Identifying the Effect of Election Closeness on Voter Turnout:
Evidence from Swiss Referenda

Leonardo Bursztyn
Davide Cantoni
Patricia Funk
Felix Schönenberger
Noam Yuchtman*

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Abstract

We provide evidence of a causal effect of anticipated election closeness on voter turnout, exploiting the precise *day-level* timing of the release of Swiss national poll results for high-stakes federal referenda, and a novel dataset on *daily* mail-in voting for the canton of Geneva. Using an event study design, we find that the release of a closer poll causes voter turnout to sharply rise immediately after poll release, with no differential pre-release turnout levels or trends. We provide evidence that polls affect turnout by providing information shaping beliefs about closeness. The effects of close polls are largest where newspapers report on them most; and, the introduction of polls had significantly larger effects in politically unrepresentative municipalities, where locally available signals of closeness are less correlated with national closeness. We then provide evidence that the effect of close polls is heterogeneous, with an asymmetric effect leading to a higher vote share for the underdog. The effect sizes we estimate are large enough to flip high-stakes election outcomes under plausible counterfactual scenarios.

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1 Introduction

Voter turnout is among the political behaviors of greatest interest to social scientists, shaping election outcomes and thus public policy. Yet, there is a surprising lack of clear, causal evidence for one of the most widely-studied drivers of turnout: a voter's response to anticipated election closeness, which is at the heart of voting models dating back to Downs (1957), and the subject of more than 100 empirical studies (summarized in Cancela and Geys, 2016).[1] On the one hand, observational studies generally find significant, positive correlations between election closeness and voter turnout, but causal inference is undermined by concerns that underlying issue type or the behavior of the political "supply side" (e.g., political advertising) may drive the results.[2] On the other hand, recent field experiments providing far more credible tests (e.g., Enos and Fowler, 2014, and Gerber et al., 2020) find no effect of anticipated election closeness on voter turnout.

In this paper we provide evidence of a significant, causal effect of anticipated election closeness on voter turnout. Specifically, we exploit the precise day-level timing of the release of Swiss national poll results for 52 high-stakes federal referenda, and a novel dataset on *daily* mail-in voting for the canton of Geneva.[3] Using an event study design — thus holding fixed the issue type — we find that the release of a closer poll causes voter turnout to sharply rise immediately after poll release. A one-standard deviation closer poll increases voter turnout by a statistically significant 0.4 percentage points in each of three days immediately following the poll's release. Cumulative turnout remains higher through the election day, indicating that close polls do not just temporally shift votes. We find that turnout rates are no different in levels or trends in the days prior to the release of close polls, suggesting that the information contained in the polls was not anticipated.

Importantly, we can exclude that these results are caused by a differential response of the "supply side", i.e. political advertisements. First, the absence of pre-trends suggests that the supply side was not differentially active prior to the release of close polls. Nor does an endogenous supply side response to the close polls, in the days following their release, account for our findings: we observe significant effects of close polls on votes counted the day immediately after a close poll was released — before the supply side could have affected turnout. Moreover, we can directly test for a supply side response, counting political ads in newspapers (the primary form of political advertising in Switzerland, as TV ads are prohibited). We find that, consistent with close polls meaningfully affecting political beliefs and behavior, there is some evidence of a supply side re-

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[1]Such a causal effect might arise for a variety of theoretical reasons, from (perhaps imperfect) instrumental calculations of costs and benefits (Myatt, 2015), to interactions of election closeness with social preferences (e.g., DellaVigna et al., 2016) or with the intrinsic utility from voting (e.g., Riker and Ordeshook, 1968, Brennan and Buchanan, 1984, Schuessler, 2000, Feddersen and Sandroni, 2006, and Ali and Lin, 2013).

[2]See, for example, Barzel and Silberberg (1973), Cox and Munger (1989), Matsusaka (1993), Shachar and Nalebuff (1999), and Kirchgässner and Schulz (2005).

[3]The vast majority — 90% — of votes cast in Geneva for the referenda studied are mail-in ballots. Note that we use the term "referenda" throughout to refer to federal referenda and initiatives. We discuss the institutional details of our setting in Section 2.

sponse: ads significantly increase following a close poll. But, this response appears only three days after the release of a closer poll (potentially affecting votes counted four days after poll release), well after voter turnout already significantly increased.

We then use data from across Switzerland to study whether close polls differentially increase turnout when they receive more coverage in local media. Using a canton×vote panel, we study the effect of *within-election* variation in the coverage of the national poll by newspapers read by the citizens of a canton. Importantly, newspapers were the primary source of political information among Swiss voters throughout the period we study.[4] Controlling for canton and vote fixed effects — and thus purging our estimates of the effects of a fixed (national-level) "issue type" driving turnout — we find that greater cantonal newspaper coverage of close polls significantly increases voter turnout. A one standard deviation increase in the newspaper coverage of a poll that is one standard deviation closer than the mean increases turnout by around 0.5 percentage points. To address concerns about endogenous local coverage of polls, we exploit a canton's arguably "incidental" exposure to poll reporting. We define "incidental" reporting on polls in a canton as poll coverage in newspapers that are read in the canton, but whose largest market is *elsewhere*. If newspaper editors target their news coverage (specifically poll coverage) toward their largest cantonal audience, then readers exposed to this reporting in *other* cantons will read it for reasons other than their own canton's election-specific interest. We find that greater exposure to this "incidental" reporting on close polls is associated with greater turnout as well.

To test for a role of beliefs in driving the relationship between close polls and turnout, we propose that in the absence of polls, voters gauge an upcoming election's closeness by "locally sampling" among individuals in their municipality. This will yield more accurate beliefs if the municipality's closeness is typically correlated with closeness at the national level (i.e., if the municipality is "representative"). In unrepresentative municipalities, it is difficult for individuals to condition their turnout decision on national-level vote closeness, since their locally available signal is less informative about the national aggregate. When polls are introduced, information on national-level closeness becomes widely available, allowing individuals in both representative and unrepresentative municipalities to condition their turnout on national-level closeness. Exploiting the introduction of polls in Switzerland in 1998, we find evidence consistent with our predictions: prior to 1998, municipalities representative of Switzerland exhibit some association between closeness and turnout, while unrepresentative municipalities do not. Following the introduction of polls, the closeness-turnout gradient increases differentially in unrepresentative municipalities, and becomes positive and highly significant. Moreover, in the post-poll period, the closeness-turnout gradient is nearly identical in the two sets of municipalities.

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[4]The nationally-representative "VOX survey," conducted following each vote, asks Swiss citizens a broad range of political questions. One of these directly asks, "Through which media did you orient yourself and learn about the pros and cons of the last vote?" In each survey, newspapers were the most frequent selection, with around 80% of respondents indicating the importance of newspapers as a source of political information. See Online Appendix Figure C.1.

We close the paper by examining whether close polls can affect election outcomes by changing the *composition* of the electorate. Specifically, we consider the possibility that turnout responses to close polls are asymmetric, with supporters of the trailing side in the poll responding differently compared to supporters of the leading side.[5] To do so, we proxy for a municipality's support for the trailing side using the local vote share for parties that endorse the trailing side in the poll. We find that closer polls differentially increase the turnout rate in municipalities with more predicted support for the trailing side. In addition, the *ex post* vote share for the trailing side is significantly greater in these municipalities following a closer poll. This suggests that the higher turnout is driven by supporters of the trailing side.

To evaluate the magnitude of this asymmetric effect of close polls, we simulate election outcomes under counterfactual polling scenarios. Our counterfactuals are motivated by real-world variation in polling outcomes (resulting from sampling and methodological differences) or by restrictions to the publication of polls (enforced in some countries). First, we consider a case in which polls are counterfactually less close, set at average closeness. Under this scenario, supporters of the trailing side would turn out differentially less, potentially overturning referendum results in which the trailing side in the polls ultimately won a close vote. We then consider a case in which polls are counterfactually one standard deviation closer than the actual poll. Under this scenario, supporters of the trailing side would turn out differentially more, again potentially flipping election outcomes. Under these assumptions, several high-stakes referenda conducted in Switzerland over the last years — on topics ranging from immigration to pension reforms and corporate taxation — would have had different outcomes.

Our findings contribute most directly to a large empirical literature testing whether closer polls affect voter turnout. Up to now, the literature on the effects of polls on voter turnout and elections has been mixed. A large literature shows observational associations between election closeness and turnout.[6] However, causal inference in these studies is undermined by concerns that underlying issue type or the behavior of the political "supply side" (e.g., political advertising) may drive the results. Lab experiments provide evidence that suggests a causal effect of poll closeness on turnout, but their external validity remains to be verified.[7] Recent field experimental work (Enos and Fowler, 2014, and Gerber et al., 2020) randomly assigns voters information about the closeness of an upcoming election and finds that such information does *not* have a causal effect on real world voter turnout.

We contribute to this literature the first credibly causal evidence of a significant effect of close polls on voter turnout in the field, providing a rigorous confirmation of the observational analyses and supporting the external validity of the lab experiments. Our findings present a striking

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[5]We use "trailing" and "leading" to describe polls' forecasted outcomes, in contrast to "losing" and "winning", which we use to describe the ultimate election outcomes.

[6]For example, Barzel and Silberberg (1973), Cox and Munger (1989), Matsusaka (1993), Shachar and Nalebuff (1999), and Kirchgässner and Schulz (2005); the literature is summarized in Cancela and Geys (2016).

[7]For example, Levine and Palfrey (2007), Duffy and Tavits (2008), and Agranov et al. (2018).

contrast with existing field experimental evidence, which deserves attention. One possible explanation for divergent findings is that our treatment differs from the field experiments: we rely on naturally-occurring exposure to poll information that arrives to entire populations, while field experiments isolate the effects of information arriving from an experimenter at the individual level. Another possible explanation is simply different settings and possibly heterogeneous effects of close polls. Finally, the null results found in field experiments may be due to a limitation they share: the inability of the experimenter to control information voters acquire outside of the experiment. Because there typically exists plentiful information about closeness available to *both* treatment and control subjects in the weeks before an election, treatment and control subjects' beliefs about election closeness may not have differed at all at the moment of the turnout decision. Hence, null results from these field experiments may be due to insufficient variation in beliefs about closeness between treatment and control subjects, not because information about election closeness is unimportant for the turnout decision. Our evidence suggests that this information, provided by polls, indeed can shape turnout.

Our finding of a causal effect of polls contributes to a growing empirical literature identifying determinants of voter turnout, for example, expressive motives (Pons and Tricaud, 2018), personality traits (Ortoleva and Snowberg, 2015), habits (Fujiwara et al., 2016), social considerations (Gerber et al., 2008, Funk, 2010, and DellaVigna et al., 2016), political movements (Madestam et al., 2013), the existence of exit poll results (Morton et al., 2015), and compulsory voting laws (León, 2017 and Hoffman et al., 2017).[8]

Our findings also contribute to an emerging literature on possible asymmetric effects of polls on turnout among supporters of the trailing and leading sides. Theory is ambiguous regarding which side (if any) will turn out more in response to polls (Simon, 1954; Levine and Palfrey, 2007): on the one hand, the trailing side may be motivated and the leading side may be overconfident, producing differentially high turnout among the trailing side. On the other hand, a discouragement effect among the trailing side and a desire to participate on the winning side (i.e., a "bandwagon effect") may generate greater turnout among supporters of the leading side. Empirical evidence is scarce. Survey-based evidence provides mixed results: Westwood et al. (2020) argues that the projected high probability of a Clinton victory in the 2016 US presidential election made her supporters overconfident and less likely to turn out; Connors et al. (2020) finds instead that supporters of the leading side in polls tend to turn out more. In a lab experiment, Agranov et al. (2018) find evidence of a bandwagon effect, with more turnout the greater the predicted lead of one's preferred side; similarly, implementing a field experiment in South Africa, Orkin (2020) finds evidence in favor of the bandwagon effect. We provide evidence from high-stakes votes that, in some cases, close polls will differentially stimulate the turnout of the losing side.

Finally, our analysis contributes to a growing body of work studying the impact of the me-

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[8]Existing work has also structurally estimated rational choice models of voter turnout, emphasizing instrumental motives (e.g., Coate and Conlin, 2004 and Coate et al., 2008), finding mixed results.

dia on voter turnout and preferences (Strömberg, 2004, Gentzkow, 2006, DellaVigna and Kaplan, 2007, Enikolopov et al., 2011, Gentzkow et al., 2011, Spenkuch and Toniatti, 2018, Durante et al., 2019). While much existing work is focused on the effects of partisan, or persuasive, media content on voters' choices, we instead study the media's provision of mere information about vote closeness. This sort of coverage has become increasingly salient during campaigns; data-driven election forecast sites such as Nate Silver's *fivethirtyeight.com* are increasingly popular. Understanding the impact of this sort of content on voters is thus important; our results suggest that it causally shapes voter turnout and potentially can affect election outcomes.

In what follows, in Section 2, we discuss the institutional context of Swiss referenda and in Section 3, we describe our data. In Section 4, we discuss the challenge of identifying a causal effect of anticipated election closeness and present our empirical results from the Geneva event study. In Section 5, we present our analysis of newspaper reporting on polls using canton-level data. In Section 6 we present our analysis of municipality-level data. In Section 7, we present evidence on the underdog effect and conduct our counterfactual analyses of Swiss referenda outcomes. Finally, in Section 8, we offer concluding thoughts.

2   Institutional Context

Switzerland is a federal republic consisting of 26 cantons and 2,202 municipalities (as of 2020). Along with a distinct federal structure, Switzerland has a long tradition of direct democracy.[9] Swiss citizens vote on federal ballots two to four times per year, with each "election day" including votes on multiple proposals. Vote topics vary broadly, from social issues, to military policy, to infrastructure, to participation in international organizations, such as the European Union.[10] Between 1981 and 2019, Swiss citizens voted on 331 federal ballots, and these ballots were held on 115 election days. Given the high stakes involved, it is unsurprising that referenda are politically contentious. Political parties regularly take positions and issue voting recommendations. In the 331 votes between 1981 and 2019, the moderate right-wing party (FDP) provided a recommendation on how to vote in all but one vote; the centrist party (CVP) and the populist right-wing party (SVP) provided recommendations in all but three votes; and the major left-wing party (SP) provided a recommendation in all but 17 votes. The left and the right typically provided voters with contrasting recommendations: there was disagreement among major parties in 271 out of 331 of the votes held between 1981 and 2019.

The voting process in Switzerland is quite convenient. No registration to vote is necessary, and

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[9]Swiss direct democracy has frequently served as a laboratory to study democratic political institutions: e.g., ballot design (Hessami, 2016; Hessami and Resnjanskij, 2019), polling (Funk, 2016), or the voting environment (Funk, 2010; Hainmueller and Hangartner, 2019). More details on the institutional setting are provided in Online Appendix A.

[10]Note that some referenda require a double majority of both voters and cantons to be passed. In nearly every case in our data, popular and cantonal majorities go hand in hand. There is no minimum voter turnout required for the ballot to be binding.

every eligible voter (i.e., Swiss citizen of at least 18 years of age) receives the voting documents by regular mail at home. The voter then casts the ballot either at the polling booth on the election day (always a Sunday) or through early voting.[11] Swiss voters are also provided with detailed information on the substance of the issues on which they will vote. The voting documents sent to eligible voters' homes include the precise questions, arguments for and against each proposition, and often outside opinions from interest groups. In addition, most federal votes are extensively debated in the media (TV, radio and dozens of local newspapers). Political advertising exists only in newspapers, with political TV and radio ads prohibited under federal law.

In 1998, the Swiss public television station decided to sponsor the first widely-disseminated national voting forecasts in Switzerland. The polls, conducted by the research institute "*gfs.bern*," were eventually disseminated more broadly, through other media as well. Two rounds of polls are typically conducted: results of the first poll are published around 5 weeks before the voting Sunday — before any voting can take place — and results of the last poll are typically released 11 days before the voting date, the Wednesday in the week prior to the election date. Because our event study analysis of Geneva voter turnout relies on the *exact* date of the release of the final poll, we note here that of the 52 votes examined in our analysis of Geneva voter turnout, 2 polls were released 16 days before the voting date, 1 poll 13 days before, 2 polls 12 days before, 44 polls 11 days before, and 3 polls 10 days before.

The release of this national-level poll (and its closeness) before each vote provides the key source of variation we will exploit in our event-study analysis of Geneva voters' turnout. In our analysis of the effects of close polls depending on municipality representativeness, we will compare voter turnout before and after 1998, when polling began. And, in our analysis of the role of newspaper dissemination of poll results, we will examine newspaper articles reporting on these national polls.

3   Data and Summary Statistics

3.1   Data Description

Voter Turnout and Vote Outcomes   Data on daily voter turnout in the canton of Geneva are obtained from the office of statistics of the canton. To the best of our knowledge, Geneva — the 6th largest canton, with a population of around 500,000 — is the only canton keeping detailed administrative records on the *timing* of voter turnout.[12] Beginning from approximately 2–3 weeks before election Sunday, the cantonal Service of Popular Votes and Elections registers the number

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[11]In our sample of Genevan voters, virtually all voters make use of early voting: 90.0% of those turning out use postal voting and 4.3% use voting by internet; only 5.7% cast their vote at the polling booth on Sunday morning.

[12]Turnout is *not* observed for each individual vote (i.e. ballot issue) that is decided on the same election day, as the ballots are placed together in a sealed envelope. The sealed envelope is then mailed, in a larger envelope, together with the signed voter identification card. Voters nearly always cast their ballots on all issues that are decided upon in one election.

of incoming ballots from early voters at a daily level. Incoming postal ballots (around 90% of the votes cast in our sample) are registered on the *very same day* of any working day (which includes election Sunday and the preceding Saturday). The relatively small number of ballots cast online (around 4%) are recorded automatically every day (including weekends and public holidays) by the e-voting system.[13] There are 52 election days in Geneva for which turnout is observed both before and after the release of pre-election poll results. We thus construct a panel of daily turnout for the voting days preceding these 52 election days. We consider cumulative turnout rate as of each day; the log of the daily count of ballots received; the daily turnout rate as a fraction of the eligible voting population in the canton, and the daily "net" turnout rate, calculated as the turnout rate among the eligible voters who have not yet voted in a particular election.

We additionally consider data on voter turnout and referenda outcomes for all of Switzerland. These data are available in disaggregate form for all levels (municipal, cantonal and federal) since 1981 and are provided by the Swiss federal office of statistics. In our analysis, we use data on: eligible voters, votes cast, the number of votes in support of the initiative, and the number of votes against the initiative.[14]

While our main analysis focuses on an *ex-ante* measure of vote closeness (derived from the polls), we also calculate an *ex post* vote closeness measure (based on actual voting outcomes), which is the share of the votes cast for the losing side in a vote. In our municipality×vote-level analysis, we use *ex post* closeness to construct a measure of a municipality's "political unrepresentativeness" prior to the release of any polls: the opposite of the correlation between each municipality's vote share closeness and the national closeness between 1981 and 1998. We also use the measure to calculate a municipality's homogeneity: how much a municipality's voting outcomes differed from 50-50, on average, prior to the release of any polls.

Importance of a Vote   Each election day typically features several votes (ballot issues). In our analysis, we focus on the issue that voters consider most important, as it plausibly drives the turnout decision. To determine the most important vote on a given election day, we use data from post-vote surveys.[15]

In our analysis of voter turnout in Geneva, the vote we identify as most important determines the poll whose closeness is used as the explanatory variable of interest in our empirical model. In our analysis of municipal and canton-level turnout across Switzerland, the most important vote determines both the turnout rate on a given election day (i.e., the dependent variable of interest) and the poll whose closeness is used as an explanatory variable. In practice, voter turnout varies

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[13]We therefore aggregate votes on eligible "voting days," i.e. days when postal ballots are registered, to which we add any incoming ballots by internet recorded on weekends or public holidays immediately preceding the voting day. Our results are robust to excluding online ballots.

[14]Turnout is calculated at the level of the individual vote. In practice, turnout is very similar for all votes held on a given election day: a regression of turnout on election day fixed effects generates residuals with a standard deviation of 0.128 percentage points.

[15]See Online Appendix B for more details.

very little across issues on an election day and our results are robust to using the average closeness across all issues.[16] Table 1 lists a few examples of election days, with the respective issues (votes) on the ballot and their importance scores (Online Appendix Table C.1 lists all the election days and the most important vote on each day).

Pre-Election Poll Results   Since 1998, the Swiss Public TV and Radio Corporation (SRG) has sponsored surveys eliciting the voting intentions of Swiss citizens before all federal votes. We collected poll results, as well as the precise timing of their release from the website of the SRG. Our variable of interest is the closeness of the pre-election poll, defined as the share supporting the losing side in the poll.[17] Closeness thus varies between 0 and 50. In the analysis that spans time periods with and without national polls, we use our *ex post* vote closeness measure, defined as the vote share of the losing side in an election.

Data on Newspaper Coverage of Polls   The Swiss Agency of Media Research (*WEMF*) has regularly conducted surveys on newspaper readership since the year 2000, with random samples of cantonal inhabitants interviewed and asked which newspapers they read. The Agency generously shared their data on canton-level newspaper readership with us, allowing us to construct a list of newspapers read by at least 10% of a canton's inhabitants in a given year. Overall, there are 50 newspapers on this list, many of which are read in several cantons (see Online Appendix Table C.2, for a list of the newspapers). To measure canton-level coverage of pre-election polls, we count the articles mentioning a pre-election poll in each of the newspapers read by at least 10% of a canton's inhabitants, between 2000 and 2014. This absolute count of "poll mentions" is our baseline measure of newspaper poll coverage.[18]

In our empirical analysis below, we will address concerns regarding the endogenous local newspaper coverage of close polls by exploiting a canton's voters' (arguably) "incidental" exposure to polls. We propose that newspaper editors may target their news coverage toward their largest cantonal audience; readers exposed to reporting in *other* cantons will read it for reasons other than their own canton's election-specific interest. We thus can decompose *total* coverage of polls in a canton into two components: first, *endogenous* coverage, which is arguably targeted toward that canton, because it represents a newspaper's largest cantonal audience; second, *incidental* coverage, to which a canton is exposed despite a newspaper's largest audience being in a different canton. We use the newspaper readership data to define incidental poll exposure in two ways: first, coverage by a source with a majority readership in a different canton; second, and more conservatively, coverage by a source with at least 85% readership in other cantons (Online

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[16]See Online Appendix Tables C.4 and C.5 for these results.

[17]In a slight abuse of terminology, we refer to the trailing side in polls — the side predicted to lose — as the "losing side," irrespective of the eventual vote outcome.

[18]We also present analyses using readership-weighted newspaper poll coverage in Online Appendix Table C.6. Our results are nearly unchanged using this alternative measure.

Appendix Figure C.2, shows how endogenous and incidental coverage vary by canton).

The Political "Supply Side": Political Advertising in Newspapers   For our analysis of voter turnout in the canton of Geneva, we hand-collected all political advertisements related to the 52 referenda studied between 2001 and 2019 for the two most widely-read Genevan newspapers: *Le Temps* and *Tribune de Genève*. We aggregate these data to counts of political ads relating to each of the 52 votes at the *daily* level.

For our analysis of voter turnout across Switzerland, we measure political advertising using data from Kriesi (2009) and the *Année Politique Suisse* on political ads in six major Swiss newspapers: *NZZ*, *Blick*, *Tages-Anzeiger*, *Le Matin*, *Journal de Genève*, and *Tribune de Genève*.[19] To measure campaigning intensity at the vote level, we calculate the sum of ads placed in these six major newspapers relating to each vote.

For our canton×vote-level analysis, we collected advertising data from a much broader set of newspapers: all of the newspapers read by at least 10% of any canton's inhabitants. We sum up to the canton×vote level our counts of political ads relating to each vote for each newspaper read in each canton.

3.2   Summary Statistics

We present summary statistics for the datasets used in our empirical analysis in Table 2. First, we consider our primary dataset of interest: vote×day-level data for the canton of Geneva (Panel A). We observe voting, on days both before and after polls are released (around 15 days per vote) for 52 "most important" votes held on election days since 2001 (766 vote×day observations in total). Around 3% of eligible voters vote on an average day; cumulative turnout is around 28% on the average day (which of course will be higher by the day of the election itself). The average *ex ante* poll closeness in our sample is 38.40 (that is a 62-38 margin for the winning side). Finally, on the average day in our sample, we count 1.6 newspaper ads related to the upcoming vote in the two major Genevan newspapers.[20]

Second, we turn to the vote-level dataset at the federal level (Panel B). It is composed of the "most important" issue for each of the 115 election days for which we have voter turnout data between 1981 and 2019. On average, over 40% of eligible voters turn out; the average margin is around 65%–35%; voters rate the importance of the issue to themselves as a 6 out of 10 in importance; and, the average vote saw around 100 ads placed in the major Swiss newspapers.[21]

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[19]Hanspeter Kriesi generously shared data for votes from 1981 to 2014, which we supplemented with the Année Politique Suisse for more recent votes (see `https://anneepolitique.swiss/pages/campaign_research`, last accessed February 16, 2022).

[20]We are missing ads data for 52 voting days — the election Sunday for each of our votes.

[21]Data on the importance of the vote are missing for 32 votes because surveys did not include this question before 1993. Missing data for political ads are inherited from the Kriesi (2009) dataset.

Third, we construct a canton×vote-level dataset, including voting data for 26 cantons and 37 "most important" votes held between 1998 and 2014 (Panel C). This panel is limited to votes for which we have a count of newspaper articles mentioning polls and political ads relating to votes in the 50 newspapers read by at least 10% of a canton's population. One can see that this slightly smaller sample, relative to the Geneva dataset that also examines the poll era, does not look very different in terms of poll closeness: on average, this is around 38 (i.e., a 38% share for the losing side) in both samples. We count around 4 newspaper articles mentioning polls for the average vote, with 2.5–3 articles mentioning polls published in newspapers read in a canton, but having a larger market elsewhere (our measure of "incidental" exposure to information). We count, on average, around 70 political advertisements on the most important vote in the newspapers read in a canton. Finally, we note that the personal importance of this set of votes looks very similar to the full sample.[22]

Fourth, we construct a municipality×vote-level dataset, including voting data for 2,176 municipalities and 115 "most important" votes held between 1981 and 2019 (Panel D).[23] In addition to summary statistics that match the vote-level data at the federal level (subject to differences due to the construction of the municipal-level data), one can see that 60% of the votes in our municipality×vote-level analysis were held after polls were introduced; the average municipality has an unrepresentativeness value of -0.59 (meaning that the average correlation between national and municipality closeness is around 0.60), but this ranges from close to -1 (a nearly perfect correlation between municipality and national closeness) to around 0 (implying no correlation between the municipality closeness and national closeness).

4 Polls and Turnout: Event Study Evidence

4.1 The Identification Challenge

Abundant evidence exists of a correlation between election closeness and voter turnout. This correlation can arise from three sources: first, voters may turn out more when they anticipate a close election — this is the *causal effect* of closeness, working through voter beliefs, that is of interest to us. Second, unobserved *issue type* may drive both closeness and turnout: for example, more important referenda issues (or election races) may be more contentious (and hence closer) and also motivate voter turnout. Third, the actions of the political *supply side*, that is, political actors and organizations with a stake in the referendum (election) outcome, may be correlated

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[22]Importance data are missing for five observations because the survey did not receive responses from small cantons for these votes.

[23]We are missing 26 out of 2,202 municipalities that existed at the end of our sample period. For 19 municipalities, the federal office of statistics reports incomplete data because these municipalities were subject to complex mergers not allowing the aggregation of data by adding up historical electoral returns from formerly independent municipalities. For another 7 municipalities, no data are reported because they share a common ballot box with neighboring municipalities to which electoral returns are aggregated.

with both voter turnout and closeness: for example, high levels of political advertising on two sides of an issue would tend to drive up turnout and closeness.

One can see in Figure 1 that in our setting, the closeness of Swiss referendum results is indeed strongly, positively associated with voter turnout (Panel A). But, the importance of an issue (measured in voter surveys) and political advertising are also strongly, positively associated with voter turnout (Panels B and C). And, the importance of an issue and political advertising are strongly, positively associated with referendum closeness (Panels D and E) and with each other (Panel F).

4.2 Empirical Framework

The ideal experiment would randomly shock voters' beliefs about election closeness, while holding fixed the issue type and the political supply side. We identify a setting that approximates this experiment: the sharp arrival of information about election closeness in newly-released polls. Using unique data from the canton of Geneva that allow us to observe voter turnout day-by-day, around the day when polls are released, we can test whether the release of *closer* polls differentially increases voter turnout (accounting for issue fixed effects). Furthermore, we can evaluate whether the natural experiment we study is a good one, by testing for differential turnout levels and trends *prior* to the release of closer polls — such an effect might arise if closer polls were anticipated; if issue types that were associated with closer polls were also associated with different turnout trends, or if the political supply side were differentially active prior to poll release on issues that (eventually) have closer polls.

To be precise, we estimate the following model:

$$turnout_{vd} = \sum_d \beta_d \; closeness_v + \alpha_v + \gamma_d + \epsilon_{vd}. \tag{1}$$

This is a simple event study, examining voter turnout by vote×day, where "day" is the number of days prior to, or following release of a poll. The coefficients of interest are the sequence of β_d, which are estimated as coefficients on the interaction of poll closeness ($closeness_v$) with a full set of day-to-poll indicators.[24] These tell us how turnout varies in the days before or after a *closer* poll is released — accounting for vote (v) and day-to-poll (d) fixed effects. Our proposed mechanism of a causal effect of closer polls through changed voter beliefs about closeness suggests that β_d will be very close to 0 for $d < 0$ and significant and positive for some $d > 0$.

In addition to examining voter turnout, we can also directly study the political supply side by estimating the event study model in equation (1), but predicting political ads by vote×day. If close polls causally shape turnout, one might expect the political supply side to respond to them as well — albeit likely with some lag given the need to develop ads and place them. Crucially, we predict a response of voter turnout *prior* to any political supply side response.

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[24]We consider only linear effects of closer polls in this analysis, and those below, due to a lack of power to identify non-linearities in the relationship between poll closeness and turnout.

4.3 Evidence from the Canton of Geneva

Our analysis of voter turnout in Geneva examines whether, in the days following the release of closer polls, voters turn out more. In Figure 2, we present *prima facie* evidence that close polls increase turnout, showing (raw) cumulative voter turnout (Panel A) and net voter turnout rates (Panel B) day by day around the time when polls are released, and splitting polls into above- or below-median closeness (above or below a 40% vote share for the losing side). One can see that voter turnout follows a *very* similar pattern day by day up to poll release for votes that would eventually have closer or less close polls. But, once polls are released, voter turnout diverges sharply, particularly in the three days immediately following poll release.

We next more formally test for the effect of closer polls. We estimate the event study equation (1) presented above, examining the effects of closer polls on net voter turnout rates day by day.[25] One can see in Figure 3 coefficient estimates (and 95% confidence intervals) on the interaction of (standardized) poll closeness with each day-to-poll indicator (with the day of poll release the omitted reference day). We present these coefficients along with standard errors clustered at the vote level in Table 3, column 1. In addition, we present *p*-values from the wild cluster bootstrap in brackets.

Prior to the day when polls are released, we see no difference in turnout rates depending on the closeness of the to-be-released poll. In contrast, on the first three days after a closer poll is released, voter turnout rates are *significantly higher* — by around 0.4 percentage points.[26] The 1.2 percentage point increase in turnout over three days arising from a one standard deviation (7.65 percentage point) increase in poll closeness actually matches the existing observational literature quite well. For example, Cox and Munger (1989) and De Paola and Scoppa (2014) estimate that a 10 percentage point increase in closeness raises voter turnout by 1–2 percentage points; our estimates fall in this range. In Table 3, column 2, we also estimate models including fixed effects for each day-to-election (not perfectly collinear with day-to-poll because the poll release day is not always the same number of voting days prior to the election). These fixed effects have no impact on our results.[27] These effects on turnout are not merely vote shifting across time, as coefficient estimates remain above 0 up through election day (consistent with the higher cumulative turnout for votes with closer polls seen in Figure 2). We can reject that the cumulative effect of all post-poll

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[25]An important limitation of a high-frequency event study analysis such as the one we conduct is that it identifies the immediate effects of close polls, rather than the total effect of close polls on turnout for a given vote.

[26]It is worth clarifying how polls released on day t can produce an increase in votes *counted* on day $t + 1$. This can arise through several mechanisms: first, when poll results are released on the morning of day t, voters may respond by mailing a ballot in time for the vote to be counted on day $t + 1$. Indeed, since 2003, Geneva prepays the ballot envelope for "A Mail," which arrives the next day when put into a mailbox or brought to the post office before closing hours in the evening (confirmed in personal communication with the cantonal Service of Popular Votes and Elections, April 27, 2021). Remember also that incoming postal ballots are registered on the very same day. Second, even when polls are released on the evening of day t, voters are able to hand-deliver their ballots to the electoral office on day $t + 1$ or to vote online on day t or day $t + 1$.

[27]Note that day-to-election fixed effects also account for differences in turnout by days of the week, which are perfectly collinear with day-to-election fixed effects (because election day is always a Sunday).

coefficients is less than or equal to zero ($p < 0.1$).

We present several robustness exercises in Figure 4. First, in Panel A, we pool net voter turnout into two-day bins, which increases the precision of the estimated time-varying effect of closer polls, and confirms our baseline results. In Panel B, we adjust the denominator of the voter turnout rate, using the fixed eligible number of voters, rather than accounting for the individuals who already voted on prior days; our results are qualitatively unchanged (though given the large turnout effect on the first day after poll release, subsequent estimated effects are smaller). In Panel C, we present estimates from a balanced panel, limiting the window to 2 days prior to poll release through election day, as some votes do not have voting data for earlier days. One can see that our results are not sensitive to this choice of sample window. Finally, in Panel D, we examine the log of the daily turnout level as the outcome, and again our results are unaffected. In Table 3, columns 3, and 4, we present coefficient estimates, clustered standard errors, and p-values from the wild cluster bootstrap, from specifications examining log turnout as the outcome and one can see that results are very similar.

The results presented in Figures 3 and 4, as well as Table 3 (and in Online Appendix Table C.3) provide evidence of a causal effect of anticipated closeness on voter turnout. Higher turnout just after the release of close polls is not driven by issue type: time-invariant issue type that might be associated with voter turnout is accounted for by the vote fixed effects; day-varying effects of issue type on voter turnout are unlikely in light of the insignificant differences in voter turnout rates observed for all of the days prior to the release of closer polls.

Nor can the political supply side account for the response of voter turnout to the release of closer polls. The absence of pre-trends suggests that the supply side was not differentially active prior to the release of close polls; poll results do not seem to have been anticipated. However, the release of polls may affect the supply side directly (if this information about closeness was not available to campaigns before) or indirectly (e.g., because anticipated greater voter turnout in closer votes increases the returns to persuasion through ads).

We thus estimate our event study model (equation (1)), but now examining the effects of closer polls on political advertisements day by day, both before and after poll release. The results are reported in Figure 5. As in Figure 3, we find no difference in political behavior (in this case advertisements) depending on the closeness of the to-be-released poll prior to poll release. After the release, we continue to see no effect of closer polls on ads until three days after the poll, when we observe a significant increase in ads in response to a closer poll for one day. This suggests that there is *some* supply side response to closer polls, but that it appears with a lag. It also suggests that endogenous changes in the behavior of the political supply side cannot account for all of the voter turnout effect that we observe in response to closer polls: political ads printed three days after the release of a poll would generally affect votes counted four or more days after poll release. Yet we find the largest effects of close polls on votes counted in the first three days after poll release.

5 Poll Coverage and Turnout

Our results thus suggest that polls causally affect voters' turnout by providing them with information about upcoming election closeness. We next test a key auxiliary prediction: that greater coverage of close polls will differentially increase turnout. Quite simply, in locations where individuals read newspapers that report more on poll results, the impact of poll closeness should be magnified.[28] Using our canton×vote panel data, we test whether there exists a differential positive relationship between *ex ante* poll closeness and turnout in cantons with greater reporting on polls in local newspapers, controlling for vote fixed effects — and thus a national-level "issue type" — as well as canton fixed effects. We estimate the following model:

$$turnout_{cv} = \phi_c + \mu_v + \psi_1 \, closeness_v \times coverage_{cv} + \psi_2 \, coverage_{cv} + u_{cv}, \qquad (2)$$

where $turnout_{cv}$ is the turnout rate (in percent) in canton c for vote v, ϕ_c are a set of canton fixed effects, and μ_v are a set of vote fixed effects. The interaction $closeness_v \times coverage_{cv}$ is the explanatory variable of interest, with the coefficient ψ_1 telling us whether close polls have a differential impact on turnout specifically when they are covered more by a canton's newspapers.

In Table 4, Panel A, column 1, one can see that indeed, voter turnout is significantly greater when *ex ante* closer polls are reported on more often. We plot the estimated effect of one standard deviation greater poll coverage across levels of (standardized) poll closeness in Figure 6. One can see that a poll that is one standard deviation closer than average (where there is substantial support in the data) increases voter turnout by a statistically significant 0.5 percentage points when newspaper coverage is one standard deviation greater. At average closeness, more coverage has little effect, and when newspapers report more on polls that are *not* close, turnout is predicted to be substantially smaller, as one would expect.

Of course, it is possible that greater coverage of close polls in locally-read newspapers is correlated with a canton×vote-specific unobservable that might shape turnout. We consider several possibilities. First, it is possible that locally-targeted political campaigning is associated with both local newspaper coverage of close polls and turnout. To evaluate this concern, we estimate equation (2), but predicting the number of political ads in a canton's newspapers for a given vote. As can be seen in Table 4, Panel A, column 3, while greater newspaper coverage of polls in general is associated with the number of ads, the *differential* coverage of *closer* polls is not associated with political ads. The political supply side thus does not seem to account for our findings.

Another possibility is that newspapers providing more coverage of closer polls may also provide other coverage that increases salience and motivates turnout — for example, increasing per-

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[28]Note that voters receive information about poll closeness from other sources of media as well — in particular, from national Swiss TV and radio. This "common information," available across Swiss cantons would tend to bias our estimates toward 0. On the other hand, exposure to polls on TV or radio that is positively correlated with newspaper coverage across space would tend to produce an overestimate.

suasive content, in addition to reporting on close polls. One would expect that increased issue salience and/or increased exposure to persuasive content would tend to enhance voters' perceptions of an issue's importance. We thus estimate equation (2), but predicting cantonal voters' *ex post* assessment of an issue's importance. As can be seen in Table 4, Panel A, column 5, we find no evidence of greater perceived importance of an issue when a canton's newspapers cover close polls more. Thus, alternative newspaper content does not seem to drive our results.[29]

Finally, differences across Switzerland's linguistic-cultural communities represent another possible source of variation in both newspaper poll coverage and voter turnout. For example, perhaps newspapers read by German-speaking Swiss are more likely to report on close polls and German-speaking Swiss are also more likely to turn out to vote in close elections, but greater coverage may not cause the higher turnout. To account for differences in turnout across linguistic-cultural communities depending on a vote's closeness or on a vote's coverage, we control for interactions between an indicator that a canton is German-speaking with pre-election poll closeness as well as with cantonal poll coverage. Including these controls does not affect any of our results (Table 4, Panel A, columns 2, 4, and 6).

As an alternative approach to addressing concerns regarding the endogenous local newspaper coverage of close polls, we exploit a canton's voters' arguably "incidental" exposure to polls. As explained in section 3.1 above, we decompose *total* coverage of polls in a canton into *endogenous* coverage, by newspapers whose largest audience lies in that canton, and *incidental* coverage, by newspapers that are read in that canton but whose largest audience lies elsewhere. Incidental coverage of polls in our data is only very weakly correlated with endogenous coverage (the correlation is -0.153).[30] We thus examine the impact of incidental coverage of pre-election polls at the canton×vote level, plausibly a "cleaner" source of variation in exposure to information regarding the closeness of an upcoming election.[31]

In Table 4, Panel B, we present estimates from specifications analogous to those in Panel A, but now exploiting within-vote variation in exposure to *incidental* coverage of pre-election polls. One can see that greater coverage of closer polls continues to predict higher turnout (column 1) and that this effect is robust to including controls for interactions between an indicator that a canton is German-speaking with pre-election poll closeness as well as with cantonal poll coverage (column 2). The coefficient on the interaction between poll closeness and incidental exposure is about 25% smaller than the coefficient in Panel A, but this does not necessarily imply that the coefficient in Panel A was biased: our measure of incidental poll coverage necessarily excludes coverage of polls in widely-read newspapers, which would plausibly have large effects on turnout. One con-

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[29]While we prefer not to control for political ads and vote importance, as they are endogenous with respect to our explanatory variable of interest, we note here that their inclusion in the model presented in Table 4, column 1, does not affect our results.

[30]We present each canton's endogenous and incidental exposure to newspaper coverage of polls in Online Appendix Figure C.2.

[31]Of course, it is possible that a newspaper's readers will have correlated political preferences across cantons, which shape turnout; these analyses are thus best viewed as suggestive.

tinues to see no relationship between greater coverage of closer polls and political advertisements or voters' perceptions of issues' importance (columns 3–6). In Panel C, we repeat the same exercises, but now implementing a more demanding measure of "incidental" newspaper coverage of polls, requiring that a canton represent less than 15% of a newspaper's readership. Our findings are much the same as in Panels A and B: greater coverage of closer polls is associated with significantly higher voter turnout; this does not seem to be driven by different cultural/linguistic groups; and it does not seem to be driven by political ads or changes in voters' perceptions of vote importance.[32]

6 Identifying the Role of Beliefs

Our findings thus far suggest a causal effect of information about election closeness on voter turnout. Such information may affect turnout either through changed beliefs about closeness, or through changes in issue salience, which might also drive turnout. Our finding above that newspaper coverage of close polls has no effect on voter perceptions of issue importance is suggestive of a primary role for beliefs, but we next test for a role of beliefs more directly.

To do so, we exploit the introduction of polls in Switzerland in 1998. In the absence of information from national, pre-election polls, it is plausible that voters will gauge an upcoming election's closeness by "locally sampling" among their friends and neighbors. This strategy will yield beliefs that reflect the actual national-level closeness only if the local sample is politically representative of the country as a whole. In such cases, it may be possible to condition the turnout decision on an informative local signal even in the absence of national polls. In contrast, in politically unrepresentative municipalities, it will not be easy for individuals to condition their turnout decision on national-level vote closeness.[33] Once polls are introduced, however, voters in *both* politically representative and politically unrepresentative municipalities will be able to condition their turnout on an accurate signal of election closeness.

If the formation of beliefs about closeness are the primary mechanism through which polls shape turnout, one would expect to see several patterns in the data. We predict: (*i*) in the era before polls, the closeness-turnout relationship should be positive in more politically representa-

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[32]As a final exercise with the canton×vote data, we use incidental exposure to poll coverage as an instrument for total exposure (and the interaction between poll closeness and incidental newspaper coverage of polls as an instrument for the interaction between poll closeness and total newspaper coverage of polls). In Online Appendix Table C.7, one can see: (i) strong first stage estimates; (ii) the coefficient on incidental articles on polls in the first stage predicting total articles on polls is not greater than 1, suggesting that an additional incidental article is not associated with more endogenous articles (the p-value from a one-sided test is < 0.001); and (iii) the IV estimate (using the empirical specification from Table 4, column 1) is somewhat larger than the OLS. This suggests that endogenous coverage of close polls may be greater when turnout is lower for other reasons: for example, newspaper editors may wish to stimulate turnout when they believe turnout will be lower than they think it ought to be.

[33]Voters in politically unrepresentative municipalities may turn out more in response to local signals of closeness, but because these signals are less correlated with national-level closeness, they will not turn out systematically more for (nationally) closer elections. It is also possible that because their local signals are less informative, they choose not to act on them.

tive municipalities, but there should be a weak or no relationship in politically unrepresentative municipalities. In other words, there should be a significant difference in the closeness-turnout gradient between politically representative and politically unrepresentative municipalities in the era without polls. (*ii*) The introduction of polls should have a significantly larger effect on the closeness-turnout relationship in politically unrepresentative municipalities (the poll has a larger effect on voters' information sets there). (*iii*) There should be convergence toward the same closeness-turnout relationship in the era with polls: i.e., a smaller difference in the closeness-turnout gradient in the era with polls.[34]

We test these predictions using a municipality×vote panel, pooling data from the era with and without polls (and thus using an *ex post* measure of election closeness). As a reminder, we define "unrepresentativeness" as the opposite of the correlation between each municipality's vote share closeness and the national closeness between 1981 and 1998 (prior to the release of any polls).[35] Before estimating regression models, we begin by providing the raw correlation between election closeness and municipality voter turnout, splitting the sample of municipalities above and below the median level of political unrepresentativeness in our sample, and examining separately the set of votes held before polls were conducted and the set of votes with polls.

In Figure 7, one can see patterns matching our predictions: in the absence of polls, among relatively unrepresentative municipalities, there is practically no relationship between election closeness and turnout. Among more representative municipalities, there is a stronger positive gradient — the difference in slopes between the representative and unrepresentative municipalities is statistically significant ($p = 0.01$). In contrast, in the era when polls are conducted, there is no difference between unrepresentative and representative municipalities in their relationship between election closeness and voter turnout ($p = 0.693$). In both sets of municipalities the slope is positive and significant ($p < 0.01$) and the difference in differences (comparing the eras with and without polls) is statistically significant as well ($p = 0.037$). Finally, the magnitudes are substantial: a one-standard deviation closer election is associated with around 2.5 percentage points higher turnout when polls are released. In the absence of polls, a one-standard deviation closer election was associated with around 1.7 percentage points higher turnout in municipalities that were representative of Switzerland, and only 0.7 percentage points in municipalities that were unrepresentative.

We next estimate the following model:

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[34]If all voters who wish to condition their turnout on national closeness have access to polls, then there will be complete convergence in turnout rates across municipalities. However, if poll information is imperfectly transmitted, voters in representative municipalities may still have access to better signals of national closeness, implying only partial convergence.

[35]See Online Appendix Figure C.3, Panel A for the distribution of unrepresentativeness.

$$turnout_{mv} = \alpha_m + \gamma_v + \delta_1 \, closeness_v \times unrepresentative_m \times PollEra_v \qquad (3)$$
$$+\delta_2 \, closeness_v \times unrepresentative_m$$
$$+\delta_3 \, unrepresentative_m \times PollEra_v + \varepsilon_{mv},$$

examining the relationship between election closeness and municipality voter turnout depending on municipality unrepresentativeness and on the existence of polls, accounting for vote and municipality fixed effects. It is useful to match our hypotheses to regression coefficients. Prediction (*i*) suggests a significant and negative coefficient δ_2. Prediction (*ii*) implies a positive and significant coefficient δ_1. Prediction (*iii*) suggests that the sum of the coefficients $\delta_1 + \delta_2$ will be insignificantly different from zero.

In Table 5, column 1, we provide regression estimates of equation (3). We find estimates that confirm our predictions: (*i*) there exists a significant difference between representative and unrepresentative municipalities in the relationship between election closeness and turnout in the era without polls (the coefficient on $closeness_v \times unrepresentative_m$ is negative and statistically significant). (*ii*) The effect of the release of polls on the relationship between election closeness and turnout is greater in unrepresentative municipalities (the coefficient on $closeness_v \times unrepresentative_m \times PollEra_v$ is positive and statistically significant). (*iii*) With polls available, there no longer is a significant difference between representative and unrepresentative municipalities in their relationship between election closeness and turnout: We cannot reject that the sum of the coefficients on $closeness_v \times unrepresentative_m$ and $closeness_v \times unrepresentative_m \times PollEra_v$ equals 0, $p = 0.798$.

One might wonder whether unrepresentative municipalities are simply smaller than representative ones, with municipality size driving the patterns observed (unrepresentativeness is negatively correlated with electorate size, $r = -0.15$). To account for the effects of municipality size, we control for the triple interaction among closeness, municipality electorate size, and a Poll Era dummy ($closeness_v \times electorate_m \times PollEra_v$) as well as all of the lower-order terms. One can see in Table 5, column 2, that accounting for differences in the size of municipalities does not affect our results.[36]

As noted above, a key question about our findings is whether salience, rather than beliefs about closeness, can explain our findings. In the context of this analysis, it is possible that nationally salient issues are also issues with close polls. If so, and if unrepresentative municipalities

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[36]One plausible source of unrepresentativeness is political homogeneity: a very homogeneous municipality will likely *never* have locally close elections, as voters will always skew strongly toward one side. This implies that there will be little or no correlation between local closeness and national closeness. Indeed, we find a strong correlation between municipality political homogeneity and unrepresentativeness ($r = 0.60$). In Online Appendix Figure C.4 and Table C.8, we show that the patterns of heterogeneous turnout observed with respect to municipality unrepresentativeness also appear with respect to homogeneity, as we would expect.

increasingly turn out to vote on nationally salient issues over time, then this could produce the patterns observed above. In fact, the release of polls may play a role in stimulating unrepresentative municipalities' greater turnout on nationally salient issues.

To address this possibility, we consider national-level voter turnout as a proxy of national-level salience. We conduct two tests: first, we investigate whether national salience has heterogeneous effects depending on municipality-level unrepresentativeness, and whether this effect changes over time as polls are introduced. We estimate the model in equation 3, but replace $closeness_v$ with (eventual) national level voter turnout for vote v. We present these results in Table 5, columns 3 and 4: one can see that unrepresentative municipalities turn out more for issues that have higher (national-level) salience, but that this greater turnout does not change following the introduction of pre-election polls.

In a second exercise, we conduct a "horserace" between the time-varying effect of close polls and the time-varying effect of national issue salience. We estimate the model in equation 3, but add the triple interaction of national-level salience, municipality unrepresentativeness, and a poll-era indicator (along with lower-order terms), as controls. As can be seen in Table 5, columns 5 and 6, the inclusion of these controls has virtually no effect on the coefficients of interest. This analysis further supports our interpretation of polls as providing information shaping beliefs about closeness, rather than increasing the salience of votes.

7 Polls' Effects on the Electorate and Electoral Outcomes

7.1 Changes in the Electorate

Our analysis thus far suggests a causal effect of close polls on voter turnout. One might wonder whether this effect can shape election outcomes. For this to be the case, close polls must not only change the level of turnout, but also the composition of the electorate, beyond a uniform turnout effect. We build on an established literature on possible asymmetric effects of polls on turnout among supporters of the trailing and leading sides (e.g., Simon, 1954; Levine and Palfrey, 2007; Rogers and Moore, 2015; Agranov et al., 2018). Theory is ambiguous regarding which side (if any) will turn out more in response to polls: on the one hand, the trailing side may be motivated and the leading side may be overconfident, producing differentially high turnout among the trailing side. On the other hand, a discouragement effect among the trailing side and a desire to participate on the winning side (i.e., a "bandwagon effect") may generate greater turnout among supporters of the leading side. We test for such an asymmetric response at the municipality-level, the most disaggregated level at which we observe voter turnout.

Because we do not observe municipality-level preferences regarding a referendum prior to the vote itself, we estimate support for the trailing side in the poll using the municipality's vote share

in the preceding legislative election for parties endorsing the trailing side in the upcoming vote.[37] We then estimate the following model on a balanced panel of 2,176 municipalities observed in all 57 votes with a pre-election poll (1998–2019):

$$y_{mv} = \lambda_{c(m)v} + \gamma_m + \alpha \, support_{mv} + \beta \, support_{mv} \times closeness_v + \epsilon_{mv}, \tag{4}$$

where y_{mv} is the municipality-level turnout; $support_{mv}$ is the estimated share supporting the trailing side, varying (from 0 to 100%); closeness is defined as the standardized support for the trailing side in the pre-election poll; canton×vote fixed effects and municipality fixed effects are captured by $\lambda_{c(m)v}$ and γ_m, respectively.

In Table 6, column 1, one can see that for votes with average levels of poll closeness, there is a small, positive, and marginally significant relationship between municipality support for the trailing side and municipality voter turnout. As polls get closer, municipalities with greater estimated support for the trailing side exhibit *differentially* higher turnout — beyond the higher turnout associated with close polls, which is captured by the canton×vote fixed effects. A 20 percentage point (roughly one standard deviation) increase in support for the trailing side in a municipality is predicted to increase turnout by around 0.5 percentage points, when a poll is one standard deviation closer than the mean (a poll of around 55–45).[38] The heterogeneous effect of support for the losing side on turnout as a function of poll closeness is shown graphically in Figure 8, Panel A. One sees that the closer an election is predicted to be, the larger the gradient between support for the trailing side and turnout.[39]

It remains to be shown whether the greater turnout we observe following close polls in municipalities with greater estimated support for the trailing side is actually driven by supporters of the trailing side within those municipalities. To do so, we examine vote outcomes at the municipality level, testing whether the municipalities with greater estimated trailing side support exhibit a higher *ex post* vote share for the trailing side following the release of closer polls.[40] Thus, we estimate equation 4, but now examining municipality vote share for the trailing side as the outcome.

We present the results in Table 6, column 2, and one can see that following closer polls, vote shares in favor of the trailing side differentially increase in municipalities with more estimated

[37]We use vote shares in the *preceding* legislative election to minimize concerns about simultaneity. We present the distribution of trailing side support across municipality×vote observations in Online Appendix Figure C.5. Because the parties running in the legislative elections differ across cantons and legislative elections, and because not all parties make recommendations on all votes, all of our analysis will consider estimated support for the trailing side conditional on canton×vote fixed effects.

[38]This can be calculated as the coefficient of 0.012 on trailing side support multiplied by 20, plus the coefficient of 0.0125 on the interaction term multiplied by 20 and by 1 (with the latter reflecting the closer poll).

[39]In Online Appendix Table C.9 and Figure C.6 one can see that excluding extreme values of estimated support for the trailing side (0% and 100%) does not affect our results.

[40]We note that even a null finding would still imply national-level changes in the composition of the electorate as a result of close polls. If municipalities supporting the trailing side show higher turnout (but with local vote shares held fixed), more supporters of the trailing side turn would turn out nationally.

support for the trailing side. A 20 percentage point (roughly one standard deviation) increase in support for the trailing side in a municipality is predicted to increase the trailing side vote share by around 9 percentage points, when a poll is one standard deviation closer than the mean (a poll of around 55–45).[41] Thus, not only is there higher turnout in response to close polls in municipalities with greater support for the trailing side, but this response is stronger among supporters of the trailing side within these municipalities. The heterogeneous effect of support for the trailing side on vote shares as a function of poll closeness is shown graphically in Figure 8, Panel B. One sees that the closer an election is predicted to be, the larger the gradient between support for the trailing side and ultimate trailing side vote share.

7.2 Counterfactual Electoral Outcomes

To evaluate the magnitude of these asymmetric effects of close polls, we simulate election outcomes under counterfactual polling scenarios. Our counterfactuals are motivated by real-world variation in polling outcomes (resulting from sampling and methodological differences) and by restrictions to the publication of polls (enforced in some countries).

We first consider counterfactual outcomes under a scenario in which polls sent a signal of average closeness (61–39; around 1.5 standard deviations below maximal closeness of 50–50), rather than their actual closeness.[42] Under this scenario, supporters of the trailing side in votes with close polls would turn out differentially less, potentially overturning referendum results in which the trailing side in the polls managed to win the referendum.[43]

Specifically, to estimate counterfactual municipality turnout rates and vote shares, we subtract from a municipality's actual turnout rate and actual vote share for the trailing side the differential, asymmetric effects of close polls generated by the municipality's support for the trailing side (as estimated from the interaction terms presented in Table 6, columns 1 and 3). We estimate counterfactual votes for each side in a vote, by municipality, for the 57 votes that had polls between 1998 and 2019, then aggregate these to the national level. We find that had there been no close polls to stimulate trailing side supporter turnout, three high-stakes referenda would have had different outcomes: two controversial initiatives against immigration (one violating the terms of Switzerland's relationship with the EU), as well as one on pension reform (see Table 7, Panel A).

In a second scenario, we consider the possibility that poll results were one standard deviation closer than the actual poll (censored at maximal closeness of 50–50). Under this scenario, supporters of the trailing side in votes with now closer polls would turn out differentially more,

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[41]This can be calculated as the coefficient of 0.3884 on trailing side support multiplied by 20, plus the coefficient of 0.0634 on the interaction term multiplied by 20 and by 1 (with the latter reflecting the closer poll).

[42]This is equivalent to a scenario without the release of national polls if, in the absence of polls, voters turn out as if knowing that they are in support of the trailing or leading side in a vote (e.g., because this sort of coarse information is available from parties' recommendations and newspaper coverage), and as if they believe that the vote is of average closeness.

[43]This situation is equivalent to the 2016 US election in which Donald Trump trailed in the polls, but won the election.

potentially overturning referendum results in which the trailing side in the polls lost a close vote. We model counterfactual turnout by applying the estimated asymmetric effects of closer polls that we estimate in Table 6, columns 1 and 2. We find that four additional referenda — on issues ranging from the armed forces, to immigration, to corporate taxation — would have had different outcomes had polls been just one standard deviation closer (see Table 7, Panel B).

8 Conclusion

We find that the release of polls causes changes in voter turnout. This effect is unlikely to be driven by purely rational pivotality considerations given the large size of the Swiss electorate. Rather, it is likely due to behavioral factors: social considerations (e.g., arising from anticipated social interactions following the referendum); or, misperceptions regarding pivotality (especially among supporters of the trailing side in the polls). Understanding how political competition interacts with other behavioral and social factors is an important area for future work.

How general is the causal effect of election closeness on turnout? While the context we study has distinctive features — we study voter turnout for referenda, rather than traditional elections, in a country with a long democratic tradition — it likely generalizes to a range of important settings. First, referenda play a role around the world in deciding high-stakes issues: from Brexit, to the decision to end the Pinochet regime, to many important policy issues in the state of California (like Switzerland, with many referenda voted on each year). More generally, Swiss referenda often produce high-stakes political competitions between left- and right-wing parties. In this sense, they are single-issue analogues of the majoritarian political competition that exists elsewhere.

Our estimates of an asymmetric underdog effect suggest magnitudes large enough to shape election outcomes. In addition to the academic interest in this asymmetry, our results have important policy implications. The regulation of polls' conduct and their dissemination can have important consequences for election outcomes. There is a remarkable degree of variation across countries in such regulation: for example, in Australia and in the United States there is none; in Italy, polls are prohibited within 15 days of a vote; and, in Switzerland, no information on polls can be released in the 10 days before the vote. The impact of these regulations on a range of policy outcomes might be far greater than many policymakers realize.

Our results also indicate an important shift in the nature of political communication. While much research on political behavior has focused on the effects of *persuasive* information in social media, in newspapers, on television, or in advertisements, our findings indicate that information about an election's *competitiveness* can shape political behavior as well. In a context of increased political polarization (e.g., Boxell et al., 2022, and Draca and Schwarz, 2021), persuasion aimed at changing the ideological preferences of voters may be less effective, making the turnout margin that we study — changing the ideological composition of the *voting* electorate — potentially more important than in the past.

References

Agranov, Marina, Jacob Goeree, Julian Romero, and Leeat Yariv, "What Makes Voters Turn Out: the Effects of Polls and Beliefs," *Journal of European Economic Association*, 2018, *16* (3), 825–856.

Ali, S. Nageeb and Charles Lin, "Why People Vote: Ethical Motives and Social Incentives," *American Economic Journal: Microeconomics*, May 2013, *5* (2), 73–98.

Barzel, Yoram and Eugene Silberberg, "Is the act of voting rational?," *Public Choice*, September 1973, *16* (1), 51–58.

Boxell, Levi, Matthew Gentzkow, and Jesse M. Shapiro, "Cross-Country Trends in Affective Polarization," 2022. Forthcoming, Review of Economics and Statistics.

Brennan, Geoffrey and James Buchanan, "Voter Choice: Evaluating Political Alternatives," *American Behavioral Scientist*, November 1984, *28* (2), 185–201.

Cancela, Joao and Benny Geys, "Explaining voter turnout: A meta-analysis of national and sub-national elections," *Electoral Studies*, 2016, *42*, 264–275.

Coate, Stephen and Michael Conlin, "A Group Rule-Utilitarian Approach to Voter Turnout: Theory and Evidence," *American Economic Review*, 2004, *94* (5), 1476–1504.

_ , _ , and Andrea Moro, "The performance of pivotal-voter models in small-scale elections: Evidence from Texas liquor referenda," *Journal of Public Economics*, April 2008, *92* (3-4), 582–596.

Connors, Elizabeth C., Jacob A. Martin, and John Barry Ryan, "Revisiting the Link between Expected Election Outcomes and Turnout," 2020. University of South Carolina.

Cox, Gary W. and Michael C. Munger, "Closeness, Expenditures, and Turnout in the 1982 U.S. House Elections," *American Political Science Review*, March 1989, *83* (1), 217.

De Paola, Maria and Vincenzo Scoppa, "The impact of closeness on electoral participation exploiting the Italian double ballot system," *Public Choice*, 2014, *160* (3/4), 467–479.

DellaVigna, Stefano and Ethan Kaplan, "The Fox News Effect: Media Bias and Voting," *Quarterly Journal of Economics*, August 2007, *122* (3), 1187–1234.

_ , John A. List, Ulrike Malmendier, and Gautam Rao, "Voting to Tell Others," *Review of Economic Studies*, October 2016, *84* (1), 143–181.

Downs, Anthony, "An Economic Theory of Political Action in a Democracy," *Journal of Political Economy*, April 1957, *65* (2), 135–150.

Draca, Mirco and Carlo Schwarz, "How Polarized are Citizens? Measuring Ideology from the Ground-Up," May 2021. Unpublished, University of Warwick and Bocconi University.

Duffy, John and Margit Tavits, "Beliefs and Voting Decisions: A Test of the Pivotal Voter Model," *American Journal of Political Science*, July 2008, *52* (3), 603–618.

Durante, Ruben, Paolo Pinotti, and Andrea Tesei, "The Political Legacy of Entertainment TV," *American Economic Review*, 2019, *109* (7), 2497–2530.

Enikolopov, Ruben, Maria Petrova, and Ekaterina Zhuravskaya, "Media and Political Persuasion: Evidence from Russia," *American Economic Review*, December 2011, *101* (7), 3253–3285.

Enos, Ryan D. and Anthony Fowler, "Pivotality and Turnout: Evidence from a Field Experiment in the Aftermath of a Tied Election," *Political Science Research and Methods*, 2014, *2* (2), 309–319.

Feddersen, Timothy and Alvaro Sandroni, "A Theory of Participation in Elections," *American Economic Review*, August 2006, *96* (4), 1271–1282.

Fujiwara, Thomas, Kyle Meng, and Tom Vogl, "Habit Formation in Voting: Evidence from Rainy Elections," *American Economic Journal: Applied Economics*, October 2016, *8* (4), 160–188.

Funk, Patricia, "Social Incentives and Voter Turnout: Evidence from the Swiss Mail Ballot System," *Journal of the European Economic Association*, September 2010, *8* (5), 1077–1103.

__ , "How Accurate are Surveyed Preferences for Public Policies? Evidence from a Unique Institutional Setup," *Review of Economics and Statistics*, 2016, *98* (3), 455–466.

Gentzkow, Matthew, "Television and Voter Turnout," *Quarterly Journal of Economics*, August 2006, *121* (3), 931–972.

__ , **Jesse Shapiro, and Michael Sinkinson**, "The Effect of Newspaper Entry and Exit on Electoral Politics," *American Economic Review*, December 2011, *101* (7), 2980–3018.

Gerber, Alan S., Donald P. Green, and Christopher W. Larimer, "Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment," *American Political Science Review*, February 2008, *102* (1), 33–48.

__ , **Mitchell Hoffman, John Morgan, and Collin Raymond**, "One in a Million: Field Experiments on Perceived Closeness of the Election and Voter Turnout," *American Economic Journal: Applied Economics*, July 2020, *12* (3), 287–325.

Hainmueller, Jens and Dominik Hangartner, "Does Direct Democracy Hurt Immigrant Minorities? Evidence from Naturalization Decisions in Switzerland," *American Journal of Political Science*, 2019, *63* (3), 530–547.

Hessami, Zohal, "How Do Voters React to Complex Choices in a Direct Democracy? Evidence from Switzerland," *Kyklos*, 2016, *69* (2), 263–293.

__ **and Sven Resnjanskij**, "Complex Ballot Propositions, Individual Voting Behavior, and Status Quo Bias," *European Journal of Political Economy*, 2019, *58* (3), 82–101.

Hoffman, Mitchell, Gianmarco León, and Maria Lombardi, "Compulsory Voting, Turnout, and Government Spending: Evidence from Austria," *Journal of Public Economics*, January 2017, *145*, 103–115.

Kirchgässner, Gebhard and Tobias Schulz, "Was treibt Stimmbuerger an die Urne? Eine empirische Untersuchung der Abstimmungsbeteiligung in der Schweiz, 1981–1999," *Swiss Political Science Review*, 2005, *11* (1), 1–56.

Kriesi, Hanspeter, "Sind Abstimmungen käuflich?," in Adrian Vatter, Frédéric Varone, and Fritz Sager, eds., *Demokratie als Leidenschaft. Planung, Entscheidung und Vollzug in der schweizerischen Demokratie*, Bern: Haupt, 2009.

León, Gianmarco, "Turnout, Political Preferences and Information: Experimental Evidence from Perú," *Journal of Development Economics*, July 2017, *127*, 56–71.

Levine, David K. and Thomas R. Palfrey, "The Paradox of Voter Participation? A Laboratory Study," *American Political Science Review*, February 2007, *101* (1), 143–158.

Madestam, Andreas, Daniel Shoag, Stan Veuger, and David Yanagizawa-Drott, "Do Political Protests Matter? Evidence from the Tea Party Movement," *Quarterly Journal of Economics*, November 2013, *128* (4), 1633–1685.

Matsusaka, John G., "Election closeness and voter turnout: Evidence from California ballot propositions," *Public Choice*, August 1993, *76* (4), 313–334.

Morton, Rebecca B., Daniel Muller, Lionel Page, and Benno Torgler, "Exit polls, turnout, and bandwagon voting: Evidence from a natural experiment," *European Economic Review*, July 2015, *77*, 65–81.

Myatt, David P., "A Theory of Voter Turnout," September 2015. London Business School Working Paper.

Orkin, Kate, "Everybody Loves a Winner: A Field Experiment Providing Information on Polls in South Africa," September 2020. Unpublished, Oxford University.

Ortoleva, Pietro and Erik Snowberg, "Overconfidence in Political Behavior," *American Economic Review*, February 2015, *105* (2), 504–535.

Pons, Vincent and Clémence Tricaud, "Expressive Voting and Its Cost: Evidence From Runoffs With Two or Three Candidates," *Econometrica*, 2018, *86*, 1621–1649.

Riker, William H. and Peter C. Ordeshook, "A Theory of the Calculus of Voting," *American Political Science Review*, March 1968, *62* (01), 25–42.

Rogers, Todd and Don Moore, "It's Close But We're Losing: The Motivating Power of Under-Confidence," *Proceedings of the Academy of Management*, 2015.

Schuessler, Alexander A., *A logic of expressive choice*, Princeton: Princeton University Press, 2000.

Shachar, Ron and Barry Nalebuff, "Follow the Leader: Theory and Evidence on Political Participation," *American Economic Review*, June 1999, *89* (3), 525–547.

Simon, Herbert A., "Bandwagon and Underdog Effects and the Possibility of Election Predictions," *The Public Opinion Quarterly*, 1954, *18* (3), 245–253.

Spenkuch, Jörg L and David Toniatti, "Political Advertising and Election Results," *The Quarterly Journal of Economics*, November 2018, *133* (4), 1981–2036.

Strömberg, David, "Radio's impact on public spending," *Quarterly Journal of Economics*, 2004, *119* (1), 189–221.

Westwood, Sean Jeremy, Solomon Messing, and Yphtach Lelkes, "Projecting Confidence: How the Probabilistic Horse Race Confuses and Demobilizes the Public," *The Journal of Politics*, 2020, *82* (4), 1530–1544.

Figures and Tables

FIGURE 1: TURNOUT, CLOSENESS, ISSUE TYPE, AND THE POLITICAL SUPPLY SIDE
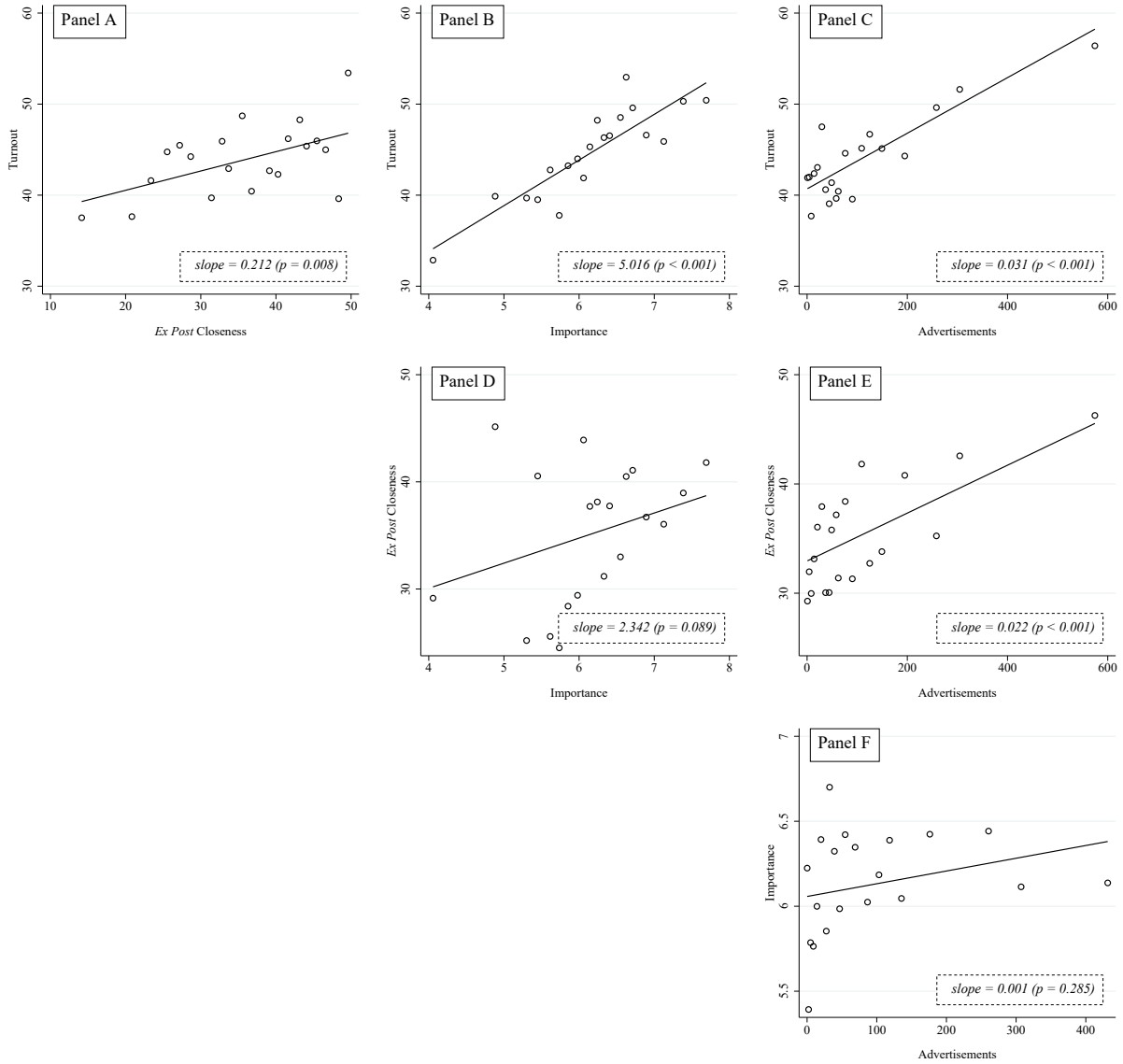
Notes: The matrix of binned scatter plots shows pairwise correlations of turnout, *ex post* closeness, vote importance and political advertisements at the vote (i.e., election) level. Turnout is the number of votes cast, as a percentage of eligible voters at the national level. *Ex Post* Closeness is the vote share of the losing side in percent. Importance is the self-reported personal importance attached by respondents of the VOX/VOTO surveys to a vote, on a scale from 0 to 10. Advertisements is the count of political ads in the six major Swiss newspapers *(NZZ, Tages-Anzeiger, Blick, Tribune de Genève, Le Temps, Le Matin)* during the four weeks preceding Election Day. Lines represent the bivariate linear fit with reported slope parameters estimated by simple OLS using heteroskedasticity-robust standard errors. Reported p-values refer to a test that the slope parameter is equal to zero.

FIGURE 2: UNCONDITIONAL TURNOUT BEFORE AND AFTER POLL RELEASE
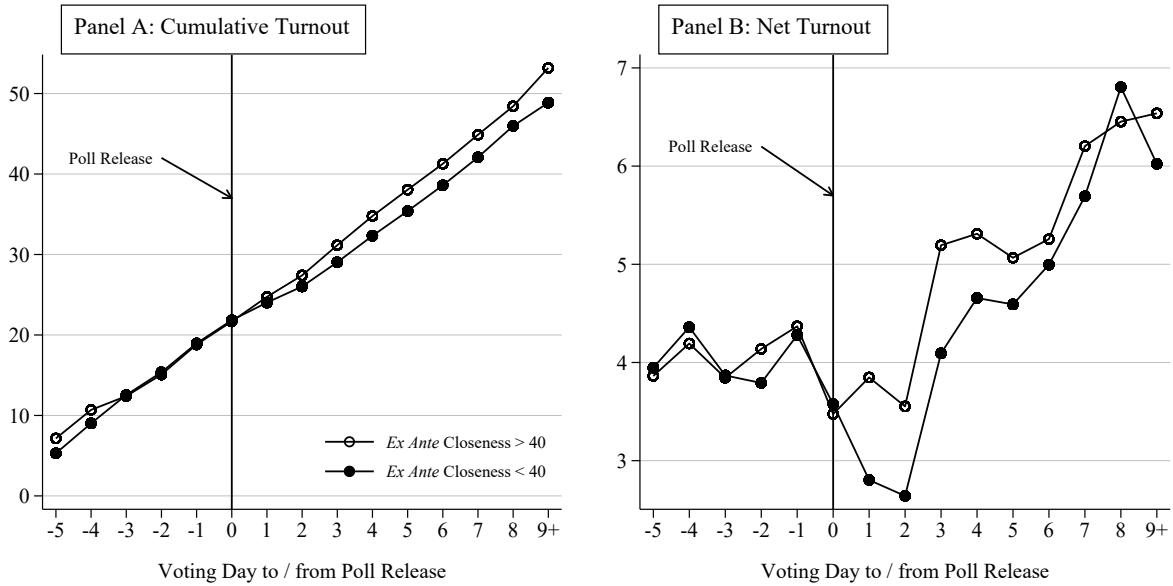
Notes: Panel A plots daily cumulative turnout, i.e., the percentage share of Genevan voters who turned out at or before a given voting day, separately for votes with *ex ante* poll closeness above or below the sample median of 40 (i.e., a losing side vote share above or below 40). Panel B shows an analogous plot for net turnout, i.e., the daily inflow of ballots divided by the stock of remaining voters (who did not turn out before a given voting day). The sample is an unbalanced panel of 52 votes observed from 5 voting days before to 9 voting days after poll release.

FIGURE 3: THE EFFECT OF CLOSER POLLS ON NET VOTER TURNOUT: EVENT-STUDY BASELINE
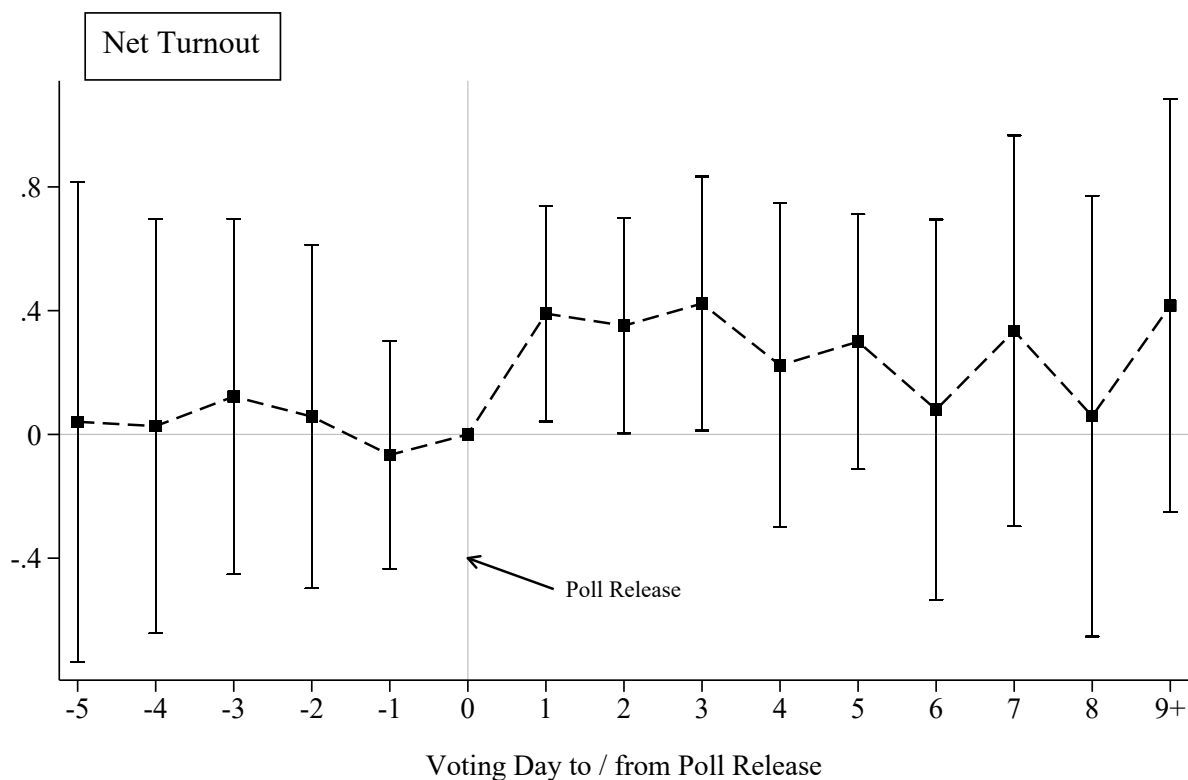
Notes: The event study graph plots day-specific effects of a one standard deviation increase in *ex ante* (poll) closeness on net turnout, i.e., the daily inflow of ballots in the canton of Geneva divided by the number of remaining Genevan voters who did not turn out before a given voting day, conditional on vote and voting day fixed effects. Squares represent coefficients and spikes depict 95% confidence intervals from OLS estimates (reported in Table 3, Column 1). The sample is an unbalanced panel of 52 votes observed from 5 voting days before to 9 voting days after poll release, where the day prior to poll release is the omitted category of reference.

FIGURE 4: THE EFFECT OF CLOSER POLLS ON NET VOTER TURNOUT: EVENT-STUDY ROBUSTNESS
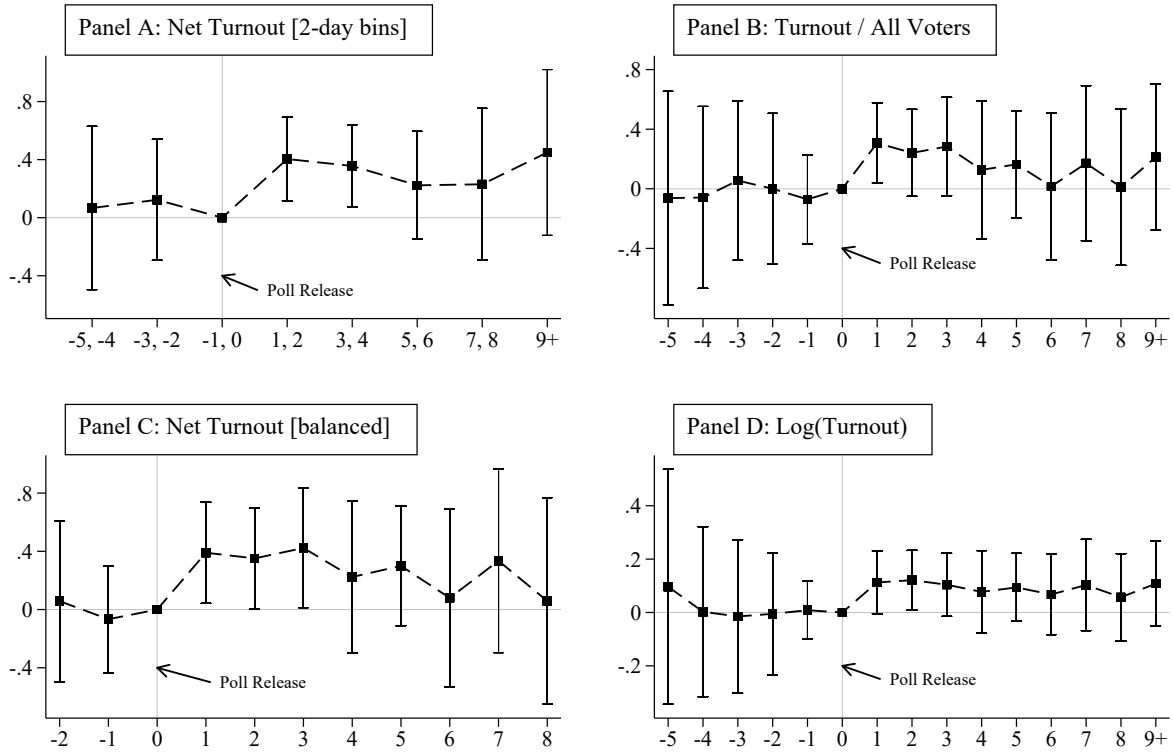
Notes: The figure shows variants of the event study graph presented in Figure 3. Panel A plots coefficients and 95% confidence intervals for bins of two voting days, reported in Appendix Table C.3, Column 1, using the day of poll release as well as the day just before poll release as the omitted category of reference. Panel B uses the daily inflow of ballots divided by all eligible Genevan voters as an alternative measure of turnout. Panel C drops all voting days in which not every vote has ballots counted, and instead uses a balanced panel of 52 votes observed from 2 voting days before to 8 voting days after poll release. Panel D uses the natural logarithm of the daily number of incoming ballots in the canton of Geneva as an alternative measure of turnout, and plots OLS estimates reported in Table 3, Column 3.

FIGURE 5: THE EFFECT OF CLOSER POLLS ON POLITICAL ADVERTISEMENTS: EVENT-STUDY
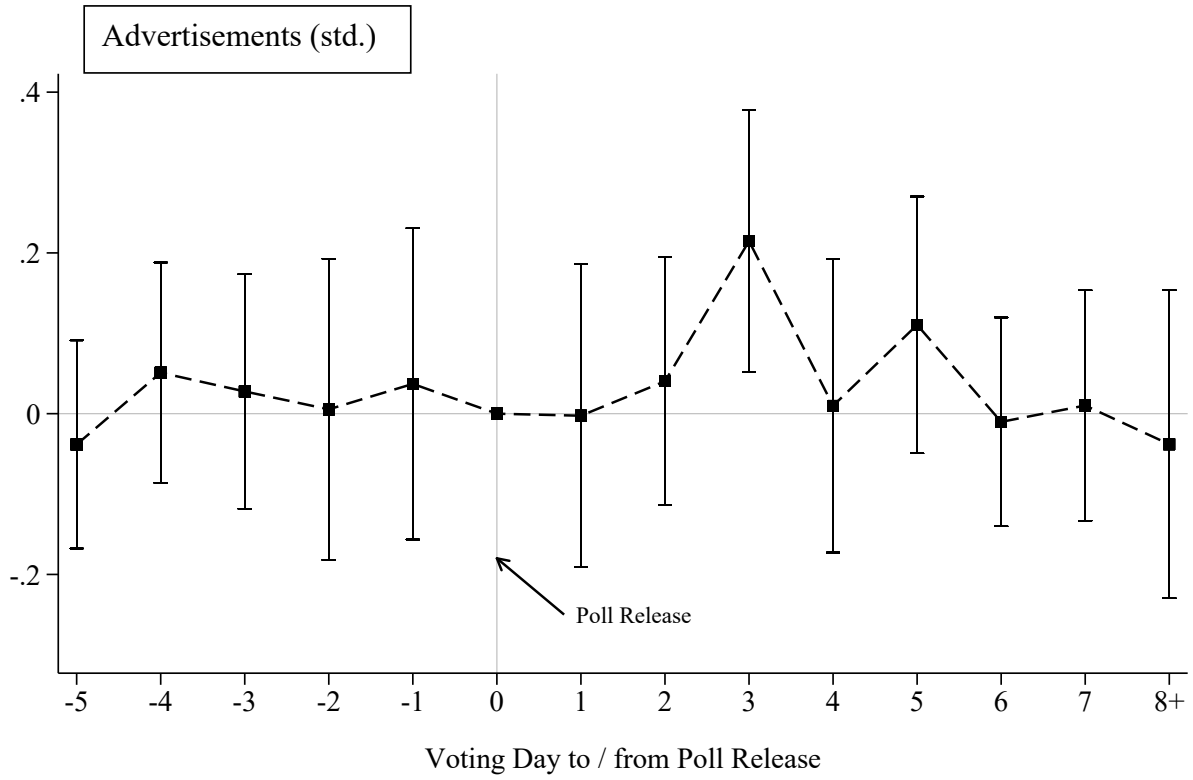
Notes: The event study graph replicates Figure 3 with a standardized measure of political campaigning activity as the outcome. It plots day-specific effects of a one standard deviation increase in *ex ante* (poll) closeness on the standardized number of political advertisements in Geneva's two major newspapers *(Tribune de Genève, Le Temps)*, conditional on vote fixed effects and voting day fixed effects. The sample is an unbalanced panel of 52 votes observed from 5 voting days before to 8 voting days after poll release, where the day of poll release is the omitted category of reference. The last voting day of each vote is dropped because there are no Sunday editions of Geneva's major newspapers.

FIGURE 6: MARGINAL EFFECTS OF NEWSPAPER POLL MENTIONS DEPENDING ON POLL CLOSENESS
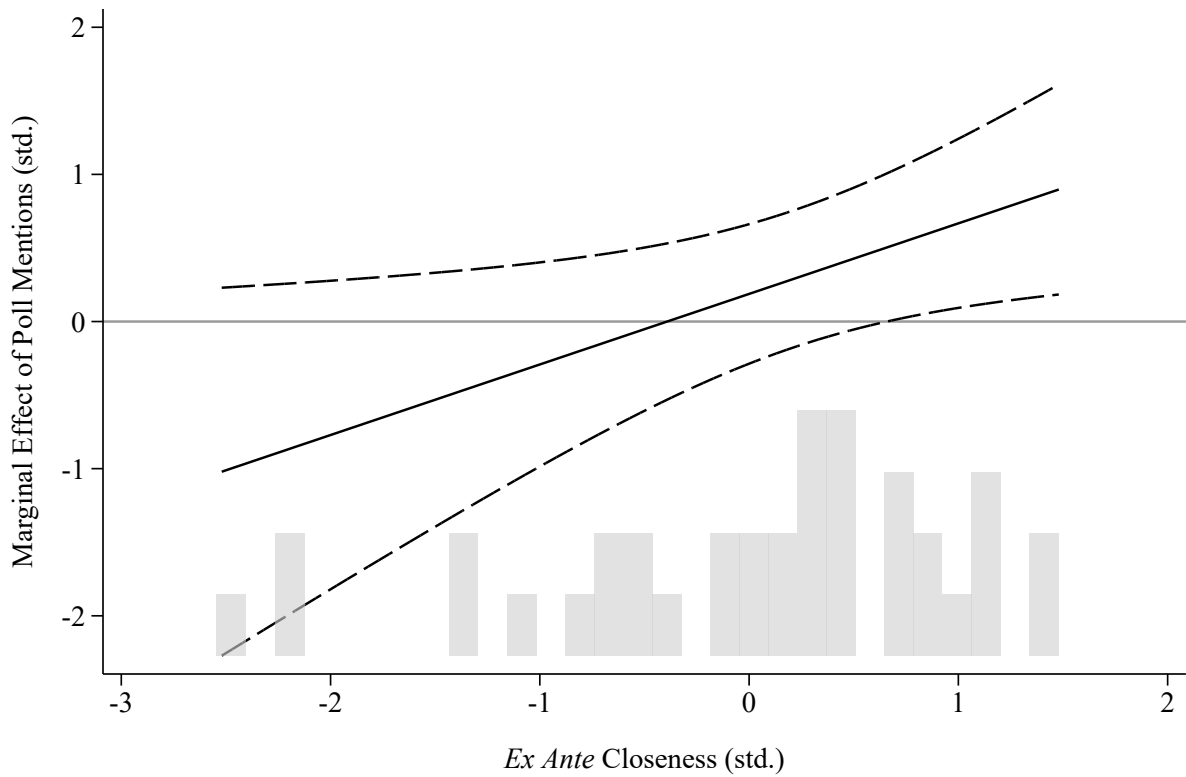
Notes: The solid line plots the total effect of a one standard deviation increase in poll mentions in cantonal newspapers on cantonal turnout depending on standardized *ex ante* (poll) closeness. Dashed lines represent 95% confidence intervals. The plot is based on OLS estimates reported in Table 4, Panel A, Column 1. The histogram shows the distribution of (standardized) *ex ante* (poll) closeness across votes.

FIGURE 7: THE EFFECT OF CLOSENESS ON TURNOUT BY MUNICIPALITY UNREPRESENTATIVENESS, BEFORE AND AFTER THE INTRODUCTION OF POLLS
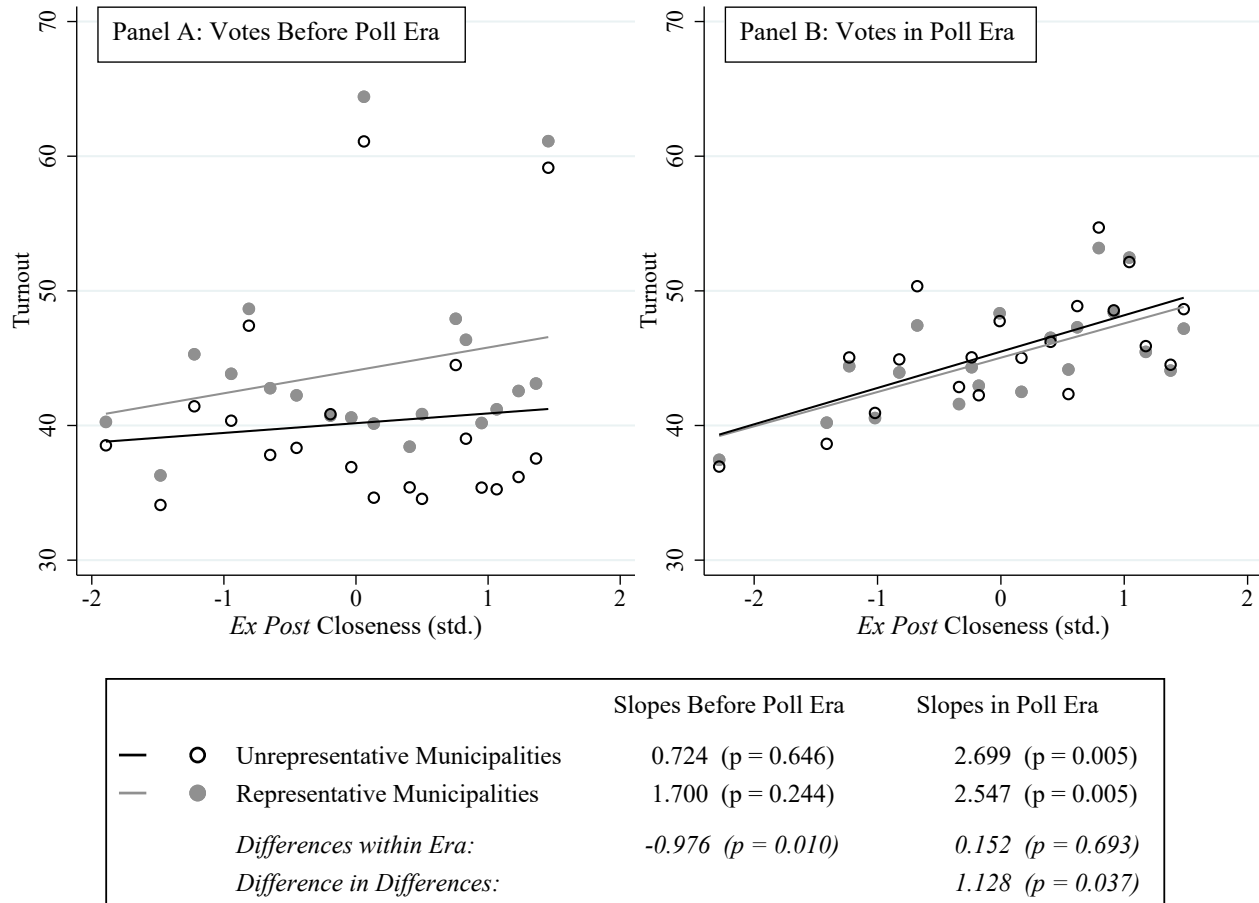
		Slopes Before Poll Era	Slopes in Poll Era
— ○	Unrepresentative Municipalities	0.724 (p = 0.646)	2.699 (p = 0.005)
— ●	Representative Municipalities	1.700 (p = 0.244)	2.547 (p = 0.005)
	Differences within Era:	*-0.976 (p = 0.010)*	*0.152 (p = 0.693)*
	Difference in Differences:		*1.128 (p = 0.037)*

Notes: Panel A shows binned scatter plots correlating municipality-level voter turnout and national-level *ex post* closeness, splitting the sample of municipalities above and below median political unrepresentativeness, for 46 votes in the era before pre-election polls were introduced. Panel B replicates Panel A for 69 votes in the era with pre-election polls. Unrepresentativeness is a municipality's historical tendency to produce voting results unrepresentative of national-level closeness, measured as the negative of the correlation coefficient between municipality-level and national-level *ex post* closeness of voting results in the era before pre-election polls were introduced. Estimates of slope parameters as well as p-values associated with tests that (differences in) slopes equal zero are obtained from an OLS regression using all 115 votes, with standard errors clustered at vote level.

Notes: The solid line plots the total effect of a unit increase in estimated *ex ante* support for the trailing side on turnout (Panel A) and on the vote share for the side trailing in the poll (Panel B), depending on standardized *ex ante* closeness. Dashed lines represent 95% confidence intervals based on standard errors clustered at vote level. The plot is based on OLS estimates reported in Table 6. The histograms show the distribution of (standardized) poll closeness across votes.

TABLE 1: EXAMPLES OF ELECTION DAYS AND MOST IMPORTANT VOTES

Date	Vote Title	NZZ Mentions	Vote Importance (Survey)
1994-09-25	**Federal Penal Code and Military Penal Code (Racial Discrimination)**	**39**	**6.12**
1994-09-25	Federal Decision Abolishing Subsidies for Domestic Breadstuff from Tariff Revenues	16	3.48
2001-03-04	**Initiative "Yes to Europe!"**	**68**	**6.61**
2001-03-04	Initiative "for Lower Prices of Pharmaceuticals"	53	5.79
2001-03-04	Initiative "for Road Safety with 30 km/h in Built-Up Areas"	36	5.53
2009-11-29	**Initiative "against the Construction of Minarets"**	**112**	**6.91**
2009-11-29	Initiative "for a Ban on Exports of War Material"	47	6.28
2009-11-29	Federal Decision on Special Funding for Air Traffic	27	3.85
2019-05-19	**Federal Act on Tax Reform and Funding for Old Age Insurance**	**77**	**7.42**
2019-05-19	Federal Decision Adopting the EU Directive on Gun Control	13	6.49

Notes: NZZ Mentions measures the number of times a vote was mentioned in the *NZZ* newspaper in the three months preceding election day. Vote Importance measures the average personal importance attached by VOX/VOTO survey respondents to a vote, on a 0-10 scale (10 indicating maximum importance).

PANEL A: VOTE × DAY-LEVEL DATA (GENEVA)	Mean	Std. Dev.	Min.	Max.	Obs.
Net Turnout (%)	4.61	1.99	0.02	16.75	766
Turnout / All Voters (%)	3.32	1.33	0.02	12.76	766
Log(Turnout)	8.76	0.55	3.91	10.02	766
Cumulative Turnout (%)	28.52	14.50	0.02	62.90	766
Ex Ante Closeness	38.40	7.65	18.89	48.96	766
Advertisements	1.61	2.47	0	19	714

PANEL B: VOTE-LEVEL DATA					
Turnout (%)	43.78	8.33	27.60	78.78	115
Ex Post Closeness	35.30	9.75	8.03	49.91	115
Importance	6.13	0.87	3.22	7.79	83
Advertisements	107.56	145.18	0	1146	112

PANEL C: CANTON × VOTE-LEVEL DATA					
Turnout (%)	47.27	8.91	21.67	72.61	962
Ex Ante Closeness	37.88	7.47	18.89	48.91	962
Poll Mentions	4.28	3.42	0	24	962
Incidental Poll Mentions	2.89	3.04	0	20	962
Incidental Poll Mentions (< 15% Market Share)	2.40	2.83	0	15	962
Importance	6.12	1.13	0.50	10.00	957
Advertisements	73.93	68.18	0	403	962

PANEL D: MUNICIPALITY × VOTE-LEVEL DATA					
Turnout (%)	44.00	13.02	3.20	100.00	250240
Poll Era	0.60	0.49	0	1	250240
Unrepresentativeness	-0.59	0.19	-0.93	0.03	250240
Trailing Side's Estimated Support	38.23	23.02	0.00	100.00	124032
Vote Share for Trailing Side	42.83	18.25	0.00	100.00	124032
Electorate Size (in 1000)	1.98	7.08	0.03	233.14	250240

Notes: In each dataset, vote-specific variables refer to the most important vote per election day, as indicated by self-reported importance in VOX/VOTO surveys, or, for years prior to the existence of survey measures, by the number of vote mentions in the *NZZ* in the three months preceding the vote. *Vote × Day-level Data:* Net Turnout measures turnout as the daily number of votes cast, in percent of eligible voters not having cast their vote on earlier days. Turnout / All Voters is the daily number of votes cast, in percent of eligible voters. Log(Turnout) is the natural logarithm of the daily number of votes cast. Cumulative Turnout is the daily running total of votes cast, in percent of eligible voters. *Ex Ante* Closeness measures the trailing side's vote share at the federal level in percent, as predicted by the pre-election poll, and varies from 0 to 50 (50 indicating maximum closeness). Advertisements is the daily count of political ads placed in the two major Genevan newspapers *(Tribune de Genève , Le Temps)*. *Vote-level Data:* Turnout is the number of votes cast, in percent of eligible voters at the federal level. *Ex Post* Closeness is the vote share of the losing side at the federal level. Importance measures the average personal importance attached by VOX/VOTO survey respondents to a vote, on a 0-10 scale (10 indicating maximum importance). Advertisements is the number of political ads placed in the six major Swiss newspapers *(NZZ, Tages-Anzeiger, Blick, Tribune de Genève , Le Temps, Le Matin)* in the four weeks preceding election day. *Canton × Vote-level Data:* Turnout measures cantonal turnout as the number of votes cast, in percent of eligible voters. *Ex Ante* Closeness defined and measured as in vote × day-level data. Poll Mentions is the number of times the pre-election poll for a vote is mentioned in cantonal newspapers read by at least 10% of a canton's inhabitants. Incidental Poll Mentions are poll mentions in cantonal newspapers whose largest market is in another canton. Incidental Poll Mentions (<15 % Market Share) are poll mentions in cantonal newspapers, excluding newspapers for which the canton is either the largest market or makes for more than 15% of the newspaper's readership. Importance measures the average personal importance attached by a canton's VOX survey respondents to a vote. Advertisements is the number of political ads placed in cantonal newspapers in the month preceding election day. *Municipality × Vote-level Data:* Turnout is the number of votes cast, in percent of eligible voters at the municipal level. Poll Era is a dummy variable equal to 1 for the 69 votes held after the introduction of pre-election polls. Unrepresentativeness is a municipality's historical tendency to produce voting results unrepresentative of national-level closeness, measured as the negative of the correlation coefficient between municipality-level and national-level *ex post* closeness of voting results before pre-election polls were introduced. Trailing Side's Estimated Support is a proxy for a municipality's ex-ante predisposition to vote for the side which is trailing in the pre-election poll, measured as the percentage share of votes in the preceeding national election for parties having recommended to vote for the side trailing in the pre-election poll. Vote Share for Trailing Side is a municipality's vote share for the side which was trailing in the pre-election poll. Electorate Size is the average number of eligible voters (in thousands) in a municipality across votes held before pre-election polls were introduced.

	Net Turnout (%)		Log(Turnout)	
	(1)	(2)	(3)	(4)
5 days before poll × *Ex Ante* Closeness (std.)	0.0408	-0.0181	0.0964	0.0757
	(0.3864)	(0.3884)	(0.2195)	(0.2230)
	[0.920]	[0.965]	[0.656]	[0.703]
4 days before poll × *Ex Ante* Closeness (std.)	0.0268	-0.0721	0.0027	-0.0329
	(0.3336)	(0.3288)	(0.1587)	(0.1527)
	[0.943]	[0.850]	[0.991]	[0.901]
3 days before poll × *Ex Ante* Closeness (std.)	0.1224	0.0240	-0.0149	-0.0393
	(0.2862)	(0.2911)	(0.1432)	(0.1459)
	[0.719]	[0.947]	[0.973]	[0.924]
2 days before poll × *Ex Ante* Closeness (std.)	0.0576	0.0854	-0.0051	0.0056
	(0.2765)	(0.2850)	(0.1140)	(0.1181)
	[0.868]	[0.812]	[0.987]	[0.986]
1 day before poll × *Ex Ante* Closeness (std.)	-0.0664	-0.0591	0.0087	0.0140
	(0.1835)	(0.1892)	(0.0540)	(0.0557)
	[0.717]	[0.754]	[0.870]	[0.796]
1 day after poll × *Ex Ante* Closeness (std.)	0.3905**	0.3709**	0.1125*	0.1094*
	(0.1737)	(0.1746)	(0.0586)	(0.0600)
	[0.045]	[0.055]	[0.079]	[0.088]
2 days after poll × *Ex Ante* Closeness (std.)	0.3515**	0.3271*	0.1211**	0.1155**
	(0.1734)	(0.1764)	(0.0558)	(0.0569)
	[0.061]	[0.080]	[0.045]	[0.055]
3 days after poll × *Ex Ante* Closeness (std.)	0.4230**	0.4414**	0.1042*	0.1114*
	(0.2045)	(0.2098)	(0.0592)	(0.0620)
	[0.046]	[0.044]	[0.088]	[0.083]
4 days after poll × *Ex Ante* Closeness (std.)	0.2235	0.1975	0.0773	0.0765
	(0.2609)	(0.2702)	(0.0771)	(0.0811)
	[0.413]	[0.482]	[0.329]	[0.355]
5 days after poll × *Ex Ante* Closeness (std.)	0.2998	0.3205	0.0941	0.1019
	(0.2053)	(0.2104)	(0.0634)	(0.0658)
	[0.158]	[0.142]	[0.147]	[0.131]
6 days after poll × *Ex Ante* Closeness (std.)	0.0801	0.0790	0.0675	0.0692
	(0.3061)	(0.3094)	(0.0749)	(0.0775)
	[0.799]	[0.803]	[0.378]	[0.378]
7 days after poll × *Ex Ante* Closeness (std.)	0.3347	0.3398	0.1032	0.1080
	(0.3147)	(0.3237)	(0.0851)	(0.0885)
	[0.298]	[0.301]	[0.233]	[0.227]
8 days after poll × *Ex Ante* Closeness (std.)	0.0591	0.0597	0.0570	0.0607
	(0.3548)	(0.3558)	(0.0815)	(0.0838)
	[0.868]	[0.866]	[0.486]	[0.470]
9+ days after poll × *Ex Ante* Closeness (std.)	0.4162	0.3809	0.1081	0.1065
	(0.3324)	(0.3300)	(0.0793)	(0.0814)
	[0.231]	[0.266]	[0.189]	[0.204]
Test of Cumulative Effects After Poll Release *(p-value)*	0.092	0.103	0.074	0.079
	[0.102]	[0.110]	[0.079]	[0.083]
Test of Joint Significance of Leads *(p-value)*	0.973	0.962	0.992	0.957
	[0.986]	[0.980]	[1.000]	[0.995]
Outcome Mean	4.611	4.611	8.764	8.764
R-squared	0.498	0.518	0.234	0.257
Observations	766	766	766	766
Vote Fixed Effects	Y	Y	Y	Y
Voting Day from/to Poll Fixed Effects	Y	Y	Y	Y
Day to Vote Fixed Effects	N	Y	N	Y

Notes: The table presents OLS estimates with two measures of daily turnout in Geneva as dependent variables: Net Turnout (columns 1 and 2) defined as the number of votes cast, in percent of eligible voters net of those voters who cast their vote on earlier days; and Log(Turnout) (columns 3 and 4) defined as the natural logarithm of the number of votes cast. *Ex Ante* Closeness is the trailing side's vote share predicted by the pre-election poll whose release date is the omitted day of reference. Test of Cumulative Effects After Poll Release reports the p-value of a one-sided F-test that the sum of the coefficients on days after poll × *Ex Ante* Closeness is less than or equal to zero. Test of Joint Significance of Leads reports the p-value of an F-test that the coefficients on before poll × *Ex Ante* Closeness are all equal to zero. P-values of analogous Wald tests based on the wild cluster bootstrap in brackets. The sample is an unbalanced panel of 52 votes held between 2001 and 2019 observed from 5 voting days before to the last voting day after poll release. Standard errors in parentheses, clustered at the vote level: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

TABLE 4: NEWSPAPER COVERAGE, CLOSENESS AND CANTONAL VOTER TURNOUT

	Turnout (%)		Advertisements (std.)		Importance (std.)	
PANEL A: POLL MENTIONS IN CANTONAL NEWSPAPERS	(1)	(2)	(3)	(4)	(5)	(6)
Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.4795**	0.5426**	0.0408	0.0389	0.0419	0.0376
	(0.2170)	(0.2010)	(0.0378)	(0.0377)	(0.0506)	(0.0509)
	[0.062]	[0.024]	[0.346]	[0.409]	[0.432]	[0.485]
Poll Mentions (std.)	0.1877	1.2549**	0.2266***	0.1393**	0.0416	0.0427
	(0.2419)	(0.6185)	(0.0526)	(0.0658)	(0.0597)	(0.0953)
	[0.443]	[0.036]	[0.000]	[0.078]	[0.504]	[0.665]
R-squared	0.820	0.822	0.876	0.877	0.329	0.329
PANEL B: INCIDENTAL POLL MENTIONS						
Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.3741*	0.4516***	0.0287	0.0519	0.0479	0.0328
	(0.1928)	(0.1635)	(0.0455)	(0.0412)	(0.0359)	(0.0481)
	[0.082]	[0.017]	[0.603]	[0.342]	[0.207]	[0.513]
Poll Mentions (std.)	-0.0818	1.3947*	0.2459***	0.2977***	0.0364	0.0132
	(0.2722)	(0.7391)	(0.0547)	(0.0857)	(0.0594)	(0.1122)
	[0.766]	[0.028]	[0.001]	[0.010]	[0.563]	[0.909]
R-squared	0.820	0.821	0.878	0.878	0.329	0.329
PANEL C: INCIDENTAL POLL MENTIONS (<15% *Market Share*)						
Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.3835**	0.5380***	0.0137	0.0335	0.0511	0.0338
	(0.1753)	(0.1752)	(0.0465)	(0.0441)	(0.0335)	(0.0398)
	[0.033]	[0.002]	[0.832]	[0.689]	[0.171]	[0.429]
Poll Mentions (std.)	0.0234	2.0387**	0.2361***	0.2975***	0.0133	-0.0353
	(0.2673)	(0.8815)	(0.0554)	(0.0766)	(0.0572)	(0.1110)
	[0.932]	[0.024]	[0.001]	[0.010]	[0.823]	[0.755]
R-squared	0.820	0.822	0.876	0.876	0.329	0.329
Outcome Mean	47.273	47.273	73.927	73.927	6.115	6.115
Outcome Std. Dev.	8.910	8.910	68.180	68.180	1.132	1.132
Observations	962	962	962	962	957	957
German × Poll Mentions (std.)	N	Y	N	Y	N	Y
German × *Ex Ante* Closeness (std.)	N	Y	N	Y	N	Y

Notes: Each panel presents results from six OLS regressions using three dependent variables: cantonal turnout (Columns 1 and 2), the standardized number of newspaper advertisements in cantonal newspapers (Columns 3 and 4), and standardized importance, as rated by a canton's average VOX survey responses (Columns 5 and 6). In Panel A, Poll Mentions (std.) refer to the (standardized) absolute count of poll mentions in cantonal newspapers, i.e., newspapers read by at least 10% of a canton's inhabitants. In Panel B, only Incidental Poll Mentions are considered, i.e., mentions in cantonal newspapers whose main market lies in another canton. Panel C further restricts Incidental Poll Mentions to mentions in newspapers whose cantonal readership accounts for less than 15% of the newspaper's total readership. *Ex Ante* Closeness is the losing side's vote share at the federal level, as predicted by the pre-election poll. All specifications include canton and vote fixed effects. Columns 2, 4, and 6 additionally control for a dummy equal to one for German-speaking cantons, interacted with both *Ex Ante* Closeness (std.) and Poll Mentions (std.). The sample is a panel of 26 cantons, observed in 37 votes held between 2000 and 2014. Standard errors clustered at the vote level in parentheses: *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

TABLE 5: HETEROGENEOUS EFFECTS OF ELECTION CLOSENESS AND POLLS DEPENDING ON MUNICIPALITY UNREPRESENTATIVENESS AND NATIONAL LEVEL TURNOUT AS PROXY FOR SALIENCE

	(1)	(2)	(3)	(4)	(5)	(6)
Ex Post Closeness (std.) × Unrepresentativeness (std.)	-0.5676***	-0.5696***			-0.6292***	-0.6294***
	(0.2132)	(0.2156)			(0.2083)	(0.2109)
Ex Post Closeness (std.) × Unrepresentativeness (std.) × Poll Era	0.6211**	0.6179**			0.6106**	0.6135**
	(0.2983)	(0.3003)			(0.3037)	(0.3063)
National Turnout (std.) × Unrepresentativeness (std.)			0.2673*	0.2564*	0.3503**	0.3394**
			(0.1396)	(0.1412)	(0.1529)	(0.1544)
National Turnout (std.) × Unrepresentativeness (std.) × Poll Era			-0.0321	-0.0472	-0.1075	-0.1237
			(0.2262)	(0.2277)	(0.2434)	(0.2453)
Unrepresentativeness (std.) × Poll Era	1.9756***	2.0288***	1.8838***	1.9440***	1.8515***	1.9118***
	(0.2613)	(0.2629)	(0.2762)	(0.2786)	(0.2665)	(0.2692)
Test for Convergence of Closeness Gradients *(p-value)*	0.798	0.818			0.933	0.943
Test for Convergence of Salience Gradients *(p-value)*			0.189	0.244	0.202	0.260
Outcome Mean	44.001	44.001	44.001	44.001	44.001	44.001
R-squared	0.697	0.698	0.697	0.697	0.698	0.698
Observations	250240	250240	250240	250240	250240	250240
Municipality Fixed Effects	Y	Y	Y	Y	Y	Y
Vote Fixed Effects	Y	Y	Y	Y	Y	Y
Electorate Size	N	Y	N	Y	N	Y

Notes: Each column presents results from an OLS regression with municipality-level voter turnout as the dependent variable. Unrepresentativeness is a municipality's historical tendency to produce voting results unrepresentative of national-level closeness, measured by the negative of the correlation coefficient between muncipality-level and national-level *ex post* closeness of voting results in the era before pre-election polls. Poll Era is a dummy equal to 1 for 69 votes held after the introduction of polls in 1998. National Turnout is the Swiss national level turnout rate for the vote. Test for Convergence of Closeness Gradients reports the p-value of an F-test that the sum of the coefficients on *Ex Post* Closeness (std.) × Unrepresentativeness (std.) and *Ex Post* Closeness (std.) × Unrepresentativeness (std.) × Poll Era (std.) equals 0. Test for Convergence of Salience Gradients reports the p-value of an F-test that the sum of the coefficients on National Turnout (std.) × Unrepresentativeness (std.) and National Turnout (std.) × Unrepresentativeness (std.) × Poll Era (std.) equals 0. Columns 2, 4 and 6 control for a triple interaction of Poll Era and the standardized average municipality electorate size with either *Ex Post* Closeness (Column 2) or National Turnout (Column 4) or both (Column 6), as well as lower order terms. The sample is a balanced panel of 2176 municipalities observed in 115 votes held from 1981 to 2019. Standard errors clustered at the vote level in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 6: ASYMMETRIC EFFECTS OF *Ex Ante* CLOSENESS ON TURNOUT AND VOTE SHARES

	(1) Turnout	(2) Vote Share
Ex Ante Closeness (std.) × Trailing Side's Estimated Support	0.0125* (0.0073)	0.0634*** (0.0213)
Trailing Side's Estimated Support	0.0120 (0.0082)	0.3884*** (0.0255)
Outcome Mean	46.853	42.826
R-squared	0.859	0.876
Observations	124032	124032

Notes: The table presents estimates from OLS regressions with municipality level voter turnout (column 1) and vote share for the trailing side (column 2) as dependent variables. The trailing side's Vote Share is defined as a municipality's share of votes cast in line with the trailing side in the pre-election poll, i.e., with the minority of poll respondents. Trailing Side's Estimated Support is a municipality's predetermined pre-disposition to vote for the side trailing in the pre-election poll, measured as a municipality's vote share, in percent of votes cast, in the preceding national election for parties whose voting recommendations are in line with the minority of poll respondents. *Ex Ante* Closeness is the trailing side's vote share in the pre-election poll. All specifications include municipality and canton × vote fixed effects. The sample is a balanced panel of 2176 municipalities observed in all 57 votes with a pre-election poll held from 1998 to 2019. Standard errors clustered at the vote level in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 7: COUNTERFACTUAL TURNOUT AND VOTE RESULTS

	Poll	Votes	
	Yes (%)	Actual Yes (%)	Counterfactual Yes (%)
PANEL A: AVERAGE POLL CLOSENESS			
Initiative "against Abuse of Asylum" (November 24, 2002)	53.75	49.91	54.45
Initiative "against Mass Immigration" (February 9, 2014)	46.24	50.33	48.63
Federal Act on Old Age Pension Reform (September 24, 2017)	53.68	47.31	50.24
PANEL B: INCREASE IN POLL CLOSENESS			
Federal Act on the Army and Military Administration (June 10, 2001)	59.49	50.99	48.74
Federal Act on Corporate Tax Reform (February 24, 2008)	59.74	50.53	48.28
Initiative "for the Expulsion of Criminal Foreigners (November 28, 2010)	55.67	52.91	49.97
Initiative "Limiting the Construction of Second Homes" (March 11, 2012)	58.43	50.63	47.16

Notes: Table lists the actual Yes vote share, the Yes vote share predicted by the pre-election poll, and the counterfactual Yes vote share, for all votes with election outcomes flipped by the counterfactual scenarios. Each panel corresponds to one counterfactual secnario. Panel A assumes pre-election polls were set at average poll closeness and calculates the counterfactual Swiss-level Yes vote share for 57 votes from municipality-level turnout and vote shares obatained from substracting the asymmetric effects of poll closeness implied by estimates in Table 6, Columns 1 and 2. Panel B replicates Panel A, but assuming counterfactual pre-election polls were one standard deviation (i.e., 7.62 percentage points) closer than actual polls, with counterfactual poll closeness bounded above by 50.

Supplementary Appendix: For Online Publication

A Institutional Background Details

Switzerland is one of the leading countries in the use of direct democracy. Since 1891, Swiss citizens have had the right to call for a popular initiative, with which they can revise the federal constitution, if 100,000 signatures are collected in support of the proposed initiative within 18 months. A popular initiative is accepted if the majority of Swiss citizens vote in favor, and the majority of the cantons do so as well. In response to an initiative, the Federal Council and the Federal Assembly may propose a direct counter-proposal; usually, this is a more "moderate" proposal.[1] In nearly every case in our data, popular and cantonal majorities go hand in hand. Between 1998 and 2019, there were two votes (out of 193) in which a narrow majority of voters rejected (49.2 % and 49.9 % of voters voting yes) but the cantons approved, and one vote in which a narrow majority of voters approved (with 54.3 % of voters voting yes) while the majority of cantons did not.

In nearly every case in our data, popular and cantonal majorities go hand in hand. Between 1981 and 2019, there were four votes (out of 331) in which a narrow majority of voters approved (between 50.9 % and 54.3 % of voters voting yes) but the cantons did not, and two votes in which a narrow majority of voters rejected (with 49.2 % and 49.9 % of voters voting yes) while the majority of cantons approved.

In addition to the popular initiative (and the counter-proposal), the Swiss constitution grants two types of referenda rights. First, a referendum can be called on all laws issued by the federal government if supported by 50,000 signatures or eight Swiss cantons. This sort of referendum is then accepted or rejected by a simple majority of the votes cast. Higher-stakes policy choices — any changes to the constitution and some international treaties — are subject to a mandatory referendum requiring a majority of voters and cantons to be passed. For all votes (initiatives and referenda), there is no minimum voter turnout required for the ballot to be binding.

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[1] In the case of a counter-proposal, voters are currently able to approve both the initiative and the counter-proposal (before 1987, voters could only approve the initiative or the counter-proposal, but not both). Voters indicate which they prefer to determine which is to be implemented if both initiative and counter-proposal were approved.

B   Data Construction

Measuring Poll Closeness   Information on poll results, as well as the precise timing of the release of poll results is received from the website of the SRG (see `https://www.srf.ch/`, last accessed May 5, 2021). The poll results are reported as the shares of eligible voters (among those who report an intention to vote), who: (i) are definitely in favor of the proposal; (ii) are somewhat in favor of the proposal; (iii) are somewhat against the proposal; (iv) are definitely opposed to the proposal; (v) do not know; or, (vi) prefer not to answer.[2]   Our main variable of interest is the predicted closeness of the final poll prior to a vote. To calculate (ex-ante) poll closeness we first construct the "share yes": the total "yes" support (groups (i) and (ii), who are definitely or somewhat in favor) divided by the total number of respondents indicating support for "yes" or "no" (groups (i), (ii), (iii), and (iv)). We then analogously construct the "share no," and code poll closeness as the share supporting the trailing side in the poll. We also calculate an *ex post* vote closeness measure, which is the share of the votes cast for the losing side in a vote.

Multiple Votes per Election Day   For the main part of the analysis, we assume that voters' turnout decision is mostly affected by the pre-polls of the most important vote. To measure vote importance, we use responses in post-election surveys: in post-election surveys: the "VOX surveys" before September 2016, and the "VOTO Surveys" after.[3]   We specifically rely on survey respondents' views of the personal importance of each voting issue (or referendum) on a given election day. The question reads: *"Let's talk about the importance this issue had for you personally. Please tell me ... how important the vote about [issue title] has been for you personally. Tell me a number between 0 and 10. 0 means not important at all, 10 very important."* We identify the vote with the highest average personal importance score as the one whose poll closeness may affect turnout for that election day.[4]

   This survey-based measure of a vote's importance is direct, and it covers all votes we study in our analysis of voter turnout in Geneva. However, it provides incomplete coverage of votes in our analysis of canton×vote level turnout. In our analysis of municipality×vote-level turnout, we wish to study voting in the era prior to the release of polls — going back to 1981, before survey data on the importance of each voting issue were collected. We thus supplement the VOX and VOTO survey data with a count of the number of articles mentioning each vote (issue) in Switzerland's preeminent German newspaper, the *NZZ*, in the three months preceding each election day.[5]   In the absence of survey data, the issue with the most *NZZ* articles is identified as the most important vote on a given election day.[6]   In our canton×vote-level analysis, we are able to include one more

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[2]Note that the poll does not project whether the referendum is likely to receive support from a majority of cantons (which technically is required to pass many of the referenda we study). As noted above, however, the popular vote has nearly always been the binding factor determining the passage of referendum; thus, information on the closeness of this component of the vote alone will be highly informative to voters.

[3]The VOX surveys, like the pre-election polls, were conducted by *gfs.bern*. The VOTO surveys were conducted by the research institute FORS. The survey data for both VOX and VOTO can be found at `https://forsbase.unil.ch/`, last accessed May 5, 2021.

[4]Online Appendix Table C.1 lists all the election days and the most important vote on each day.

[5]We checked six major newspapers in Switzerland (*NZZ*, *Blick*, *Tages Anzeiger*, *Le Matin*, *Journal de Genève*, and *Tribune de Genève*) for an available online archive going back to 1981, but only the *NZZ* had a complete archive throughout this time period.

[6]Online Appendix Table 1 lists a few examples of election days, with the respective issues (votes) on the ballot and their importance scores. Online Appendix Table C.1 lists all the election days and the most important vote on each day.

election day by shifting to a slightly different survey question from the VOX survey, which asks about the importance of the vote to the nation, rather than about its personal importance.[7]

Voter Turnout In our municipality×vote and canton×vote analyses, we use data on: eligible voters, votes cast, the number of votes in support of the initiative, and the number of votes against the initiative. Data at all levels are available from the Swiss federal office of statistics for referenda held since 1981 (see `https://www.pxweb.bfs.admin.ch/pxweb/de/`, last accessed May 5, 2021). Turnout is calculated at the level of the individual vote. In practice, turnout is very similar for all votes held on a given election day: a regression of turnout on election day fixed effects generates residuals with a standard deviation of 0.128 percentage points.

Political Advertising in Newspapers For our analysis of voter turnout in the canton of Geneva, we hand-collected all political advertisements related to the 52 referenda studied between 2001 and 2019 for the two most widely-read Genevan newspapers: *Le Temps* and *Tribune de Genève*. We aggregate these data to counts of political ads relating to each of the 52 votes at the *daily* level. For our canton×vote-level analysis, we collected advertising data from a much broader set of newspapers: all of the newspapers read by at least 10% of any canton's inhabitants. We sum up to the canton×vote level our counts of political ads relating to each vote for each newspaper read in each canton.

Geneva Data Our sample contains 52 votes, of which: 2 polls were released 16 days before the voting date, 1 poll 13 days before, 2 polls 12 days before, 44 polls 11 days before, and 3 polls 10 days before. Most Geneva voters cast their ballot by mail. Their ballot is recorded *at the same day* by the administrative office (if it falls on a working day). The relatively small number of ballots submitted by internet (around 4%) are recorded automatically every day (including weekends and public holidays) by the e-voting system. We therefore aggregate votes on eligible "voting days," i.e. days when postal ballots are registered, to which we add any incoming ballots by internet recorded on weekends or public holidays immediately preceding the voting day. Turnout is *not* observed for each individual vote (i.e. ballot issue) that is decided on the same election day, as the ballots are placed together in a sealed envelope. The sealed envelope is then mailed, in a larger envelope, together with the signed voter identification card. Voters nearly always cast their ballots on all issues that are decided upon in one election. To preserve the secrecy of the ballot, authorities are not allowed to open the sealed envelope or to count votes before election Sunday, but only to register the voter identification card. We consider cumulative turnout rate as of each day; the log of the daily count of ballots received; the daily turnout rate as a fraction of the eligible voting population in the canton, and the daily "net" turnout rate, calculated as the turnout rate among the eligible voters who have not yet voted in a particular election.

Municipality×Vote-Level Data The municipality-level voting data of the federal office of statistics includes 2,202 municipalities that existed at the end of our sample period, where historical municipalities that merged are aggregated to the set of municipalities in existence at the beginning of 2020. For 19 municipalities, the federal office of statistics reports incomplete data because these municipalities were subject to complex mergers not allowing the aggregation of data by

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[7]Our results are nearly identical using the personal importance measure, but we prefer to maximize the sample coverage.

adding up historical electoral returns from formerly independent municipalities. For another 7 municipalities, no data are reported because they share a common ballot box with neighboring municipalities to which electoral returns are aggregated. This leaves us with 2,176 municipalities in our data. In our municipality×vote-level analysis, we use party recommendations issued prior to the release of pre-election polls and municipality-level party vote shares in the preceeding legislative elections to estimate the *ex ante* support for the trailing side in the poll, which we proxy with the municipality-level vote share for parties that endorse that side in the vote. Data on party recommendations is available from Année Politique Suisse (see `https://swissvotes.ch/page/dataset`, last accessed May 5, 2021) and data on national elections can be obtained from the Swiss federal office of statistics (see `https://www.pxweb.bfs.admin.ch/pxweb/de/`, last accessed May 5, 2021).

In our municipality×vote-level analysis, we use *ex post* closeness to construct a measure of a municipality's "political unrepresentativeness" prior to the release of any polls: the opposite of the correlation between each municipality's vote share closeness and the national closeness between 1981 and 1998.

Canton×Vote-Level Data   To gauge newspaper coverage of polls, we used three different strategies in this search: online databases, "Factiva" and "Swissdox" [8]; newspapers' own online archives; and, manual search in the Swiss National Library in Bern. In our empirical analysis, we address concerns regarding the endogenous local newspaper coverage of close polls by exploiting a canton's voters' (arguably) "incidental" exposure to polls. We propose that newspaper editors may target their news coverage (specifically, poll coverage) toward their largest cantonal audience; if so, then readers exposed to this reporting in *other* cantons will read it for reasons other than their own canton's election-specific interest. We thus can decompose *total* coverage of polls in a canton into two components: first, *endogenous* coverage, which is arguably targeted toward that canton, because it represents a newspaper's largest cantonal audience; second, *incidental* coverage, to which a canton is exposed despite a newspaper's largest audience being in a different canton.

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[8]See `https://global.factiva.com` and `https://swissdox.ch/`, both last accessed; May 5, 2021.

C   Additional Figures and Tables

FIGURE C.1: MEDIA USAGE FOR POLITICAL OPINION FORMATION
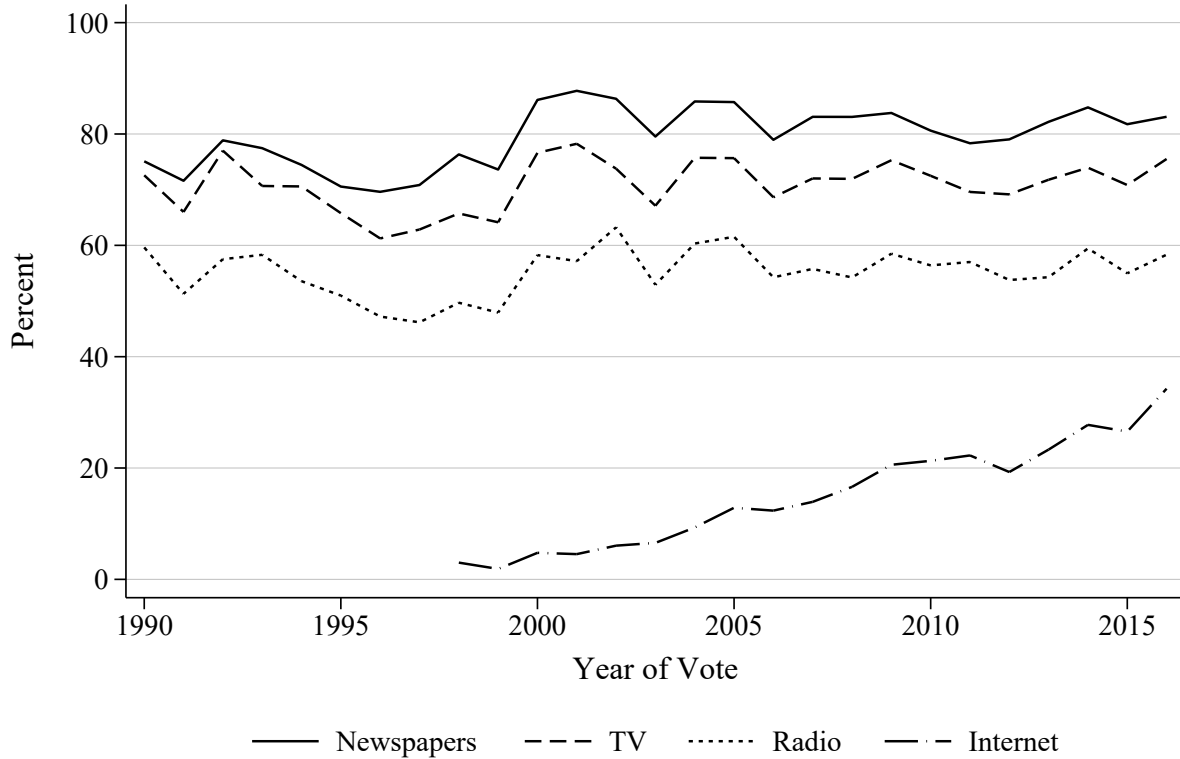
Notes: Responses from the VOX survey to the following prompt: "Through which media did you orient yourself and learn about the pros and cons of the last vote? Please indicate all possibilities that were accurate for the last vote." The graph shows the share of survey respondents who indicated the use of newspapers, TV, radio, or the Internet.

FIGURE C.2: ENDOGENEOUS AND INCIDENTAL POLL MENTIONS IN CANTONS OVER TIME

- - - - - Endogenous Poll Mentions   ———— Incidental Poll Mentions
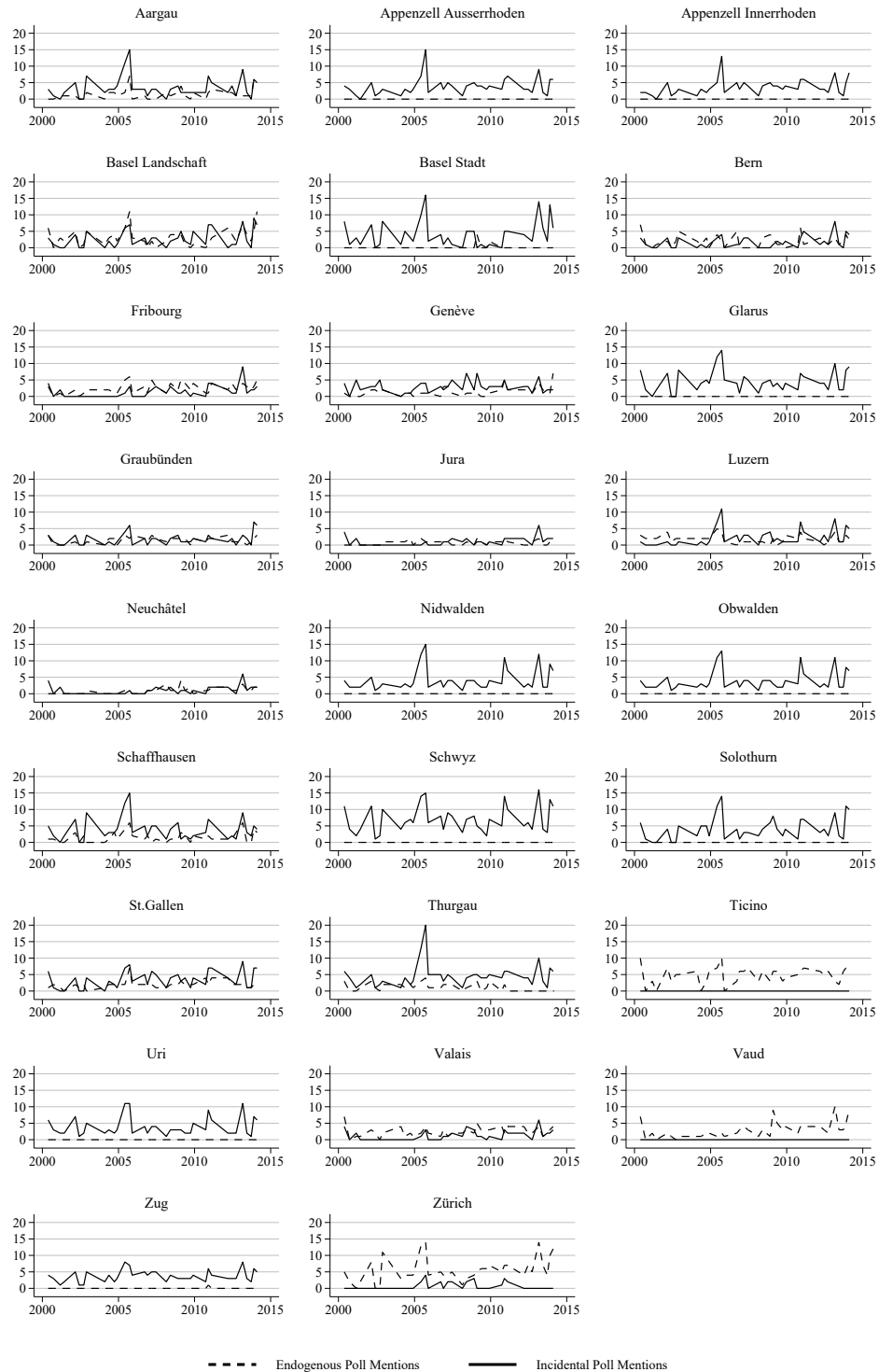
Notes: Each panel plots the number of endogenous and incidental poll mentions over time, for one canton. Endogenous poll mentions are poll mentions in newspapers read by at least 10% of a canton's inhabitants and for which the canton is the largest market. Incidental poll mentions are poll mentions in newspapers read by at least 10% of a canton's inhabitants, but whose largest market is in a different canton.

A.6

FIGURE C.3: DISTRIBUTIONS OF MUNICIPALITY UNREPRESENTATIVENSS AND HOMOGENEITY
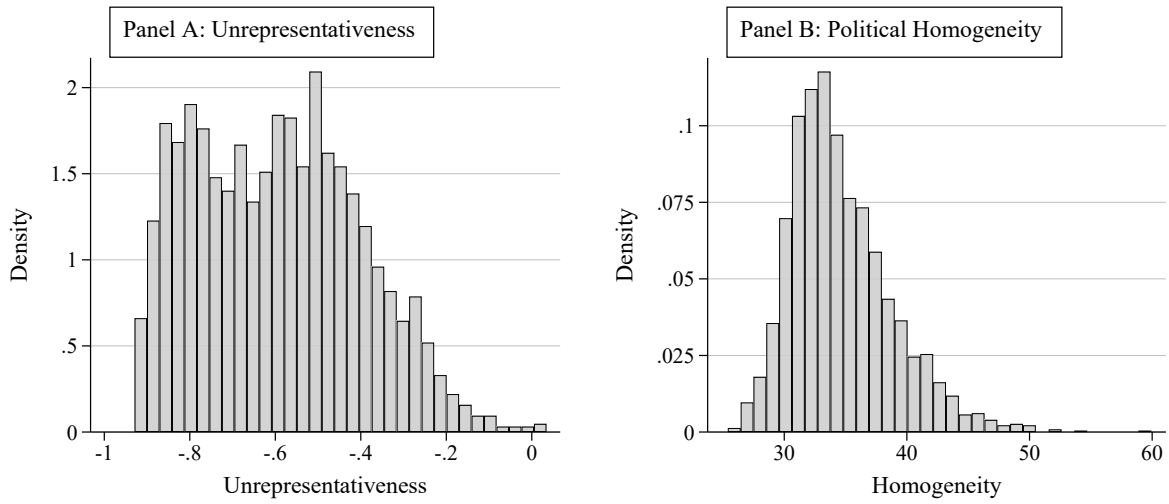
Notes: The figure shows the distribution of 2176 Swiss municipalities according to unrepresentativeness (panel A) and political homogeneity (panel B). Unrepresentativeness is a municipality's historical tendency to produce voting results unrepresentative of national-level closeness, measured as the negative of the correlation coefficient between municipality-level and national-level *ex post* closeness of voting results in the era before pre-election polls were introduced. Political homogeneity is a municipality's historical tendency to produce outcomes distant from 50-50, as measured by the average municipal-level margin of majority across all votes held in the era before pre-election polls were introduced.

FIGURE C.4: THE EFFECT OF CLOSENESS ON TURNOUT BY MUNICIPALITY HOMOGENEITY, BEFORE AND AFTER THE INTRODUCTION OF POLLS
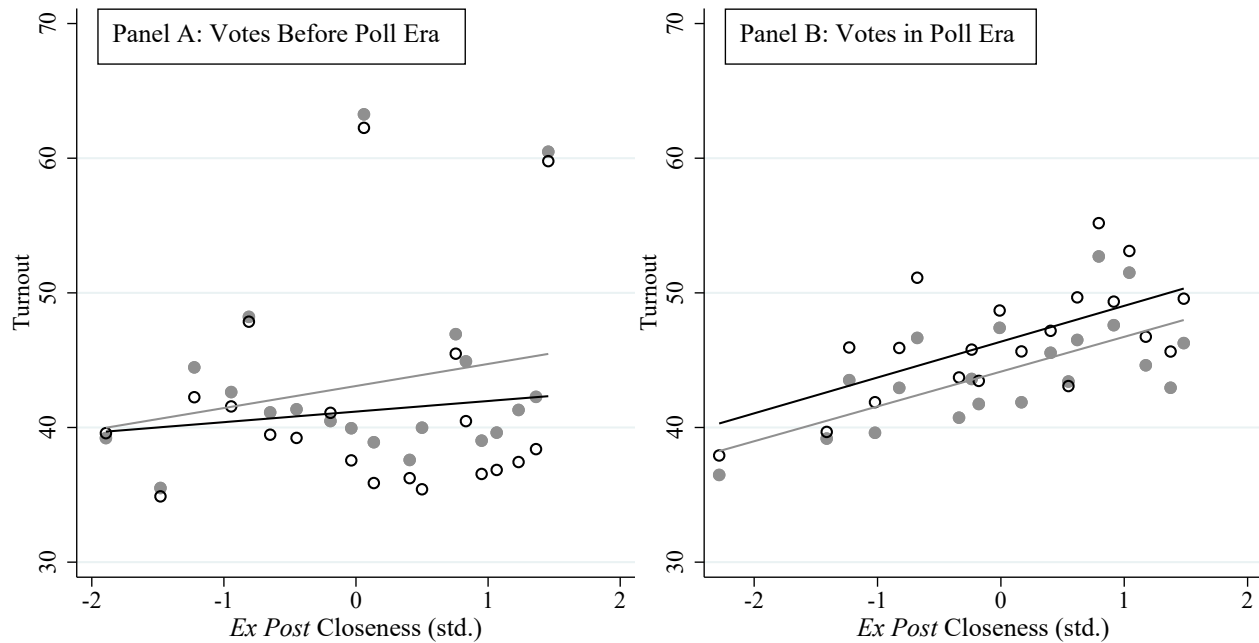
		Slopes Before Poll Era	Slopes in Poll Era
─ ○	Homogeneous Municipalities	0.786 (p = 0.612)	2.661 (p = 0.005)
─ ●	Heterogeneous Municipalities	1.638 (p = 0.267)	2.585 (p = 0.005)
	Differences within Era:	*-0.852 (p = 0.005)*	*0.077 (p = 0.800)*
	Difference in Differences:		*0.928 (p = 0.030)*

Notes: Panel A shows binned scatter plots correlating municipality-level voter turnout and national-level *ex post* closeness, splitting the sample of municipalities above and below median political homogeneity, for 46 votes in the era before pre-election polls were introduced. Panel B replicates Panel A for 69 votes in the era with pre-election polls. Political homogeneity is a municipality's historical tendency to produce outcomes distant from 50-50, as measured by the average municipal-level margin of majority across all votes held in the era before pre-election polls. Estimates of slope parameters as well as p-values associated with tests that (differences in) slopes equal zero are obtained from an OLS regression using all 115 votes, with standard errors clustered at vote level.

FIGURE C.5: DISTRIBUTION OF TRAILING SIDE'S ESTIMATED SUPPORT
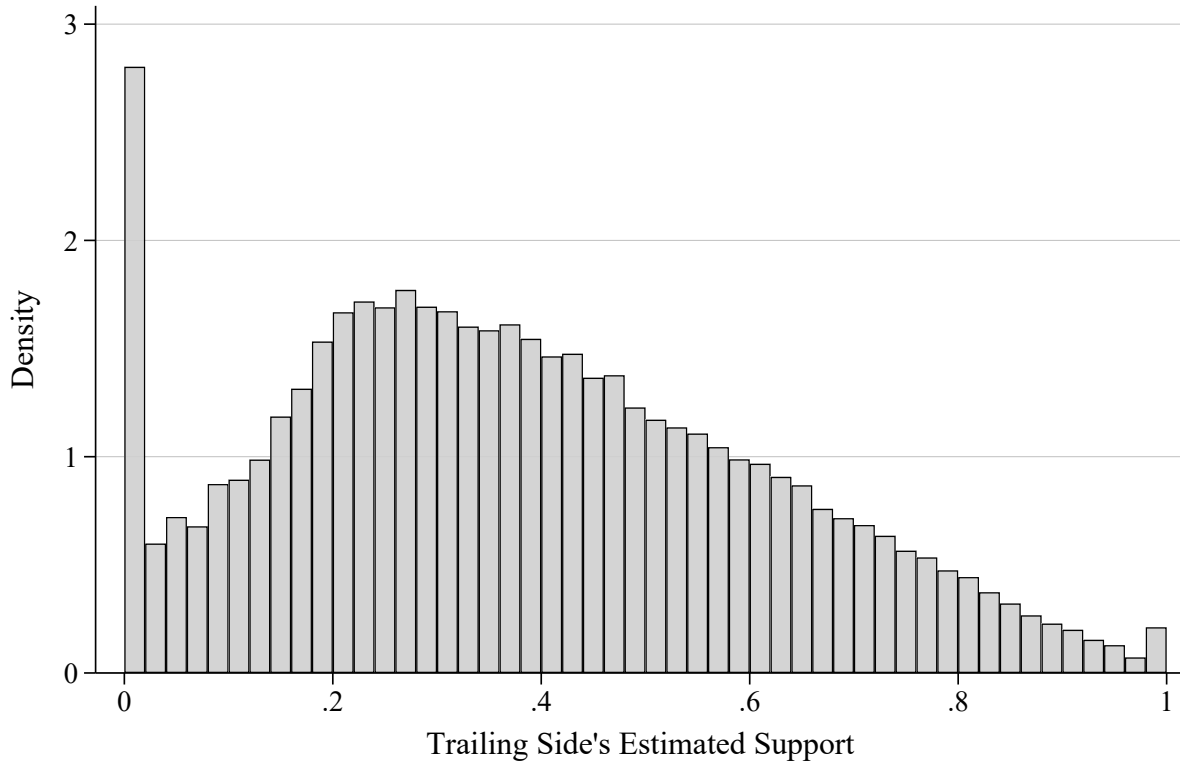
Notes: The figure shows the distribution of Trailing Side's Estimated Support accross 2176 municipalities and 57 votes. Trailing Side's Estimated Support is a municipality's predetermined pre-disposition to vote for the side trailing in the pre-election poll, measured as a municipality's vote share, in percent of votes cast, in the preceding national election for parties whose voting recommendations are in line with the minority of poll respondents.

FIGURE C.6: MARGINAL EFFECTS OF TRAILING SIDE SUPPORT ON TURNOUT AND VOTE SHARE FOR THE TRAILING SIDE DEPENDING ON POLL CLOSENESS: TRIMMED SAMPLE
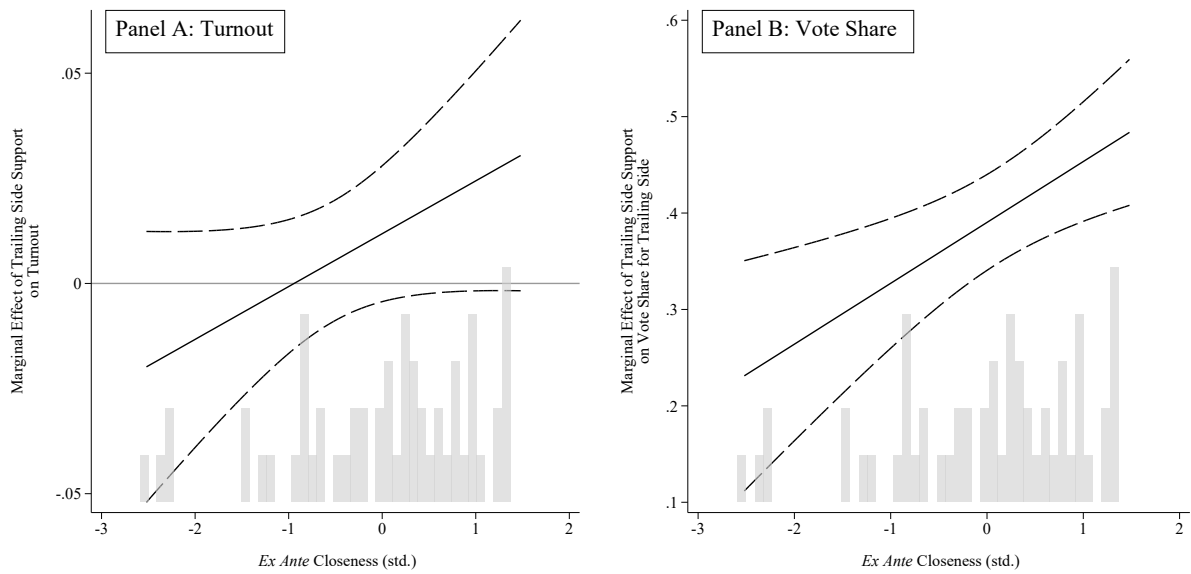
Notes: The solid line plots the total effect of a unit increase in *ex ante* support for the trailing side on turnout (Panel A) and on the vote share for the side trailing in the poll (Panel B), depending on standardized *ex ante* closeness. Dashed lines represent 95% confidence intervals based on standard errors clustered at vote level. The plot is based on OLS estimates using the trimmed sample that excludes all observations with 0% or 100% support for the trailing side, reported in Table C.9. The histograms show the distribution of (standardized) poll closeness across votes.

TABLE C.1: LIST OF MOST IMPORTANT VOTES BY ELECTION DAY

Date	Title	Turnout (%)	Yes (%)
1981-06-14	Initiative for "Equal Rights of Men and Women"	33.95	60.27
1981-11-29	Federal Decision on the Financial Order Improving the Federal Budget	30.35	68.95
1982-06-06	Federal Penal Code (Violent Crime)	35.19	63.71
1982-11-28	Initiative for "Preventing Abusive Pricing"	32.93	57.94
1983-02-27	Federal Decision on the Revision of Fuel Tariffs	32.42	52.69
1983-12-04	Federal Decision on the Regulation of Citzenship in the Constitution	35.84	60.81
1984-02-26	Initiative "for Civil Service Based on Factual Evidence"	52.77	36.17
1984-05-20	Initiative "against Bank Secrecy and the Power of Banks"	42.52	26.96
1984-09-23	Initiative "for a Safe, Economical and Eco-Friendly Energy"	41.62	45.77
1984-12-02	Initiative "for an Effective Protection of Motherhood"	37.66	15.78
1985-03-10	Initiative "for Extending Paid Holidays"	34.60	34.78
1985-06-09	Initiative "for the Right to Life"	35.72	30.96
1985-09-22	Federal Decision on Risk Guarantees for Innovations in SMEs	40.87	43.11
1985-12-01	Initiative "for Abolishing Vivisection"	37.97	29.47
1986-03-16	Federal Decision on the Accession to the United Nations	50.71	24.33
1986-09-28	Initiative "for Secured Vocational Education and Re-training"	34.82	18.38
1986-12-07	Initiative "for an Fair Levy on Heavy Traffic"	34.74	33.87
1987-04-05	Initiative "for Referenda against Military Expenses"	42.42	40.56
1987-12-06	Federal Decision on "Railway 2000"	47.70	56.99
1988-06-12	Initiative "for Reducing the Retirement Age"	42.02	35.12
1988-12-04	Initiative "against Land Speculation"	52.83	30.78
1989-06-04	Initiative "for Natural Farming - against Animal Factories"	35.96	48.95
1989-11-26	Initiative "for Switzerland Without an Army and a Comprehensive Peace Policy"	69.19	35.59
1990-04-01	Initiative "against Concrete - for Limiting Road Construction"	41.13	28.51
1990-09-23	Initiative "against Constructing New Nuclear Power Plants"	40.44	54.52
1991-03-03	Initiative "for Promoting Public Transport"	31.24	37.14
1991-06-02	Federal Decision on Federal Budget Reform	33.27	45.65
1992-02-16	Initiative "for the Drastic and Stepwise Limitation of Animal Experiments"	44.50	43.63

Continued on next page

Date	Vote Title	Turnout (%)	Yes (%)
1992-05-17	Initiative "against Abuses of Reproduction Technology and Genetic Engeneering"	39.18	73.83
1992-09-27	Federal Decision on the New Railway Link through the Alps (NRLA)	45.91	63.61
1992-12-06	Federal Act on the Accession to the European Economic Area	78.78	49.66
1993-03-07	Initiative "for Abolishing Animal Experiments"	51.26	27.77
1993-06-06	Initiative "for Switzerland without New Fighter Jets"	55.61	42.81
1993-09-26	Federal Decision on Temporary Measures against Cost Increases in Health Care	39.80	80.55
1993-11-28	Initiative "for Reducing Alcohol Problems"	45.51	25.26
1994-02-20	Initiative "for Protecting the Alpine Region against Transit Traffic"	40.86	51.91
1994-06-12	Federal Decision on the Facilitated Naturalization for Young Foreign Nationals	46.78	52.84
1994-09-25	Federal Penal Code and Military Penal Code (Racial Discrimination)	45.93	54.65
1994-12-04	Federal Act on Coercive Measures under the Law on Foreigners	44.06	72.91
1995-03-12	Federal Decision on Curbing Expenditures	37.88	83.38
1995-06-25	Federal Act on Old Age Insurance	40.45	60.71
1996-03-10	Federal Decision Abolishing Cantonal Responsibility for the Equipment of Soldiers	31.04	43.70
1996-06-09	Initiative "Farmers and Consumers - for a natural Agriculture" (counter-proposal)	31.44	77.59
1996-12-01	Federal Act on Labor	46.76	32.97
1997-06-08	Initiative "for a Ban on Exports of War Material"	35.50	22.50
1997-09-28	Federal Decision on the Financing of the Unemployment Insurance	40.65	49.18
1998-06-07	Initiative "for Protecting Life and Environment from Genetic Engeneering"	41.35	33.29
1998-09-27	Federal Act on Power-Dependent Levies on Heavy Traffic	51.85	57.20
1998-11-29	Initiative "for a Reasonable Drug Policy"	38.39	26.01
1999-02-07	Federal Decision on a Constitutional Article on Transplant Medicine	38.01	87.77
1999-04-18	Federal Decision on a New Constitution	35.93	59.16
1999-06-13	Federal Decision on Maternity Insurance	45.98	38.99
2000-03-12	Initiative "for Halving Motorised Traffic and Conserving Habitats"	42.41	21.33
2000-05-21	Federal Decision on Bilateral Treaties between Switzerland and the EU	48.35	67.19
2000-09-24	Initiative "for Regulating Immigration"	45.31	36.20
2000-11-26	Initiative "for Lower Hospital Costs"	41.69	17.89
2001-03-04	Initiative "Yes to Europe!"	55.84	23.15
2001-06-10	Federal Act on the Army and Military Administration (Armament)	42.55	50.99

A.12

Date	Vote Title	Turnout (%)	Yes (%)
2001-12-02	Initiative "for a Credible Security Policy and Switzerland without an Army"	37.96	21.90
2002-03-03	Initiative "for Accession to the UN"	58.48	54.61
2002-06-02	Federal Penal Code (Abortion)	41.85	72.15
2002-09-22	Initiative "Gold Reserves for the Old Age Insurance"	45.21	47.56
2002-11-24	Initiative "against Abuse of Asylum"	47.97	49.91
2003-02-09	Federal Act on Adjusting Cantonal Contributions to Hospitals	28.74	77.36
2003-05-18	Initiative "Energy without Nuclear Power - For a Stepwise Phaseout"	49.77	33.71
2004-02-08	Initiative "Liefelong Custody for Untreatable, Extremely Dangerous Offenders"	45.54	56.19
2004-05-16	Federal Act on Tax Refrom and Revision Stamp Duties	50.85	34.12
2004-09-26	Federal Act on Compensation for Loss of Earings (Motherhood)	53.82	55.45
2004-11-28	Federal Act on Stem Cell Research	37.04	66.39
2005-06-05	Federal Decision on the Association to the EU Schengen-Dublin Agreements	56.64	54.63
2005-09-25	Federal Decision Extending Free Movement of Persons to New EU Member States	54.29	55.98
2005-11-27	Initiative "Initiative for GMO-Free Agriculture"	42.25	55.67
2006-05-21	Federal Decision on Revising Constituional Provisions for Education	27.80	85.58
2006-09-24	Federal Act on Asylum	48.92	67.76
2006-11-26	Federal Act on Family Allowances	45.01	67.98
2007-03-11	Initiative "for a Unified Social Health Insurance"	45.94	28.76
2007-06-17	Federal Act on Disability Insurance	36.20	59.09
2008-02-24	Federal Act on Corporate Tax Reform	38.63	50.53
2008-06-01	Initiative "for Democratic Naturalizations"	45.18	36.25
2008-11-30	Initiative "for a Flexible Retirement Age"	47.67	41.38
2009-02-08	Federal Decision Extending Free Movement of Persons to New EU Members	51.44	59.61
2009-05-17	Initiative "Yes to Complementary Medicine" (counter-proposal)	38.80	67.03
2009-09-27	Federal Decision on Funding the Disability Insurance by Raising the VAT	41.01	54.56
2009-11-29	Initiative "against the Construction of Minarets"	53.76	57.50
2010-03-07	Federal Act on the Occupational Pension Scheme	45.75	27.27
2010-09-26	Federal Act on the Unemployment Insurance	35.84	53.42
2010-11-28	Initiative "for the Expulsion of Criminal Foreign Nationals"	52.93	52.91
2011-02-13	Initiative "for Protection against Armed Violence"	49.12	43.70

A.13

Date	Vote Title	Turnout (%)	Yes (%)
2012-03-11	Initiative "Limiting the Construction of Second Homes"	45.18	50.63
2012-06-17	Federal Act on Health Insurance (Managed Care)	38.65	23.95
2012-09-23	Federal Decision on a Constitutional Article Promoting Music Lessons for the Young	42.42	72.69
2012-11-25	Federal Act on Epizootic Diseases	27.60	68.28
2013-03-03	Initiative "against Rip-Off Salaries"	46.74	67.96
2013-06-09	Federal Act on Asylum	39.43	78.45
2013-09-22	Initiative "Repealing Compulsory Military Service"	46.89	26.79
2013-11-24	Federal Act on Tolls for the Use of National Roads	53.61	39.54
2014-02-09	Initiative "against Mass Immigration"	56.57	50.33
2014-05-18	Initiative "for Protecting Fair Wages (Minimum Wage Initative)"	56.36	23.73
2014-09-28	Initiative "for a Public Health Insurance"	47.18	38.16
2014-11-30	Initiative "Stop Overpopulation - for Securing Natural Life Resources"	49.98	25.90
2015-03-08	Initiative "for an Energy Tax Instaed of the Value Added Tax"	42.06	8.03
2015-06-14	Initiative "for Bequest Taxes on the Wealthy for Funding the Old Age Insurance"	43.71	28.96
2016-02-28	Initiative "for Enforcing the Expulsion of Criminal Foreign Nationals"	63.73	41.15
2016-06-05	Federal Act on Asylum	46.79	66.78
2016-09-25	Initiative "for a Stronger Old Age Insurance"	43.13	40.60
2016-11-27	Initiative "for a Structured Nuclear Phaseout"	45.38	45.80
2017-02-12	Federal Decision on Facilitaed Naturalization of Third Generation Foreign Nationals	46.84	60.41
2017-05-21	Federal Act on Energy	42.89	58.22
2017-09-24	Federal Act on the Old Age Insurance Reform 2020	47.39	47.31
2018-03-04	Initiative "for Abolishing Radio and Television Fees"	54.84	28.44
2018-06-10	Initiative "for Crisis-Proof Money: Money Creation Only by the Central Bank"	34.55	24.28
2018-09-23	Initiative "for Healthy, Environmentally Friendly and Fair Food"	37.52	38.70
2018-11-25	Federal Act on Social Insurance	48.38	64.72
2019-02-10	Initiative "against Urban Sprawling - for a Sustainable Settlement Development"	37.92	36.34
2019-05-19	Federal Act on Tax Reform and Funding for Old Age Insurance	43.74	66.38

TABLE C.2: LIST OF NEWSPAPERS CONSULTED FOR POLL COVERAGE AND POLITICAL ADS

Newspaper	Language	# of cantons for which it has been used
Aargauer Zeitung	German	1
Badener Woche	German	1
Basellandschaftl. Ztg.	German	1
Basler Zeitung	German	2
Berner Zeitung	German	2
Blick	German	20
Blick am Abend	German	15
Bund	German	1
Büwo	German	1
Caffè della domenica (Il)	Italian	1
Corriere del Ticino	Italian	1
Côte (La)	French	1
Engadiner Post	German	1
(L')Express (aggregated with L'Impartial)	French	1
Freiburger Nachrichten	German	1
Giornale del Popolo	Italian	1
Gruyère (La)	French	1
Liberté (La)	French	1
Matin (Le)	French	6
Matin Dimanche (Le)	French	6
Matin Bleu (Le)	French	6
Mattino della Domenica (Il)	Italian	1
Neue Luzerner Zeitung GES (sometimes aggregated with: Neue Nidwaldner Zeitung; Neue Obwaldner Zeitung; Neue Schwyzer Zeitung; Neue Urner Zeitung; Neue Zuger Zeitung)	German	6
Nouvelliste (Le)	French	1
NZZ	German	3
NZZ am Sonntag	German	14
Ostschweiz am Sonntag	German	4
Quotidien Jurassien (Le)	French	1
Regione Ticino (La)	Italian	1
Rheinzeitung	German	2
Schaffhauser Nachrichten	German	1
Sonntag (Schweiz am Sonntag from 2013)	German	5
Sonntags Blick	German	21
Sonntags Zeitung	German	19
St. Galler Tagblatt (sometimes aggregated with: Appenzeller Zeitung)	German	5
Südostschweiz GES (Die)	German	4
Südostschweiz am Sonntag	German	1

Continued on next page

Newspaper	Language	# of cantons for which it has been used
Tages-Anzeiger	German	7
Temps (Le)	French	2
Thurgauer Zeitung	German	1
Tribune de Genève	French	1
Walliser Bote	German	1
Wiler Zeitung	German	1
Zentralschweiz am Sonntag	German	5
Zuger Woche	German	1
Zürichsee Zeitung	German	1
20 Minuten	German	19
20 Minutes	French	6
20 Minuti	Italian	1
24 Heures	French	1

TABLE C.3: DAILY TURNOUT BEFORE AND AFTER POLL RELEASE DEPENDING ON POLL CLOSENESS: BINS OF TWO DAYS

	Net Turnout (%)		Log(Turnout)	
	(1)	(2)	(3)	(4)
4-5 days before poll × *Ex Ante* Closeness (std.)	0.0669	-0.0155	0.0445	0.0138
	(0.2799)	(0.2757)	(0.1613)	(0.1580)
	[0.828]	[0.960]	[0.816]	[0.936]
2-3 days before poll × *Ex Ante* Closeness (std.)	0.1231	0.0851	-0.0143	-0.0232
	(0.2079)	(0.2105)	(0.1120)	(0.1145)
	[0.655]	[0.798]	[0.994]	[0.991]
1-2 days after poll × *Ex Ante* Closeness (std.)	0.4042***	0.3786***	0.1124***	0.1055**
	(0.1436)	(0.1413)	(0.0411)	(0.0402)
	[0.015]	[0.018]	[0.023]	[0.024]
3-4 days after poll × *Ex Ante* Closeness (std.)	0.3565**	0.3490**	0.0864*	0.0870*
	(0.1417)	(0.1454)	(0.0432)	(0.0458)
	[0.024]	[0.032]	[0.069]	[0.083]
5-6 days after poll × *Ex Ante* Closeness (std.)	0.2231	0.2293	0.0764	0.0786
	(0.1848)	(0.1853)	(0.0466)	(0.0482)
	[0.256]	[0.242]	[0.132]	[0.129]
7-8 days after poll × *Ex Ante* Closeness (std.)	0.2301	0.2294	0.0757	0.0774
	(0.2602)	(0.2634)	(0.0606)	(0.0630)
	[0.400]	[0.401]	[0.235]	[0.239]
9+ days after poll × *Ex Ante* Closeness (std.)	0.4494	0.4105	0.1037*	0.0997
	(0.2843)	(0.2780)	(0.0598)	(0.0609)
	[0.148]	[0.173]	[0.112]	[0.128]
Test of Cumulative Effects After Poll Release *(p-value)*	0.030	0.035	0.023	0.029
	[0.048]	[0.053]	[0.035]	[0.040]
Test of Joint Significance of Leads *(p-value)*	0.812	0.812	0.848	0.912
	[0.863]	[0.871]	[0.964]	[0.990]
Outcome Mean	4.611	4.611	8.764	8.764
R-squared	0.496	0.517	0.232	0.255
Observations	766	766	766	766
Vote Fixed Effects	Y	Y	Y	Y
Voting Day from/to Poll Fixed Effects	Y	Y	Y	Y
Day to Vote Fixed Effects	N	Y	N	Y

Notes: The table presents OLS estimates with two measures of daily turnout in Geneva as dependent variables: Net Turnout (columns 1 and 2) defined as the number of votes cast, in percent of eligible voters net of those voters who cast their vote on earlier days; and Log(Turnout) (columns 3 and 4) defined as the natural logarithm of the number of votes cast. *Ex Ante* Closeness is the trailing side's vote share predicted by the pre-election poll whose release date (and the preceding day) are the omitted days of reference. Test of Cumulative Effects After Poll Release reports the p-value of a one-sided F-test that the sum of the coefficients on days after poll × *Ex Ante* Closeness is less or equal to zero. Test of Joint Significance of Leads reports the p-value of an F-test that the coefficients on before poll × *Ex Ante* Closeness are all equal to zero. P-values of analogous Wald tests based on the wild cluster bootstrap in brackets. The sample is an unbalanced panel of 52 votes held between 2001 and 2019 observed from 5 voting days before to the last voting day after poll release. Standard errors in parentheses, clustered at the vote level: $^*p < 0.1,^{**}p < 0.05,^{***}p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

TABLE C.4: DAILY TURNOUT BEFORE AND AFTER POLL RELEASE DEPENDING ON AVERAGE POLL CLOSENESS: SINGLE DAYS

	Net Turnout (%)		Log(Turnout)	
	(1)	(2)	(3)	(4)
5 days before poll × Average Closeness (std.)	0.1078	0.0738	0.0406	0.0280
	(0.3745)	(0.3850)	(0.1888)	(0.1978)
	[0.777]	[0.850]	[0.835]	[0.887]
4 days before poll × Average Closeness (std.)	0.0660	0.0138	-0.0337	-0.0482
	(0.3584)	(0.3725)	(0.1638)	(0.1693)
	[0.857]	[0.971]	[0.847]	[0.789]
3 days before poll × Average Closeness (std.)	0.2349	0.1758	0.0548	0.0450
	(0.2818)	(0.2853)	(0.1484)	(0.1520)
	[0.422]	[0.559]	[0.693]	[0.736]
2 days before poll × Average Closeness (std.)	0.2553	0.3246	0.0766	0.1012
	(0.2723)	(0.2843)	(0.1265)	(0.1318)
	[0.363]	[0.265]	[0.534]	[0.477]
1 day before poll × Average Closeness (std.)	-0.0561	-0.0400	0.0452	0.0555
	(0.2327)	(0.2419)	(0.0978)	(0.1022)
	[0.812]	[0.870]	[0.720]	[0.665]
1 day after poll × Average Closeness (std.)	0.5833**	0.5689**	0.1924*	0.1920*
	(0.2655)	(0.2702)	(0.1074)	(0.1122)
	[0.030]	[0.039]	[0.058]	[0.069]
2 days after poll × Average Closeness (std.)	0.5225**	0.4984**	0.1851*	0.1815*
	(0.2435)	(0.2455)	(0.0973)	(0.1009)
	[0.051]	[0.060]	[0.057]	[0.066]
3 days after poll × Average Closeness (std.)	0.5375**	0.5857**	0.1658*	0.1823*
	(0.2598)	(0.2697)	(0.0972)	(0.1018)
	[0.049]	[0.040]	[0.086]	[0.070]
4 days after poll × Average Closeness (std.)	0.2945	0.2672	0.1213	0.1237
	(0.3000)	(0.3091)	(0.1089)	(0.1143)
	[0.341]	[0.396]	[0.284]	[0.296]
5 days after poll × Average Closeness (std.)	0.2247	0.2485	0.1097	0.1200
	(0.2396)	(0.2498)	(0.0967)	(0.1016)
	[0.364]	[0.335]	[0.280]	[0.255]
6 days after poll × Average Closeness (std.)	0.1616	0.1809	0.1103	0.1167
	(0.3060)	(0.3111)	(0.1047)	(0.1093)
	[0.606]	[0.565]	[0.313]	[0.303]
7 days after poll × Average Closeness (std.)	0.3594	0.3595	0.1432	0.1497
	(0.3115)	(0.3241)	(0.1102)	(0.1156)
	[0.262]	[0.276]	[0.203]	[0.203]
8 days after poll × Average Closeness (std.)	0.1014	0.1116	0.1024	0.1105
	(0.3490)	(0.3518)	(0.1115)	(0.1158)
	[0.780]	[0.758]	[0.378]	[0.358]
9+ days after poll × Average Closeness (std.)	0.3325	0.2971	0.1361	0.1358
	(0.3516)	(0.3479)	(0.1086)	(0.1132)
	[0.358]	[0.406]	[0.223]	[0.242]
Test of Cumulative Effects After Poll Release *(p-value)*	0.095	0.101	0.084	0.086
	[0.101]	[0.106]	[0.085]	[0.086]
Test of Joint Significance of Leads *(p-value)*	0.793	0.610	0.693	0.399
	[0.841]	[0.695]	[0.788]	[0.444]
Outcome Mean	4.611	4.611	8.764	8.764
R-squared	0.500	0.520	0.239	0.263
Observations	766	766	766	766
Vote Fixed Effects	Y	Y	Y	Y
Voting Day from/to Poll Fixed Effects	Y	Y	Y	Y
Day to Vote Fixed Effects	N	Y	N	Y

Notes: The table presents OLS estimates with two measures of daily turnout in Geneva as dependent variables: Net Turnout (columns 1 and 2) defined as the number of votes cast, in percent of eligible voters net of those voters who cast their vote on earlier days; and Log(Turnout) (columns 3 and 4) defined as the natural logarithm of the number of votes cast. Average Closeness is the mean of the trailing side's vote shares across all pre-election polls for votes of the same election day. The polls' release date is the omitted day of reference. Test of Cumulative Effects After Poll Release reports the p-value of a one-sided F-test that the sum of the coefficients on days after poll × Average Closeness is less or equal to zero. Test of Joint Significance of Leads reports the p-value of an F-test that the coefficients on before poll × Average Closeness are all equal to zero. P-values of analogous Wald tests based on the wild cluster bootstrap in brackets. The sample is an unbalanced panel of 52 votes held between 2001 and 2019 observed from 5 voting days before to the last voting day after poll release. Standard errors in parentheses, clustered at the vote level: $^*p < 0.1$,$^{**} p < 0.05$,$^{***} p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

TABLE C.5: DAILY TURNOUT BEFORE AND AFTER POLL RELEASE DEPENDING ON AVERAGE POLL CLOSENESS: BINS OF TWO DAYS

	Net Turnout (%)		Log(Turnout)	
	(1)	(2)	(3)	(4)
4-5 days before poll × Average Closeness (std.)	0.1147	0.0642	-0.0196	-0.0381
	(0.2726)	(0.2788)	(0.1420)	(0.1474)
	[0.685]	[0.825]	[0.906]	[0.816]
2-3 days before poll × Average Closeness (std.)	0.2733	0.2714	0.0432	0.0458
	(0.2049)	(0.2068)	(0.1069)	(0.1098)
	[0.189]	[0.196]	[0.778]	[0.777]
1-2 days after poll × Average Closeness (std.)	0.5810***	0.5537***	0.1661**	0.1590**
	(0.1955)	(0.1936)	(0.0624)	(0.0636)
	[0.002]	[0.003]	[0.004]	[0.006]
3-4 days after poll × Average Closeness (std.)	0.4441**	0.4462**	0.1210**	0.1252**
	(0.1693)	(0.1710)	(0.0563)	(0.0591)
	[0.016]	[0.018]	[0.038]	[0.041]
5-6 days after poll × Average Closeness (std.)	0.2212	0.2350	0.0874	0.0907
	(0.1864)	(0.1886)	(0.0573)	(0.0597)
	[0.251]	[0.223]	[0.133]	[0.131]
7-8 days after poll × Average Closeness (std.)	0.2584	0.2559	0.1002	0.1024
	(0.2354)	(0.2396)	(0.0680)	(0.0711)
	[0.294]	[0.300]	[0.148]	[0.156]
9+ days after poll × Average Closeness (std.)	0.3606	0.3177	0.1135	0.1083
	(0.2862)	(0.2741)	(0.0688)	(0.0707)
	[0.219]	[0.261]	[0.105]	[0.130]
Test of Cumulative Effects After Poll Release *(p-value)*	*0.028*	*0.032*	*0.024*	*0.030*
	[0.027]	*[0.031]*	*[0.022]*	*[0.027]*
Test of Joint Significance of Leads *(p-value)*	*0.371*	*0.342*	*0.736*	*0.660*
	[0.403]	*[0.373]*	*[0.801]*	*[0.732]*
Outcome Mean	4.611	4.611	8.764	8.764
R-squared	0.499	0.519	0.238	0.261
Observations	766	766	766	766
Vote Fixed Effects	Y	Y	Y	Y
Voting Day from/to Poll Fixed Effects	Y	Y	Y	Y
Day to Vote Fixed Effects	N	Y	N	Y

Notes: The table presents OLS estimates with two measures of daily turnout in Geneva as dependent variables: Net Turnout (columns 1 and 2) defined as the number of votes cast, in percent of eligible voters net of those voters who cast their vote on earlier days; and Log(Turnout) (columns 3 and 4) defined as the natural logarithm of the number of votes cast. Average Closeness is the mean of the trailing side's vote shares across all pre-election polls for votes of the same election day, whose release date (and the preceding day) are the omitted days of reference. Test of Cumulative Effects After Poll Release reports the p-value of a one-sided F-test that the sum of the coefficients on days after poll × Average Closeness is less or equal to zero. Test of Joint Significance of Leads reports the p-value of an F-test that the coefficients on before poll × Average Closeness are all equal to zero. P-values of analogous Wald tests based on the wild cluster bootstrap in brackets. The sample is an unbalanced panel of 52 votes held between 2001 and 2019 observed from 5 voting days before to the last voting day after poll release. Standard errors in parentheses, clustered at the vote level: $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

Table C.6: Newspaper Coverage, Closeness and Cantonal Voter Turnout: Readership-weighted Poll Mentions

	Turnout (%)		Advertisements (std.)		Importance (std.)	
PANEL A: POLL MENTIONS IN CANTONAL NEWSPAPERS	(1)	(2)	(3)	(4)	(5)	(6)
Readership-weighted Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.5567**	0.5744***	0.0217	0.0214	0.0020	-0.0047
	(0.2104)	(0.2089)	(0.0285)	(0.0262)	(0.0462)	(0.0465)
	[0.018]	[0.010]	[0.462]	[0.437]	[0.967]	[0.925]
Readership-weighted Poll Mentions (std.)	0.1510	0.8465*	0.1340***	0.0954**	0.0608	0.0234
	(0.1688)	(0.4544)	(0.0408)	(0.0432)	(0.0557)	(0.0839)
	[0.369]	[0.087]	[0.000]	[0.038]	[0.295]	[0.788]
R-squared	0.821	0.823	0.866	0.866	0.329	0.330
PANEL B: INCIDENTAL POLL MENTIONS						
Readership-weighted Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.2993	0.3881**	0.0295	0.0401*	0.0260	0.0086
	(0.1860)	(0.1685)	(0.0294)	(0.0236)	(0.0335)	(0.0493)
	[0.126]	[0.034]	[0.344]	[0.129]	[0.446]	[0.865]
Readership-weighted Poll Mentions (std.)	-0.2368	1.3535*	0.1904***	0.2078**	0.1145	0.0876
	(0.3455)	(0.7630)	(0.0624)	(0.0943)	(0.0685)	(0.1462)
	[0.510]	[0.082]	[0.003]	[0.060]	[0.096]	[0.581]
R-squared	0.820	0.822	0.868	0.868	0.331	0.331
PANEL C: INCIDENTAL POLL MENTIONS (*<15% Market Share*)						
Readership-weighted Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.3530**	0.4571***	0.0228	0.0298	0.0262	0.0087
	(0.1610)	(0.1436)	(0.0247)	(0.0190)	(0.0336)	(0.0462)
	[0.031]	[0.002]	[0.398]	[0.169]	[0.441]	[0.852]
Readership-weighted Poll Mentions (std.)	-0.1772	1.8231**	0.2021***	0.2177**	0.0729	0.0780
	(0.3239)	(0.7542)	(0.0653)	(0.0819)	(0.0673)	(0.1352)
	[0.617]	[0.025]	[0.003]	[0.032]	[0.294]	[0.600]
R-squared	0.820	0.823	0.868	0.868	0.329	0.330
Outcome Mean	47.273	47.273	73.927	73.927	6.115	6.115
Outcome Std. Dev.	8.910	8.910	68.180	68.180	1.132	1.132
Observations	962	962	962	962	957	957
German × Poll Mentions (std.)	N	Y	N	Y	N	Y
German × *Ex Ante* Closeness (std.)	N	Y	N	Y	N	Y

Notes: This table replicates Table 4 with Readership-weighted Poll Mentions, i.e., cantonal newspapers' poll mentions multiplied with the the cantonal share of peolple reading the newspaper in which the poll is mentioned. Each panel presents results from six OLS regressions using three dependent variables: cantonal turnout (Columns 1 and 2), the standardized number of newspaper advertisements in cantonal newspapers (Columns 3 and 4), and standardized importance, as rated by a canton's average VOX survey responses (Columns 5 and 6). In Panel A, Readership-weighted Poll Mentions (std.) refer to the standardized readership-weighted count of poll mentions in cantonal newspapers, i.e., newspapers read by at least 10% of a canton's inhabitants. In Panel B, only Incidental Poll Mentions are considered, i.e., mentions in cantonal newspapers whose main market lies in another canton. Panel C further restricts Incidental Poll Mentions to mentions in newspapers whose cantonal readership accounts for less than 15% of the newspaper's total readership. *Ex Ante* Closeness is the losing side's vote share at the federal level, as predicted by the pre-election poll. All specifications include canton and vote fixed effects. Columns 2, 4, and 6 additionally control for a dummy equal to one for German-speaking cantons, interacted with both *Ex Ante* Closeness (std.) and Readership-weighted Poll Mentions (std.). The sample is a panel of 26 cantons, observed in 37 votes held between 2000 and 2014. Standard errors clustered at the vote level in parentheses: $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

TABLE C.7: NEWSPAPER COVERAGE, CLOSENESS AND CANTONAL VOTER TURNOUT: IV ESTIMATES

	First Stage		Second Stage
	(1)	(2)	(3)
	Poll Mentions (std.)	Poll Mentions (std.) × *Ex Ante* Closeness (std.)	Turnout
Incidental Poll Mentions (std.) × *Ex Ante* Closeness (std.)	0.0231	0.3880***	
	(0.0392)	(0.0433)	
	[0.610]	[0.000]	
Incidental Poll Mentions (std.)	0.7351***	0.1020*	
	(0.0397)	(0.0578)	
	[0.000]	[0.139]	
Poll Mentions (std.) × *Ex Ante* Closeness (std.)			0.9789**
			(0.4790)
			[0.072]
Poll Mentions (std.)			-0.2472
			(0.3788)
			[0.530]
R-squared	0.866	0.699	0.819
Observations	962	962	962
Test of Joint Significance of Excluded Instruments *(p-value)*	< 0.0001	< 0.0001	
	[< 0.0001]	[< 0.0001]	
Test β (Incidental Poll Mentions) ≥ 1 *(p-value)*	< 0.0001		
	[< 0.0001]		

Notes: The table presents two-stage least squares estimates using Incidental Poll Mentions as an instrument for Poll Mentions in cantonal newspapers. Columns 1 and 2 show the two first-stage estimates. Column 3 shows estimates of the second stage. Test of Joint Significance of Excluded Instruments reports the p-value of an F-test that all excluded instruments are equal to zero. Test β (Incidental Poll Mentions) reports the p-value of a one-tailed F-test that the effect of Incidental Poll Mentions on endogenous Poll Mentions is greater than or equal to one. P-values of analogous Wald tests based on the wild cluster bootstrap in brackets. All specifications include canton and vote fixed effects. The sample is a balanced panel of 26 cantons observed in 37 votes held between 2000 and 2014. Standard errors in parentheses, clustered at the vote level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. P-values obtained from the wild cluster bootstrap in brackets.

TABLE C.8: HETEROGENEOUS EFFECTS OF ELECTION CLOSENESS AND POLLS DEPENDING ON MUNICIPALITY POLITICAL HOMOGENEITY AND NATIONAL LEVEL TURNOUT AS PROXY FOR SALIENCE

	(1)	(2)	(3)	(4)	(5)	(6)
Ex Post Closeness (std.) × Homogeneity (std.)	-0.5674***	-0.5659***			-0.6128***	-0.6097***
	(0.1900)	(0.1904)			(0.1885)	(0.1891)
Ex Post Closeness (std.) × Homogeneity (std.) × Poll Era	0.5874**	0.5822**			0.6123**	0.6111**
	(0.2631)	(0.2630)			(0.2785)	(0.2786)
National Turnout (std.) × Homogeneity (std.)			0.1772	0.1687	0.2580**	0.2491*
			(0.1219)	(0.1222)	(0.1270)	(0.1273)
National Turnout (std.) × Homogeneity (std.) × Poll Era			-0.1084	-0.1177	-0.1890	-0.1986
			(0.2118)	(0.2119)	(0.2370)	(0.2374)
Homogeneity (std.) × Poll Era	2.3689***	2.3936***	2.3255***	2.3551***	2.2953***	2.3252***
	(0.2319)	(0.2319)	(0.2476)	(0.2478)	(0.2390)	(0.2395)
Test for Convergence of Closeness Gradients *(p-value)*	0.913	0.928			0.998	0.995
Test for Convergence of Salience Gradients *(p-value)*			0.692	0.769	0.731	0.802
Outcome Mean	44.001	44.001	44.001	44.001	44.001	44.001
R-squared	0.700	0.700	0.699	0.700	0.700	0.700
Observations	250240	250240	250240	250240	250240	250240
Municipality Fixed Effects	Y	Y	Y	Y	Y	Y
Vote Fixed Effects	Y	Y	Y	Y	Y	Y
Electorate Size	N	Y	N	Y	N	Y

Notes: Each column presents results from an OLS regression with municipality-level voter turnout as the dependent variable. Political Homogeneity is a municipalitiy's historical tendency to produce voting results distant from 50-50, as measured by the average municipal-level margin of majority across all votes held in the era before pre-election polls. Poll Era is a dummy equal to 1 for 69 votes held after the introduction of polls in 1998. National Turnout is the Swiss national level turnout rate for the vote. Test for Convergence of Closeness Gradients reports the p-value of an F-test that the sum of the coefficients on *Ex Post* Closeness (std.) × Homogeneity (std.) and *Ex Post* Closeness (std.) × Homogeneity (std.) × Poll Era (std.) equals 0. Test for Convergence of Salience Gradients reports the p-value of an F-test that the sum of the coefficients on National Turnout (std.) × Homogeneity (std.) and National Turnout (std.) × Homogeneity (std.) × Poll Era (std.) equals 0. Columns 2, 4 and 6 control for a triple interaction of Poll Era and the standardized average municipality electorate size with either *Ex Post* Closeness (Column 2) or National Turnout (Column 4) or both (Column 6), as well as lower order terms. The sample is a balanced panel of 2176 municipalities observed in 115 votes held from 1981 to 2019. Standard errors clustered at the vote level in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE C.9: ASYMMETRIC EFFECTS OF *Ex Ante* CLOSENESS ON TURNOUT AND VOTE SHARES: TRIMMED SAMPLE

	(1) Turnout	(2) Vote Share
Ex Ante Closeness (std.) × Trailing Side's Estimated Support	0.0126*	0.0631***
	(0.0074)	(0.0212)
Trailing Side's Estimated Support	0.0118	0.3903***
	(0.0082)	(0.0254)
Outcome Mean	46.913	43.132
R-squared	0.859	0.876
Observations	119394	119394

Notes: The table presents estimates from OLS regressions with municipality level voter turnout (column 1) and vote share for the trailing side (column 2) as dependent variables. The trailing side's Vote Share is defined as a municipality's share of votes cast in line with the trailing side in the pre-election poll, i.e., with the minority of poll respondents. Trailing Side's Estimated Support is a municipality's predetermined pre-disposition to vote for the side trailing in the pre-election poll, measured as a municipality's vote share, in percent of votes cast, in the preceding national election for parties whose voting recommendations are in line with the minority of poll respondents. *Ex Ante* Closeness is the trailing side's vote share in the pre-election poll. All specifications include municipality and canton × vote fixed effects. The sample is an unbalanced panel of 2176 municipalities observed in 57 votes with a pre-election poll held from 1998 to 2019, excluding all observations with 0% or 100% support for the trailing side. Standard errors clustered at the vote level in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.