-0.030	-0.021	-0.025				
	(0.011)	(0.011)	(0.013)	(0.013)				
Appointed Commission · SVP Vote Share		-0.071		-0.082				
		(0.028)		(0.033)				
Direct Democracy · SVP VS Medium					-0.938	-0.979	-1.376	-1.497
					(0.412)	(0.402)	(0.543)	(0.535)
Direct Democracy · SVP VS High					-1.438	-1.586	-1.754	-2.027
					(0.433)	(0.422)	(0.552)	(0.540)
Appointed Commission · SVP VS Medium						0.274		-0.305
						(1.276)		(1.592)
Appointed Commission · SVP VS High						-3.201		-3.982
						(1.232)		(1.574)
Constant	1.675	1.651	2.264	2.224	1.664	1.637	2.202	2.151
	(0.153)	(0.153)	(0.219)	(0.222)	(0.156)	(0.156)	(0.221)	(0.223)
Municipality FEs	✓	✓	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Observations	24,477	24,477	15,597	15,597	24,477	24,477	15,597	15,597
Municipalities	1,360	1,360	874	874	1,360	1,360	874	874

Note: OLS panel fixed effects regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The outcome variable is the municipal naturalization rate, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), Appointed Commission (1 for appointed commission, 0 otherwise) and either a continuous measure for the SVP vote share (Models 1–4) or two binary indicators for SVP vote share median and high (the reference category is low SVP vote share; the three groups are based on equal sized bins). Representative Democracy is the baseline. Models 1, 2, 5, and 6 refer to the sample of all municipalities and models 3, 4, 7, and 8 restrict the sample to municipalities in the German language region.

Table 6: Effect of Direct Democracy on Naturalization Rates by Country of Origin

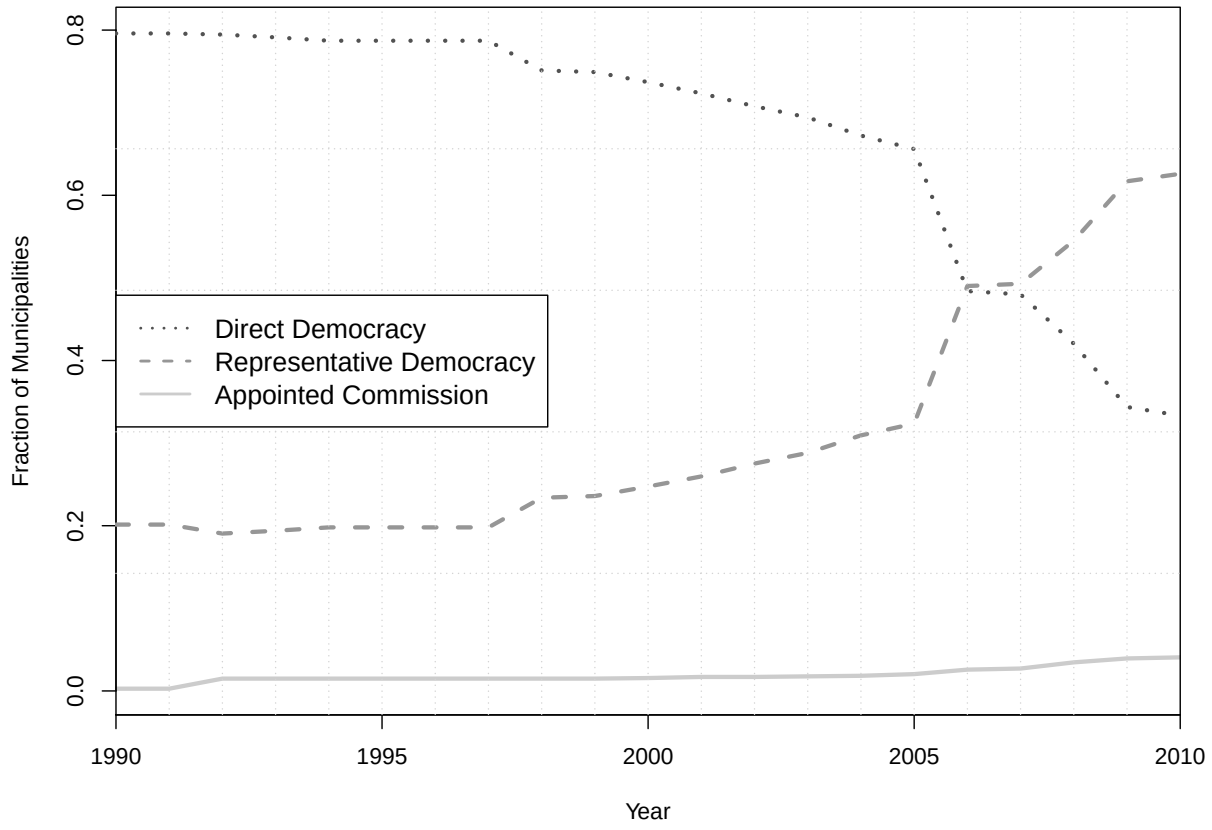
Outcome:	Naturalization Rate (%)					
Mean (Direct Democracy)	0.81		0.72		4.31	
Country of Origin	Southern Europe		Rich Europe		Yugoslavia/Turkey	
Sample	All Municipalities					
Model	(1)	(2)	(3)	(4)	(5)	(6)
Direct Democracy	-0.16	-0.17	-0.27	-0.28	-2.83	-2.83
	(0.14)	(0.14)	(0.13)	(0.14)	(0.58)	(0.59)
Appointed Commission		-0.11		-0.13		-0.00
		(0.31)		(0.25)		(1.13)
Constant	1.21	1.22	1.32	1.32	3.71	3.71
	(0.16)	(0.16)	(0.16)	(0.16)	(0.46)	(0.48)
Municipality FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓
Observations	24,073	24,073	24,542	24,542	15,775	15,775
Municipalities	1,420	1,420	1,421	1,421	1,173	1,173
Effect Size	20	21	37	39	66	66
95 LB	-14	-13	2	01	39	39
95 UB	54	55	73	77	92	92

Outcome:	Naturalization Rate (%)					
Mean (Direct Democracy)	0.86		0.67		4.67	
Country of Origin	Southern Europe		Rich Europe		Yugoslavia/Turkey	
Sample	German Language					
Model	(7)	(8)	(9)	(10)	(11)	(12)
Direct Democracy	-0.35	-0.36	-0.35	-0.37	-4.19	-4.26
	(0.16)	(0.17)	(0.14)	(0.14)	(0.62)	(0.64)
Appointed Commission		-0.28		-0.31		-1.08
		(0.37)		(0.29)		(1.27)
Constant	1.34	1.35	1.36	1.38	5.07	5.14
	(0.21)	(0.21)	(0.20)	(0.20)	(0.58)	(0.60)
Municipality FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓
Observations	15,204	15,204	16,038	16,038	11,741	11,741
Municipalities	918	918	930	930	772	772
Effect Size	41	42	53	56	90	91
95 LB	4	3	11	14	64	64
95 UB	77	80	94	97	116	118

Note: OLS panel fixed effects regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The outcome variable is the municipal naturalization rate, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), and Appointed Commission (1 for appointed commission, 0 otherwise). Representative Democracy is the baseline. The last three rows summarize the increase when switching from direct democracy to representative democracy as the percent change over the average naturalization rate (under direct democracy). LB and UB refer to upper and lower bound of 95 % confidence interval. Models 1-6 refer to the sample of all municipalities and models 7-12 restrict the sample to municipalities in the German language region. In each panel, the first two models restrict the sample to applicants from Southern Europe, the next two models to applicants from Rich European Countries, and the last two models to applicants from (former) Yugoslavia and Turkey.

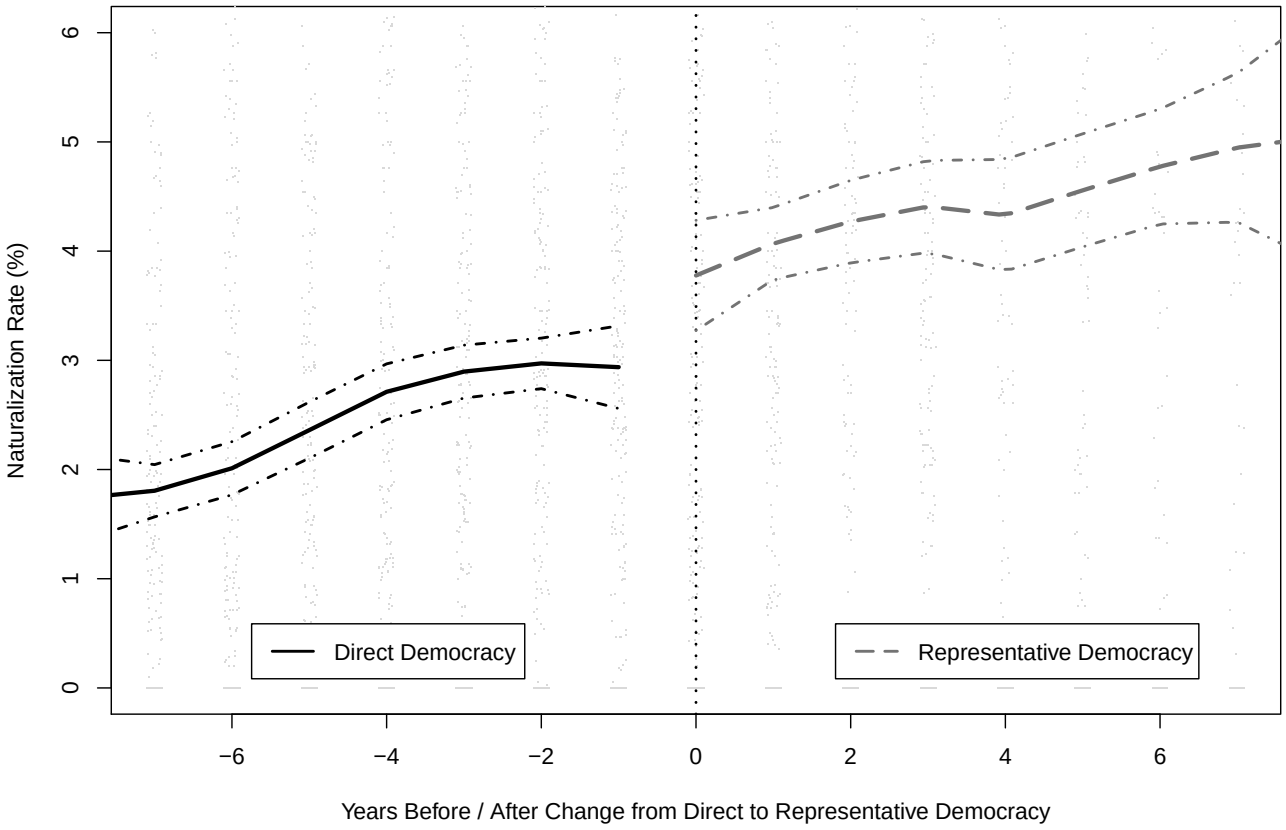
Figures

Figure 1: Trends in Naturalization Institutions



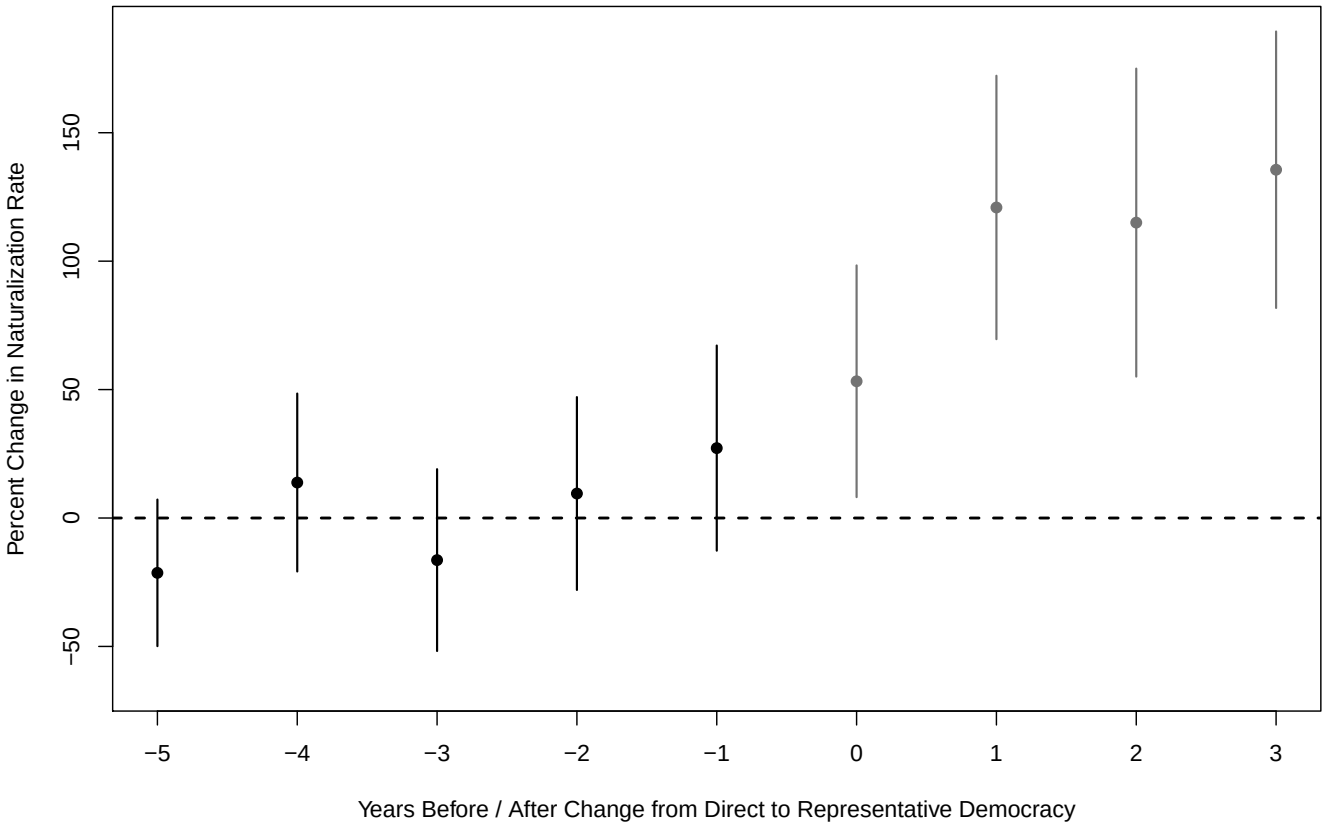
Note: Plot shows fraction of municipalities that use direct democracy (dotted black line), representative democracy (dashed dark grey line), and appointed commission (solid bright grey line) to decide on local naturalization requests for the years 1990-2010. N=1,360 municipalities. (Source: Own data collection).

Figure 2: Effect of Direct Democracy on Naturalization Rates



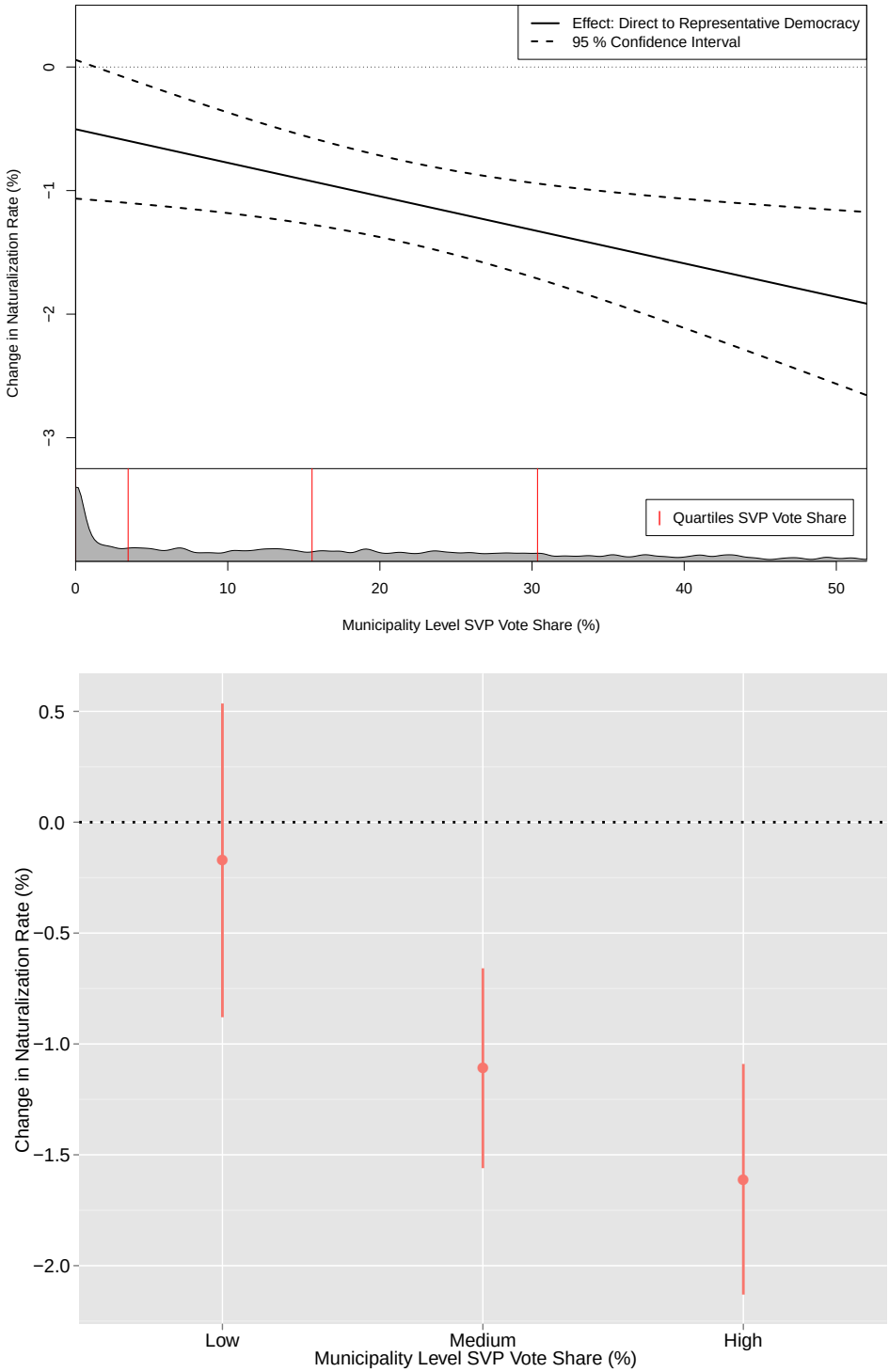
Note: Plot shows how naturalization rates change as municipalities switch from direct to representative democracy. Grey dots visualize municipal naturalization rates for seven years before and after a given municipality switched from direct to representative democracy (values are horizontally jittered); year 0 refers to the first year in which representative democracy was used on January 1. The solid and dashed lines summarize the average naturalization rate in the years under direct and representative democracy respectively, using a loess fit (solid line) with its 95% piece-wise confidence intervals (dotted line). $N = 598$ (all switching municipalities). Signed rank test for no change in naturalization rate from $t = -2$ to $t = 0$ is rejected: z-val=2.2, p-val=0.03

Figure 3: Dynamic Effect of Direct Democracy on Naturalization Rates



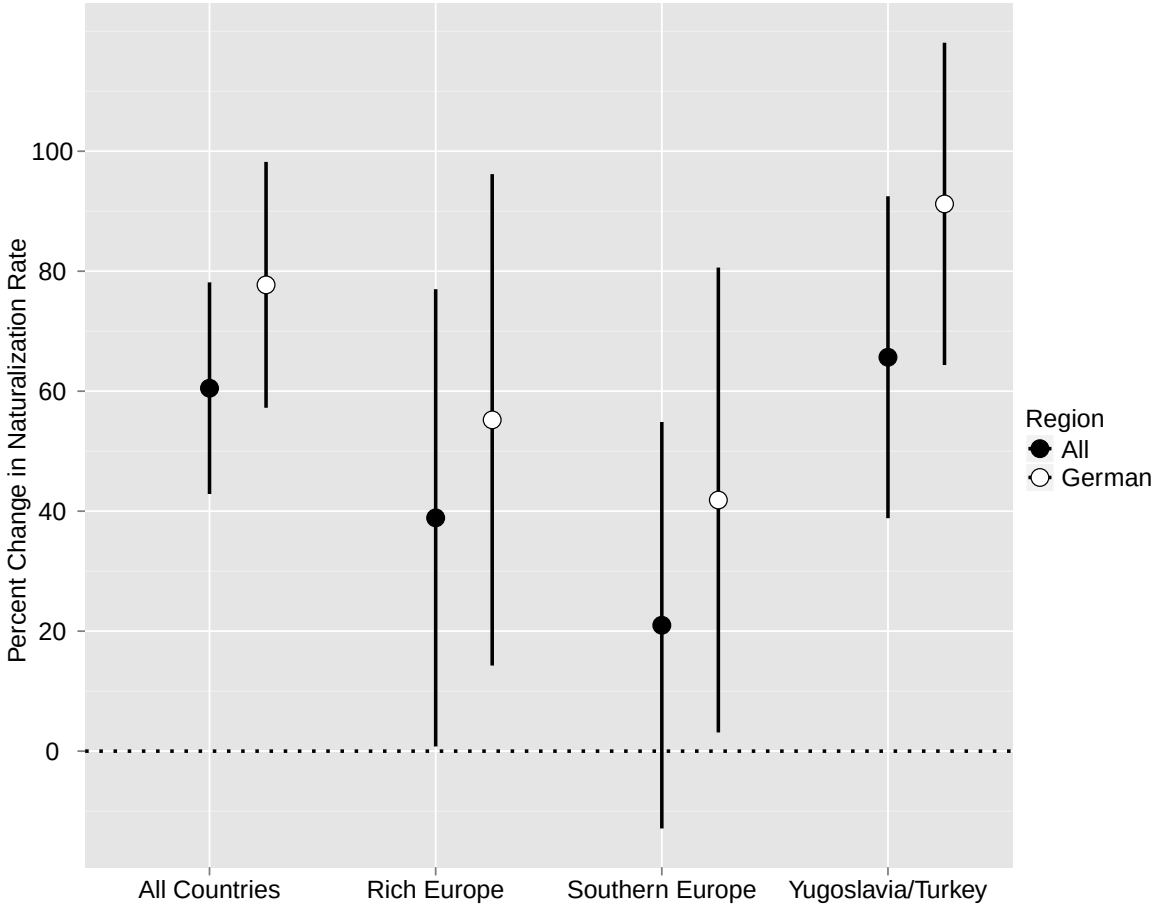
Note: Estimated impact of switching from direct to representative democracy on naturalization rate for years before (black lines) and after (gray lines) the institutional change. Year 0 is the first year in which representative democracy was used on January 1. Point estimates with 95 % confidence intervals (based on robust standard errors clustered by municipality) from dynamic panel regression including municipality and year fixed effects and indicator variables for three leads and five lags. Results are based on $N = 487$ switching municipalities for which complete panels are available.

Figure 4: Effect of Direct Democracy and Voter Preferences



Note: Marginal effect of switching from representative to direct democracy on naturalization rate, computed at different levels of SVP vote share. The first Figure is based on Model 1 in Table 5. The grey shaded area visualizes the density of the marginal distribution of SVP vote shares; red vertical lines indicate the quartiles. The second Figure is based on Model 5 in Table 5.

Figure 5: Effect of Direct Democracy on Naturalization Rates by Country of Origin



Note: Marginal effect of switching from representative to direct democracy on naturalization rate, computed for applicants from different country of originigs (based on model 1 and 2 in Table 2 and Model 1–6 in Table 6).

Appendix A: Data Sources

- Naturalization Institution: Survey by authors.
- Native Population Size: Swiss Federal Statistical Office (Bundesamt für Statistik), 2010 Neuchâtel Schweiz, Erhebung ESPOP 1990-2010.
- Number of Naturalizations: : Swiss Federal Statistical Office (Bundesamt für Statistik), 2010 Neuchâtel Schweiz, Erhebung PETRA 1991-2009.
- Immigrant Population Size: Swiss Federal Statistical Office (Bundesamt für Statistik), 2010 Neuchâtel Schweiz, Erhebung ESPOP 1990-2010.
- SVP Vote Share. Swiss Federal Statistical Office (various years)
- Number of Unemployed: State Secretariat for Economic Affairs (Schweizerische Arbeitsmarktstatistik), 1993-2010.

Appendix B: Robustness Checks

In this appendix we present additional results that are referenced in the main paper.

Table B.1: Naturalization Regimes in Swiss Municipalities (1990-2010)

	% of Municipalities by Period (N=1,360)				
Years	1990-1995	1996-2000	2001-2005	2006-2010	1990-2010
Direct Democracy					
Referenda: polling place	2.3	2.4	1.4	0.0	1.5
Referenda: citizens' assembly	50.2	48.9	44.8	30.6	43.8
Referenda: polling place (Burghers only)	0.5	0.5	0.2	0.0	0.3
Referenda: citizens' assembly (Burghers only)	23.9	22.9	21.5	10.9	19.9
Representative Democracy					
Municipality Council: Legislative Branch	17.9	16.4	15.7	7.6	14.5
Municipality Council: Executive Branch	2.7	5.2	12.0	46.0	16.1
Municipality Council: Burghers only	1.3	2.1	2.6	1.3	1.8
Appointed Commissions					
Naturalization Commission: Municipality	0.2	0.2	0.5	2.1	0.7
Naturalization Commission: Canton	1.1	1.6	1.5	1.5	1.4

Note: Table shows the % of municipalities that used the respective decision making body to decide on naturalization requests (as computed from the annual panel data). The total number of municipalities is 1,360 in each year. Institutions are as follows: In the direct democracy regime, naturalization requests are decided by local Swiss residents using referenda, where voting takes place at the polling place or the citizens' assembly with secret ballots or by hand-raising. Burgher municipalities restrict the suffrage for the referenda to the Burghers, a select group of families that have lived in the municipality for a long time. In the representative democracy regime, naturalization requests are decided by elected politicians in the legislative or executive branch of the municipality council. Some municipalities restrict council elections to the Burghers. In the appointed commission regime, naturalization requests are decided by appointed members of a naturalization commission that operates at the municipal or cantonal level. Source: Authors' municipality survey.

Table B.2: Robustness: Effect of Direct Democracy on Naturalization Rates (Switchers only)

Outcome	Naturalization Rate %							
Mean (Direct Democracy)	2.05		1.90		2.46		2.24	
Sample	All Municipalities				German Language			
Restriction	Switching Cantons		Switching Municipalities		Switching Cantons		Switching Municipalities	
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Direct Democracy	-1.15	-1.13	-1.50	-1.48	-1.38	-1.38	-1.27	-1.27
	(0.20)	(0.20)	(0.26)	(0.26)	(0.27)	(0.27)	(0.32)	(0.32)
Appointed Commission		0.41		0.43		0.00		0.00
		(0.59)		(0.82)		(0.72)		(0.83)
Constant	1.60	1.59	2.17	2.16	1.91	1.91	1.96	1.96
	(0.17)	(0.17)	(0.29)	(0.29)	(0.29)	(0.29)	(0.35)	(0.35)
Municipality FEs	✓	✓	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Observations	16,357	16,357	10,521	10,521	8,001	8,001	6,673	6,673
Municipalities	910	910	595	595	453	453	383	383
Effect Size	56	55	79	78	56	56	57	57
95% CI LB	37	36	52	51	35	35	29	29
95% CI UB	75	74	106	105	78	78	85	85

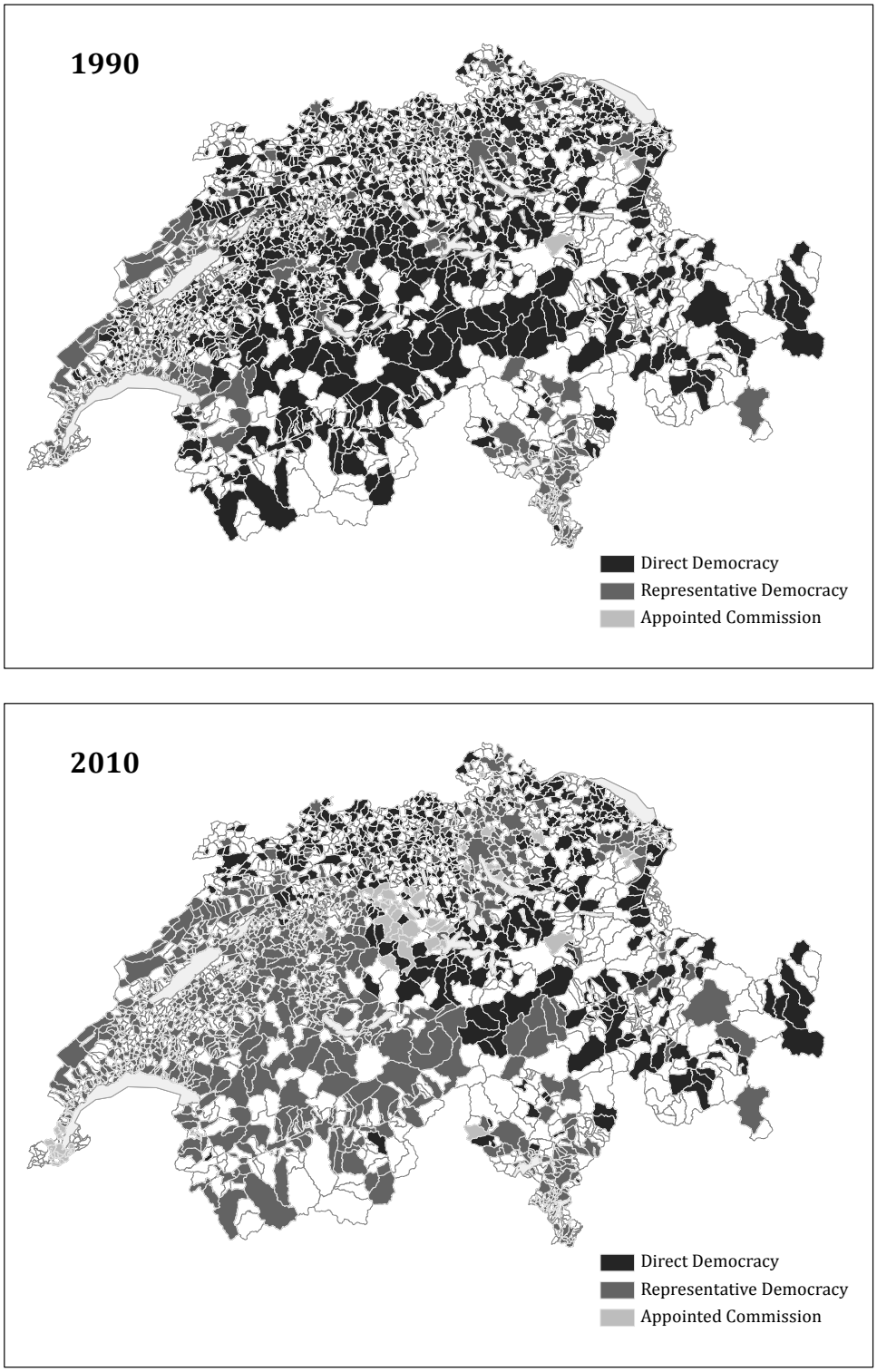
Note: OLS panel fixed effects regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The outcome variable is the municipal naturalization rate, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), and Appointed Commission (1 for appointed commission, 0 otherwise). The last three rows summarize the increase when switching from direct democracy to representative democracy as the percent change over the average naturalization rate (under direct democracy). LB and UB refer to upper and lower bound of 95 % confidence interval. Models 1-4 refer to the sample of all municipalities and models 5-8 restrict the sample to municipalities in the German language region. For each subsample, the first two models restrict the sample to all cantons where a majority of municipalities switch and the last two columns restrict the sample to all municipalities that switch.

Table B.3: Robustness: Effect of Direct Democracy on Naturalization Rates (Lagged Dependent Variable)

Outcome	Naturalization Rate %							
Mean (Direct Democracy)	2.0				2.20			
Sample	All Municipalities				German Language			
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Direct Democracy	-0.58	-0.52	-0.61	-0.57	-1.35	-1.33	-1.07	-1.05
	(0.08)	(0.08)	(0.09)	(0.09)	(0.15)	(0.15)	(0.15)	(0.15)
Appointed Commission		1.04		0.84		0.31		0.36
		(0.25)		(0.25)		(0.63)		(0.60)
Constant	1.12	1.05	-2.75	-2.76	1.95	1.93	-2.65	-2.67
	(0.09)	(0.09)	(0.24)	(0.24)	(0.16)	(0.16)	(0.45)	(0.45)
Year FEs	✓	✓	✓	✓	✓	✓	✓	✓
Lagged DV	✓	✓	✓	✓	✓	✓	✓	✓
Covariates			✓	✓			✓	✓
Observations	23,030	23,030	22,399	22,399	14,658	14,658	14,415	14,415
Municipalities	1,347	1,347	1,334	1,334	865	865	859	859
Effect Size	29	26	31	29	61	61	49	48
95 LB	21	18	22	20	48	47	35	34
95 UB	37	34	39	37	75	74	62	61

Note: OLS panel regression for 1991-2009 period. Regression coefficients shown with robust standard errors (clustered by municipality) in parentheses. The outcome variable is the municipal naturalization rate, the independent variables are Direct Democracy (1 for direct democracy, 0 otherwise), and Appointed Commission (1 for appointed commission, 0 otherwise). Additional predictors include the lagged naturalization rate (models 1-8) and log population, lagged ratio of foreign to Swiss population, the local unemployment rate, and the SVP vote share (for Models 2-4 and 6-8). The last three rows summarize the increase when switching from direct democracy to representative democracy as the percent change over the average naturalization rate (under direct democracy). LB and UB refer to upper and lower bound of 95 % confidence interval. Models 1-4 refer to the sample of all municipalities and models 5-8 restrict the sample to municipalities in the German language region.

Figure B.1: Naturalization Regimes in Swiss Municipalities 1990 & 2010



Note: Figure shows the naturalization regimes in surveyed Swiss Municipalities in 1990 (upper panel) and 2010 (lower panel). Source: Authors' municipality survey.