THE SEEDS OF POPULISM: MEDIA COVERAGE OF VIOLENCE AND ANTI-IMMIGRATION POLITICS[*]

Very preliminary version, do not circulate

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Abstract

We study how news coverage of immigrants' criminality impacted municipality-level votes in the 2009 referendum on "Minaret Ban" in Switzerland. The campaign, successfully led by the populist party SVP, played aggressively on the fears of Muslim immigration and linked Islam with terrorism and violence. We make use of an exhaustive dataset of violent crime detection that we combine with detailed information on crime coverage from 12 newspapers. First we quantify the extent of the media bias in covering immigrant's criminality. Second we estimate a theory-based voting equation at the municipality-level. Exploiting random variations in crime occurrences, we find a positive and large effect of news coverage on the votes in favor of the Minaret ban. Our counterfactual quantifications show that, in presence of a law forbidding the report of crime perpetrators nationality, the outcome of the referendum would have been nearly reverted at the national level.

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JEL Classification: D72, L82, Z12, K42.

"When Mexico sends its people, they're not sending their best. They're not sending you. They're not sending you. They're sending people that have lots of problems, and they're bringing those problems with us. They're bringing drugs. They're bringing crime. They're rapists. And some, I assume, are good people."

- Donald Trump, presidential announcement speech, June 16, 2015

1 Introduction

In recent years, anti-immigration political platforms have received increasing support in the US and many European countries. Populist parties that campaign for such programs build on the notion that communities with growing immigrant population are unsafe, and that migration policy must be evaluated through this lens. Since voters can hardly assess themselves the potential over-propensity of immigrants to commit crime, their beliefs are fuelled with two possibly non-representative samples of crimes: the sample of crimes that voters observe in their local community and the sample of crimes that are reported in the news. If the priming of the populist parties is successful, that is, if voters take into account immigrants' criminality when deciding to vote for an anti-immigration platform, news reporting criminality may well affects voting outcome.

In this paper, we study empirically how news coverage of immigrants' criminality impacted voting patterns in the 2009 referendum on "Minaret Ban" in Switzerland. Led by the populist party SVP, the campaign has been perceived as highly controversial since it played aggressively on the fears of Muslim immigration and linked Islam with terrorism and violence (e.g. see Figure A.2). The unexpected, and worldwide blamed, outcome of the referendum was a clear yes (58%) in favor of banning minarets. Our analysis combines detailed information on crime coverage in 12 Swiss newspapers with an exhaustive dataset of violent crime detection that reports nationalities. We first assess the extent of the media bias in covering immigrant's criminality. Then we estimate a theory-based voting equation in the cross-section of municipalities. Finally we perform counterfactual quantifications.

Identification of a causal impact of news coverage on anti-immigration vote is challenging for at least three reasons. First, in most democracies, representatives are elected on multi-dimensional political platforms and this makes difficult for the researcher to link votes and media coverage of specific issues. Second, the effect of reported criminality of migrants (i.e. as covered in the news) must be disentangled from the direct effect of criminality (i.e. its true level). Third, reverse causation is a concern, since xenophobic attitudes of the readership may well drive both the news coverage of crimes perpetrated by immigrants and the anti-immigration vote. We see Switzerland as an ideal laboratory for tackling these methodological issues. The widespread use of referendum –the so-called direct democracy– is a crucial feature of Swiss political institutions that makes possible the observation at a very fine grained-level (i.e. municipality) of political support on very specific issues. Moreover Switzerland being a highly heterogeneous country from a cultural and linguistic perspective, we can exploit spatial variations in votes, violence and media exposure for the

purpose of our identification strategy.

The findings of this paper are manifold. First, we document a large distortion in immigrants' over-criminality in the news during the pre-vote period. Comparing the crime over-propensity of immigrants in the detection data and in the news, we find that this distortion ranges from 41% in the six month period before the vote to 69% in the three months preceding the vote. Moreover, estimates of the likelihood of news coverage are consistent with the stylized facts. We find that the likelihood of being reported in the news is 29% higher for crimes perpetrated by foreigners than crimes perpetrated by natives during the 2009-2013 period. This effect is robust to the inclusion of standard determinants of news coverage, such as the readership of the journal in the district where the crime occurred. In addition, we examine the effect of perpetrator's nationality at different points in time separately and show that coverage of foreign crimes increased dramatically one month before the 2009 referendum.

Second, our estimates show that proximity between the area where the crime is perpetrated and the area where a newspaper is edited is a key driver of news coverage, besides the nationality and readership effects. In other words, news coverage of immigrants' over-propensity to commit crime embeds also patterns of migration and criminality that are specific to the areas where newspapers have headquarters, which are very large cities. For instance, it may well be that the distortion between immigrants' criminality in the news and in the raw data is driven mechanically by the fact that journalists cover more the criminality in large cities where the immigrant population accounts for a larger share of the population than the average share of immigrants in the country.

Third, we assess the effect of the crime over-propensity of immigrants in the news on the Minaret Ban vote. The baseline OLS estimates regress the "yes" vote at municipality level on the share of foreign crimes in each of the newspapers, weighted by the market share of each newspaper in the municipality. We call this variable crime news exposure (CNE) in the rest of the paper. We are concerned with the possible endogeneity of the relationship between crime news exposure and anti-immigration vote. Thus, for the sake of causality, our analysis makes use of cross-municipality variations in the readership of newspapers that cover different samples of crimes by chance. Our analysis uses two sources of variation. We exploit cross-municipality differences in the readership of each of the newspapers in our sample. Then, we use cross-newspaper variation in the occurrence of crimes in areas where the newspaper has a headquarter, six months before the vote. Since the newspapers we cover in this paper are mainly local newspapers, and Switzerland is divided in linguistic regions, the newspapers in our sample do not have headquarters in the same places. Using the two sources of variation together, we instrument the municipality-specific crime news exposure with an aggregation of the share of foreign crimes committed in areas where newspapers have a headquarter, by weighting each newspaper by its market share in the municipality.

Nevertheless, it may still be that long-run patterns of criminality in these places correlate with xeno-phobic beliefs, which would violate the exclusion restriction. We address this issue by exploiting cross-newspaper differences in the short-run deviation of criminality in the areas, taking the difference between the share of immigrants in the crimes perpetrated six months before the vote and the share of immigrants in the crimes perpetrated over the whole period (2009-2013). We construct an aggregate index at the mu-

nicipality level, which sums the interaction of the market share of each newspaper in the municipality with the short-run deviation of the share of immigrants in the crimes perpetrated in the area of the newspaper's headquarter. Our preferred estimates make use of the instrument in deviation and include region fixed effects that control for all time-invariant differences between regions. We also control for the many observable municipality characteristics, including the past anti-immigration votes outcome. As such, our strategy follows the same logic as a first difference estimator. Eventually, we allow voters to learn from the local crime over-propensity of immigrants by including the share of immigrants in the crimes perpetrated in the municipality six months before the vote.

We find that a larger crime over-propensity of immigrants in the news increases the vote in favour of the ban significantly. The estimates imply that, should newspapers report foreigners' crime over-propensity at its true value, this would have decreased the "yes" vote by 4 percentage points, which is comparable to an increase in the share of highly educated people by 50%. Another interesting counterfactual exercise shows that in absence of news reporting of criminality, voters' belief on foreigners is equal to 22% (the share of the immigrants in total population). If this is the case, the "yes" vote decreases by 6 percentage points at the national level, which is close to reverting the outcome of the vote.

Our results are robust to different sensitivity analysis such as alternative measures for the instrument, the inclusion of the long-run share of foreign crimes in the areas where the newspapers have a headquarter, alternative time windows before the vote, the instrumentation of readership, alternative coding rules for newspaper articles with no mention of the nationality and also controls for the local criminality where people work. We also report a set of falsification exercises to assess the validity of the exclusion restriction of our IV. Last, we exploit individual post-vote surveys that confirm our previous results but also indicate that the Minaret Ban vote was driven by concerns on immigration and security rather that other potentially relevant aspects, such as the loss of traditional values.

Literature Review. This paper presents the first empirical evidence on the determinants of news coverage of immigrants' criminality. It contributes to a flourishing literature on the market forces that determine media bias.[1] While ideological bias of the news outlets has been extensively documented in the literature (Groseclose and Milyo, 2005; Gentzkow and Shapiro, 2010), we explore filtering of information on violent crimes, i.e. the fact that a given crime may or may not be released by a newspaper. Similarly to Snyder and Strömberg (2010) who study media coverage of electoral politics, we find that coverage of crime is driven by readershare. Moreover, we also show that geographical proximity to journalists and newsrooms increases the probability of coverage significantly, leading to criminality in the news being driven by criminality in these specific areas.

In the second part of the paper, we investigate the effect of the media sampling of immigrants' criminality on support for anti-immigration politics. These findings build on the literature that finds a positive effect of media coverage of electoral politics on voter turnout (Strömberg, 2004; Gentzkow, 2006; Oberholzer-

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[1]See Gentzkow et al. (2016); Puglisi and Snyder (2015) for a survey of, respectively, the theoretical and empirical aspects of media bias in the literature.

Gee and Waldfogel, 2009; Snyder and Strömberg, 2010; Gentzkow et al., 2011; Drago et al., 2014) as well as electoral outcomes (DellaVigna and Kaplan, 2007; Gerber et al., 2009; Snyder and Strömberg, 2010; Enikolopov et al., 2011; Gentzkow et al., 2011; Durante et al., 2015). To the best of our knowledge, we provide the first empirical evidence of the significant role played by media in the success of a populist campaign.

Our findings on the large effect of media on voting in favor of anti-immigration politics informs also the recent literature on relations between immigration and vote for anti-immigration political platforms (Barone et al., 2016; Mayda et al., 2016). We build on the literature on immigration and crime (Bianchi et al., 2012; Bell et al., 2013; Couttenier et al., 2016) to address the effect of beliefs on immigrants' criminality on voting outcomes. The present paper contributes to the literature that views anti-immigration vote as one being driven by natives' worries about immigration's negative externalities on labour market outcomes, quality of amenities, or welfare state (Facchini and Mayda, 2009; Otto and Steinhardt, 2014; Halla et al., 2017). Eventually, this paper also relates to the study of Drago et al. (2016) which views criminality as a driver of electoral outcomes.

Moreover, our identification strategy exploits a crucial feature of Swiss political institutions, namely the widespread use of referendum, which makes possible the observation at a very fine grained-level (i.e. municipality) of political support on the very specific issue of anti-immigration politics. On the contrary, the literature has focused so far on elections of representatives based on multi-dimensional political platforms, with the exception of Brunner and Kuhn (2014).

The paper is organized as follows. In Section 2 we present the data. Section 3 provides a model of media coverage of criminality and anti-immigration voting and grounds the empirical analysis. In Section 4 we analyse the determinants of media coverage of violence. Then, we turn to the analysis of the crime news exposure on vote in Section 5. We conclude in Section 6.

2 Data

2.1 Criminality in Switzerland

Data on criminality in Switzerland comes from the Swiss Statistical Office (FSO). This non-publicly available exhaustive data contains information on all crimes detected by the police in Switzerland between 2009 and 2013. The individual-level dataset has been collected by local police services and covers all cases when somebody was charged with infractions to the (federal) Penal Code. Remarkably, the data convey precise information on the nationalities and residency status of victims and perpetrators of any detected crime, as well as on the place, date and type of the crime. It therefore allows us to know at each point in time during this period the true composition of criminality in Switzerland.

We are interested in "signal" crimes; i.e. "particular types of criminal and disorderly conduct [that] have a disproportionate impact upon fear of crime" (Innes et al., 2002). We thus focus on violent crimes only, defined as "Offences against Life and Limb" in the Swiss Penal Code (Title 1), e.g murders, assassinations

and infanticides, also including attempts. In the period from 2009 to 2013 there were 847 such incidents; 362 aggressions (43%) were perpetrated by foreigners, while foreigners represent 23% of the population. This indicates there is a higher propensity of foreigners to commit violent crimes than natives. The crime over-propensity of foreigners at national level can be defined as $\frac{\#\texttt{crime}^{\texttt{F}}}{\#\texttt{crime}^{\texttt{All}}} / \frac{\texttt{pop}^{\texttt{F}}}{\texttt{pop}^{\texttt{All}}}$. Over the period, crime over-propensity of foreigners amounts to 1.85 (= 0.43/0.23), which implies that (unconditionally) foreigners were close to twice as likely as natives to commit a violent crime in the period 2009 to 2013.

Explaining the sources of this propensity is beyond the scope of this paper. Couttenier et al. (2016) show that the largest part of the variance in violence (80%) can be explained by gender, age, and employment status. Young unemployed men are over-represented in foreigners with respect to natives, a key driver of this discrepancy.

2.2 Newspapers coverage of violent crime

The news sample consists of 12 major Swiss newspapers, 6 German- and 6 French-speaking ones. The German-speaking outlets are: 20 Minuten, Neue Zuercher Zeitung, NZZ am Sonntag, SonntagsZeitung, St. Galler Tagblatt, and Tages-Anzeiger; the French-speaking ones are: 20 Minutes, 24 Heures, Le Matin, Le Matin Dimanche, Le Temps, and La Tribune de Genève.

We used Lexis/Nexis to search the on-line archives of these newspapers for mentions of the 847 aggressions. Data on four newspapers (Neue Zuercher Zeitung, NZZ am Sonntag, 20 Minuten, and 20 Minutes) was collected by hand. Following the literature, we restricted the search window from 2 days prior to the event up to 10 days after. Standard keywords related to these aggressions were chosen to identify the articles, such as kill and murder, as well as their variants.

This procedure resulted in identifying 9,819 articles. These articles were then double-checked to evaluate whether they actually referred to the specific aggressions. This allowed to match 994 articles corresponding to 696 events out of the possible 9,997 newspaper-event combinations.[2] Information on whether the nationalities of perpetrators and victims were mentioned in the newspaper article was also coded. Interestingly, the information that could be found in these articles was very precise, with more than 43% reporting the nationality of the aggressors and 42% the nationality of the victim (see example in Figure A.1).

Table A.1 presents descriptive statistics of crimes' media coverage. Some newspapers in our sample cover crimes extensively, like the *20 Minutes F-CH* which covers 135 crimes (16% of the crimes), or *Le Matin* with 92 crimes covered (11% of the crimes). These two newspapers are usually classified as tabloid. At the other end of the spectrum, *Le Temps* and *Neue Zuercher Zeitung* are nationwide French- and German-language (respectively) non-specialised daily newspapers and cover only 1% to 2% of the crimes. We present further statistics on the coverage of crimes, and notably on the bias towards the crimes perpetrated by foreigners in section 4.

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[2]The St. Galler Tagblatt is only available starting 2010 on Lexis/Nexis. In 2009 there were 167 violent crimes. The total number of possible combinations is therefore $680 \times 12 + 167 \times 11 = 9,997$.

2.3 Other data

Newspaper circulation data comes from the Research and Studies in Advertising Media Association (*WEMF/REMP*).[3] This association conducts two surveys per year, covering approximately 20,000 individuals and collecting information on media consumption. Information on the district of residence of the respondents is also available. This allows us to calculate a time-unvarying market share for each newspaper in every district using the waves from 2006 to 2008.[4] The average share of a newspaper in our dataset in overall sales is 5%; the twelve newspapers account for 50.6% to 52.8% of the total circulation of general interest newspapers in Switzerland for the 2009-2013 period. Table A.1 gives information on the newspaper-specific market shares.

Data on referenda outcomes, demography, and municipality characteristics comes from the Swiss Statistical Office (FSO). This municipality level data contains information on the number of voters registered, the number of ballots, valid ballots, and vote in favour of every referendum since 1960. Population data contains information on native and foreign composition, languages spoken, religion, sectoral employment, gender, age distribution, and education. Municipality characteristics refer to the type of the municipality (urban/rural), whether it belongs to a mountain group, altitude, and terrain roughness.

2.4 The Swiss Minaret Referendum

To evaluate the impact of perceived immigrant violence on anti-immigration vote we focus on the Minaret Ban referendum. The Minaret Ban referendum was initiated by a group primarily composed of politicians of the far-right Swiss People's Party (*SVP/UDC*).[5] In July 2008, this group collected the 100,000 signatures required to launch a referendum on the ban of the construction of minarets in the Switzerland.[6] The proposition of this popular initiative was to introduce a single sentence in the constitution: "The construction of minarets is prohibited" (Art. 72. P. 3).

The minarets were merely a problem per-se; in 2009, there were altogether 4 minarets in Switzerland.[7] They were rather chosen as a symbol of the expansion of Islam in the country.[8] The initiators built on the idea that Switzerland was being invaded by foreigners originating from Muslim countries, putting forward the fact that while in 1980 there were only 56,600 Muslims in the country, they would soon reach half a

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[3]We kindly thank Marc Sele for giving us access to the WEMF/REMP dataset.

[4]Throughout the empirical analysis we use the 2006-2008 market shares (pre-vote years) to mitigate endogeneity concerns; all results hold nevertheless when using the 2009-2012 shares.

[5]The so-called "Egerkinger" committee. 14 out of the 16 members of this committee were members of the Swiss People's Party. The other 2 members of this committee were members of the Federal Democratic Union of Switzerland (*EDU/UDF*).

[6]In Switzerland, for citizens to launch a federal popular initiative, or "votation", 100,000 valid signatures of Swiss nationals are required. These signatures have to be collected within 18 months of the official start of signatures collection. Once these signatures are collected they are brought to the Federal Chancellery for validation. Referenda take place 3 to 4 times per year. From 2001 to 2010, 31 referenda took place in which the citizens were asked to vote on 94 objects.

[7]In Geneva, Zurich, Winterthur and Wangen bei Olten. The construction of one more minaret was authorised in Langenthal in July 2009. The construction of this minaret did not go through.

[8]The initiators namely quoted the President of Turkey Recep Tayyip Erdogan referring to minarets as "bayonets" of political Islam in 1997.

million.[9] The campaign preceding the referendum was highly controversial, playing aggressively on the fears of Muslim immigration and linking Islam with terrorism and violence. Islam was presented as a threat to Swiss fundamental values; the main campaign poster depicted minarets as missiles coming out of the Swiss flag (see Figure A.2). The number of Google searches of the words "violence", "murder", "attack", and "killer" can testify the success of this campaign; the three months preceding the referendum there was a large increase in searches in Switzerland, an indication of the growing anxiety of the population towards violence and crime (see Figure A.3).

The government, both chambers and all majority parties, except the Swiss People's Party, opposed the initiative. The proposition was perceived as a threat to religious peace and contradictory to the Swiss constitution since it violated the principle of non-discrimination.[10] It was also seen as a threat to the peaceful religious co-existence in Switzerland, and potentially harmful to the image of Switzerland internationally.

The referendum took place on November 29, 2009. Pre-referendum polls had indicated a comfortable, if slowly shrinking, majority against the proposal.[11] The participation rate (53.9%) turned out to be the largest in the last 5 years. The resulting unexpected win of the "yes" campaign with 57.5% of ballots came as a shock in the public opinion, not only in Switzerland, but around the world. The *New York Times* described the outcome as one that "displayed a widespread anxiety" (NYT, Nov 30, 2009). *The Guardian* spoke of a result that was "likely to cause strife [...] and set back efforts to integrate a population of some 400,000 Muslims, most of whom are European Muslims - and non-mosque-goers - from the Balkans" (The Guardian, Nov 29, 2009). The "yes" win even divided the Swiss People's Party. The result was initially perceived as a response to increased fear of Islam. The voting patterns reveal however that it had a strong anti-immigration component. Figure A.4 presents the correlation between the Minaret Ban outcome and immigration referenda during the 2000-2009 period; the correlation is very strong, ranging from 0.7 to 0.8.

3   Conceptual Framework

With the aim of structuring our empirical analysis we first provide a model of media coverage of criminality and anti-migrant voting. The setup is kept simple and builds on the existing theoretical literature on media coverage and political accountability (see Strömberg (2015)). Starting from a one-period probabilistic voting model (Lindbeck and Weibull, 1987) we assume that voter k in municipality m endorses the minaret ban if

$$\mathbb{E}\left[\mathtt{U}_{\mathtt{k}}^{\mathtt{YES}} - \mathtt{U}_{\mathtt{k}}^{\mathtt{NO}}\right] + \mathtt{xeno}_k \geq 0 \tag{1}$$

The first term captures the expected difference in utility of k between the two aggregate outcomes of

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[9]In 2009, Muslims accounted for 5% of the Swiss population; all immigrants accounted for 23%. Approximately 90% of the Muslim population originated from Turkey and the Balkans (Kosovo, Albania, and Bosnia).

[10]The initiative was perceived as discriminatory because it only prohibited the construction of minarets and not other tall religious buildings such as bell towers.

[11]In the last survey preceding the referendum only 34% of respondents declared themselves in favour of the initiative.

the vote (adoption or rejection of the ban). The second term is an individual taste shock unobserved by the econometrician that is uniformly distributed at the municipality-level with mean $\overline{\text{xeno}}_m$ and, w.l.o.g., variance normalized to $1/12$. Hence municipalities with higher $\overline{\text{xeno}}_m$ tend to be more supportive of the minaret ban everything else equal.

Crucially we make an assumption of *crime priming*, namely that the voter considers foreigners criminality as a first-order issue when evaluating the costs and benefits of anti-migrant policies. Notice that inducing crime priming among voters was a key aspect of the communication strategy of the populist parties at the origin of the minaret ban initiative. Understanding the strategic determinants of priming is a fascinating question that goes beyond the scope of this paper. Here we take priming as given and we posit that individual k expected utility difference increases with violence_k, her belief about the crime over-propensity of foreigners

$$\mathbb{E}\left[\text{U}_k^{\text{YES}} - \text{U}_k^{\text{NO}}\right] = \alpha \times \text{violence}_k + \mathbf{X}_k'\beta + \varepsilon_k \tag{2}$$

where $\mathbf{X}_k$ and ε_k are observable/unobservable characteristics impacting the utility benefits of the ban. Our assumption of crime priming means $\alpha \geq 0$ in the previous equation.

By definition crime over-propensity of Foreigners corresponds to the share of crimes perpetrated by Foreigners relative to their share in the total population. This implies

$$\text{violence}_k \equiv \mathbb{E}_k\left[\frac{\#\text{crime}^{\text{F}}}{\#\text{crime}^{\text{All}}}\right] - \frac{\text{pop}^{\text{F}}}{\text{pop}^{\text{All}}} \tag{3}$$

where expectations $\mathbb{E}_k[.]$ depend on k information set, the categories of population (All,F) refer to "All individuals"/"Foreigners only", pop is their respective size (known by k) and $\#\text{crime}$ is the total amount of crimes perpetrated by each category (unobserved by k).

A key feature in Equation (3) is that the voter knows the share of Foreigners in the total population but has an imprecise assessment of their criminality. Voter forms her expectations on this matter by using (i) the media sampling of (global) violence and (ii) their own sampling of (local) violence. Assuming that k reads one and only one newspaper $j \in \{1, ..., J\}$, the belief on the share of crimes perpetrated by Foreigners is equal to

$$\mathbb{E}_k\left[\frac{\#\text{crime}^{\text{F}}}{\#\text{crime}^{\text{All}}}\right] = \omega \times \frac{\#\text{news}_j^{\text{F}}}{\#\text{news}_j^{\text{All}}} + (1 - \omega) \times \frac{\#\text{crime}_m^{\text{F}}}{\#\text{crime}_m^{\text{All}}} \tag{4}$$

where, for each category (All,F), the variable $\#\text{news}_j$ stands for the amount of articles in newspaper j reporting a crime and $\#\text{crime}_m$ is the amount of crimes perpetrated in municipality m.

In Equation (4) the weight $\omega \in [0, 1]$ can be interpreted in two non-exclusive ways. From a learning perspective ω balances the relative importance of the two informational sources, i.e. newspapers' reporting versus own experience. From a voting perspective ω captures the fact that the voter is concerned both by aggregate (unconditional) criminality of foreigners and by local criminality of foreigners living in their neighbourhood.[12]

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[12]The second interpretation is a shortcut for saving on notation. An equivalent but more rigorous modelling setup (available

Aggregating at the municipality level the probabilistic voting model (1)-(4) yields the share of voters supporting the minaret ban in municipality m

$$\overline{\text{YES}}_m = \alpha_0 \times \left[\sum_j s_m(j) \times \frac{\#\text{news}_j^F}{\#\text{news}_j^{All}} \right] + \alpha_1 \times \frac{\#\text{crime}_m^F}{\#\text{crime}_m^{All}} + \bar{\mathbf{X}}_m' \gamma + (\overline{\text{xeno}}_m + \varepsilon_m) \qquad (5)$$

where (α_0, α_1) are positive parameters and $s_m(j)$ is newspaper j market share in municipality m.[13] This relationship basically states that pro- ban votes vary positively across-municipality with (i) the share of the population that reads news on crimes perpetrated by Foreigners and (ii) crime over-propensity of Foreigners at the local level.

Equation (5) is at the core of our empirical analysis. Our main variable of interest, Crime News Exposure, is built under its theoretical guidance

$$\text{CNE}_m \equiv \sum_j s_m(j) \times \frac{\#\text{news}_j^F}{\#\text{news}_j^{All}} \qquad (6)$$

This variable basically compounds the media sampling of Foreign crimes across newspapers, weighted by municipality-level market shares. Henceforth, for a randomly picked voter, CNE_m captures the impact of news exposure on her belief about foreign criminality. As a preliminary step, in Section 4, we investigate empirically the determinants of news provision in CNE_m. Then Section 5 exposes the core of our empirical analysis that focuses on the estimation of Equation (5).

4   Crime News Provision

In this section we estimate the determinants of news provision and notably whether there is an over-reporting by newspapers of crimes perpetrated by foreigners. Beside this question, this section enables us to ground our IV strategy and also to quantify counterfactual policy experiments in Section 5.

Provision of news on violent crimes by newspaper j takes the form $\#\text{news}_j = \mathbb{P}_j \times \#\text{crime}$ where $\mathbb{P}_j$ is the average reporting probability in newspaper j. Our main explanatory variable, news provision on crime over-propensity of Foreigners, is quite similar except that it must be conditioned on perpetrator nationality $\frac{\#\text{news}_j^F}{\#\text{news}_j^{All}} = \frac{\mathbb{P}_j^F}{\mathbb{P}_j^{All}} \times \frac{\#\text{crime}^F}{\#\text{crime}^{All}}$. We define the reporting bias of newspaper j as equal to $\mathbb{P}_j^F / \mathbb{P}_j^{All}$. When it differs from 1, we see that newspaper j provides a non-representative sampling of aggregate violence.

Coverage of crime in 2009 offers evidence of such reporting bias (Table A.2). In 2009, 167 violent crimes occurred; 69 of these aggressions were perpetrated by foreigners (41.3%). 103 articles appeared in

upon request from the authors) consists in directly assuming in Equation (2) that priming depends on voter's perception of both local foreign criminality and aggregate foreign criminality. While newspapers inform on the latter form of criminality, own experience mostly informs on the former one.

[13]We use market shares (i.e. share of newspaper j in total sales) in our aggregating procedure because information is available for all municipalities. By contrast newspaper readership (i.e. share of readers of j in total population) is known only for a sub-sample of municipalities. However for this sub-sample, Figure A.5 shows that the propensity to read newspapers is homogeneous and close to 100% in most municipalities. Hence the two measures are in fact comparable.

the news, of which 57 related to aggressions with a foreign suspect (55.8%). This implies that, in 2009, the distortion between crime detection data and as reported in the news was around 34%.[14] In the 6 months (3 months) preceding the Minaret Ban referendum, the propensity of foreigners to commit violent crime remained broadly unchanged: of the 77 (35) aggressions that took place, 31 (16) were perpetrated by foreigners (40.3% and 45.7%, respectively). In the news however the pattern is different. In the 6 months (3 months) before the referendum, more news referred to foreigners: out of the 53 (31) articles that appeared, 30 (24) referred to foreigners (56.6% and 77.4%, respectively). The distortion between foreigners' propensity to commit crime in the detection data and as reported in the news amounts to around 41% in the 6 months before the referendum, and 69% in the 3 month period before the referendum. In the next section we investigate the determinants of this distortion between crime raw data and crime news.

4.1 Estimating Reporting Probabilities

Crucially we observe the universe of violent crimes (the raw data) and newspapers articles (sampled events). This allows us to estimate $\mathbb{P}_{ij}$ the reporting probability for each (crime i × newspaper j) cell. To this purpose we estimate the following LPM model on the full sample of 2009-2013 crimes × 12 newspapers

$$\texttt{news}_{ij} = \rho \times \texttt{foreign}_i + \alpha \times \texttt{readershare}_{ij} + \beta \times \texttt{newspaperHQ}_{ij} + \mathbf{D}'_i \lambda + \mathbf{FE}_j + \varepsilon_{ij} \qquad (7)$$

where the binary variable $\texttt{news}_{ij} = 1$ when crime i is reported in newspaper j (0 otherwise), and $\texttt{foreign}_i$ is equal to 1 if crime i is perpetrated by a foreigner (0 otherwise). $\mathbf{D}'_i$ is a set of crime specific co-determinants of news coverage. We control for time-variant co-determinants of the probability of coverage by including calendar day fixed effects and year-week fixed effect. We also include crime subcategory fixed effects to control for potential differences in the newsworthiness across different types of crimes.[15] We include district fixed effects to account for potential asymmetric coverage across localities (including potential higher coverage in large urban centres). Regressions include newspaper fixed effects ($\mathbf{FE}_j$) to capture time-invariant newspaper specific characteristics, such as political orientation and readership composition.

Then, we include a set of co-variates at the crime × newspaper level. We control for the readershare of newspaper j in the municipality where crime i has occurred, $\texttt{readershare}_{ij}$, since newspaper j is likely to provide more information on events that take place in areas where a large share of its readership is located (Snyder and Strömberg, 2010). Arguably, controlling for the readership effect, it may still be that some areas are more covered than others, and notably for cost-related reasons. In fact, one can argue that the cost of journalists' investigations is likely to decrease with geographical proximity. We control for the potential effect of the geographical proximity with the newspaper's headquarter by including $\texttt{newspaperHQ}_{ij}$,

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[14]The distortion between crime detection data and crime as reported in the news: $\frac{\#\texttt{news}^{\mathrm{F}}}{\#\texttt{news}^{\mathrm{All}}} / \frac{\#\texttt{crime}^{\mathrm{F}}}{\#\texttt{crime}^{\mathrm{All}}}$. In 2009, it represents $\frac{57}{103} / \frac{69}{167} = 1.34$

[15]Crime subcategories are based on the criminal code. These subcategories are: murder/homicide, assassination, passion crime, infanticide, and negligence.

Table 1: DETERMINANTS OF NEWS COVERAGE OF VIOLENT CRIME

Dependent Variable	News coverage		
	(1)	(2)	(3)
Foreign	0.020^b	0.020^b	0.019^b
	(0.009)	(0.009)	(0.009)
Readershare		0.366^a	0.203^b
		(0.078)	(0.092)
Newspaper HQ area			0.038^a
			(0.011)
Observations	9997	9997	9997
R^2	0.176	0.179	0.180
Sample Mean	0.07	0.07	0.07

Notes: LPM estimations. Clustering at crime event level. [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Population, % of foreign in population, readershare, week, calendar day, district, type of crime and newspaper fixed effects are included.

a dummy that codes 1 if newspaper j has a headquarter in the area where crime i has been perpetrated.[16] Standard errors are clustered at crime event level.

The coefficient of interest here, ρ, captures the effect of a perpetrator's nationality on the probability of coverage, controlling for the standard determinants of news coverage. We are also interested in β, since we make use of geographical proximity to the newspapers' headquarters to infer causality in Section 5.

Results. The estimates from the ordinary least squares (OLS) regression of Equation (7) are presented in Table 1. The coefficient of interest is positive and statistically significant. In other words, we first identify an over-sampling of crimes perpetrated by foreigners in the news (Column (1)). The point estimate of 0.02 translates into an increase of 29% of the probability of report in comparison to the unconditional probability (7%) over the 2009-2013 period.

This over-sampling of crimes perpetrated by immigrants is robust to the inclusion of the share of a newspaper's readers who live in the district the aggression occurred (Column (2)). Coverage increases in readershare; the effect is positive and significant, in line with findings in Snyder and Strömberg (2010). The magnitude of the coefficient of readership implies that a 1 percentage point increase in readers increases the probability of coverage in this location by 0.37 percentage points.

Interestingly, there is also an important over-sampling of the crimes that are perpetrated in the areas where newspaper headquarters are located (Column (3)). This effect is precisely estimated even though we control for readershare, which is expected to be large in municipalities where a newspaper is edited. As we

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[16]The edition of newspapers in our sample takes places in large cities primarily: Zurich (6 newspapers), Lausanne (5), Bern (3), Geneva (3), St. Gallen (2), Basel (1), Luzern (1), and Neuchâtel (1).

show that crimes' occurrence is exogenous to the referendum taking place, we will exploit this variation to address the causal impact of news coverage on vote in the rest of the paper. The effect of 0.04 corresponds to an equivalent increase in readershare of 18.7 percentage points.

4.2   Heterogeneous effects

In this section we study heterogenous effect with respect i) to the origins of both perpetrators and victims; ii) to newspapers' characteristics and iii) to the political cycle.

Perpetrators' origins.   We make use of the a unique feature of our dataset on criminality in Switzerland, namely information on the nationalities of both perpetrators and victims. We start by focusing on the country of origin of perpetrators. Table A.3 displays the results. In Column (1), we interact foreign_i with with two mutually exclusive country characteristics. $\text{AS} = 1$ corresponds to countries that are in the 10 most represented nations of asylum seekers in Switzerland.[17] The effect is positive and statistically significant for events perpetrated by individuals coming from these countries; this is not the case for individuals coming from countries that are not in the 10 countries with the highest number of asylum seekers in Switzerland. The difference between the two country groups however is not statistically significant, as shown by the joint test (p-value=0.30).

In the same spirit, in Column (2), the variable $\text{muslim}(90\%)$ takes a value of 1 for countries where the share of Muslims is above 90%. The effect is positive and statistically significant for events perpetrated by individuals coming from these countries but also coming from non-Muslim countries. The difference between the two country groups is not statistically significant, as shown by the joint test in the Table (p-value=0.64).

In Column (3), border codes 1 for neighbouring countries (Austria, France, Germany, Italy). The probability of coverage of crimes perpetrated by foreigners from neighbouring countries is significantly lower than of crimes by other foreigners (the difference between the two country groups is statistically significant).

Early in the 90s, Swiss authorities have developed an immigration policy based on three different "circles". Countries in the first circle have got a simpler access than countries in the last.[18] We make us of this former immigration policy as a ranking for the countries. The variable $\text{circle1} - 2$ takes a value of 1 for countries in circle 1 or 2. The effect is positive and statistically significant for events perpetrated by individuals coming from the third circle but the difference between the two country groups however is not statistically significant (p-value=0.34)

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[17]Source: Foreign Resident Population Statistics.

[18]In 1991, first circle: Germany, Austria, Finland, Island, France, Belgium, Italy, Luxembourg, Netherlands, U.K., Ireland, Denmark, Greece, Spain, Portugal, Liechtenstein, Norway and Sweden. In the second circle: USA, Canada, Japan, Australia and New-Zealand and in the third circle all the other countries.

Victims' origins. We then look whether the nationality of the victim affects the likelihood of coverage. Results are presented in Table A.4. foreignvictim$_i$ is equal to 1 if the victim of crime i is a foreigner and 0 otherwise. In Columns (1) and (2), the nationality of the victim does not affect significantly the likelihood of coverage. In Column (3) we interact foreign with foreignvictim. The estimate is not significant. All in all, the victim's origin does not influence the probability of crime coverage.

Across newspapers. Is the over-sampling of crimes perpetrated by foreigners in the news the same for all newspapers? We replicate Column (3) of Table 1 but splitting the variable foreign across the different newspapers. For the for ease of interpretation results by newspaper are presented in Figure A.6. All newspapers are more likely to report foreign aggressions. The effect ranges form 0.5% (St. Galler Tagblatt) to 5.8% (20 Minutes). The effect is statistically significant for 4 newspapers (20 Minutes, Le Temps, Le Matin Dimanche, and NZZ am Sonntag).

Turning to magnitudes, this implies that an individual only reading the 20 Minutes would have the impression that foreigners are 30% more likely to commit crimes than one only reading the St. Galler Tagblatt.[19] In the next section we exploit differences in reporting across newspapers to estimate the impact of perceived violence on voting behaviour.

Across time periods. Another salient question is whether the coverage is influenced by the political cycle, e.g whether the proximity to the referendum affects the likelihood of coverage. Table A.5 displays the results. In Column (1), we interact the variable foreign with a dichotomous variable coded 1 if the crime is committed 0 to 30 days before the referendum (Votation$[t, t-30)$). The estimate of the interaction term is positive and significant, e.g the over-sampling of crimes perpetrated by foreigners in the news is higher in the 30 days before the referendum.

In Column (2), we interact the variable foreign with dichotomic variables coded 1 if the crime is committed between 30 to 60 days (Votation$[t-30, t-60)$) or 60 to 90 days (Votation$[t-60, t-90)$) before the referendum. Interaction terms are not significantly different from 0. In Column (3), we assess whether the over-sampling of crimes perpetrated by foreigners in the news is higher in the days following the referendum. The interaction terms are not significant.

5   News and Voting

In this section, we turn to the core of our empirical analysis by estimating the impact of news coverage of criminality on the Minaret Ban vote.

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[19]The bias for these two newspapers is $\frac{\mathbb{P}^{\text{F}}_{20FR}}{\mathbb{P}^{\text{N}}_{20FR}} = 1 + \frac{\widehat{\rho_{20FR}}}{\mathbb{P}^{\text{N}}_{20FR}} = 1 + \frac{0.058}{0.14} = 1.42$, and $\frac{\mathbb{P}^{\text{F}}_{SGT}}{\mathbb{P}^{\text{N}}_{SGT}} = 1 + \frac{\widehat{\rho_{SGT}}}{\mathbb{P}^{\text{N}}_{SGT}} = 1 + \frac{0.005}{0.07} = 1.07$. See Table A.1 for newspaper specific coverage rates.

5.1 Econometric Model

We estimate our theoretical model of voting (5) in a cross-section of Swiss municipalities in year 2009:

$$\overline{\text{YES}}_m = \alpha_0 \times \text{CNE}_m + \alpha_1 \times \frac{\texttt{\#crime}_m^{\texttt{F}}}{\texttt{\#crime}_m^{\texttt{All}}} + \bar{\mathbf{X}}_m' \gamma + \epsilon_m \tag{8}$$

where the error term is equal to $\epsilon_m \equiv \overline{\text{xeno}}_m + \varepsilon_m$ and CNE_m is our theory-based variable of Crime News Exposure as defined in equation (6). In our baseline specifications, we measure the news provision component of CNE_m and local crimes $\texttt{crime}_m$ within a time frame of 6 months before the vote. Alternative time frames are considered in our sensitivity analysis. Note also that pre-2009 newspapers market shares are used for computing CNE_m.

For building our cross-sectional sample we start from the full set of 2596 Swiss municipalities in 2009. Since we only collected German- and French-speaking newspapers, Italian-speaking and bilingual municipalities are excluded.[20] Moreover municipalities from districts where newspaper headquarters are located are also excluded: (i) because we want to exclude towns where a single newspaper has a dominant position (following Gentzkow et al. (2014)), and (ii) because we exploit local crime in areas where newspapers have a headquarter as an exogenous source of variation of news coverage in the following section.[21] At the end the sample is composed of a cross-section of 1862 municipalities.

Endogeneity Issue. Demand-driven news provision constitutes our main challenge for assessing the causal effect of crime news exposure on anti-migration vote. This well-established fact (Gentzkow and Shapiro, 2010) states that newspapers tend to provide news that confirm readers' ideology and beliefs. In other words, voters with strong anti-migrant opinions are more likely to read newspapers that over-report foreign criminality. From a theoretical perspective this means that market shares $\mathbf{s}_m(j)$ of newspapers reporting high $\texttt{\#news}_j^{\texttt{F}}/\texttt{\#news}_j^{\texttt{All}}$ are larger in municipalities with a high preference-shock $\overline{\text{xeno}}_m$. As a result, in our econometric specification (8), the error term ϵ_m correlates with CNE_m leading to an estimation bias.

A first approach to cope with endogeneity is to control for co-determinants of Crime News Exposure and anti-migrant attitude in Equation (8). In particular, we include a variable coding for past anti-migration votes outcome at the municipality level.[22] The estimation results in Table 2 show that it is a powerful control with a point estimate close to 1, illustrating the high level of persistence in anti-migration attitude

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[20]In Switzerland there are four official languages: German, French, Italian, and Romansh (a descendant of the Latin language spoken in the Roman Empire). The linguistic partition of the country in 2000 was: German 74%, French 21%, Italian 4%, Romansh 0.6%. In places where Romansh is spoken, people also speak either German or Italian. When omitting Romansh, 152 municipalities are Italian-speaking (out of the 2324 existing in Jan 01, 2015). Bilingual municipalities are defined as those with no language spoken by more than 90% of the population. There are 146 such municipalities in Switzerland.

[21]Newspaper headquarter are located in Zurich (6), Lausanne (5), Bern (3), Geneva (3), St. Gallen (2), Basel (1), Luzern (1), Neuchâtel (1); 159 municipalities are located in newspaper headquarter districts.

[22]This variable is created as the mean of the vote share in favour of anti-immigration referenda in the 2000-2010 period. These referenda are: "For a regulation of immigration" (Sep 24, 2000), "Against abuses in asylum rights" (Nov 24, 2002), "Federal decision on facilitated naturalization of second generation immigrants" (Sep 26, 2004), "Federal law on foreigners" (Sep 24, 2006), and "For democratic naturalizations" (Jun 01, 2008). An alternative way to construct this variable is to take the principal component of the outcome of these referenda; result remain unchanged when using the principal component instead of the mean.

at the municipality-level. Henceforth, the inclusion of past votes outcome makes our econometric model akin to a first difference specification: We basically correlate deviations from anti-migration past votes to the level of crime news exposure over a 6 month pre-vote period.[23]

Finally the vector of covariates $\bar{\mathbf{X}}'_m$ also includes canton FE, type of municipality FE, type of mountain FE, ruggedness, population size, share of immigrants, net immigration, education, language, religion, sectoral employment, and share of young people.

Instrumental variable   A second and more compelling approach for addressing endogeneity consists in instrumenting the news provision component of CNE_m in a 2SLS version of equation 8.[24] The key insight comes from Section 4 showing that proximity to newspaper headquarters is a powerful predictor of news coverage. Our IV strategy consequently exploits cross-newspaper exogenous variations in crime news provision that originate from the fact that (i) newspapers HQs are located in different municipalities; (ii) spatial proximity of a crime to HQ drives news coverage, for cost-related reasons that are unrelated to the nationality of its perpetrator (native or foreigner).[25]

More precisely, for each newspaper, a candidate instrument of its level of news provision, $\frac{\#\texttt{news}_j^F}{\#\texttt{news}_j^{All}}$, corresponds to the share of foreign crimes among crimes perpetrated in its headquarter municipality $\frac{\#\texttt{crimeHQ}_j^F}{\#\texttt{crimeHQ}_j^{All}}$. Aggregating across newspapers at the municipality-level yields our IV for CNE_m

$$\% \text{ foreign crime: HQ areas} \equiv \sum_j s_m(j) \times \frac{\#\texttt{crimeHQ}_j^F}{\#\texttt{crimeHQ}_j} \tag{9}$$

The fact that crimes are infrequent, and that we focus on a limited period of time (six months before the vote), generates sampling variations in the occurrence of crimes perpetrated by foreigners and natives across newspapers HQs. In the six month period before the vote, 25 crimes have been perpetrated in the municipalities where at least one newspaper has a headquarter, among which 56% have a perpetrator of foreign nationality. Table A.6 presents the descriptive statistics of the criminality per newspaper, or in other words, per groups of municipalities where each of the newspapers has a headquarter. On average, a newspaper has headquarters in municipalities where 7 crimes have been perpetrated in total, ranging from 2 crimes (e.g. *24 Heures*) to 18 crimes (*Le Temps*). The share of foreign crime per groups of municipalities where a newspaper has a headquarter is on average 57%, and ranges from 17% (*Neue Zuercher Zeitung*) to 100% (*Matin*). These variations across newspapers combined with cross-municipality heterogeneity in market shares drive the identification in the instrumental variable strategy.

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[23]Specifying crime news exposure in level rather than in difference makes sense given the short-lived dimension of priming effects.

[24]Although instrumenting news provision is sufficient for alleviating endogeneity concern, we embrace a more comprehensive approach in our robustness analysis by instrumenting the two components of CNE_m, namely news provision and market shares. In spite of a significant drop in the statistical power of the instrument, results are robust (see Section 5.3).

[25]An alternative approach would consider cross-newspaper exogenous variations that originates from the demand for news provision, by making use of the evidence that newspapers' sampling is driven by crimes perpetrated in municipalities where they have a large audience. Conceptually this approach is similar to the instrumental strategy developed in Snyder and Strömberg (2010). We check the robustness of our empirical strategy by implementing this approach in subsection 5.3 and find that our results hold.

Exclusion Restriction To be a valid instrument in Equation (8), the variable $\frac{\text{\#crimeHQ}_j^{\text{F}}}{\text{\#crimeHQ}_j^{\text{All}}}$ must be orthogonal to the error term ϵ_m conditional on the set of controls. With this respect it is crucial to control for local criminality in all our 2SLS specificiations given that local criminality impacts vote and that criminality is spatially correlated (i.e. including $\frac{\text{\#crime}_m^{\text{F}}}{\text{\#crime}_m^{\text{All}}}$ on the RHS of Equation (8)).

Violation of the exclusion restriction may still occur because of spatial correlation of unobserved co-determinants of anti-immigration vote and criminality, such as labor market participation of foreigners or spatial-sorting of particular types of immigrants, like asylum seekers. For example, consider the case of a metropolitan area where Foreigners are over-represented among unemployed workers. This feature may raise discontent against migrants in all cities of the area and simultaneously increase foreign criminality. Technically this means that municipalities close to a newspaper's headquarter municipality belong to the same "xenophobic cluster", implying $\mathbb{E}[\epsilon_m \epsilon_{\text{HQ}}] \neq 0$. As a consequence, for the exclusion restriction *not* to be violated, we must assume that foreign crime over-propensity and anti-migrant opinions are uncorrelated in the HQ municipality $\mathbb{E}[\frac{\text{\#crimeHQ}^{\text{F}}}{\text{\#crimeHQ}^{\text{All}}} \times \epsilon_{\text{HQ}}] = 0$.

To overcome this potential threat to the exclusion restriction we consider as alternative instrument the *short-run deviation* in the share of foreign crimes among crimes perpetrated in headquarter municipalities

$$\% \text{ foreign crime: HQ areas (deviation)} \equiv \sum_j s_m(j) \times \left(\frac{\text{\#crimeHQ}_j^{\text{F}}}{\text{\#crimeHQ}_j^{\text{All}}} - \frac{\text{\#LRcrimeHQ}_j^{\text{F}}}{\text{\#LRcrimeHQ}_j^{\text{All}}} \right) \qquad (10)$$

The rationale is that short-run deviations can be viewed as pure sampling errors: While long-run crime over-propensity of foreigners may correlate with headquarters' characteristics, short-run deviation should not. With the instrument specified in deviations the identifying assumption is less stringent and becomes $\mathbb{E}[(\frac{\text{\#crimeHQ}_j^{\text{F}}}{\text{\#crimeHQ}_j^{\text{All}}} - \frac{\text{\#LRcrimeHQ}_j^{\text{F}}}{\text{\#LRcrimeHQ}_j^{\text{All}}}) \times \epsilon_{\text{HQ}}] = 0$. This assumption is tested on a set of observable characteristics for the sub-sample of cities experiencing violent crimes during the 2009-2013 period. Tables A.8, A.9, A.10 and Figure A.9 report the results. We see that log-run and short-run foreign criminality do indeed correlate with city characteristics; by contrast, short-run deviations in criminality do not correlate with observable city characteristics.

5.2 Baseline Results

Table 2 displays the estimation results of equation (8). Only the main coefficients of interest are reported (see above for the full list of covariates). Standard errors are clustered at the district level in all specifications. Our preferred specifications are Columns (6) to (8).

The first two columns show the OLS estimates. In Column (1) we do not include our two most important control variables, namely past anti-migration vote outcomes and the share of foreign crimes in the municipality. The effect of crime news exposure is positive in both specifications, and it is precisely estimated when we include our two main controls (Column (2)). Local crime has a positive and significant effect on votes endorsing the Minaret Ban. This can be interpreted as direct evidence supporting our theoretical

assumption of *crime priming*. The coefficient on past anti-migration vote outcomes is very close to 1 and highly statistically significant. This confirms our unconditional evidence in Figure A.4 that the Minaret Ban vote had a strong anti-immigration component. Overall the precision and sign of the estimated coefficients on control variables are encouraging for the quality of our data.

The next three columns report the 2SLS estimation with crime in HQ area as instrument. Column (3) is the reduced-form equation, Column (4) shows the first-stage equation, Column (5) shows the second-stage. In the first-stage the sign of the IV coefficient and the magnitude of the F-statistic confirm that headquarter criminality is a powerful positive predictor of crime news provision. Moreover past vote is a weak predictor (and negative, if anything) of news provision. This is reassuring as it suggests that our concern on demand-driven news provision should in fact be limited (see above our discussion on endogeneity issue). In Column (5) we see that the second-stage coefficient of crime news exposure is precisely estimated and very close to its OLS point estimate. The coefficients of local crime and past vote remain precisely estimated and have the expected signs.

Columns (6) to (8) replicate the same approach with the instrument based on deviations from long-run crime. Results are qualitatively unchanged but quantitatively larger. A 1 percentage point increase in crimes perpetrated by foreigners in newspaper headquarters is associated to a 0.8 percentage point increase in the share of votes supporting the Minaret ban referendum (Column (6)); a 1 percentage point increase in the deviation from long-run criminality in newspaper headquarters is associated to a 2 percentage point increase in foreign crime news provision (Column (7)).

5.3   Sensitivity analysis

Our identification strategy embed several strengths: (i) the inclusion of past anti-immigration outcomes leads to an estimation strategy that is close to a first-difference and we also control for the fact that individuals might obtain direct information by observing local criminality; (ii) in the 2SLS estimation, we exploit cross-municipality exogenous variations in the exposure to different sampling of crimes by chance. In this section we perform a battery of robustness check.

Controlling for Long-Run Criminality   A natural concern about the exclusion restriction may be that short-run deviations of criminality still embed long-run trend. This concern can be addressed by the inclusion of the long-run share of foreign crimes in the areas where the newspapers have a headquarter.

Columns (1) to (3) of Table A.11 replicate our preferred specification (Columns (6) to (8) of Table 2) with the inclusion of the long-run share of foreign crimes in the areas where newspapers are edited. We also include the long-run share of foreign crimes at the local level, i.e. in municipality m. We find that our results hold, and that the first stage is still very strong (with a first-stage F-statistic of 55).

Instrumenting with residuals   When instrumenting crime news exposure, we build short-run deviations by using first-difference between short-run and long-run criminality. An alternative, and less parametric,

Table 2: NEWS AND ANTI-IMMIGRATION VOTE

Specification	OLS		Instrument: crime in HQ areas			Instrument: short-run deviation of crime in HQ areas		
			Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	%Yes	%Yes	% foreign crime: news	%Yes	%Yes	% foreign crime: news	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% foreign crime: news (CNE)	0.146 (0.111)	0.184^b (0.077)			0.190^b (0.086)			0.390^a (0.087)
% foreign crime: local		0.013^b (0.006)	0.013^b (0.006)	−0.000 (0.005)	0.013^b (0.006)	0.013^b (0.005)	0.000 (0.005)	0.012^b (0.006)
Past votes outcome		0.978^a (0.043)	0.975^a (0.043)	-0.015^c (0.008)	0.978^a (0.042)	0.973^a (0.042)	-0.018^c (0.010)	0.980^a (0.042)
% foreign crime: HQ areas			0.204^b (0.101)	1.077^a (0.115)				
% foreign crime: HQ areas (deviation)						0.808^a (0.210)	2.072^a (0.249)	
Observations	1862	1862	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.687	0.849	0.849	0.995	0.683	0.850	0.995	0.681
First-stage F-statistic				87.38			69.36	

Notes: ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

building option, consists in using instead the estimated residual $\hat{\eta}_m$ of a regression of the short-run share of foreign crimes on its long-run counterpart.

$$\frac{\#\texttt{crime}_m^{\texttt{F}}}{\#\texttt{crime}_m^{\texttt{All}}} = \gamma \times \frac{\#\texttt{LRcrime}_m^{\texttt{F}}}{\#\texttt{LRcrime}_m^{\texttt{All}}} + \eta_m$$

This model is estimated on the subsample of 307 municipalities experiencing violent crimes over the 2009-2013. We find that $\hat{\gamma} = 0.988$ (0.040). Moreover the long-run share of foreign crimes can explain by itself 66.2% of the variation in the short-run share of foreign crimes.

Columns (4) to (6) in Table A.11 replicate our preferred baseline specifications with $\sum_j s_m(j)\hat{\eta}_{HQ(j)}$ as instrument. These specifications yield results similar to the baseline estimates. This goes without surprise as $\hat{\gamma}$ is close to 1 implying that residuals and first-differences are in fact quantitatively comparable. We can also control for the long-run share of foreign crimes in areas where newspapers have headquarters and at the local level and find that our results are qualitatively unchanged (Columns (7) to (9) of Table A.11).

Alternative time frames. To assess the robustness of the effect of crime news exposure on anti-migration vote, we need to check that our results are not affected by the time window before the vote we choose to calculate the crime and news-related variables. In the baseline estimates we choose to focus on the six month period before the vote, because it complies with two criteria: it is still a short-run period and identifying variations are larger than for shorter periods.

Figure A.10 presents the point estimates when running the same estimation than the one presented in Column (8) of Table 2, but changing the time frame of news and crimes. The point estimates are very stable and statistically significant for the time windows that range between three to eight months before the vote. The first-stage remains valid in all the specifications.

Instrument with criminality in places with large readershare. As we mentioned in subsection 5.1, our instrument exploits cross-newspaper exogenous variations in the sampling of crimes. This sampling is driven by a cost motive, which is geographical proximity, and that we can interpret as the fact that it is less costly for journalists to write articles on events that occur nearby. However, a very similar approach would have been to use cross-newspaper variations in the sampling of crimes for demand-related reasons.

In fact, we can build on empirical evidence that newspapers cover more the events that occur in areas where readership is high. In the context of crime news exposure, this means that we can use an alternative instrument, which is based on short-run deviations in the share of foreign crimes perpetrated in the municipalities with the largest readership for each of the newspapers.

Table A.7 presents the results when we instrument crime news exposure with the aggregate measure of the share of foreign crimes in the three municipalities that have the largest readershare of newspaper j, aggregating each newspaper at municipality level by the market share of j in municipality m. Results are qualitatively unchanged, with a positive and significant effect of crime news exposure on vote. Interestingly,

the first-stage F-statistic is smaller than in our preferred specification (Column (8) of Table 2), even though it is still above the conventional threshold required for a valid first-stage.

Instrument readership with relative distance.   The specifications reported up to this point do not address the issue of potential endogeneity of the market shares in the crime news exposure variable, and hence in the instrumental variables. To overcome pure reverse causality, we take the market shares calculated on the pre-2009 period in the baseline specifications.

It is still plausible however that long-run readership of a newspaper in a municipality correlates with xenophobia. We tackle this issue by instrumenting the market share of newspaper j in municipality m by the inverse of the minimum geographical distance between newspaper j's headquarter and municipality m. More precisely, we normalize the inverse of the distances so that relative distances do not correlate with xenophobia, when controlling for ruggedness.

Table A.13 displays the point estimates of the specifications when making use of this alternative instrument $\left[\sum_j \left(\frac{(dist_m(j))^{-1}}{\sum_i (dist_m(i))^{-1}} \right) \times \frac{\#\texttt{crimeHQ}_j^F}{\#\texttt{crimeHQ}_j^N} \right]$ which instruments for both the news provision of each newspaper *and* its market share in municipality m. Results are again qualitatively the same than in the baseline, with a positive and significant effect of the crime news exposure on vote. The predictive power of the instrument on the crime news exposure is smaller, with a first stage F-statistic ranging from 11.91 (instrument for news provision in level, see Column (5)) to 8.38 (instrument for news provision in deviation, see Column (8)).

Control for local criminality where people work (commuting).   We base our identification strategy on the fact that voters can update their belief about immigrants' over-criminality from two sources: crimes news exposure and local criminality. For local criminality to fully capture the observable part of the criminality to the eyes of the voters, we may like to include a measure of the local criminality in places where people work, and not only in places where they live and vote. This issue is particularly crucial if people work in municipalities where the newspapers have a headquarter, since it would violate the exclusion restriction. Thus, we construct a new variable, based on the share of foreign crimes perpetrated in each of the places, w where individuals from municipality m work. We then aggregate this variable at the municipality m level, by taking the share of foreign crimes in each of the municipalities w where individuals work, and by weighting each working place w by the share of the population in m that works in this municipality w.

Table A.12 presents the results and shows that our baseline estimates are unaffected. In Columns (1) to (3), we replace the local share of foreign crimes by the share of local crimes in municipalities where individuals from m work. These specifications allow us to precisely estimate the coefficient on this new covariate. In Columns (4) to (6), we include both variables of the share of foreign crimes (locally and in the working places). The coefficient on the crime news exposure variable is robust to the inclusion of these two controls simultaneously; identification however is weaker, since we cannot precisely estimate the coefficients on these two variables simultaneously, given that many individuals work where they live, a fact inducing multi-collinearity.

Alternative outcome - Post-referendum survey. An alternative way to test our hypothesis is to exploit survey responses. The data comes from the "Post-vote surveys" of the Swiss Centre in Expertise in the Social Sciences (*FORS*). FORS conducts a survey after each federal vote. The data contains information on the characteristics of the respondents and questions on each referendum. We use the *VOX101* data that was conducted after the Minaret Ban vote. 1008 individuals were surveyed following the Minaret Ban referendum. We focus on general questions on attitudes towards immigration, security and the Minaret Ban vote.

Table A.14 displays the estimates. In the first column we estimate whether respondents were in favour of the Minaret Ban or against the initiative. As we find previously, the effect is positive and statistically significant. In Column (2), we rely on a question on immigration. The question on immigration asks whether there should be an expansion or reduction of minority rights. In line with the previous results, individuals more exposed to news on foreign violence are less likely to be in favour of equality in rights of minorities.

In Columns (3) and (4), the questions we focus on ask whether Switzerland should give little or a lot of importance to order and security, and whether the army should be strong or should be abolished. The two variables on security issues are positively correlated to exposure to news on foreign violence. Last, we also use a question on redistribution as placebo regression, since individuals in favour of the parties proposing the Minaret Ban should be against redistribution. The question on redistribution asks if individuals would prefer a country with large income inequalities, or one with no inequalities (Column (5)). The point estimate is not significant.

Taking stock, results from Table A.14, albeit the small sample of respondent, indicate that the vote in favour of the Minaret Ban was driven by concerns on immigration and security rather that other aspects such as the loss of traditional values.

Alternative coding rules for news without nationality. This far we have excluded newspaper articles where the nationality of the perpetrators were not mentioned. As robustness, we consider three different assumptions on the interpretation by the reader of the absence of information on the nationality of the perpetrators. We consider news without nationality as i) news on crime committed by natives (Table A.16); ii) news on crime committed by a foreigners (Table A.17) and iii) news on crime committed by a native with a probability of 0.78 and news on foreign crime with probability of 0.22, e.g. that reflects the true composition of foreigners in the population (Table A.18). All in all, our results are robust to these different assumptions.

Spatial clustering. Given the spatial resolution of the data it is important to carefully consider the spatial correlation. As robustness, we replicate Table 2 but with standard errors estimated with a spatial HAC correction allowing for cross-sectional spatial correlation applying the method developed by Conley (1999). For the spatial dimension we retain a radius of 10, 25, 50, 75, 100, 125 and 150 km for the spatial kernel. Results are robust (Table A.15).

5.4   Falsification exercises

To assess the validity of the exclusion restriction we undertake a set of falsification exercises.

Post-referendum News.   The first exercise consists of evaluating the impact exposure to foreign crime post-referendum has on the voting outcome. The results from running these regressions using the news in the 3 months following the vote have already been presented in Figure A.10. As expected, post-referendum crime news exposure has no impact on the outcome.

Placebo Outcome.   A second test consists of using voting outcomes that are unrelated to immigration issues. In our model, after reading the news, individual k updates $\texttt{violence}_k$, his belief about the propensity of foreigners to perpetrate violent crime. Since $\texttt{violence}_k$ is relevant in deciding to vote in favour or against immigration, the aggregate electoral result in the municipality where k lives changes. This implies that there should be no effect of news on vote for policies that are unrelated to $\texttt{violence}_k$. To test this hypothesis we exploit the fact that in Switzerland several referenda take place on the same day.

On November 29, 2009, there was a second object Swiss people voted on: The "Creation of a special fund in favor of tasks in the air traffic domain".[26] The first two columns of Table A.19 present the results when using the outcome of the Air Traffic Fund referendum instead of the Minaret Ban. In Column (1) we run the reduced form regression from Column (3) of Table 2; reassuringly, neither crime in newspapers' headquarters, nor local crime has an effect on the outcome of the Air Traffic Fund vote. In Column (2) we run the full two-stage least squares estimation; not surprisingly - given the results of Column (1) - the coefficient of predicted crime coverage is statistically insignificant.

Newspapers not read.   In the last four columns of Table A.19 we turn to instrument falsifications. The assumption made in the two-stage least squares estimation is that when crimes occur in newspaper j's head-quarter, newspaper j is more likely to report it. Individual k that reads newspaper j updates his belief about the propensity of foreigners to commit crimes and consequently chooses to vote in favour or against immigration. If that is the case, there should be no effect in the voting behaviour of individual k if a crime takes place in the headquarter of newspaper j' that is not read by him.

To implement this falsification we run the reduced-form regression of Table 2. Since the instrument takes the value 0 once a newspaper is not read, we use the inverse relative distance to a newspaper's headquarter to create variation across municipalities. Results are presented in Columns (3) and (4). In Column (3) we replicate the reduced-form estimation of Table 2 using newspapers read in the municipality; there is a positive and statistically significant correlation between foreign crime in newspaper headquarters and vote in favour of the Minaret Ban . In Column (4) we only keep newspapers that are not read in a municipality; crimes taking place in these newspaper headquarters do not affect vote in favour of the Minaret Ban.

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[26]The precise title of the object (in French) is *Arrêté fédéral du 03.10.2008 sur la création d'un financement spécial en faveur de tâches dans le domaine du trafic aérien*. We refer to this object as "Air Traffic Fund" from now on, for simplicity.

Newspapers written in a language that is not spoken.   A second way to implement this falsification is by exploiting the fact that there are several languages spoken in Switzerland. The results from implementing this estimations are presented in Columns (5) and (6) of Table A.19. We start by only keeping outlets edited in the language spoken in the municipality; reduced-form estimates are positive and statistically significant (Column (5)). In Column (6) we focus on newspapers that are written in a language not spoken in the municipality; crime at the headquarter of these newspapers does not affect vote.

5.5   Quantification

In this sub-section, we provide three different counterfactual exercises to gauge the magnitude of the over-reporting of foreign crime on the referendum outcome. All counterfactuals are based on Table 2, Column (8).

Counterfactual #1 – Truthful Reporting.   One way to assess the magnitude of the implied 2SLS estimate of the effect of crime news exposure on vote is to create a counterfactual experiment where we assume that newspapers have reported foreign criminality at its true value. Would newspapers report foreigners' crime propensity at the value of 45% of total crimes (instead of 77% as reported in the news during the six month period before the vote), the "yes" vote would have decreased by 4 percentage points on average at the municipality level, which can be compared with an increase in the share of the highly educated by 50% on average in the estimation sample of municipalities (in-sample). Using all municipalities (out-sample), this translates in a 3 percentage points decrease in the "yes" vote, from 58% to 55% at national level.

Counterfactual #2 – Newsworthiness.   In a second counterfactual, we address the question of the bias in the reporting of crimes that points to a larger coverage of the crimes perpetrated by the foreigners. In this exercise, we predict the share of foreign crimes in the news of each of the newspapers during the six month period before the vote by using Equation (7). Should perpetrator's nationality have no effect on the reporting probability ($\hat{\rho} = 0$), the "yes" vote would decrease by 5 percentage points on average at municipality level (in-sample). This translates into a 4 percentage points decrease in the yes vote at the national level (out-sample).

Counterfactual #3 – No Reporting of Nationality.   A potential policy implication of this study is related to the question of whether newspapers should be allowed to mention nationality of perpetrators.[27] If this was the case, we need to formulate an assumption on voters' belief on foreigners' propensity to commit crimes. If voters believed that foreigners are as crime-prone as natives, thus that foreigners' crime propensity is at 22% (their share in total population), this would have decreased the yes vote by 6 percentage points at municipality level (in-sample). By comparison, the share of highly educated people at municipality level should increase by 97% to generate an effect of this magnitude on the vote. At national level, this

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[27]Such a policy is already in place in other countries, like Germany and Sweden.

translates into a 6 percentage points decrease in the "yes" vote, which is close to reverting the outcome of the referendum.

6   Conclusion

[TBC]

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A Appendix - Tables & Figures

Table A.1: NEWS COVERAGE OF VIOLENT CRIME BY OUTLET

Newspaper	Crime All Obs	Crime Covered Obs	P(Coverage) Native Mean	P(Coverage) Foreign Mean	#Articles All Obs	#Articles Covered Mean	Marketshare Mean	Marketshare Max
20 Minuten D-CH	847	77	0.10	0.08	139	1.81	0.13	0.45
20 Minutes F-CH	847	135	0.14	0.18	199	1.47	0.05	0.24
24 Heures	847	78	0.10	0.09	109	1.40	0.04	0.34
Matin dimanche, Le	847	15	0.02	0.02	15	1.00	0.08	0.32
Matin, Le (lu - sa)	847	92	0.11	0.10	129	1.40	0.04	0.23
NZZ am Sonntag	847	7	0.01	0.01	7	1.00	0.04	0.18
Neue Zuercher Zeitung	847	68	0.08	0.08	93	1.37	0.02	0.15
SonntagsZeitung	847	12	0.02	0.01	12	1.00	0.09	0.27
St. Galler Tagblatt	680	42	0.07	0.05	52	1.24	0.02	0.52
Tages-Anzeiger	847	88	0.11	0.10	127	1.44	0.04	0.30
Temps, Le	847	17	0.02	0.02	26	1.53	0.01	0.10
Tribune de Geneve	847	65	0.08	0.07	86	1.32	0.01	0.33
Total	9997	696	0.07	0.07	994	1.43	0.05	0.45

Notes: The unit of observation is the crime event. Total refers to averages over all newspapers. Marketshare calculated over major, general interest newspapers. Crime data comes from the Swiss Statistical Office (FSO). News data collected by us. Marketshare data collected by the Research and Studies in Advertising Media Association (*WEMF/REMP*).

Table A.2: NEWS COVERAGE OF VIOLENT CRIME IN 2009

| | Coverage | | # of News per crime | | | | |
	#	P(cov>0)	total	mean	sd	min	max
2009							
Crime in the news (out of 167)	46	0.27	103	2.23	1.33	1	5
6 months before vote							
Crime in the news (out of 77)	24	0.31	53	2.21	1.18	1	5
3 months before vote							
Crime in the news (out of 35)	13	0.37	31	2.38	1.39	1	5

Table A.3: NEWS COVERAGE OF VIOLENT CRIME BY COUNTRY OF PERPETRATOR

Dependent Variable	News coverage			
	(1)	(2)	(3)	(4)
Foreign $\times$ AS $= 0$	0.012			
	(0.011)			
Foreign $\times$ AS $= 1$	0.025^b			
	(0.011)			
Foreign $\times$ Muslim (90%) $= 0$		0.017^c		
		(0.010)		
Foreign $\times$ Muslim (90%) $= 1$		0.024^c		
		(0.014)		
Foreign $\times$ Border $= 0$			0.023^b	
			(0.010)	
Foreign $\times$ Border $= 1$			-0.006	
			(0.015)	
Foreign $\times$ Circle 1-2 $= 0$				0.023^b
				(0.010)
Foreign $\times$ Circle 1-2 $= 1$				0.009
				(0.014)
F-test equality coefficients	1.08	0.22	3.59	0.92
F-Stat p-value	0.30	0.64	0.06	0.34

Notes: LPM estimations. ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Baseline controls included.

Table A.4: NEWS COVERAGE OF VIOLENT CRIME BY VICTIM ORIGIN

Dependent Variable	News coverage		
	(1)	(2)	(3)
Foreign victim	0.008	0.001	0.021
	(0.010)	(0.011)	(0.016)
Foreign perpetrator		0.019^c	0.030^a
		(0.010)	(0.011)
Foreign victim $\times$ Foreign perpetrator			–0.034
			(0.021)
Observations	9997	9997	9997
R^2	0.180	0.180	0.181

Notes: LPM estimations. ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Baseline controls included.

Table A.5: TIMING OF NEWS COVERAGE OF VIOLENT CRIME

Dependent Variable	News coverage		
	(1)	(2)	(3)
Foreign	0.018^c	0.018^c	0.017^c
	(0.009)	(0.009)	(0.009)
Foreign × Votation [t, t-30)	0.124^b	0.125^b	0.126^b
	(0.056)	(0.056)	(0.056)
Foreign × Votation [t-30, t-60)		−0.032	−0.032
		(0.070)	(0.070)
Foreign × Votation [t-60, t-90)		0.017	0.018
		(0.094)	(0.094)
Foreign × Votation (t, t+30]			0.058
			(0.094)
Foreign × Votation (t+30, t+60]			−0.006
			(0.033)
Readershare	0.184^b	0.184^b	0.185^b
	(0.092)	(0.092)	(0.092)
Newspaper HQ area	0.040^a	0.040^a	0.040^a
	(0.011)	(0.011)	(0.011)
Observations	9997	9997	9997
R^2	0.181	0.181	0.182

Notes: LPM estimations. [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. The controls of the baseline table are included.

Table A.6: INSTRUMENTAL VARIABLE - IDENTIFYING VARIATIONS - 6 MONTHS BEFORE THE VOTE

	# crimes	# foreign crimes	share of foreign crimes
20 Minuten D-CH	14	6	0.43
20 Minutes F-CH	9	7	0.78
24 Heures	2	2	1
Matin dimanche	2	2	1
Matin (lu-sam)	2	2	1
NZZ am Sonntag	6	1	0.17
Neue Zuercher Zeitung	6	1	0.17
SonntagsZeitung	7	2	0.29
Tages-Anzeiger	6	1	0.17
Temps,Le	18	11	0.61
Tribune de Geneve	7	5	0.71
Mean	7.18	3.63	0.57

Table A.7: NEWS AND ANTI-IMMIGRATION VOTE: INSTRUMENT WITH TOP-3 READERSHARE

Specification	Instrument: short-run deviation of crime in top 3 readershare areas		
	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	CNE	%Yes
	(1)	(2)	(3)
% foreign crime: news (CNE)			0.689^a
			(0.218)
% foreign crime: local	0.011^c	–0.000	0.012
	(0.006)	(0.008)	(0.007)
Past votes outcome	0.977^a	–0.008	0.982^a
	(0.042)	(0.013)	(0.041)
% foreign crime: Top 3 Readershare (deviation)	0.589^a	0.854^a	
	(0.210)	(0.244)	
Observations	1862	1862	1862
Adjusted R^2	0.849	0.990	0.668
First-stage F-statistic		12.25	

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.8: LONG-RUN CRIME AND OBSERVABLE CHARACTERISTICS

Dependent Variable								Long-run % of foreign crime in HQ areas								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Log population	6.51^a (1.60)															1.70 (2.60)
% German-speaking		-0.01 (0.05)														-0.10 (0.15)
% French-speaking			-0.00 (0.05)													-0.27^c (0.16)
% Protestants				-0.00 (0.09)												0.00 (0.12)
% Immigrants					0.58^a (0.21)											0.05 (0.50)
% Net Immigration						3.98 (2.79)										3.31 (5.52)
% High-skilled							0.36 (0.30)									0.17 (0.72)
Log Income								4.06 (9.43)								5.79 (15.06)
% Secondary emp.									-0.12 (0.30)							-0.02 (0.63)
% Tertiary emp.										0.36 (0.30)						-0.50 (0.67)
Ruggedness											-19.59^a (5.27)					-14.66^c (7.45)
% Male												-3.79^a (1.40)				-1.82 (2.60)
% Active													0.37 (0.75)			-0.80 (1.15)
% Young														1.68^b (0.79)		2.32^c (1.28)
Past votes outcome															-0.35 (0.22)	-0.70 (0.61)
Observations	356	356	356	356	356	356	356	356	356	356	356	356	356	356	356	356

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.9: SHORT-RUN CRIME AND OBSERVABLE CHARACTERISTICS

Dependent Variable						Short-run % of foreign crime in HQ areas										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Log population	2.65[b] (1.31)															-0.49 (2.38)
% German-speaking		-0.02 (0.04)														-0.07 (0.15)
% French-speaking			0.01 (0.04)													-0.21 (0.16)
% Protestants				-0.02 (0.10)												-0.05 (0.12)
% Immigrants					0.41[b] (0.19)											0.13 (0.40)
% Net Immigration						2.10 (1.79)										1.40 (2.85)
% High-skilled							0.44[c] (0.25)									-0.02 (0.67)
Log Income								8.44 (9.06)								6.72 (16.41)
% Secondary emp.									-0.28 (0.24)							-0.06 (0.58)
% Tertiary emp.										0.36 (0.26)						-0.33 (0.56)
Ruggedness											-23.35[a] (6.26)					-22.41[a] (7.52)
% Male												-1.54 (1.32)				1.35 (2.49)
% Active													0.43 (0.71)			-0.89 (1.07)
% Young														0.92 (0.69)		1.29 (1.17)
Past votes outcome															-0.32[c] (0.18)	-0.75 (0.62)
Observations	473	473	473	473	473	473	473	473	473	473	473	473	473	473	473	473

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.10: SHORT-RUN CRIME DEVIATIONS AND OBSERVABLE CHARACTERISTICS

| Dependent Variable | | | | | | Short-run deviation of % of foreign crime in HQ areas | | | | | | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Log population	−0.92 (0.63)															−0.71 (0.98)
% German-speaking		−0.00 (0.02)														0.03 (0.03)
% French-speaking			0.00 (0.02)													0.02 (0.04)
% Protestants				0.01 (0.02)												−0.01 (0.04)
% Immigrants					−0.01 (0.05)											0.20^c (0.11)
% Net Immigration						−0.53 (0.62)										$−1.12^c$ (0.61)
% High-skilled							0.01 (0.07)									0.10 (0.19)
Log Income								1.13 (2.60)								−7.36 (5.05)
% Secondary emp.									0.02 (0.09)							−0.10 (0.16)
% Tertiary emp.										−0.05 (0.08)						−0.09 (0.16)
Ruggedness											−2.20 (1.74)					−2.61 (2.30)
% Male												0.78 (0.47)				0.94 (0.88)
% Active													0.15 (0.25)			0.74 (0.46)
% Young														−0.36 (0.25)		$−1.16^b$ (0.51)
Past votes outcome															0.02 (0.07)	−0.14 (0.21)
Observations	473	473	473	473	473	473	473	473	473	473	473	473	473	473	473	473

Notes: ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

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Table A.11: News and Anti-Immigration Vote: Controlling for Long-Run Trends

Specification	Instrument: SR deviation of crime in HQ areas + ctrl for LR crime in HQ areas			Instrument: Short-Run residual			Instrument: Short-Run residual + ctrl for LR crime in HQ areas		
	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	CNE	%Yes	%Yes	CNE	%Yes	%Yes	CNE	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
% foreign crime: news (CNE)			0.515^a (0.111)			0.385^a (0.086)			0.515^a (0.111)
% foreign crime: local	0.013^a (0.005)	−0.001 (0.004)	0.013^b (0.005)	0.013^b (0.005)	0.000 (0.005)	0.013^b (0.006)	0.013^a (0.005)	−0.001 (0.004)	0.013^b (0.005)
% foreign crime: local (Long-Run)	0.001 (0.005)	0.003 (0.005)	−0.000 (0.006)				0.001 (0.005)	0.003 (0.005)	−0.000 (0.006)
Past votes outcome	0.981^a (0.041)	−0.009 (0.008)	0.986^a (0.041)	0.973^a (0.042)	$−0.018^c$ (0.010)	0.980^a (0.042)	0.981^a (0.041)	−0.009 (0.008)	0.986^a (0.041)
% foreign crime: HQ areas (deviation)	0.905^a (0.215)	1.759^a (0.238)							
% foreign crime: HQ areas (residual)				0.799^a (0.209)	2.073^a (0.249)		0.905^a (0.215)	1.759^a (0.238)	
% foreign crime: HQ areas (Long-Run)	−0.247 (0.153)	0.643^a (0.106)	$−0.578^a$ (0.205)				$−0.258^c$ (0.154)	0.622^a (0.106)	$−0.578^a$ (0.205)
Observations	1862	1862	1862	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.851	0.996	0.681	0.850	0.995	0.681	0.851	0.996	0.681
First-stage F-statistic		54.69			69.51			54.69	

Notes: ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

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Table A.12: NEWS AND ANTI-IMMIGRATION VOTE: CONTROLLING FOR WORKPLACE CRIME

Specification	Instrument: short-run deviation of crime in HQ areas			Instrument: short-run deviation of crime in HQ areas		
	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	% foreign crime: news	%Yes	%Yes	% foreign crime: news	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)
% foreign crime: news (CNE)			0.403^a			0.390^a
			(0.086)			(0.086)
% foreign crime: workplace	0.018^c	−0.003	0.020^c	0.003	−0.007	0.005
	(0.010)	(0.007)	(0.011)	(0.018)	(0.010)	(0.018)
% foreign crime: local				0.011	0.003	0.010
				(0.009)	(0.007)	(0.010)
Past votes outcome	0.968^a	−0.015	0.974^a	0.973^a	-0.018^c	0.980^a
	(0.042)	(0.011)	(0.042)	(0.042)	(0.010)	(0.041)
% foreign crime: HQ areas (deviation)	0.831^a	2.063^a		0.808^a	2.072^a	
	(0.206)	(0.252)		(0.209)	(0.250)	
Observations	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.850	0.995	0.679	0.850	0.995	0.681
First-stage F-statistic		67.18			68.47	

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.13: News and Anti-Immigration Vote: Instrumenting Readership

Specification	OLS		Instrument: crime in HQ areas			Instrument: SR dev. of crime in HQ areas		
			Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	%Yes	%Yes	CNE	%Yes	%Yes	CNE	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% foreign crime: news (CNE)	0.146	0.184[b]			0.842[a]			1.131[a]
	(0.111)	(0.077)			(0.271)			(0.409)
% foreign crime: local		0.013[b]	0.014[a]	0.003	0.011	0.016[a]	0.005	0.010
		(0.006)	(0.005)	(0.008)	(0.008)	(0.006)	(0.009)	(0.010)
Past votes outcome		0.978[a]	0.987[a]	0.005	0.983[a]	0.987[a]	0.001	0.985[a]
		(0.043)	(0.041)	(0.012)	(0.041)	(0.042)	(0.013)	(0.042)
% foreign crime: HQ areas × distance			0.594[a]	0.706[a]				
			(0.155)	(0.205)				
% foreign crime: HQ areas (dev.) × distance						0.633[a]	0.559[a]	
						(0.167)	(0.193)	
Observations	1862	1862	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.687	0.849	0.850	0.991	0.658	0.850	0.990	0.631
First-stage F-statistic				11.90			8.38	

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

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Table A.14: NEWS AND ANTI-IMMIGRATION VOTE: POST-VOTATION SURVEY

Specification	Instrument: short-run deviation of crime in HQ areas				
	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage
	Vote	Immigration	Security		Placebo
Dependent Variable	Minaret Ban	Minority Rights	Order & Security	Strong Army	Income Inequalities
	(1)	(2)	(3)	(4)	(5)
% foreign crime: news (CNE)	0.026^a	-0.020^b	0.016^b	0.021^b	0.010
	(0.010)	(0.008)	(0.007)	(0.009)	(0.009)
% foreign crime: local	0.001	0.000	0.001^b	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Past votes outcome	0.006	-0.009	0.013^b	0.005	-0.012
	(0.008)	(0.006)	(0.006)	(0.005)	(0.008)
Observations	676	914	995	984	960
Adjusted R^2	0.050	0.022	0.046	0.056	0.005
First-stage F-statistic	20.19	22.96	22.20	22.23	21.83

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE. Standard errors clustered at district level.

Table A.15: NEWS AND ANTI-IMMIGRATION VOTE: SPATIAL CLUSTERING

Specification	Instrument: short-run deviation of crime in HQ areas						
	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage	2SLS 2nd Stage
Dependent Variable	%Yes	%Yes	%Yes	%Yes	%Yes	%Yes	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% foreign crime: news (CNE)	0.390^a	0.390^a	0.390^a	0.390^a	0.390^a	0.390^a	0.390^a
	(0.083)	(0.091)	(0.091)	(0.111)	(0.137)	(0.145)	(0.136)
% foreign crime: local	0.012^c	0.012^b	0.012^c	0.012^c	0.012^c	0.012^c	0.012^b
	(0.007)	(0.005)	(0.007)	(0.008)	(0.007)	(0.006)	(0.006)
Past votes outcome	0.980^a	0.980^a	0.980^a	0.980^a	0.980^a	0.980^a	0.980^a
	(0.040)	(0.041)	(0.049)	(0.035)	(0.035)	(0.052)	(0.051)
Observations	1862	1862	1862	1862	1862	1862	1862
Spatial cluster	10km	25km	50km	75km	100km	125km	150km

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Spatially clustered standard errors.

Table A.16: NEWS AND ANTI-IMMIGRATION VOTE: NEWS W/O NATIONALITY - SCENARIO 1

Specification	OLS		Instrument: crime in HQ areas			Instrument: SR dev. of crime in HQ areas		
			Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	%Yes	%Yes	CNE	%Yes	%Yes	CNE	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CNE (incl. news w/o nationality)	0.426^b	0.368^b			0.373^b			0.726^a
	(0.193)	(0.141)			(0.170)			(0.169)
% foreign crime: local		0.013^b	0.013^b	-0.000	0.013^b	0.013^b	-0.000	0.013^b
		(0.006)	(0.006)	(0.002)	(0.006)	(0.005)	(0.002)	(0.006)
Past votes outcome		0.976^a	0.975^a	-0.002	0.976^a	0.973^a	-0.003	0.975^a
		(0.042)	(0.043)	(0.004)	(0.042)	(0.042)	(0.005)	(0.041)
% foreign crime: HQ areas			0.204^b	0.547^a				
			(0.101)	(0.055)				
% foreign crime: HQ areas (deviation)						0.808^a	1.113^a	
						(0.210)	(0.114)	
Observations	1862	1862	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.687	0.849	0.849	0.993	0.683	0.850	0.994	0.681
First-stage F-statistic				98.34			95.92	

Notes: ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.17: NEWS AND ANTI-IMMIGRATION VOTE: NEWS W/O NATIONALITY - SCENARIO 2

Specification	OLS		Instrument: crime in HQ areas			Instrument: SR dev. of crime in HQ areas		
			Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	%Yes	%Yes	CNE	%Yes	%Yes	CNE	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CNE (incl. news w/o nationality)	-0.028	-0.004			0.220^b			2.175
	(0.098)	(0.066)			(0.109)			(1.405)
% foreign crime: local		0.014^b	0.013^b	0.002	0.013^b	0.013^b	0.004	0.004
		(0.006)	(0.006)	(0.005)	(0.006)	(0.005)	(0.009)	(0.022)
Past votes outcome		0.977^a	0.975^a	-0.015	0.979^a	0.973^a	-0.010	0.994^a
		(0.043)	(0.043)	(0.016)	(0.042)	(0.042)	(0.019)	(0.054)
% foreign crime: HQ areas			0.204^b	0.926^a				
			(0.101)	(0.116)				
% foreign crime: HQ areas (deviation)						0.808^a	0.372^c	
						(0.210)	(0.215)	
Observations	1862	1862	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.686	0.848	0.849	0.990	0.677	0.850	0.986	0.310
First-stage F-statistic				63.94			2.98	

Notes: ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.18: NEWS AND ANTI-IMMIGRATION VOTE: NEWS W/O NATIONALITY - SCENARIO 3

Specification	OLS		Instrument: crime in HQ areas			Instrument: SR dev. of crime in HQ areas		
			Reduced Form	2SLS 1st Stage	2SLS 2nd Stage	Reduced Form	2SLS 1st Stage	2SLS 2nd Stage
Dependent Variable	%Yes	%Yes	%Yes	CNE	%Yes	%Yes	CNE	%Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CNE (incl. news w/o nationality)	0.267 (0.209)	0.255^c (0.141)			0.324^b (0.149)			0.851^a (0.211)
% foreign crime: local		0.013^b (0.006)	0.013^b (0.006)	0.000 (0.002)	0.013^b (0.006)	0.013^b (0.005)	0.001 (0.003)	0.012^c (0.007)
Past votes outcome		0.977^a (0.043)	0.975^a (0.043)	−0.005 (0.005)	0.977^a (0.042)	0.973^a (0.042)	−0.005 (0.007)	0.977^a (0.041)
% foreign crime: HQ areas			0.204^b (0.101)	0.631^a (0.049)				
% foreign crime: HQ areas (deviation)						0.808^a (0.210)	0.950^a (0.110)	
Observations	1862	1862	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.687	0.849	0.849	0.996	0.682	0.850	0.993	0.676
First-stage F-statistic				163.46			74.45	

Notes: ^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Table A.19: NEWS AND ANTI-IMMIGRATION VOTE: OUTCOME AND INSTRUMENT FALSIFICATIONS

| Falsification | Outcome %Yes Air Traffic Fund | | Instrument | | Instrument | |
| | Reduced Form | 2SLS 2nd Stage | True Reduced Form | False Reduced Form | True Reduced Form | False Reduced Form |
	(1)	(2)	(3)	(4)	(5)	(6)
% foreign crime: news (CNE)		−0.102 (0.096)				
% foreign crime: local	0.001 (0.006)	0.001 (0.006)	0.015^b (0.006)	0.014^b (0.006)	0.016^a (0.006)	0.014^b (0.006)
Past votes outcome	$−0.269^a$ (0.050)	$−0.271^a$ (0.049)	0.975^a (0.043)	0.977^a (0.043)	0.979^a (0.043)	0.977^a (0.043)
% foreign crime: HQ areas	−0.110 (0.107)					
- Readership instrument			0.156^c (0.085)	0.002 (0.017)		
- Language instrument					0.332^b (0.142)	−0.362 (0.376)
Observations	1862	1862	1862	1862	1862	1862
Adjusted R^2	0.528	0.263	0.849	0.848	0.849	0.848
First-stage F-statistic		87.38				

Notes: [c] significant at 10%; [b] significant at 5%; [a] significant at 1%. Canton FE, type of municipality FE, type of mountain FE and marketshare FE. Standard errors clustered at district level.

Figure A.1: MEDIA COVERAGE OF VIOLENT CRIMES: 24 HEURES, SEP 4, 2009

Note: Media coverage of aggression taking place in Lausanne on Sep 01, 2009 in 24 Heures on Sep 04, 2009. The title translates into "Stabbed in the middle of the heart for a simple look". The title in the extensive coverage translates into "They stabbed him in the middle of the heart, like real professionals". The aggressors are described as a 17 year-old Ukrainian holding a B residence permit, and a 15 year-old Armenian asylum seeker (encircled by us).

Figure A.2: MINARET BAN CAMPAIGN POSTER

Official poster of the initiators of the Minaret Ban referendum. The poster was eventually banned in a number of Swiss cities, namely Basel, Lausanne, Fribourg, Neuchâtel, and Yverdon.

Violence, murder, attack, killer (French and German)

Note: Google searches of the words "violence", "murder", "attack", "killer" in the period preceding the Minaret Ban referendum. The shaded area are the 3 months preceding the Minaret Ban referendum.

Figure A.4: MINARET BAN AND PREVIOUS IMMIGRATION REFERENDA
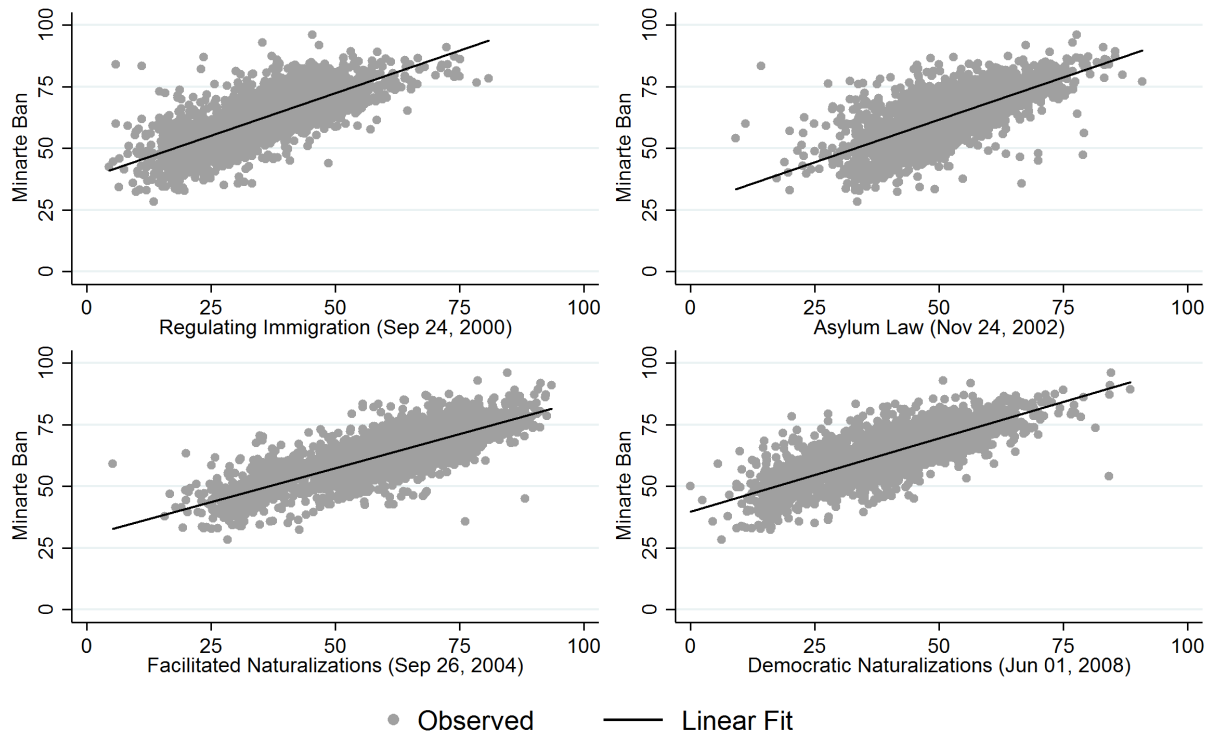
Note: Correlation between referendum "Against the Construction of Minarets" (Nov 29, 2009), and past immigration referenda. The unit of observation is a municipality. Municipality limits as of Jan 01, 2015. The y axis is the fraction of vote share in favor of the Minaret Ban. The x axis is the vote share in favor of the corresponding immigration referendum. Top-left: "For the regulation of immigration" (36.2% in favor); top-right: "Against abuses in the asylum law" (49.9% in favor); bottom-left: "Facilitated naturalization of second-generation immigrants" (43.2% in favor); bottom-right: "For democratic naturalizations" (36.2% in favor).

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Figure A.5: PROPENSITY TO READ NEWSPAPERS
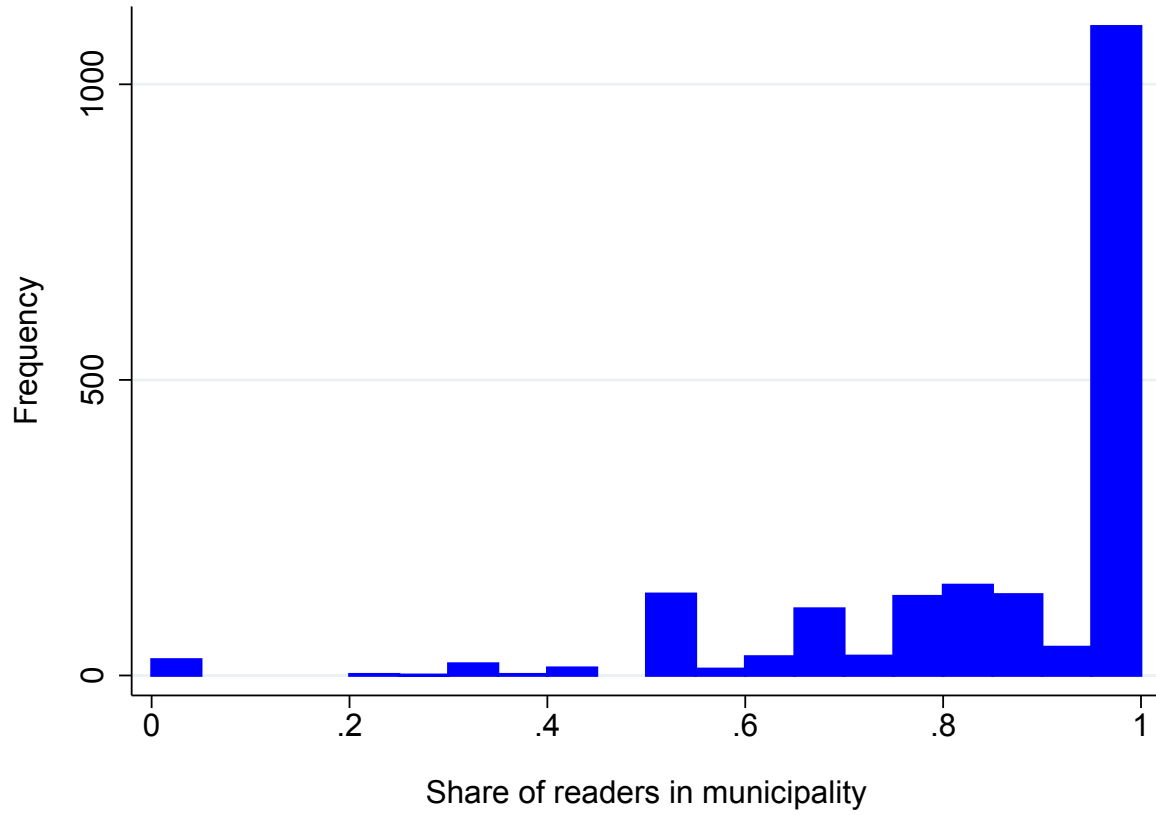
Note: Fraction of people reading 1 newspaper per municipality. Data comes from the *Swiss Household Panel*.

Figure A.6: BIAS BY NEWSPAPER (NATIONALITY)
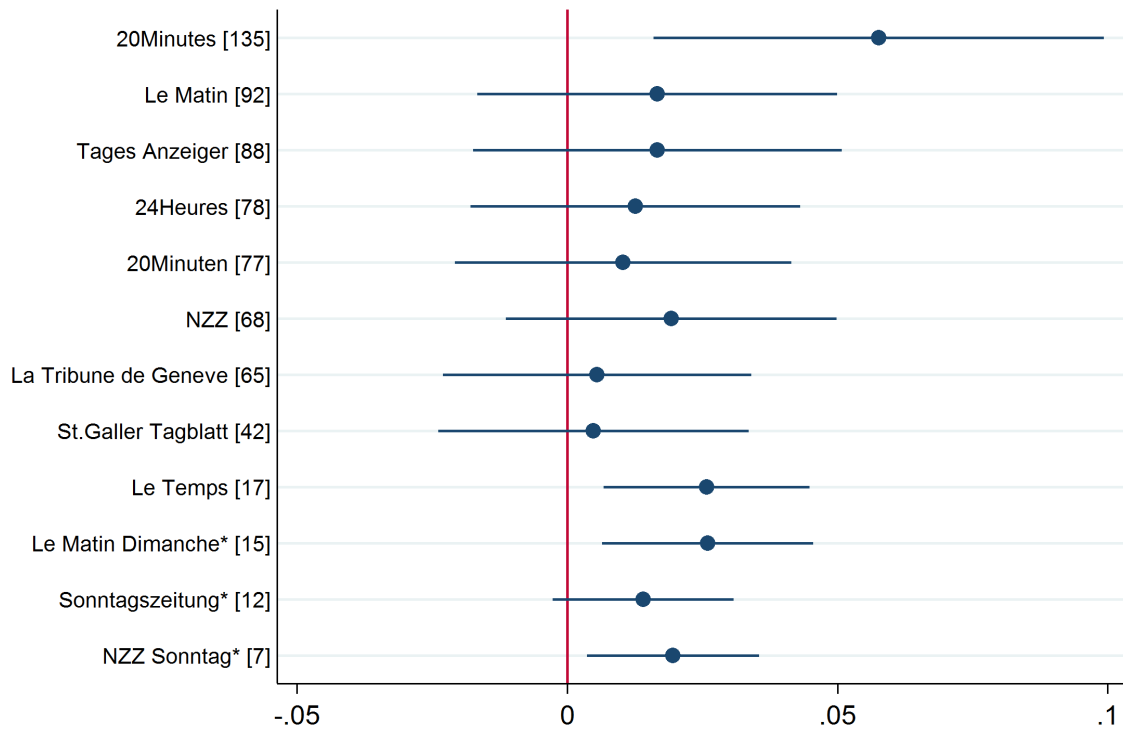
Note: LPM estimations. Robust standard errors clustered at crime event level. 90% Confidence intervals. Number of newspaper articles in brackets. * for Sunday newspapers. The point estimates (stardard errors) are: 20 Minutes 0.058 (0.02), Le Matin 0.017 (0.20), Tages-Anzeiger 0.017 (0.20), 24 Heures 0.013 (0.02), 20 Minuten 0.010 (0.02), NZZ 0.019 (0.02), La Tribune de Genève 0.006 (0.02), St. Galler Tagblatt 0.005 (0.02), Le Temps 0.026 (0.01), Le Matin Dimanche 0.026 (0.01), SonntagsZeitung 0.014 (0.01), and NZZ am Sonntag 0.020 (0.001).

Figure A.7: CRIME LOCALITIES AND NEWSPAPER HQ
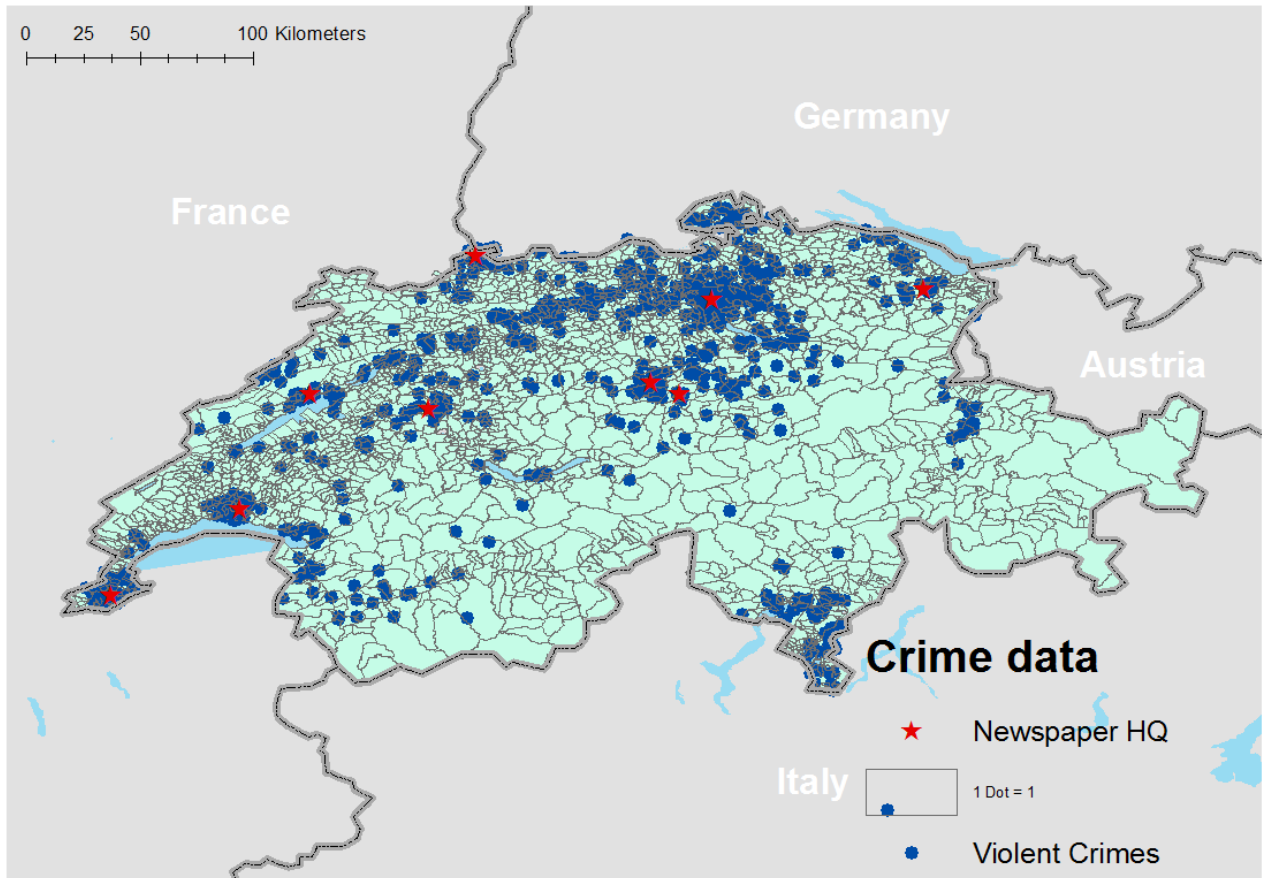
Note: Violent crimes in 2009-2013 in Switzerland. Data comes from the Swiss Statistical Office (FSO). Each dot refers to one event. Stars indicate newspaper headquarters. Municipality limits valid as of Jan 01, 2015.

Figure A.8: FOREIGN CRIME LOCALITIES
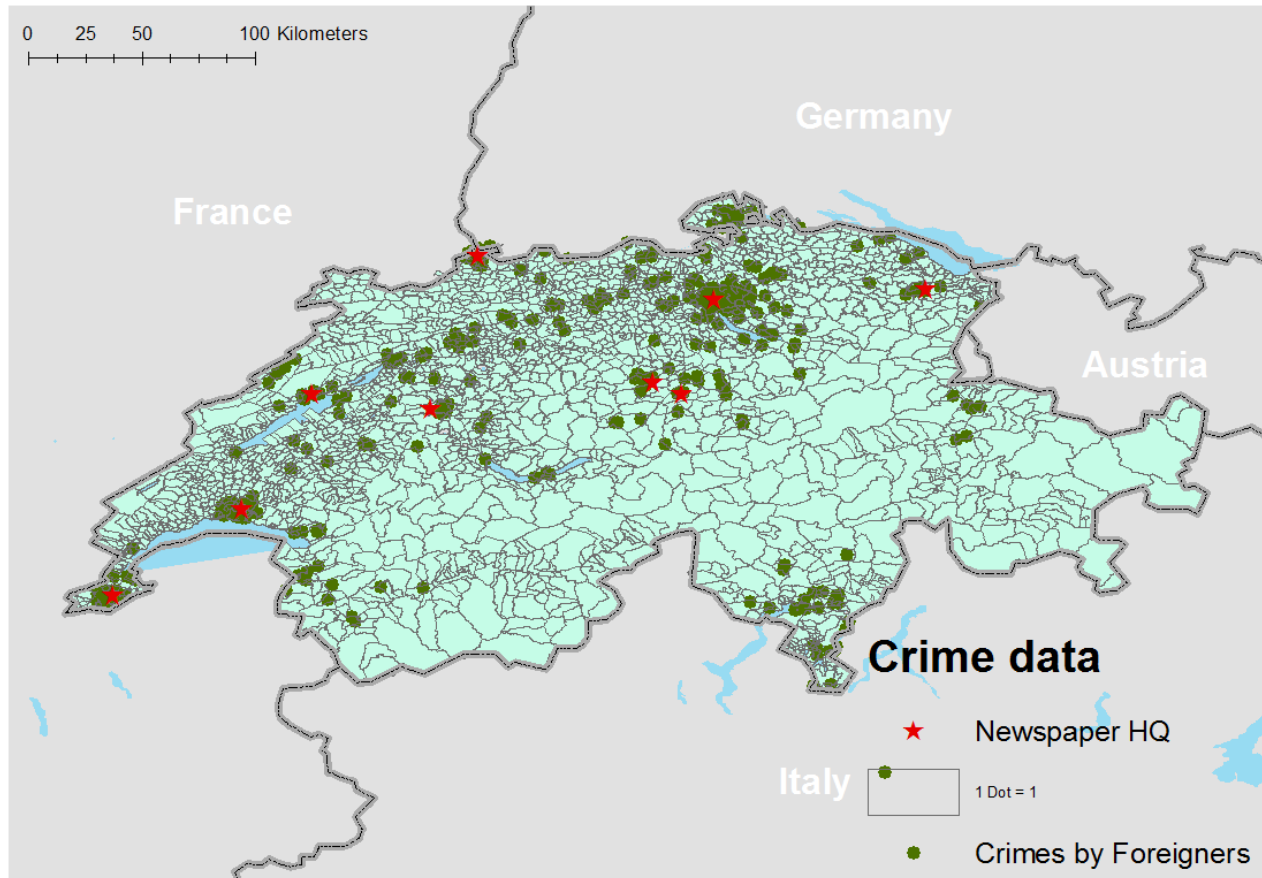
Note: Violent crimes perpetrated by foreigners in 2009-2013 in Switzerland. Data comes from the Swiss Statistical Office (FSO). Each dot refers to one event. Stars indicate newspaper headquarters. Municipality limits valid as of Jan 01, 2015.

Figure A.9: RESIDUALS AND OBSERVABLE CHARACTERISTICS
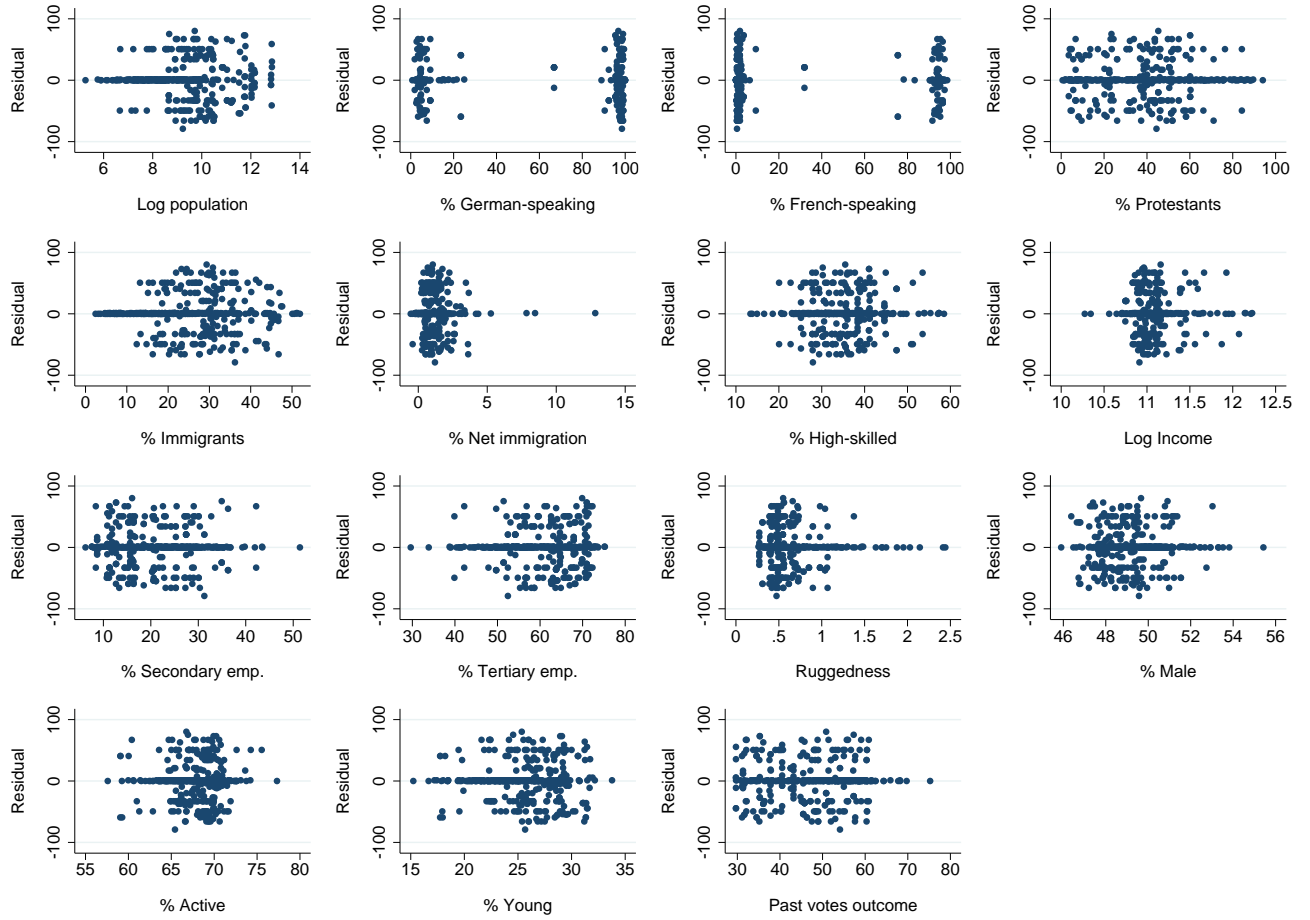
Note: Correlation between the residual from regressing $\frac{\#\text{crime}_m^F}{\#\text{crime}_m}$ on $\frac{\#\text{crimeLR}_m^F}{\#\text{crimeLR}_m}$ and observable characteristics in the 19 municipalities where violent crimes were perpetrated within six-month periods over the 2009-2013 period.

Figure A.10: 2SLS Estimates When Changing the Time Frame
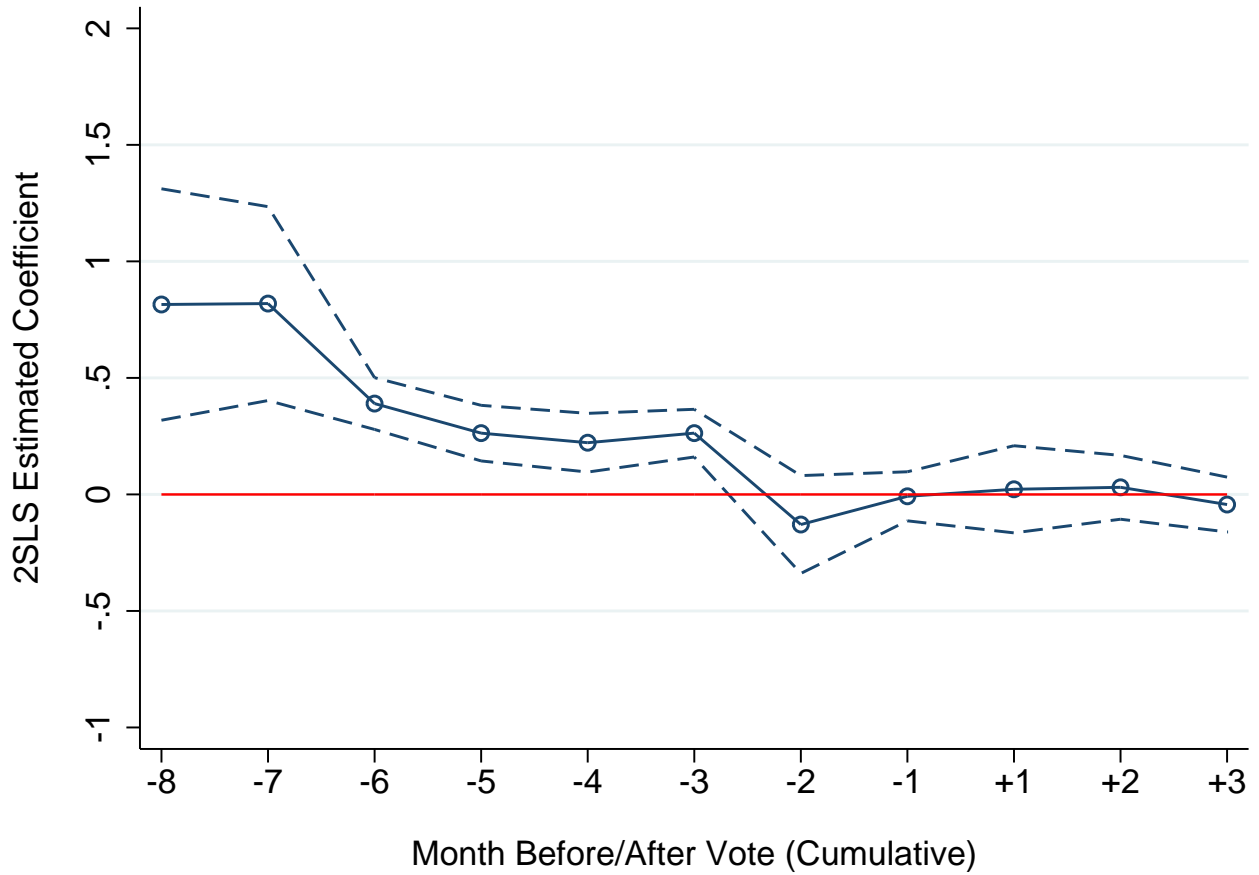
Note: Municipality level regressions. The outcome is the vote in favor of the "Minaret Ban" referendum. 2SLS estimation results with crime and news-related variables calculated over different windows of time before the vote: from one month up to eight months before the vote (-8 to -1 on the graph). We also replicate the exercise up to three months after the vote (+1 to +3 on the graph), which are placebo specifications. All regression include the full set of controls of column 8 of Table 2. Robust standard errors clustered at the district level. *c* significant at 10%; *b* significant at 5%; *a* significant at 1%.