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Does candidates' media exposure affect vote shares? Evidence from Pope breaking news ☆

Giulia Caprini

Nuffield College and Oxford University, United Kingdom

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ABSTRACT

I study the impact of politicians' media exposure in campaign on their vote share, exploiting an exogenous change in coverage during the Italian 2013 electoral race. Right before the election, the Pope Benedict XVI suddenly resigned and broadcast coverage of politics markedly dropped. Only five days of lower visibility of the right-wing leader and TV tycoon Berlusconi (-26 percentage points) caused a 2 percentage points dip in his vote share, and lead to his defeat by 0.4 percentage points. Following the TV coverage disruption, a part of Berlusconi's electorate resorted to Internet for political news, and later favored a new party with Internet-centred propaganda.

1. Introduction

A candidate's visibility on the media is widely considered a crucial element of a successful electoral campaign. To date, political actors around the world keep striving for frequent and ample coverage during the race, particularly on TV.[1] In line with this general consensus, several democracies strictly regulate candidates' airtime during campaign periods, on the grounds of creating a level playing field for parties (Glavaš, 2017; Holtz-Bacha and Kaid, 2014).[2] However, while candidates' media coverage during the race and polls standing are often positively correlated, there is little empirical evidence on whether a causal relation exists, and if so, how decisive it is for electoral outcomes. The main empirical challenge lies in finding a convincing identification strategy. In fact, media coverage and vote shares will naturally be correlated even if visibility on television did not affect votes, as both depend on the candidate's popularity.

This paper studies the impact of candidates' media exposure on vote by exploiting exogenous variation in broadcast coverage during an electoral race. On February 11, 2013, during the last weeks of the campaign for the Italian general election, the Pope Benedict XVI announced his intention to renounce the papacy. The event was unexpected, given its rarity (it has occurred only 5 times in history, the last in 1415). After the Pope's announcement, Italian TVs immediately shifted to a blanket coverage of related content, driving attention away from the upcoming elections.

In this context, I identify the impact of TV coverage on voters' support for candidates by instrumenting coverage with the presence of the "Pope news", and measuring voters' support through both voting intentions and a stock-market based prediction of vote shares. I find that for the right-wing leader Silvio Berlusconi, whose

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E-mail address: giulia.caprini@economics.ox.ac.uk

[1] This is apparent in countries where election runners are allowed to purchase broadcast time, to which they devote large shares of their campaign budget (Holtz-Bacha and Kaid, 2014).

[2] The list includes Argentina, Canada, France, Germany, Italy, Latvia, Lithuania, Mexico, Poland, Russia, Spain, South Korea, the Netherlands, UK, and the US. See Holtz-Bacha and Kaid (2014) for an overview of the legislative models implemented across countries.

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communication strategy had historically been based on TV, the visibility decline caused a statistically significant loss in his voters' support. In particular, his dip in TV coverage (-26 percentage points) translated into a 2 percentage points loss of vote share, and he was defeated by 0.4 percentage points.

Using survey data, I then study the mechanisms underlying the strong impact of TV on vote. I find that the disruption of politics coverage on TV affected voters' source of political information: voters who had supported Berlusconi in the previous election significantly increased their reliance on Internet as main outlet for political news during the coverage shock (+14.8 percentage points). Those voters were significantly less likely to then renew their support for Berlusconi's party (-18 p.p.) as compared to voters who had supported him in the previous election but did not change their main political information outlet. In fact, voters relying on Internet were then significantly more likely to favor the party with an Internet-centred communication strategy (+15 p.p.)[3].

The validity of the instrumental variable analysis rests on the assumption that the Pope's announcement did not directly impact voting preferences and exerted an effect only via the disruption of TV coverage. I study three dynamics that would potentially lead to a violation of the exogeneity assumption: whether the Pope news directly affected voters' religiosity, their intention to go to vote, or their general interest in politics. In this sense reassuringly, I find no evidence of either dynamic.

The remainder of this paper proceeds as follows. Section II describes earlier work and discusses the contributions of this paper. Section III introduces the reader to the context of the 2013 Italian election. Section IV presents the data. Section V outlines the main results. Section VI presents robustness tests and an analysis of underlying mechanisms. Section VII discusses the external validity of the results, and Section VIII concludes.

2. Related literature

The results in this paper contribute to the literature on the effects of media on the democratic process in three ways.

First, this paper finds a significant causal impact of TV on vote after a short span of coverage, thereby showing that candidates' media exposure during campaign significantly influences electoral outcomes and, importantly, that just few days suffice for this effect to materialize. Several papers document the influence of media coverage on voting preferences in different democratic contexts (DellaVigna and Kaplan, 2007; Adena et al., 2015 Barone et al., 2015;Miner, 2015; Durante et al., 2019). However, those studies consider and identify the effect of very long exposures to the media (often many years) – such as those induced by the introduction of a new outlet. DellaVigna and Kaplan (2007) for instance isolate a positive effect of Fox News on Republicans' vote share by exploiting the staggered entry of the broadcaster in US cable markets over four years.[4] Conversely, my paper exploits a very short-lived variation (5 days) in TV coverage, identifying a quantitatively similar effect of the media on vote. This evidence has important and distinct implications for policy, and it is relevant to the regulation of politicians' broadcast airtime in electoral races.

Second, by studying a temporary mute of politics coverage on a media, this paper addresses the key empirical question of how political outcomes would differ in the absence of media coverage. As Prat and Strömberg (2013) remark, this question has received large attention in the literature, but the existing empirical evidence mostly consists of cross-country comparisons and does not offer conclusive evidence on causal effects. An exception is the study by Snyder and Strömberg (2010), who use a naturally occurring variation in US newspapers' coverage to identify the effect of the absence of press coverage on a number of political outcomes; however, these authors do not explore the impact of coverage on voting behavior. The literature often frames the muting of media coverage as a negative shock to media pluralism, namely a decrease in the number of competing media voices (Strömberg, 2015). In these studies, media pluralism is seen to affect political coverage and, through the latter, political outcomes. My paper highlights another chain of effects: I find suggestive evidence that even in a context where media pluralism is held constant (as in my study), coverage patterns on a given media can shape voters' consumption of competing media, as undecided voters search for relevant coverage (for instance, lower politics coverage on TV induces higher reliance on Internet for political news). The reliance on multiple information sources then affects their voting choices. Importantly, these results imply that in a democratic context media pluralism *per se* doesn't guarantee a positive welfare effect of media coverage; what matters to such an effect is that media pluralism translates into voters' reliance on multiple sources. As a paradox, in fact, more political coverage in a given outlet could potentially inhibit voters' search for information elsewhere, amplifying the attention shares of that media (Prat, 2018). While this instance would generate no concerns from a competition policy viewpoint, it would be dangerous from a capture viewpoint.

Third, this paper contributes to the literature on the mechanisms of voters' persuasion through the media. In this domain, there are two different viewpoints as to why media matters (Strömberg, 2015). In most economics studies, media exert an effect by providing information to predominately rational voters; vice versa, in the communication literature media is seen to affect voters mostly through propaganda and by exploiting audiences' cognitive mistakes. The present paper contributes evidence congruent with both narratives. On the one hand, my results are in line with with "agenda setting", "priming", and "framing" theories of media effects, in which media matters by exploiting voters' cognitive mistakes. I find multiple hints of this dynamic, for instance that the coverage shock induced higher willingness to abstain from vote among former Berlusconi supporters who relied on TV as main information source throughout the entire campaign. In general, individuals' voting behavior appears to respond to non-politically informative events, and it thus fulfils the predictions of memory-based models: voting effects materialize not through the information provided on an issue (or at least not completely through that) but by the fact that the issue has received coverage and attention (Prat and Strömberg, 2013; Puglisi and Snyder, 647–667).[5] On the other hand, my findings suggest that voters exposed to a different coverage via the Internet respond by updating their political views and increasing political participation.[6] This pattern is coherent with the "rational learning" theories of media effects, whereby media matters by informing voters.[7]

The existence of different behavioral responses is once again relevant to evaluate the welfare impact of media coverage. In fact, if a sufficiently high share of individuals reacts to non informative coverage, media can crowd-out information derived from personal

[3] This is in line with findings by Campante et al. (2017), who find a positive causal effect of broadband Internet access on the electoral performance of the "Five Star Movement" *Movimento Cinque Stelle*, M5S.

[4] Between October 1996 and November 2000.

[5] Namely, when they see less politics on TV they become more likely to abstain from vote. Notably, this behavior is not explained by a loss of interest in politics, which stays instead constant over time.

[6] This result parallels what shown by Gentzkow et al. (2011), namely that access to newspapers had a positive effect on political participation in the US in the first quarter of the 20th Century.

[7] In line with the predictions of rational-Bayesian voting models (that larger persuasive effects materialize for voters with weaker priors), I find the persuasive effect of Internet to be lower for individuals who watched TV very rarely or very frequently, and higher for intermediate-frequency TV viewers.

experience with a consistent amount of politically-irrelevant details, making voters worse-off. (Strömberg, 2015).

3. The 2013 Italian election

The campaign for the 2013 Italian general elections started with the selection of party leaders in late fall of 2012 and culminated with the elections on February 23, 2013. By the end of 2012, six parties predominated in Italian political debate. The largest four were the Democratic Party (*Partito Democratico*, PD), the People of Freedom (*Popolo Della Libertà*, PDL), the Five Star Movement (*Movimento Cinque Stelle*, M5S), and the Civic Choice (*Scelta Civica*, SC), respectively guided by Pierluigi Bersani, Silvio Berlusconi, Beppe Grillo, and the then Prime Minister Mario Monti.[8] The latter had been leading a technical government since November 2011, when Berlusconi had resigned from office in the ramping up of Italy's sovereign debt crisis. At the onset of the 2013 campaign, Berlusconi was still under criminal investigation for alleged sexual relationships with minors and abuse of office, and his request to postpone the trial to after the elections had been rejected. Given these issues, despite his victory in the previous elections (in 2008) many had considered his candidacy doomed from the onset of the campaign. Yet, as in the past, he was able to turn all TV coverage to his advantage, and ended up losing the 2013 race by only a small margin. A large literature documents Berlusconi's TV-centered communication strategy consolidated over more than 20 years of political career (Mazzoleni, 1991; Livolsi and Volli, 1995; Della Porta and Vannucci, 1995; Mazzoleni and Sfardini, 2009; Campus, 2010; Bobba et al., 2013; Bobba and Seddone, 2014).[9] Thanks to this strategy, Berlusconi achieved an unrivaled immediacy with his electorate through TV. In 2013, just during the first 20 days of the campaign (including non-working days), he participated to 54 TV shows, more than two per day;[10] in this time frame his speech-time amounted to 28 h, 56 min, and 32 s.[11] As a term of comparison, the former prime minister Monti had spoken for 20 h and 13 min. Berlusconi was certainly planning on appearing extensively on TV for the entire duration of the campaign. However, he could not foresee that on the morning of February 11, 2013, Pope Joseph Ratzinger would declare his decision to renounce the papacy.

The "Pope breaking news" was first spread on media outlets at 11:46 a.m. by the Italian agency Ansa, and then rapidly expanded worldwide. In Italy, the Pope's decision had an immediate, wide resonance: politics, chronicle, economics and sport were assigned a back seat, as all news programs focused on the Pope news.

4. Data

4.1. Data on TV coverage

I use coverage data from the TV content analysis of the 2013 campaign, collected jointly by the Italian National Election Study (Itanes) and the University of Pavia. This dataset contains detailed information on the main Italian TV programs, chosen on the basis of typology, broadcaster, and audience share,[12] and it encompasses all instalments aired between December 1, 2012 and March 3, 2013. The data include the first 12 actors that took part in each "TV unit," the way they are presented, and their characteristics. A TV unit is either one of the headlines in TV news programs, one of the first 3 news reports, or one of the main themes covered in talk shows and "pop" programs. My measure of coverage, not limited to newscasts, encompasses non-politically themed programs because they account for a relevant part of politicians' TV appearances during the campaign (Legnante et al., 2013; Bianchi et al., 2014). In the TV units of Itanes dataset, an individual is considered present in the unit if he was either mentioned twice, quoted, or interviewed. The TV units were then aggregated to create a measure of daily visibility for each of the main actors. Fig. 1 shows the pattern of TV appearances in a window of 20 days around the date of the event. When the Pope news broke, the attention of the media was suddenly diverted from politics. Vice versa, the Pope's visibility naturally displays an inverted pattern. The coverage disruption lasted until February 16: this date coincided with the end of a popular music contest (the "Sanremo festival"[13]) aired every year on national broadcasts; as the show attracts substantial media attention, its conclusion aided the quick reinstatement of politics coverage apparent in Fig. 1.

I perform a battery of Wald-tests for the existence of structural breaks in the series of TV coverage (appendix Table A.1). When I impute the date of the Pope news – February 11 – as break-date, all the tests reject the null hypothesis of no-break.

Table 1 provides a summary of the TV coverage of different actors, during the three windows of interest: (1) before the Pope news, (2) during the TV coverage disruption, and (3) after the coverage disruption up until pre-election day. For each actor, I test the difference in mean-coverage between these periods, and find that the Pope news significantly disrupted coverage of Berlusconi, Monti, and Bersani. Notice that Grillo's TV coverage decreases only marginally after the Pope news (from 7 to 4 percent), due to the fact that the Five Star Movement's communication strategy was primarily based on the Internet and direct contact with people. After the TV shock ended, and as the elections approached, the coverage of Berlusconi and Bersani increased again significantly. Grillo's TV visibility also grew due to indirect references by other party leaders in final TV confrontations.

4.2. Data on electoral support

Electoral studies commonly measure voters' support towards candidates using either opinion polls or prediction markets. The first measure is more common, as voting intentions are collected for elections in virtually all democracies around the world, and thus guarantee availability and comparability of data. Nevertheless, some authors maintain that opinions expressed in the polls may not translate directly into the Election Day vote, whereas market prices reflect forecasts of the expected vote, can quickly incorporate new information and exhibit lower statistical errors (Snowberg et al., 2007; Campbell, 2008). As weighting the merits of the existing debate is beyond the scope of this work, in this paper I rely on both methodologies to construct two independent measures of electoral support: a stock market-based prediction of vote shares, and a measure of voting intentions derived from survey data. The following subsections illustrate the construction of the two alternatives and provide a visual comparison. As the reader can then verify in Section IV, the analysis on either variant produces quantitatively similar results, a concordance reassuring about the robustness of the findings.

[8] Beppe Grillo was not the party's office runner, but rather the main mediatic figure of the party. Other smaller factions included Act to Stop the Decline (*Fare per fermare il declino*) and Civil Revolution (*Rivoluzione Civile*), respectively led by Oscar Giannino and Antonio Ingroia.

[9] A more thorough discussion in Appendix Section A.4.

[10] *La Stampa*, January 15, 2013.

[11] Auditel data.

[12] The list of the 13 programs is provided in the appendix.

[13] The Sanremo Music Festival is the most popular Italian song contest and the longest-running annual TV music competition. Since its first edition in 1951, the festival has always been broadcast live by the Italian national TV.

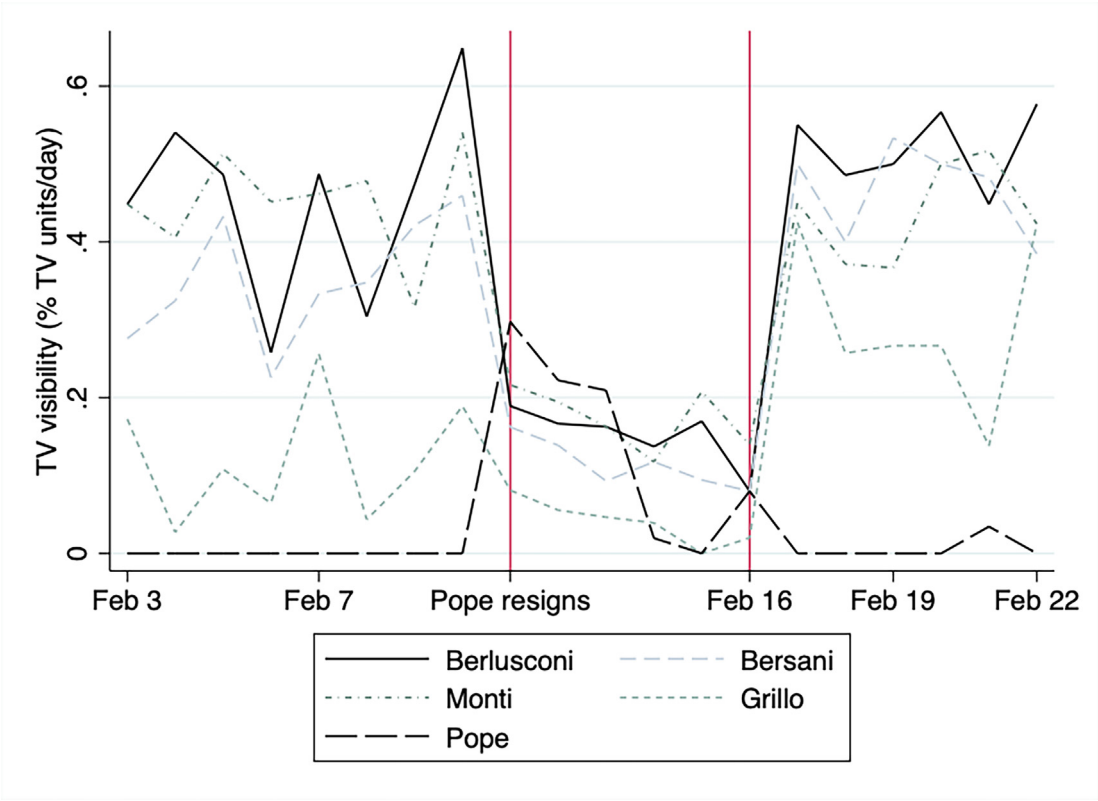

Fig. 1. Candidates and Pope's Coverage on TV During the Campaign. The figure displays the time series of TV coverage for each of the four main candidates and for the Pope. TV coverage is measured as the percentage of TV units in which an individual is present, each day. The two vertical lines mark the date of the Pope's announcement (Feb. 11, 2013) and Feb. 16, 2013. Data: TV monitoring of 2013 campaign.

Table 1
Differences in TV coverage of politicians during campaign.

	(1)	(2)	(3)	(4)	(5)
Coverage of:	Berlusconi	Monti	Bersani	Grillo	Pope
(A) Dec. 1 - Feb. 11:	0.345	0.389	0.234	0.070	0.005
	(0.136)	(0.137)	(0.120)	(0.074)	(0.020)
(B) Feb. 11–16:	0.151	0.173	0.114	0.040	0.138
(No coverage)	(0.038)	(0.039)	(0.031)	(0.028)	(0.121)
(C) Feb. 16–22:	0.332	0.242	0.348	0.316	0.051
	(0.206)	(0.192)	(0.167)	(0.162)	(0.083)
Difference (B)-(A):	−0.195	−0.216	−0.119	−0.029	0.132
	(0.021)	(0.022)	(0.018)	(0.013)	(0.046)
Difference (C)-(B):	0.181	0.069	0.233	0.276	−0.086
	(0.086)	(0.052)	(0.045)	(0.044)	(0.052)

Notes: The table lists the results of two-tailed tests for difference in means of TV coverage. Columns (1) to (5) indicate the person whose TV coverage is being tested. Mean coverage is computed over three time-windows: from the beginning of the TV campaign to before the Pope news (A), during the *No-coverage* period (B), and from the end of the TV coverage disruption to the election (C). The two rows at the bottom of the table display the tests for difference in means. Heteroskedasticity-robust standard errors in parenthesis. Data source: TV monitoring of 2013 campaign.

4.3. Voting intentions

I measure voting intention through the Rolling Cross Section (RCS) dataset from the Italian National Election Study (Itanes)[14]. The dataset consists of a series of electoral surveys conducted on a representative sample of the Italian population, before and after national parliamentary elections. I focus on the 2013 wave, which contains 8,723 surveyed individuals before the elections and 3,008 in the follow-up, and includes questions on voting choices in the 2008 and 2013 elections, general political preferences, media consumption, and religious participation. The pre-electoral wave of the 2013 RCS covers all days between January 5 and February 23 (one day before the elections), and was published roughly 1 year after the election.[15]

To summarize the changes in leaders' favor throughout the campaign using the same time frames as in Table 1, I regress the

[14] In Italy, electoral opinion polls must published their data on the website: www.sondaggipoliticoelettorali.it (Article 8.1, Law 28, 2000).

[15] The Italian law prohibits the diffusion of polls during the 15 days prior to an election. Differently from opinion polls disseminated during the campaign, Itanes data were to be published 12 months after the election, and could therefore cover the entire period of the campaign. The surveys were realized using the CAWI method (*Computer Assisted Web Interviewing*). On average, 203 individuals were surveyed each day. The post-electoral follow-up survey took place between March 27 and April 8, 2013, and participants were randomly selected with stratification by gender, age, residence, and political interest and orientation. The redemption rate for the follow-up sample was 91%.

leaders' approval rates on a time trend and a dummy for the *No coverage* period, namely the time window between the Pope's announcement and the end of the Sanremo music festival. The OLS estimates are presented in Table 2. Column (1) shows that while Berlusconi gained popularity over time, he lost 2.14 percentage points of support during the TV coverage shock; with a standard error of 0.792, the estimate is statistically significant at 1% level. The popularity of other leaders, instead, was not significantly affected (columns (2), (3), and (4)). In terms of the distance between Berlusconi's and Bersani's popularity, the spread narrowed during the campaign period, but it significantly increased by just over 2.5 percentage points during the *No coverage* window (Column(5)). The table shows that the TV diversion from politics affected Berlusconi more negatively than his rivals. This finding is coherent with the large literature documenting and explaining Berlusconi's unrivaled immediacy with his electorate through TV (Mazzoleni, 1991; Livolsi and Volli, 1995; Della Porta and Vannucci, 1995; Mazzoleni and Sfardini, 2009; Campus, 2010; Bobba et al., 2013; Bobba and Seddone, 2014).[16]

4.4. Predicted vote share

Many studies measure electoral support through electoral prediction markets, widely adopted because they provide a good (and continuous) measure of electoral support (Wolfers and Zitzewitz, 2006; Snowberg et al., 2011).[17] Another approach in this same spirit is to infer investors' beliefs on elections by studying fluctuations in regular financial markets. In fact, as politicians' platforms are capitalized in equity prices of politically-sensitive stocks and indexes, these can be informative of electoral trends (Knight, 2006). Leblang and Mukherjee (2005), for instance, find that in the U.S. and British equity markets the volume and mean price of stocks traded in campaign was an accurate proxy of the left-wing party's probability to win, as investors expect higher inflation under left-wing administrations. Already Gemmill (1992) examined the behavior of stock and options markets in London during the 1987 election, and found a close relationship between opinion polls and the FTSE 100 Index of share prices. More recently, Mattozzi (2008) used the stock market to measure the electoral support of US office-runners throughout their campaign. Using the same approach as in this literature, Borsari, a publishing company specialised in financial analysis, used stock market fluctuations to measure the electoral support for candidates in Italian elections from 2004 to 2014. In 2013, the company combined aggregate market indexes (such as the BTP-BUND 10-year spread, Dax30, FTSE-Mib, US 30-year T-bond, and the exchange rate Euro-US Dollar) to predict the vote shares in the Chamber of Deputies election, obtaining a more accurate forecast than that of pollsters in the same period. Since in 2013 none of the existing prediction markets traded futures on the Italian elections, I use Borsari's index as a market-based counterpart to the survey data introduced in previous subsection.[18] During the 2013 campaign, Borsari published daily reports on its website displaying the vote-share distance between Berlusconi's right-wing coalition, the PDL, and the left-wing coalition, led by the PD.[19] Access to those reports was reserved to website subscribers only, therefore Borsari's index could be published uninterruptedly every day until the elections without fear of breaking the pre-ballot silence.[20] I name the time series obtained by scraping Borsari's reports "Predicted Vote Share" (hereinafter, PVS): at every intraday period before the election, it indicates the vote share difference that would have existed between the PDL and the PD coalitions if the ballot were to take place at that time.[21] Fig. 2 compares the PVS to the opinion polls released on public media during the campaign. Borsari's prediction, as above mentioned, was markedly more accurate:[22] the election culminated in a PDL-PD difference of −0.4 percentage points (marked in the Figure with a cross) and the PVS predicted a −1 percentage point margin; the polls, in comparison, predicted an average margin of −6.2 percentage points. Following the structure of the previous subsection, I repeat a test for structural breaks on the PVS series; the test rejects at 99% confidence level the null hypothesis of no structural break. Fig. 3 shows the jump in the series, in correspondence with the exact moment (month, day, and hour) of the Pope's announcement. Upon the arrival of the unexpected Pope news, the PVS immediately attributed to Berlusconi a penalty of about 1.2 percentage points relative to the left-wing coalition. This jump in the PVS indicates that markets anticipated what Itanes' survey data show in Table 2: namely that the Pope news would be bad news for Berlusconi, less so for his rivals. Moreover, the PVS maintained a negative trend for the entire duration of the TV coverage blackout, in marked contrast with periods before and after (Fig. 4). This suggests the markets ascribed a vote share loss for Berlusconi because of the inevitably lower TV exposure, a mechanism I formally test in Section VI. To compare the performance of the two measures of electoral support, I plot Itanes' RCS voting intention data and the PVS. Since the latter captures the distance between the PDL and the PD, I first convert RCS popularity data to a similar format, subtracting Bersani's popularity score from that of Berlusconi, then set a polynomial fitting this new RCS index against the PVS (Fig. 5).[23] The series exhibit similar patterns, suggesting that the variation in the popularity of left- and right-wing coalitions is closely related to changes in leaders' appeal.

5. Empirical strategy

The relationship of interest for the present study is summarized by the following equation:

$$Y_t = \alpha + \beta C_t + \gamma T + \epsilon_t \tag{1}$$

where Y_t and C_t are respectively the vote share and the TV coverage of a candidate at time t, and T is a linear time trend. The coefficient of interest is β, the effect of a candidate's TV coverage on her vote share.

In this section I estimate the model in Eq. (1) to assess the impact of TV coverage on the vote share of Berlusconi. A comparison of Figs. 1 and 4 in the previous section highlights the strong positive correlation between Berlusconi's TV coverage and his vote share, yet there are several reasons not to interpret this relationship as causal. First, the popularity of a candidate can determine his visibility on TV. Second, in addition to this reverse causality issue, it is probable that several unobserved factors affecting a candidate's vote share are also correlated with TV coverage. The latent variables are likely to introduce a bias in the OLS estimates.

I solve these problems by instrumenting Berlusconi's TV coverage with the presence of the Pope news on TV. This means that TV

[16] See also Appendix Section A.4 for a more thorough discussion of this literature.

[17] Those consist of exchange markets trading the outcome of elections, whose prices therefore indicate what the crowd thinks the probability of victory of a party.

[18] No prediction markets with one exception: the group Intrade, which covered the Italian 2013 elections but whose data are no longer available as it went into liquidation in 2015.

[19] The vote shares for individual parties instead were not published

[20] Reports were accessed on average 120,000 times per day, at www.borsarireport.it

[21] The PVS series attains only negative values, as the PD led the race for the entire campaign.

[22] Polls listed on the governmental website sondaggipoliticoelettorali.it. The graph excludes pollsters whose sampling method, sample size, or reference population was not kept constant over time, or series with less than a total of 200 surveyed individuals per poll.

[23] Polynomial with Epanechnikov kernel of degree 1.

Table 2
the effect of TV coverage on candidates' support.

	From 0 to 100, how much do you like candidate . . .?				
	(1) Berlusconi	(2) Bersani	(3) Monti	(4) Grillo	(5) Berlusconi-Bersani
"No coverage"	−2.142***	0.639	1.068	1.304	−2.653*
	(0.792)	(0.973)	(0.869)	(1.289)	(1.560)
Time trend	0.092**	−0.116***	−0.142***	0.174***	0.207***
	(0.039)	(0.035)	(0.024)	(0.028)	(0.066)
Observations	7679	7623	7673	7428	7606
Mean of dependent	36.40	58.83	52.13	53.42	−22.48

Notes: The table presents coefficients of OLS regressions. The dependent variables measure politicians' support on a 0–100 scale, using the question: *From 0 to 100, how much do you like candidate X?* Headers of columns (1)-(4) indicate the candidate; column (5) indicates the difference in agreeableness between Berlusconi and Bersani. *No coverage* is a dummy equal to 1 if the respondent to the RCS survey was interviewed during the TV coverage disruption. Day-level clustered standard errors in parentheses. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

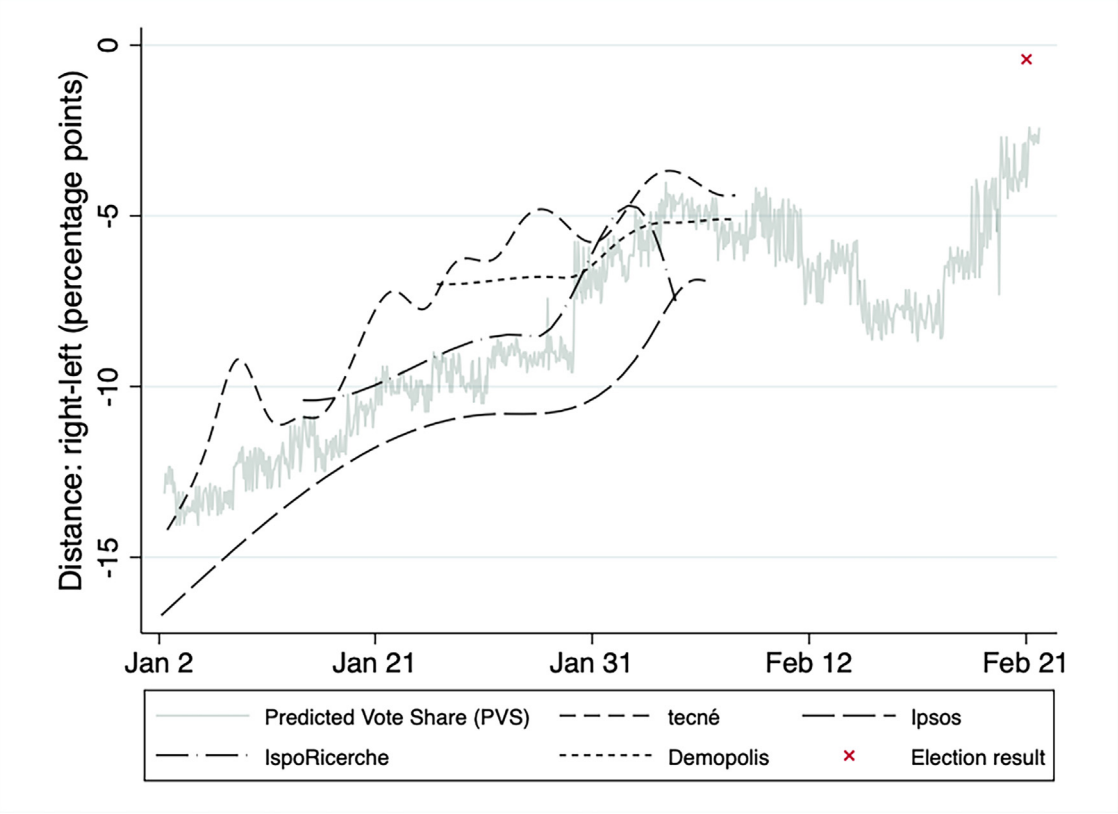

Fig. 2. Comparison of PVS and Opinion Polls. The figure compares the series of the Predicted Vote Share (PVS) to the series of opinion polls by the four main polling agencies (*Tecné*, *Ipsos*, *IspoRicerche*, and *Demopolis*). The vertical axis indicates the difference between the right-wing and the left-wing coalition in percentage points of vote share. The cross marks the final election result (-0.4 p.p). Data: Borsari; Sondaggipoliticoelettorali.it.

coverage of the candidate is treated as endogenous, and modelled as:

$$C_t = \zeta + \delta P_t + \lambda T + \upsilon_t \tag{2}$$

where P_t is a dummy for TV coverage of Pope news at time t. In what follows, I estimate this model using both measures of electoral support, first with voting intentions then with the Predicted Vote Share.

5.1. Estimation using voting intentions

I first proceed to an instrumental variable analysis on voting intentions from Itanes' RCS data. Table 3 contains the estimates when the main dependent variable is the likelihood to vote for Berlusconi's PDL. The dummy *No coverage* takes value 1 in the date range Feb. 11–16. Standard errors are robust to heteroskedasticity and clustered at day level. Columns (1)-(3) respectively display the first stage, second stage, and reduced form. The Pope news decreased Berlusconi's TV coverage by about 26 percentage points; the effect is statistically significant at 1% level, with a standard error of 4.444. Column (2) contains the 2SLS estimates of β, the coefficient of interest from model (1). An extra 1% of coverage for the right wind candidate on average increases the voters' likelihood to vote for Berlusconi by.098 percentage points; the estimate is statistically significant at 1% level, with a standard error of.033. The reduced form in column (3) provides an estimate of the total effect of the Pope news on Berlusconi's electoral support. The estimated impact is a decline by 2.518 percentage points, statistically significant at 1% level with a standard error of.625 (column (3)). Since the RCS dataset records multiple survey responses for each

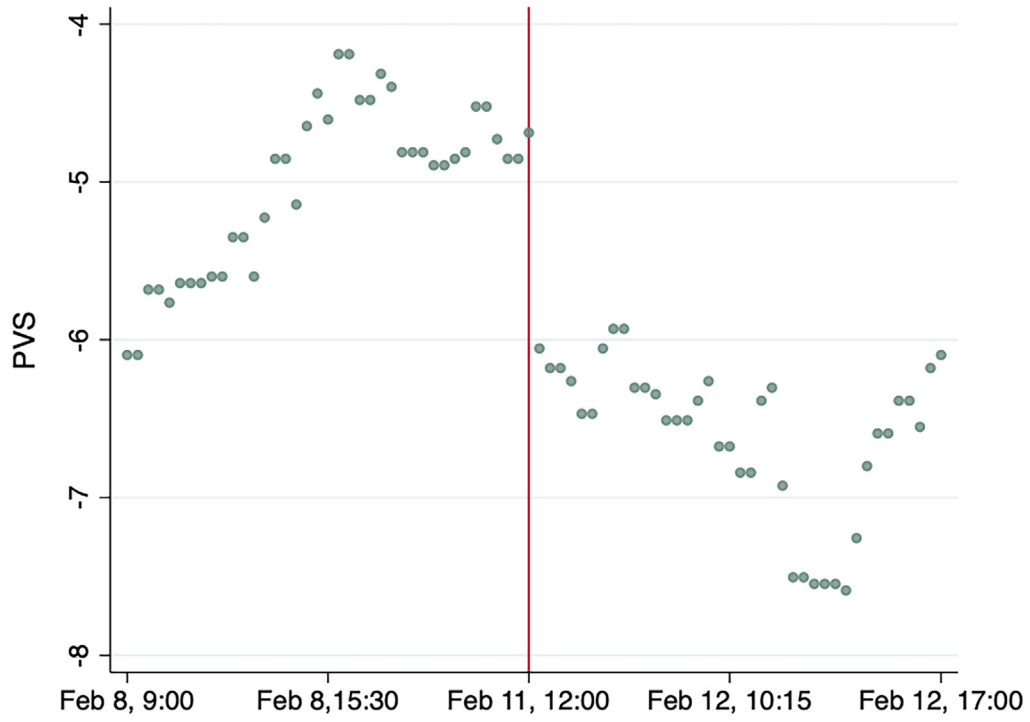

Fig. 3. PVS Around the Pope News. The figure plots the PVS series in the window of time ranging from −3 to + 3 h around the Pope's announcement (Feb 11, h 12). Data: Borsari.

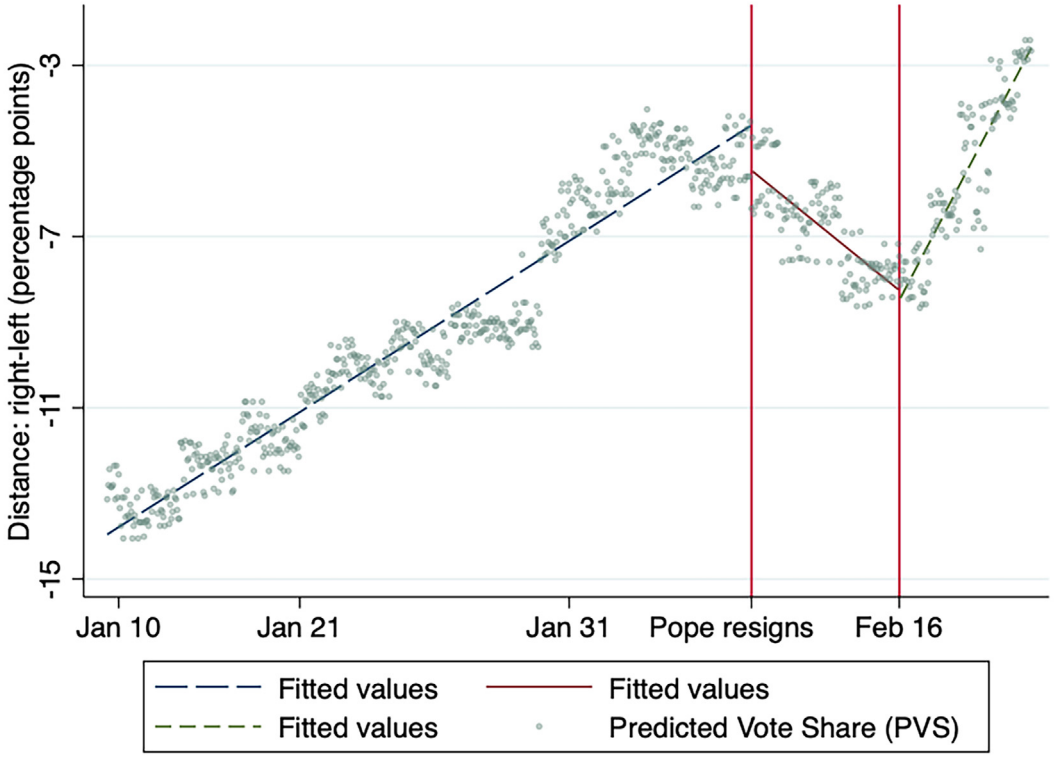

Fig. 4. PVS trends over the campaign. The figure displays the series of the Predicted Vote Share (PVS), highlighting the changes in trend in correspondence to the coverage shock. The vertical lines mark the day of the Pope's announcement (Feb. 11, 2013) and the end of the "No coverage" window (Feb 16, 2013). The vertical axis indicates the difference between the right-wing and the left-wing coalition in percentage points of vote share. Data: Borsari.

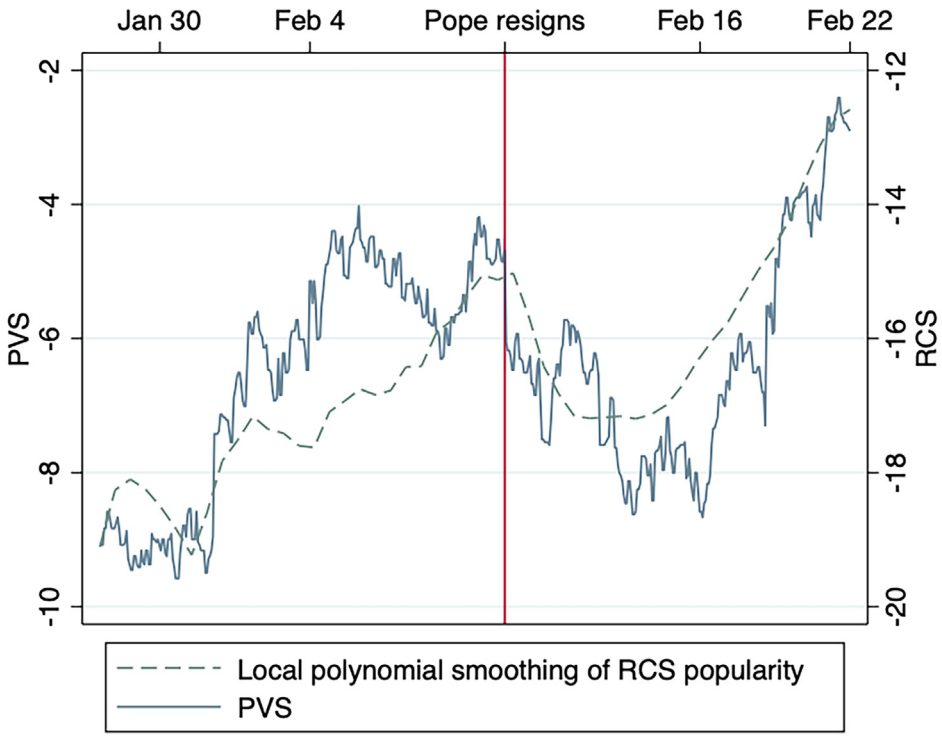

Fig. 5. Comparison of PVS and Itanes Survey Data. The figure compares the Predicted Vote Share (PVS) to a local polynomial smoothing (Epanechnikov kernel, degree 1) of the distance in popularity between left-wing and right-wing coalitions in the Itanes 2013 RCS survey. The left-hand side vertical axis refers to the PVS; the axis on the right-hand refers to RCS survey answers. Data: Borsari; Itanes 2013 RCS.

Table 3
2SLS Estimates: The effect of TV on intention to vote Berlusconi.

	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	TV Berlusconi	Berlusconi's support	Berlusconi's support	TV Berlusconi	Berlusconi's support	Berlusconi's support
"No coverage"	−25.806***		−2.518***	−26.223***		−2.533***
	(4.444)		(0.625)	(4.456)		(0.642)
TV Berlusconi		0.098***			0.097***	
		(0.033)			(0.031)	
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7541	7541	7541	43	43	43
F-test		33.72			34.64	
Mean of dependent	35.06	28.85	28.85	35.23	28.89	28.89

Notes: The table presents 2SLS regressions. The dependent variable is an index of Berlusconi's support, as measured by the RCS question: *From 0 to 100, how likely are you to vote for Berlusconi?*. TV coverage of Berlusconi is the main endogenous regressor. Column (1) presents the first stage; *TV Berlusconi* is the share of TV units per day in which Berlusconi is covered, ranging in 0–100; *No coverage* is a dummy taking value 1 in the date range Feb. 11–16. Column (2) presents the second stage, with Berlusconi's support as dependent variable. Column (3) presents the reduced form. Columns (4)-(6) repeat the analysis in previous columns on a dataset in which both TV coverage and political support vary at daily level. All regressions include a time trend. All standard errors (in parentheses) are robust to heteroskedasticity and clustered at daily level. Data: TV monitoring of 2013 campaign; Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

day of the campaign, while TV coverage varies at daily level, to avoid the complications stemming from mixed-frequency data, I repeat the analysis after taking the daily averages of survey responses (Columns (4)-(6)). The estimates are similar to the previous ones, and the total impact of the coverage shock is now estimated to be a 2.533 percentage points decline in voters' support (with a standard error of.642, the estimate is statistically significant at 1% level).Table 4.

To ease the comparison with the PVS estimates in the next section, I repeat the analysis using the difference in propensity to vote for PDL and for PD as dependent variable (Appendix Table A.2). In terms of relative distance, the total impact of the coverage shock amounts to about 3.4 percentage lower favor for Berlusconi's coalition relative to the left-wing, a statistically significant estimate at 1% level.

5.2. Estimation using the predicted vote share

In this subsection I estimate the model in (1) using the PVS as measure of electoral support; the estimates are displayed in Table A.3. Coefficients in columns (1)-(3) were obtained using homogeneous frequency data with daily-variation (after taking 1-

Table 4
2SLS Estimates: The Effect of TV on the PVS

	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent:	TV Berlusconi	PVS	PVS	TV Berlusconi	PVS	PVS
"No coverage"	−30.66***		−1.77**	−26.28***		−1.71**
	(2.86)		(0.79)	(2.78)		(0.75)
TV Berlusconi		0.06**			0.07**	
		(0.03)			(0.03)	
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32	32	32	778	778	778
F statistic	114.91	114.91	...	89.39	89.39	...
Mean of dependent:	38.05	−8.26	−8.26	37.11	−8.30	−8.30

Notes: The table presents 2SLS regressions with Predicted Vote Share (PVS) as dependent variable and TV coverage of Berlusconi as the main endogenous regressor. Data used for the estimations in columns (1)-(3) vary at day-level, with the PVS and the instruments averaged at daily level. Data used for the estimations in columns (4)-(6) vary at intraday-level, with 15 min frequency. A 25-periods smoothing (1 trading day) has been applied to the original daily measure of TV coverage. Columns (1) and (4) present the first stage; *TV Berlusconi* is the share of TV units per day in which Berlusconi is covered, rescaled to range in 0–100. Columns (2) and (5) present the second stage, with Predicted Vote Share (PVS) as dependent variable. Columns (3) and (6) present the reduced forms. The instrument for TV coverage is *No coverage*, a dummy taking value 1 in the date range Feb. 11–16. All regressions include a time trend. Standard errors (in parentheses) are robust to heteroskedasticity and to autocorrelation (8-lags in columns (1)-(3); 34-lags in columns (4)- (6)). Data: Borsari; TV monitoring of 2013 campaign; 2013 RCS Itanes. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

day averages of the PVS and of the instrument); columns (4)-(6) contain estimates from homogeneous frequency data with intra-day variation (after passing TV coverage to a 25-period smoothing, namely 1 trading day). Analysing the original (mixed frequency) dataset produces very similar results (see Appendix Table A.4).

Column (1) of Table A.3 shows the first stage relationship between the Pope news and Berlusconi's TV coverage, which appears strong and negative. The breaking news decreased Berlusconi's TV coverage by about 31 percentage points; the effect is statistically significant at 1% level, with a standard error of 2.86. The null hypothesis of weak-instrument is rejected at 99% confidence level (F-statistic at the bottom of the Table).[24] Column (2) contains the 2SLS estimates of β, the coefficient of interest from model (1). An extra 1% of coverage for the right wind candidate on average cuts the distance between parties by.06 percentage points; with a standard error of.03, the estimate is statistically significant at 5% level. The reduced form in column (3) provides an estimate of the total effect of the Pope news on Berlusconi's electoral support. We observe that the minus with the left-wing coalition increased by 1.77 percentage points; the estimate is statistically significant at 5% level, with a standard error of.79. Columns (4)-(6) repeat the analysis using intra-day data. Column (4) displays the first stage on intraday data, and it shows that the coverage disruption reduced Berlusconi's visibility by 26.28 percentage points, statistically significant at 1% level with a 2.78 standard error. Column (5) presents the new 2SLS estimate for the coefficient β in model (1), which now corresponds to an additional.07 percentage points increase in PVS from an additional 1% of TV coverage. The estimate is statistically significant at 5% level, with a.03 standard error. The reduced form (column (6)) displays the total effect of the coverage shock on the PVS: an estimated loss of 1.71 percentage points, statistically significant at 5% level with a.75 standard error. All standard errors in Table A.3 are robust to autocorrelation, with appropriate lags detected through the autocorrelation test by Cumby and Huizinga (1990).[25]

Consider the difference in average TV coverage between Bersani and Berlusconi before the Pope news, consisting of about 11 percentage points (Table 1). In light of this figure, the estimates in columns (2) and (5) of Table A.3 suggest that, had the two leaders enjoyed the same coverage, the left-wing advantage in vote share would have already been between.66 and.77 percentage points greater at the time of the Pope news. This suggests the accrual of an additional gap in vote share between 165% and 192% of the final distance in the election (.4 percentage points).

To summarize, the reduced form estimates in this Section indicate that the Pope news caused a statistically significant loss in voters' support for Berlusconi; this result holds true independently of whether vote shares or voting intentions are employed. Moreover, the vote share loss was bigger than the final vote gap between Berlusconi's and the winning coalition, suggesting that the effect of TV coverage can be strong enough to overturn the electoral result in a close election.

6. Mechanisms

In what follows, I first explore the channels underlying Berlusconi's loss in favor; I find it accrued through his supporters' relative greater exposure to a different information environment (Internet). I then discuss some of the possible threats to the validity of the exogeneity assumption, namely the assumption that the Pope news only affected voting behavior through a change in candidates' visibility. In particular, I test whether the Pope news had a direct impact on interest for politics, turnout, or religiosity, or that events concurrent to the Pope news affected voters' behavior.

Main source of political information. Using the answers to the Itanes RCS dataset introduced in previous sections, I construct a measure of voters' "Main source of information for the 2013 elections". Fig. 6 shows the main information outlet for voters, who are stacked by their 2008 vote choice. TV and Internet stand out as the two most common leading sources of information for the 2013 election, irrespective of past voting behavior[26]. Notably, TV has been the main outlet for former Berlusconi supporters.

I then estimate OLS regressions whose dependent variables are dummies for the main source of political information during the 2013 campaign. To try to disentangle the role of "information seeking" in voters' media consumption, I perform the analysis separately on two complementary subsets of RCS respondents: those

[24] See Angrist and Pischke (2009), pp. 217–18, for a discussion of weak-identification tests when the assumption of i.i.d. errors is dropped, as in this case.

[25] I use the test in its Stata implementation by Belluati et al. (2006). This test rejects the null hypothesis of no-autocorrelation up to the 8-lag in daily data (columns (1)-(3)), and up to 34-lag in intraday data (columns (4)-(6)).

[26] Note that "Internet" does not encompass online-reading of newspapers, which was instead categorized under "newspapers." Internet usage corresponds to visits to politicians' websites, use of social media, participation in online political forums/debates/events, subscription to email lists, and actively being in contact with party-members via email/social media.

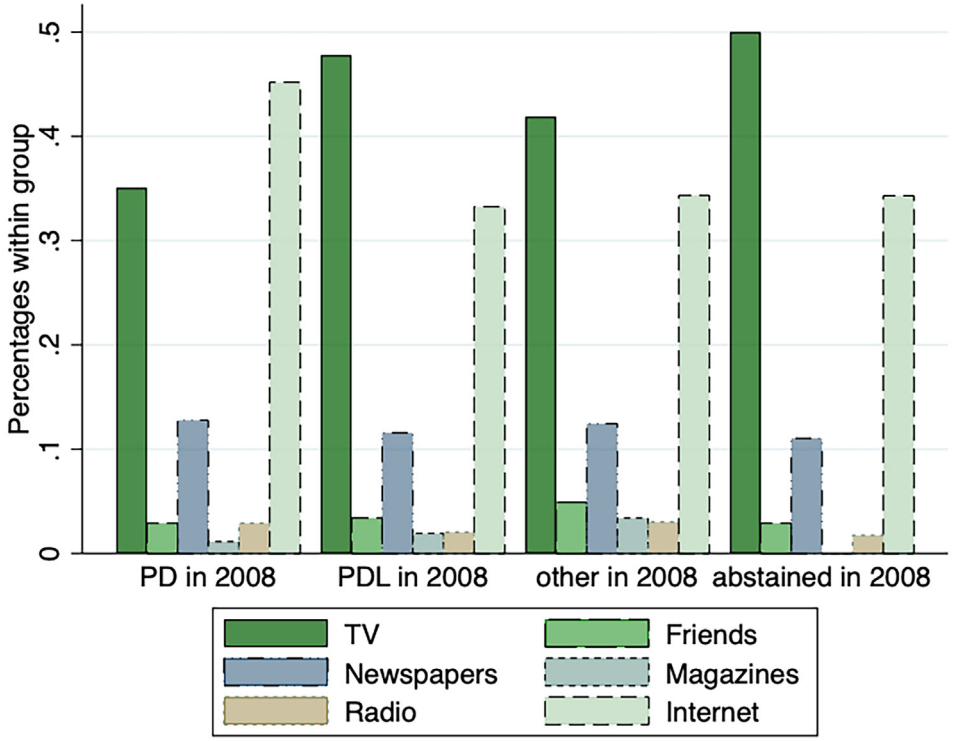

Fig. 6. Principal source of political information By 2008 Vote. The figure summarizes the principal sources of political information in 2013 for RCS respondents, stacked by their vote choice in 2008. The vertical axis indicates the percentage use of media outlets within a voting group. Data source: Itanes RCS 2013.

who declared their vote choice ripened during the campaign, and voters who had already decided before the beginning of the campaign. In fact, for these the two groups the need for political information was reasonably different throughout the campaign, and they would plausibly react differently to information shortages on their preferred media.[27] Table 5 presents the estimates for voters who decided during the campaign period; Panel A, column (1), shows that among former supporters of the PDL coalition the arrival of the coverage shock induced an increase by 14 percentage points in the propensity to use Internet as main source of political information. The effect is statistically significant at 1% level, with a.05 standard error. For the same group, there is no significant effect on the reliance on TV (column (2)) not other media (columns 3–6). Vice versa, for voters who had supported other parties in the previous election, the Pope news yield only a non-statistically significant increase in Internet use, by 3 percentage points (Panel B, column (1)).

Note that the dependent variable of the regressions in Table 5 is an indicator for voters' main information source, not for an individual's use of each media. The analysis thus shows an increase in the number of people considering Internet as their main source, not in the number of users. In fact, the share of individuals using the web as either first or second main information source barely changed in that period: the increase in Internet's mentions as leading source was paired by a corresponding decrease in its mentions as secondary source (see the null coefficient in row 1, column 1, of Appendix Table A.6). In other words, during the TV coverage disruption the larger adoption of Internet as leading source was brought forth by people who already used it as secondary source (namely the majority of former Berlusconi voters).[28] For this reason, in that electoral segment the web became a leading source almost as popular as TV (see the means at the bottom of panel A, Table 5).[29] In sum, by inducing higher reliance on the web, the coverage shock did not just silence a biased source of political news (TV), but it caused a substitution between the politics coverage on TV with that from Internet.

To check whether the detected change in media habit (namely the higher incidence of Internet as leading source), was driven by information-seeking voters, I repeat the analysis on the complementary subset of RCS respondents who declared that their voting decision was already taken at the onset of the campaign, thus well before the Pope news. As mentioned, for these voters the need for political information was plausibly lower throughout the campaign, and they would reasonably be less reactive to a drop in political contents in the media they customarily relied on. This "placebo test" finds that, in fact, these voters even exhibit a mild decline (-1.9 percentage points), albeit imprecisely estimated, in the use of Internet during the coverage shock (Table A.5).

Then, building on the findings in Table 5, I study whether Internet information during the coverage shock has induced statistically significant changes in 2013 voting patterns. In fact, even in absence of Internet-coverage data, it seems plausible to assume that while the Pope news clouded political contents on traditional media, it didn't impede their provision on the Internet. As the M5S propaganda dominated the web, this party then enjoyed much wider

[27] Clearly, one caveat of this approach is relying on respondents' self reported "timing of decision", which may be biased vis- à vis real behavior.

[28] The majority of former Berlusconi voters were using TV as main source and Internet as secondary source: see the means at the bottom of Panel A of Table 5, as well as a cross-tabulation of media sources in Appendix Table A.7.

[29] The absence of data on the intensity of Internet use does not allow to further explore the relative use of TV vs. Internet, beyond their ranking as first or second main information source.

Table 5
Main Source of Political Information For the 2013 Election

	"Which was your main source of political information?					
	(1) Internet	(2) TV	(3) Friends	(4) Newspapers	(5) Magazines	(6) Radio
Panel A: Voters of PDL in 2008						
"No Coverage"	0.148***	0.042	−0.036	−0.073	−0.024	−0.019**
	(0.050)	(0.071)	(0.024)	(0.061)	(0.022)	(0.009)
Time trend	−0.002**	−0.001	0.001	0.001	0.001	−0.000
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)
Observations	462	462	462	462	462	462
Mean of dependent	0.31	0.47	0.04	0.11	0.03	0.02
Panel B: Voters of other parties in 2008						
"No Coverage"	0.031	−0.021	−0.037**	0.018	0.019	0.020
	(0.052)	(0.037)	(0.018)	(0.034)	(0.014)	(0.026)
Time trend	−0.000	−0.000	0.000	−0.001	−0.001*	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Observations	825	825	825	825	825	825
Mean of dependent	0.32	0.45	0.04	0.11	0.02	0.03

Notes: The table presents coefficients of OLS regressions. The dependent variables are dummies for whether a media type was the main source of electoral political information. Headers of columns (1)-(6) indicate the media type. *No coverage* is a dummy equal to 1 if the respondent of the follow-up RCS survey had his first-wave interview after the Pope's announcement and before the end of Feb 16, 2013. Day-level clustered standard errors in parenthesis (day of first interview). All regressions exclude respondents whose voting decision was already taken at the onset of the campaign. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

attention shares of voters in that time window. Table 6 presents the estimation of OLS regressions whose dependent variables are dummies for the party voted in 2013.[30] Remarkably, among respondents who had voted for PDL in 2008, those who in 2013 used Internet as main information source in general (namely during any campaign day outside of the *No coverage* window) were 10.2 percentage points less likely to vote again for PDL (Panel A, column (1), and 11.3 percentage points more likely to support M5S[31] (Panel A, column (2)). Coherently with previous findings, the arrival of the coverage shock did not induce a significant impact among former supporters who did *not* rely on Internet as main source (Panel A, first row). However, among individuals who mainly relied on the web for political information, the shock induced a significant decline in the propensity to vote again for PDL (-18.3 percentage points, with a.103 standard error). In parallel, the reliance on Internet during the coverage shock additionally and significantly increased those voters' likelihood to support M5S (an increment of 15.6 percentage points, with a.067 standard error). Panel B of the same Table repeats the analysis on voters who in 2008 had supported parties other than PDL. While use of Internet in general during the campaign significantly decreases support for PDL and increases that for M5S (by 3.6 and 8.3 percentage points, respectively), the coverage shock does not bring about significant changes in voting patterns, independently of the use of Internet as leading source. In Appendix Section A.2 I argue more in details why I interpret those results as evidence of a causal impact of Internet exposure on the lower likelihood to vote for Berlusconi (as opposed to other alternative explanations, such as a change in composition of media-groups).

Finally, I explore whether the intensity of TV exposure modulated the probability of changing political favour. To answer, I study how the intensity of TV use correlates with the propensity to change media outlet during the coverage shock, as well as with the later propensity to switch party.[32] I code the intensity of exposure to TV as "Low" when voters watch television strictly less than 30 min, "Medium" when voters watch between 30 min and 1 h of television per day, and "High" when watching more than 1 h of TV. For context, someone watching only the introductory section (highlights) of the news programs would fall in the first category; someone watching the news programs in full but no other programs would fall in the second category; someone watching one or more entertainment programs would fall in the third category.[33] I find that both the change in media outlet and the later change in party have been largely driven by "medium-intensity TV watchers", namely those who watch too little TV to follow any of the entertainment shows, but enough to follow the news programs in full, beyond the initial highlights (Table 7). For low-level TV watchers there is no significant effect on the propensity to rely on Internet (column (1), row 1). For the medium-level TV watchers the coverage shock significantly increases the propensity to rely on Internet by 45.5 percentage points, with a standard error of.166 (column (1), row 2). The effect is positive but only marginally significant also for the "high intensity" watchers (column (1), row 3), whose propensity to mention Internet as main source increases by 7.7 percentage points (with a standard error of.045). During the rest of the campaign, we observe that reliance on Internet is negatively correlated with intensity of TV use (column (1), rows 4–6), suggesting substitution rather than complementarity of the two media outlets. The dependent variables of regressions in columns (2) and (3) are dummies for whether the individual voted for PDL or M5S, respectively. We observe that, in general, TV intensity is positively correlated with the propensity of voting for PDL (column (2), rows 4–6). The medium-level watchers who did not resort to Internet as main information channel appear significantly more likely to support PDL again in 2013 (column (2), row 2) and less likely to support M5S (column (3), row 2); vice versa, medium-level TV watchers who used Internet during the coverage shock exhibit a significant lower propensity to vote again for PDL (column (2), row 8).

In synthesis, during the TV coverage shock individuals who had supported Berlusconi in the previous election significantly increased their reliance on Internet as main outlet for political news. Voters exposed to a different information environment were later significantly less likely to renew their support for Berlusconi,

[30] This analysis is again performed on the full sample, not on the complementary subsamples of Tables 5 and A.5.
[31] Whose campaign strategy was, as mentioned, Internet based.
[32] Hence, this exercise excludes respondents who had decided their vote at the campaign onset.
[33] This example has mere illustrative intent, meaning that the time spent on TV by "medium intensity watchers" is not necessarily devoted to consuming the news.

Table 6
The effect of Internet exposure during the coverage shock

	Party voted in 2013:				
	(1) PDL	(2) M5S	(3) PD	(4) SC	(5) abstain
Panel A: Voters of PDL in 2008					
"No Coverage"	0.107	−0.079	−0.012	−0.045*	0.099*
	(0.074)	(0.073)	(0.022)	(0.026)	(0.053)
Internet	−0.102**	0.113***	−0.016	−0.031	0.013
	(0.042)	(0.038)	(0.017)	(0.020)	(0.015)
"No Coverage" × Internet	−0.183*	0.156**	0.040	0.039	−0.143***
	(0.103)	(0.067)	(0.041)	(0.055)	(0.040)
Time trend	Yes	Yes	Yes	Yes	Yes
Observations	821	821	821	821	896
Mean of dependent	0.53	0.25	0.05	0.08	0.07
Panel B: Voters of other parties in 2008					
"No Coverage"	−0.008	0.032	0.007	0.006	0.014
	(0.025)	(0.039)	(0.058)	(0.033)	(0.029)
Internet	−0.036**	0.083***	0.048	−0.019	−0.032*
	(0.014)	(0.023)	(0.029)	(0.015)	(0.017)
"No Coverage" × Internet	−0.024	0.083	−0.067	−0.034	−0.025
	(0.025)	(0.080)	(0.076)	(0.033)	(0.037)
Time trend	Yes	Yes	Yes	Yes	Yes
Observations	1535	1535	1535	1708	1535
Mean of dependent	0.07	0.27	0.40	0.09	0.09

Notes: The table presents coefficients of OLS regressions. The dependent variables are dummies for the party voted in 2013. *No coverage* is a dummy equal to 1 if the respondent of the follow-up RCS survey had his first-wave interview after the Pope's announcement and before the end of Feb 16, 2013. *Internet* is a dummy equal to 1 if the individual indicated Internet as main political information source for the 2013 campaign. Day-level clustered standard errors in parenthesis (day of first interview). All regressions exclude respondents whose voting decision was already taken at the onset of the campaign. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table 7
The effect of TV coverage shock by intensity of TV use.

Voters of PDL in 2008:	(1) Internet was the main political information source	(2) Voted PDL in 2013	(3) Voted M5S in 2013
"No coverage" × TV intensity = 1	0.083	−0.248	0.401**
	(0.394)	(0.189)	(0.195)
"No coverage" × TV intensity = 2	0.455***	0.663***	−0.391***
	(0.166)	(0.090)	(0.079)
"No coverage" × TV intensity = 3	0.077*	0.117	−0.042
	(0.045)	(0.112)	(0.112)
TV intensity = 1	0.417**	0.356*	0.521**
	(0.161)	(0.185)	(0.196)
TV intensity = 2	0.345***	0.446***	0.313***
	(0.088)	(0.096)	(0.086)
TV intensity = 3	0.290***	0.512***	0.219***
	(0.020)	(0.042)	(0.044)
"No coverage" × TV intensity = 1 × Internet		−0.137	0.188
		(0.322)	(0.350)
"No coverage" × TV intensity = 2 × Internet		−0.958***	0.402
		(0.293)	(0.266)
"No coverage" × TV intensity = 3 × Internet		−0.061	0.118
		(0.148)	(0.084)
TV intensity = 1 × Internet		0.140	−0.190
		(0.322)	(0.350)
TV intensity = 2 × Internet		0.210	−0.153
		(0.193)	(0.147)
TV intensity = 3 × Internet		−0.012	0.070
		(0.054)	(0.055)
Time trend	Yes	Yes	Yes
Observations	462	452	452
Mean of dependent	0.31	0.44	0.30

Notes: The table presents coefficients of OLS regressions, on all respondents who had voted for PDL in 2008. The dependent variables are dummies for: Internet being the main political information source in the 2013 campaign (column 1), and for party voted in 2013 (columns 2–3). *No coverage* is a dummy equal to 1 if the respondent of the follow-up RCS survey had his first-wave interview after the Pope's announcement and before the end of Feb 16, 2013. *Internet* is a dummy equal to 1 if the individual indicated Internet as main political information source for the 2013 campaign. "TV intensity" indicates how much TV the respondent watches in a day: from 0 up to 30 min (1); from 30 min to one hour (2); or more than 1 h (3). Day-level clustered standard errors in parenthesis. All regressions exclude respondents whose voting decision was already taken at the onset of the campaign. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

compared to former supporters who remained mainly informed via TV. In parallel, they were significantly more likely to favor the party with an Internet-centred communication strategy. Both effects are driven by voters who watched just as much TV as the duration of the news programs.

Interest for Politics, Intention to go Voting, Religiosity. While testing the exogeneity assumption is not possible, it is worth examining some of the mechanisms that could alternatively explain the impact of the Pope's announcement on vote. In particular, the Pope news could have altered voters' interest for political themes, their willingness to go vote, or could trigger a higher relevance of religious themes thus affecting voting preferences. Each of these instances would represent a violation of the exogeneity assumption, and thereby question the validity of the instrumental variable analysis. From the Itanes RCS 2013 dataset I produce the measures of voters' "Interest in politics," "Intention to abstain from voting," and "Religiosity". The survey questions record ordered choices, with lower values indicating lower intensity but having no cardinal meaning; I apply a logarithmic transformation to homogenize the different ranges and ease the comparability of the estimates. Using OLS, I estimate whether the coverage shock had an impact on these variables (Table A.8). Note that with respect to all other voting groups, former PDL voters overall had significant higher propensity to abstain from voting in 2013, higher interest in politics, and higher religiosity. However, there is no conclusive evidence of a differential effect of the Pope news on individuals' attitudes: the gap between groups neither increases not decreases significantly. The news did not trigger sizeable changes in trends either, as the before/after differences within group are relatively small compared to the variables' means and imprecise. Estimates in Column 3 however suggest an apparent generalized decline in religiosity, of about 6.1 p.p for former Berlusconi supporters and 9.8 p.p for other voters (however both imprecisely estimated). To exclude this effect may originate from sample selection, I test the balance of observable characteristics of survey respondents during and outside the no-coverage period (Tables A.10 and A.11). As expected by virtue of randomization, the respondents are balanced in terms of observable characteristics, and the standardized difference is always below the critical threshold of 0.25 suggested by Imbens and Rubin (2015).

To additionally explore the heterogeneity of voters' changed preferences for either PDL or M5S along the religious dimension, I stack former Berlusconi supporters by their religious intensity and estimate again the impact of the Pope news (Appendix Table A.9). For none of three religiosity levels (low, medium, high) there is evidence of a substantially different effect of the Pope news: this suggests religiosity was not a relevant mediating factor of Berlusconi's vote loss, nor of the M5S's vote gain.

Finally, I examine whether other politically relevant events took place during the no-coverage window and could thus threaten the identification assumption. To this extent, I gather additional data from the front pages of the 12 most popular Italian Newspapers in 2013, whose scanned images were retrieved from the Italian Ministry of Education.[34] I pass the scans of the front pages to a text recognition algorithm to extract the written contents, then analyse the articles' text to determine which were the main news covered across all the outlets each day. This analysis reveals that in the relevant timeframe of the TV coverage shock, no news or scandals involved the election runners nor their parties (see a detailed list of the news and related comments in Appendix Section A.3). Overall, while one cannot fully exclude the impact of concurrent news on the opinion of the electorate, the evidence gathered suggests this to be unlikely, and the identification assumption to hold.

To summarize, the findings in this section suggest a negligible impact of the Pope's decision on Berlusconi supporters' religiosity, interest in politics, or willingness to vote. The disruption of politics coverage on TV, however, coincides with a significantly greater relevance of a different information source (Internet). The evidence is coherent with a causal effect of internet exposure on the lower likelihood to vote again for Berlusconi and the higher likelihood to vote for the party with a web-based communication strategy, confirming the results in previous literature (see in particular Campante et al., 2017).

7. Speculation

In the spirit of what suggested in Banerjee et al. (2017), this Section introduces structured speculation on the external validity of the paper's findings, exploring aggregate results patterns beyond the individual estimates.

I conjecture how the effects of media visibility could vary along two dimensions: (1) across politicians and (2) across media types.

How do the political gains from media visibility vary across politicians?

In this subsection I speculate on how the media effects estimated for Berlusconi would vary for other politicians. To this extent, it is useful to first reason out *why* media coverage can benefit office-seekers in general. Most economics studies consider media to exert an impact by providing information to predominately rational voters. The effects of information on vote are plausibly slow-to-materialize but long-lasting: upon exposure to factual news on a politician, voters are unlikely to quickly forget about it even if subject to intense opposite propaganda. Vice versa, the communication literature asserts media impact voters by driving their attention towards issues or people, producing affect-based characterizations and exploiting people's subconscious processing.[35] This affect-based response consults ideological thought more than a logical one, and is independent of instantaneous information provision. Affect modulates the audiences' "guts feeling" for a candidate, building on factors such as candidates' innate suitability to make a positive impression via a specific communication media, or the outlets' stance (for instance favoring or antagonizing the politician).

The evidence presented in this paper suggests the effect of media on vote accrues through both "affect" and "information" factors. On the one hand, the data indicate after the coverage disruption voters' support for Berlusconi fell below its pre-shock level; hence, some vote loss occurred during the shock. We cannot conclusively determine if the loss was permanent or temporary, namely whether Berlusconi lost and gained back the same voters, or he attracted new ones instead. However, there is some margin for informed conjectures. Fig. 5 suggests his support at the end of campaign was higher than the maximum reached before the pope news: in other words the tycoon "gained" votes he did not have before the coverage shock. Since these votes were acquired independently of any negative information arrived in between, Berlusconi plausibly would have earned them even earlier on, absent the coverage shock. Because of their relative independence from information, those votes can be thought of as mainly "affect-driven".

On the other hand, the data also suggest some votes were lost to negative information. Tentatively, those could be quantified as the difference between the projection of the pre-shock trend level and the actual vote share reached at the end of the campaign (see Fig. 7). The underlying assumption here is that the pre-shock trend

[34] See http://rstampa.pubblica.istruzione.it/rassegna.

[35] For a more extensive review of this literature, see Section II.

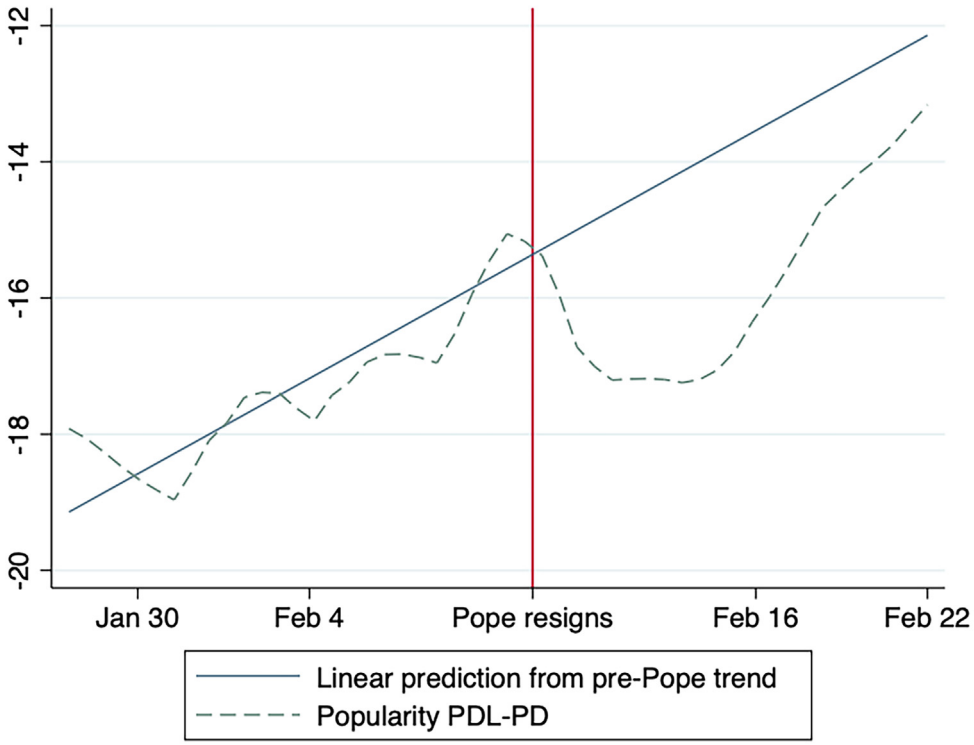

Fig. 7. Comparison of linear prediction and popularity pattern. This Figure uses the same data as in Figure V. It compares the true distance in popularity between left-wing and right-wing coalitions to a linear prediction fitting the data points up to the TV coverage disruption. Data: Itanes 2013 RCS.

would have continued even absent the coverage shock. Against this assumption one could postulate that by the end of the campaign Berlusconi realized the maximum support he possibly could. However, this is implausible: his plan to win the 2013 election was to replicate the 2008 performance, and "conquer back" the vote of former supporters (Sections III and A.1.4). This indicates there was a broader voting base ideologically aligned with Berlusconi's agenda, and their votes would have been sufficient to grant him the victory.[36]

The coexistence of affect- and information-based effects of media coverage also helps to explain why during the Pope news only Berlusconi lost votes, despite all candidates suffered a TV-visibility loss. Understanding this, in turn, relaxes the limits of inference of the present study by shedding light on broader patterns.

A large body of political science works documents the tycoon's singular ability to project a positive image of himself via TV. Several studies describe how the tycoon strived for maximizing the impact of his broadcast visibility: he tailored his messages to the televised format by focusing on brevity and entertainment, and he "personalised" the political debate creating a cohesive, cross-channel narrative centred around his persona (Bolasco et al., 2006; Giansante, 2010; Ruggiero, 2012).[37] The opposite example in this respect is that of former Italian prime Minister Mario Monti. During the 2013 electoral campaign he also appeared extensively on TV; however, his messaging was lengthy and more technical than that of Berlusconi, but much less effective in triggering voters' sympathy. Perhaps as a result, the data presented in Section IV suggest he experienced negative marginal returns to TV exposure: the more he appeared on broadcasts, the lower his popularity and consensus (see Table I and Table II). While this instance does not necessarily imply a causal link, it suggests –perhaps counter-intuitively– that policies forcing equal exposure of candidates in campaign may be detrimental to some politicians, namely those less capable of triggering positive affect via a given communication media.

A second reason for the differential impact of the coverage shock across candidates lies in the "media diet" of the respective voting bases. In fact, Berlusconi's target electorate historically hinged on TV, and only moderately encompassed other outlets (see, among others, Mancini, 2008). The intensive reliance on TV, coupled with Berlusconi's hold on the broadcasts' narrative, produced a closed information environment around these voters, distancing them from the other voting groups. When the Pope news broke, it had the unintended effect of bursting this echo chamber by raising the relative volume of secondary media voices (Internet). This circumstance remarks that Berlusconi's hold on broadcasts' narrative would have had much less political influence had voters diversified their media consumption.

To summarize, the highlighted patterns of results suggest a politician's total vote gain from media exposure is (A) increasing in the politician's control over the media narrative (articulated in terms of both information and affect) and (B) decreasing in the media diet diversification by the targeted electorate.

How do the political gains from media visibility vary across media types?

Relating the political effect of TV visibility to factors "A" and "B" illustrated in the previous paragraphs also aids to speculate on how the effects documented in this paper would generalize to

[36] As we know, however, the politician fell short of this task: only 53.4% of former supporters in the data voted again for him in 2013 (see Table 6).

[37] See Appendix Section A.1.4 for a more detailed discussion.

media platforms other than TV. In this sense the relevant finding is that even very brief patterns of TV exposure can produce a significant change in voting patterns. The external validity of this result across other communication platforms depends on the presence of structural features affecting either the politicians' ability to trigger affect/control information provision on the given media (A), or the sources differentiation by the audience (B). A relevant case is that of Internet, whose *web* structure should by design provide a richer plurality of viewpoints, at once lowering the cost of differentiation and increasing that of controlling political narratives.

However, to the extent that the retrieval of political information on Internet is mediated by social media (as it has been in recent years), voters' information environment can be, and in fact is, shaped by private interests and political actors.[38] A context in which social media tailor their recommendations to users' characteristics, and the latter do not actively differentiate their media consumption, gives rise to information echo chambers similar to that experienced by Berlusconi's voters and illustrated in the previous paragraphs. Hence, social media satisfy all the requirements for candidates' coverage to exert a significant political impact in a very short time, as in the case examined for TV. Moreover, the political impact of exposure on social media is even amplified if voters believe Internet to present a greater variety of political perspectives compared to traditional media, and in turn further lower their proactive search for alternative information.

From a policy perspective, this is again relevant to the debate on the regulation of electoral campaigns. As commented in the previous subsection, the existing regulatory attempts to even-out politicians' attention shares may be inadequate to level out the play field of candidates because of the latter's personal characteristics. The effectiveness of this policies appears further limited when considering that monitoring candidates' exposure patterns is *de facto* successful only on traditional media. Nevertheless, the evidence suggests exposure on social media can be as politically effective as on traditional media – if not more. These considerations call for a structural change in the normative approach to regulate political communication; the policy effort today should encourage and facilitate voters' media consumption differentiation, which the evidence suggests is effective to level the political play field. Policies of this nature aim to empower the public through transparency, allowing to monitor and decide the amount of information that is consumed from different political angles.

Shifting the regulatory approach in this direction will progressively free the legislator from the burden of determining and the candidates' true attention shares, a task doomed to become impossible the more political information is consumed from several sources on a given platform, and across several platforms too.

8. Conclusion

This paper exploits a plausibly exogenous change in TV coverage during a campaign to identify the effect of candidates' TV exposure during the race on their support from voters. Shortly before the 2013 Italian general elections, the Pope Benedict XVI announced his intention to renounce the papacy. After his declaration, Berlusconi's drop in television coverage (-26 percentage points) translated into a vote share loss of about 2 percentage points, and the rival left-wing party won by 0.4 percentage points. The arrival of the "Pope news" did not exert a significant change in voters' interest in politics, willingness to abstain from voting, or religiosity. Instead, the disruption in TV coverage of politics had an impact on voters' source of political information: individuals who had supported Berlusconi in the previous election significantly increased their reliance on Internet as main outlet for political news. Voters exposed to a different information environment were later significantly less likely to renew their support for Berlusconi, compared to former supporters who remained mainly informed via TV. In parallel, they were significantly more likely to favor the party with an Internet-centred communication strategy.

[38] The paper offers a direct example of this instance, showing that exposure to Internet increased the voters' support for the party whose campaign was based on the web (corroborating the results by Campante et al., 2017).

Data availability

Data will be made available on request.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Appendix

A.1. List of monitored TV programs during 2013 campaign

The dataset on TV monitoring covers the following programs:

The first 3 reports of the news programs: TG1, TG5, TG La7, Sky TG24; *Ballarò; Servizio Pubblico; Porta a Porta; Quinta Colonna; Striscia la Notizia; Le invasioni barbariche; Che tempo che fa; La telefonata di Belpietro; Festival di Sanremo.*

A.2. On the causal impact of Internet exposure on vote

Table 6 in the main text shows that former Berlusconi supporters who considered Internet as main source were in general less inclined than others to vote again for Berlusconi's party, and even less so during the coverage shock. One could however argue this result is not evidence of a causal link between Internet exposure and vote, as this interpretation is clouded by the possibility of a composition effect. More precisely, if only marginal Berlusconi supporters increased their Internet use (making it their leading source, thus changing their "main-media" affiliation during the coverage shock), the vote divide between Internet users and non-Internet users would mechanically increase, even absent a causal effect of web exposure on vote.

However, it is possible to demonstrate that the estimates in Table 5 and 6 cannot be explained away through a change in groups composition.

Assume that (1) the negative effect of Internet on vote is only due to a change in media-group composition, namely that voters' political opinion remains constant (2) "new main users" of Internet (those who adopted internet as leading source as a result of the TV coverage shock) are marginal voters, namely individuals in between strong supporters and strong opponents of Berlusconi. To begin, note that Internet users were ex-ante less fond of Berlusconi compared to non-Internet users, as the negative coefficient for Internet (-.102) indicates. If everyone's political opinion remains constant (as per assumption 1), then the new coefficient of the Internet users group is a weighted average of "old" and "new" users. Following hypothesis 2, we should then observe the group of web users overall being less disdaining of Berlusconi during the coverage shock than during the rest of the campaign. Instead, the interaction "Internet x No coverage" in the first column of Table 6 presents a negative coefficient almost twice that of the

"Internet" indicator (-.183 vs. -.102). Hence, "new users" of Internet despise Berlusconi more than old users, contradicting assumption 2 (new users being marginal supporters). Observe then the coefficient for non-Internet users during the coverage shock: +.107 (row 1, col.1 of Table 6). If such extreme opponents changed main-media affiliation during the TV coverage disruption (from non-Internet users to Internet users), the positive coefficient for non-Internet users during that time window should be much higher than the actual one. This proves assumption 1 wrong too.

Finally, note that shifting any number of people from one group to another could result in estimates of different magnitudes in the two groups, if there exists disparity in groups' final sizes. However, in order for a change in group composition to generate a larger estimate among TV users and a smaller one among internet users, the size of the internet group would need to be larger -not smaller- than that of TV (and in this case, by at least 5.8%). Instead, the figures in Table 5 (columns 1 and 2) document TV remained the largest group even during the Pope news.

In sum, the estimates in Tables 5 and 6 cannot be attributed exclusively to changes in group composition. Hence, they provide evidence of the hypothesized mechanism: a negative causal impact of internet use on the propensity to vote for Berlusconi.

At the same time, voters' support and their media consumption are measured concurrently in the data; given this, we are unable to assess the relative weight of mechanisms, such as internet use vs. group composition. Therefore, if the Pope news selectively triggered a media change only among "weak supporters", the true causal effect of internet could possibly have lower magnitude than the one estimated.

A.3. Newspapers' coverage during the TV coverage shock

This section is based on additional data extracted from the front pages of the 12 most popular Italian Newspapers in 2013, whose scanned images can be retrieved on the website of the Italian Ministry of Education.[39]

The presence of politically relevant concurrent news during the TV-coverage shock could pose a threat to the identification assumption laid out in Section V. To address this concern, I pass the scans of the front pages to a text recognition algorithm to identify the main news covered across all the outlets each day. Overall, besides the Pope news and Sanremo, the three most covered events were the arrest of a top manager of Italy's third largest bank, the Italian president Napolitano meeting with the US president Obama, and athlete Pistorious murdering his girlfriend. On a daily basis, the main news issues were:

- Feb 12: Pope news; Sanremo Festival;
- Feb 13: Pope news; Sanremo; Italian police arrested Finmeccanica CEO as part of a bribery investigation related to a 2010 sale of helicopters to India.
- Feb 14: Sanremo; Pope news (with speculations on the possible reasons of the renounce); Nomination of a new CEO of Finmeccanica.
- Feb 15: Italian police arrests the former head of the finance department of Monte dei Paschi (Italy' 3rd largest bank), since mid January at the center of an inquiry for alleged fraud; Athlete Pistorious kills his girlfriend.
- Feb 16: Italian president Napolitano meets US president Obama; a meteorite explodes over Russia, more than 1000 injured.

Note that none of the events occurred during the TV coverage shock involved the electoral candidates nor their parties. The arrest of a Bank's manager (the first issue published on Feb. 15) is perhaps the only news issue with some potential for influencing the electorate. However, even in this case, because the news of the bank's fraud had already broke a month earlier (and investigations had been ongoing since then) any eventual vote-effect of the scandal should have accrued before Feb 15. Therefore, the evidence gathered suggests low chances of concurrent news affecting the electorate during the TV coverage shock.

Exploiting further the newspapers' front pages, I compare the coverage of politics to that on TV. To this extent, I count the total daily mentions for the Pope and the four main candidates (Berlusconi, Bersani, Monti, Grillo), and using these measures of visibility I produce a plot similar to Fig. 1 in the main text.

Fig. A.1 shows that the reduction in candidates' visibility on newspapers was neither as marked nor as sudden as on TV.

A.4. The efficacy of TV for the Italian Left- and Right- wings

A large body of political science works suggest that, in turning marginal voters into supporters, the TV has been more "efficient" for Berlusconi than for his rivals. To win again in 2013, Berlusconi had to replicate the numbers of the previous (2008) election. Given the advantage of the left-wing in the polls, he had to convince marginal voters. As described in public polls as well as in Itanes RCS data, those voters used TV significantly more than any other outlet for political information, thus were relatively more sensitive to TV coverage.

In the twenty years of Berlusconi's political power, the scenario of Italian politics has been *de facto* two-pronged, with a centre-left-wing coalition opposing a right-wing one. On the right hand was Berlusconi, owner of three of the main Italian TV channels with a special intuition for entertainment contents; he "personalised" the political debate and shaped his campaigns on the principles of brevity and emotionality (Novelli, 2002; Bolasco et al., 2006; Giansante, 2010). The leader exploited his own ease and mastery of the television platform (Belluati, 2006; Morcellini and Prospero, 2009), and exhibited an innovative and skilful use of the narrative as political tool (Ruggiero, 2012). He targeted the "avid low- to medium-class [TV] watchers who had abstained from political activity" (Mancini, 2008). He made his audience interested in politics by making politics more "entertaining" (Semino and Masci, 1996; Gianpietro and Sfardini, 2010), and by fostering a "fast consumption" agenda compatible with an audience whose daily life and hurdles appeared to leave no room for a more in-depth analysis of politics (Mazzoleni and Schulz, 1999; Mancini, 2008).

On the other hand, the Italian left wing has historically been reluctant to accept the rules and simplifications typical of mass media outlets, and not without criticism (Morcellini and Prospero, 2009). Between 2001 and 2013, the left-wing communication consisted of lengthy, rational, and balanced messages (Novelli, 2002; Bolasco et al., 2006), creating the rhetoric for a "slow consumption" agenda, with the declared intent to "give sobriety back to politics"(Morcellini and Prospero, 2009). This approach is less suited for the fast-paced, time-constrained context of TV campaigns.

see Tables A.1,A.2,A.3,A.4,A.5,A.6,A.7,A.8,A.9,A.10,A.11.

[39] See http://rstampa.pubblica.istruzione.it/rassegna.

Fig. A.1. Number of mentions in Newspapers' front pages. The Figure presents the number of daily mentions in the front pages of the 12 main Italian Newspapers for Berlusconi, Bersani, Monti, Grillo and the Pope. The newspapers, listed in alphabetic order, are: *Avvenire*, *il Corriere della sera*, *il Giornale*, *Libero Quotidiano*, *il Mattino*, *il Messaggero*, *la Nazione*, *la Repubblica*, *il Sole 24 ore*, *la Stampa*, *il Tempo*, *l'Unità*). The two vertical lines mark the beginning and the end of the TV coverage disruption (Feb 11-Feb 16). Data source: elaboration from Newspapers' front pages, retrieved from http://rstampa.pubblica.istruzione.it/rassegna.

Table A.1
Wald tests for structural breaks in TV Coverage.

	(1)	(2)	(3)	(4)	(5)
Coverage of:	Berlusconi date/p-value	Monti date/p-value	Bersani date/p-value	Grillo date/p-value	Pope date/p-value
Break date:	Feb 11 0.0373	Feb 11 0.0002	Feb 11 0.1433	Feb 11 0.0000	Feb 11 0.0000

Notes: The table presents Wald-tests for the presence of structural breaks in the TV appearances of the 4 main political candidates and of the Pope. Headers of columns (1)-(5) indicate the actor whose coverage is being tested. Dates correspond to the structural-break-date that is being tested (p-values below). Data source: 2013 campaign TV monitoring, Itanes.

Table A.2
2SLS Estimates: The Effect of TV on intention to vote (Dependent: Berlusconi's Margin Over Bersani).

	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	TV Berlusconi	Berlusconi's margin	Berlusconi's margin	TV Berlusconi	Berlusconi's margin	Berlusconi's margin
"No coverage"	−25.783***		−3.375**	−26.223***		−3.425**
	(4.468)		(1.388)	(4.456)		(1.421)
TV Berlusconi		0.131**			0.131**	
		(0.057)			(0.056)	
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7484	7484	7484	43	43	43
F-test		33.31			34.64	
Mean of dependent	35.07	−17.81	−17.81	35.23	−17.70	−17.70

Notes: The table presents 2SLS regressions. The dependent variable is the difference in Berlusconi and Bersani's support, as measured by the RCS question: *"From 1 to 100, how likely are you to vote for X?*". TV coverage of Berlusconi is the main endogenous regressor. Column (1) presents the first stage; *TV Berlusconi* is the share of TV units per day in which Berlusconi is covered, ranging in 0–100; *No coverage* is a dummy taking value 1 in the date range Feb. 11–16. Column (2) presents the second stage, with difference in electoral support as dependent variable. Column (3) presents the reduced form. Columns (4)-(6) repeat the analysis in previous columns on a dataset in which both TV coverage and political support vary at daily level. All regressions include a time trend. All standard errors (in parentheses) are robust to heteroskedasticity and clustered at daily level. Data: TV monitoring of 2013 campaign; Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.3
2SLS Estimates: The Effect of TV on the PVS (Distinct time trends by month).

	2SLS	2SLS	OLS	2SLS	2SLS	OLS
	1ST STAGE	2ND STAGE	RED. FORM	1ST STAGE	2ND STAGE	RED. FORM
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent:	TV Berlusconi	PVS	PVS	TV Berlusconi	PVS	PVS
"No coverage"	−31.54***		−2.07***	−27.44***		−1.74**
	(3.35)		(0.67)	(2.95)		(0.79)
TV Berlusconi		0.07 ***			0.06**	
		(0.02)			(0.03)	
January time trend	Yes	Yes	Yes	Yes	Yes	Yes
February time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32	32	32	778	778	778
F statistic	88.47	88.47	...	86.53	86.53	...
Mean of dependent:	38.05	−8.26	−8.26	37.11	−8.30	−8.30

Notes: The table presents 2SLS regressions with Predicted Vote Share (PVS) as dependent variable and TV coverage of Berlusconi as the main endogenous regressor. Data used for the estimations in columns (1)-(3) vary at day-level, with the PVS and the instruments averaged at daily level. Data used for the estimations in columns (4)-(6) vary at intraday-level, with 15 min frequency. A 25-periods smoothing (1 trading day) has been applied to the original daily measure of TV coverage. Columns (1) and (4) present the first stage; *TV Berlusconi* is the share of TV units per day in which Berlusconi is covered, rescaled to range in 0–100. Columns (2) and (5) present the second stage, with Predicted Vote Share (PVS) as dependent variable. Columns (3) and (6) present the reduced forms. The instrument for TV coverage is *No coverage*, a dummy taking value 1 in the date range Feb. 11–16. All regressions include a time trend varying by month. Standard errors (in parentheses) are robust to heteroskedasticity and to autocorrelation (8-lags in columns (1)-(3); 34-lags in columns (4)- (6)). Data: Borsari; TV monitoring of 2013 campaign; 2013 RCS Itanes. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.4
Instrumental variable analysis on mixed-frequency data (daily TV coverage and intraday PVS).

	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM	2SLS 1ST STAGE	2SLS 2ND STAGE	OLS RED. FORM
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	TV Berlusconi	PVS	PVS	TV Berlusconi	PVS	PVS
"No coverage"	−27.83***		−1.75***	−27.83***		−1.75**
	(1.00)		(0.26)	(2.65)		(0.72)
TV Berlusconi		0.06***			0.06**	
		(0.01)			(0.03)	
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	802	802	802	802	802	802
F-statistic	781.88	781.88	...	110.59	110.59	...
Mean of dependent	37.48	−8.28	−8.28	37.48	−8.28	−8.28

Notes: The table presents 2SLS regressions with Predicted Vote Share as dependent variable and TV coverage of Berlusconi as the main endogenous regressor. Column (1) presents the first stage; *TV Berlusconi* is the share of TV units per day in which Berlusconi is covered, ranging in 0–100. Column (2) presents the second stage, with Predicted Vote Share (PVS) as dependent variable. Column (3) presents the reduced form. Standard errors (in parentheses) correct for 3-lags autocorrelation. Columns (4)-(6) repeat the analysis in previous columns correcting for 34-lags autocorrelation. All regressions include a time trend. All standard errors are robust to heteroskedasticity. Data: TV monitoring of 2013 campaign; Borsari. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.5
PLACEBO: Impact of TV Coverage Shock on Main Source of Political Information for PDL voters who had already decided.

	What was your main source of political information for the elections?					
	(1) Internet	(2) TV	(3) Friends	(4) Newspapers	(5) Magazines	(6) Radio
"No Coverage"	-0.019	−0.014	0.066	0.009	−0.004	−0.032**
	(0.104)	(0.099)	(0.053)	(0.058)	(0.003)	(0.013)
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	369	369	369	369	369	369
Mean of dependent	0.33	0.46	0.03	0.12	0.01	0.02

Notes: The Table presents OLS regressions estimated on respondents who voted PDL in 2008 and who before the 2013 campaign had already decided who to vote. The dependent variables are dummies for whether a media type was the main source of electoral political information. *No coverage* is a dummy equal to 1 if the respondent was interviewed in the days between the Pope's announcement and the end of Feb 16, 2013. Day-level clustered standard errors in parenthesis. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.6
First and second main sources of political information for the 2013 election.

	"Which media are among your main 2 sources of political information?					
	(1) Internet	(2) TV	(3) Friends	(4) Newspapers	(5) Magazines	(6) Radio
Panel A: Voters of PDL in 2008						
"No Coverage"	−0.008	0.084	−0.022	0.053	−0.060**	0.037
	(0.058)	(0.074)	(0.048)	(0.098)	(0.026)	(0.044)
Time trend	0.001	−0.004**	0.000	0.001	0.001**	−0.001
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
Observations	462	462	462	462	462	462
Mean of dependent	0.60	0.77	0.10	0.29	0.09	0.07
Panel B: Voters of other parties in 2008						
"No Coverage"	−0.002	−0.020	0.001	0.097**	0.024	−0.020
	(0.068)	(0.050)	(0.044)	(0.043)	(0.016)	(0.050)
Time trend	0.000	−0.002*	−0.000	−0.001	−0.000	0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Observations	825	825	825	825	825	825
Mean of dependent	0.58	0.71	0.16	0.29	0.06	0.09

Notes: The table presents coefficients of OLS regressions. The dependent variables are dummies for whether a media type was either the main or the second main source of political information. Headers of columns (1)-(6) indicate the media type. *No coverage* is a dummy equal to 1 if the respondent of the follow-up RCS survey had his first-wave interview after the Pope's announcement and before the end of Feb 16, 2013. Day-level clustered standard errors in parenthesis. All regressions exclude respondents whose voting decision was already taken at the onset of the campaign. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.7
First and second main information sources among former Berlusconi voters.

	2nd Source:				
	TV	Internet	Newspapers	All others	Total
1st Source:					
TV	-	103	47	63	213
Internet	95	-	30	19	144
Newspapers	29	16	-	8	53
All others	17	12	6	-	43
Total	141	131	83	90	453

Notes: The Table shows the cross-tabulation of first and second main information sources, in the same subsample analysed in Table 5 (all RCS respondents who had voted Berlusconi in 2008, excluding those whose 2013 voting decision was already taken at the onset of the campaign). The figures indicate the number of respondents indicating a given combination of preferred media. Data source: Itanes RCS 2013.

Table A.8
The Impact of TV Coverage Shock on voting participation, interest in politics, and religiosity.

	(1)	(2)	(3)
	Intention to abstain from vote	Interest in politics	Religiosity
"No Coverage"	0.005	0.010	−0.098
	(0.026)	(0.012)	(0.050)
Voted PDL in 2008	0.133***	0.020	0.164***
	(0.031)	(0.011)	(0.045)
"No Coverage"× Voted PDL in 2008	−0.029	−0.029	0.037
	(0.061)	(0.018)	(0.109)
Constant	0.914***	0.666***	0.866***
	(0.035)	(0.014)	(0.044)
Time trend	Yes	Yes	Yes
Observations	7781	7649	1242
Mean of dependent	0.90	0.67	0.99

Notes: The table presents OLS regressions with the following dependent variables: "Intention to abstain from voting in the 2013 election", "Interest in politics", and "General religiosity level". Measures' smaller values correspond to lower probability/frequency/intensity. The dummy *No coverage* equals 1 if the respondent was interviewed between the Pope's announcement and the end of Feb 16. Day-level clustered standard errors in parentheses. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.9
The effect of Pope News on 2013 vote, by religiosity level.

	Party voted in 2013:	
	(1)	(2)
Voters of PDL in 2008:	M5S	PDL
Yearly religious attendance	0.573***	0.224***
	(0.037)	(0.033)
Monthly religious attendance	0.556***	0.222***
	(0.068)	(0.059)
Weekly religious attendance	0.524***	0.214***
	(0.059)	(0.033)
"No coverage x Yearly religious attendance	0.094	−0.081
	(0.140)	(0.095)
"No coverage x Monthly religious attendance	0.069	0.028
	(0.163)	(0.161)
"No coverage x Weekly religious attendance	−0.096	0.072
	(0.128)	(0.094)
Observations	385	385
Mean of dependent	0.56	0.22

Notes: The table presents coefficients of OLS regressions on respondents who had supported the PDL coalition in 2008. The dependent variables are dummies for the party voted in 2013. *No coverage* is a dummy equal to 1 if the respondent was interviewed after the Pope's announcement and before the end of Feb 16, 2013. Day-level clustered standard errors in parenthesis. Data: Itanes RCS 2013. "*", "**", and "***" indicate respectively 10%, 5%, and 1% significance levels.

Table A.10
Balance table for interviewees' observable demographic characteristics during the campaign and in the "no coverage" period.

Variable name:		"No coverage"	Other days	St. difference
Male		0.574	0.552	0.044
Age group:	25–34	0.200	0.249	−0.118
	35–44	0.342	0.298	0.093
	45–54	0.258	0.273	−0.035
	55–64	0.142	0.140	0.006
	65 or older	0.058	0.039	0.088
Region of residence:	-Abruzzo	0.006	0.015	−0.084
	-Basilicata	0.006	0.007	−0.008
	-Calabria	0.045	0.027	0.099
	-Campania	0.097	0.077	0.068
	-Emilia Romagna	0.116	0.072	0.151
	-Friuli Venezia Giulia	0.052	0.050	0.008
	-Lazio	0.084	0.105	−0.072
	-Liguria	0.019	0.026	−0.043
	-Lombardia	0.219	0.198	0.053
	-Marche	0.019	0.029	−0.065
	-Molise	0.000	0.003	−0.073
	-Piemonte	0.071	0.072	−0.004
	-Puglia	0.084	0.073	0.040
	-Sardegna	0.026	0.028	−0.017
	-Sicilia	0.039	0.065	−0.119
	-Toscana	0.045	0.061	−0.072
	-Trentino	0.013	0.007	0.058
	-Umbria	0.019	0.010	0.080
	-Valle d'Aosta	0.000	0.001	−0.042
	-Veneto	0.039	0.073	−0.150
Schooling level:	-Elementary school or below	0.000	0.004	−0.085
	-Middle school	0.103	0.094	0.030
	-Highschool (currently enrolled)	0.013	0.003	0.116
	-Professional diploma	0.077	0.081	−0.013
	-High school diploma	0.510	0.381	0.260
	-University (currently enrolled)	0.058	0.069	−0.047
	-Any university diploma	0.013	0.028	−0.110
	-Bachelor degree	0.045	0.040	0.025
	-Masters degree	0.142	0.213	−0.186
	-Postgraduate studies	0.039	0.064	−0.115
	-Phd	0.000	0.022	−0.213
N of observations:		1117	6930	

Notes: The table presents the means for the characteristics or respondents during the "No coverage" period and in other days of the campaign. The last column reports the standardized difference between the two periods averages. "*" indicates that the standard difference surpasses the.25 conventional threshold for significance.

Table A.11
Balance table for interviewees' observable characteristics on behavior and beliefs during the campaign and in the "no coverage" period.

Variable name:		"No coverage"	Other days	St. difference
Currently employed:		0.502	0.533	−0.061
Employment type:	-Entrepreneur	0.026	0.034	−0.047
	-Artisan	0.045	0.016	0.169
	-Commercial/seller	0.032	0.028	0.027
	-Self employment	0.045	0.032	0.068
	-Freelance	0.116	0.107	0.029
	-Manager	0.026	0.036	−0.057
	-Professor (High school or above)	0.013	0.029	−0.115
	-Teacher (middle school or below)	0.032	0.032	0.001
	-Middle manager/technician	0.065	0.078	−0.054
	-Clerk	0.458	0.452	0.011
	-Employee	0.045	0.066	−0.090
	-Factory worker	0.097	0.085	0.039
	-Agriculturer	0.000	0.004	−0.095
2008 Vote:	-Greens (Left)	0.200	0.221	−0.051
	-PD (Left)	0.200	0.220	−0.051
	-Italia dei valori (Centre)	0.161	0.089	0.219
	-PDL (Right)	0.245	0.259	−0.032
	-Lega (Right)	0.116	0.076	0.134
	-Unione di Centro (Centre)	0.045	0.054	−0.042
	-Null vote (blank ballot)	0.019	0.019	−0.002
	-Did not vote	0.064	0.061	0.013
	-Don't remember	0.070	0.085	−0.054
	-Prefer not to say	0.019	0.053	−0.182
Interest in election results:	-None	0.071	0.058	0.053
	-Little	0.077	0.131	−0.175
	-Some	0.284	0.304	−0.043
	-High	0.568	0.508	0.121
Is on Facebook:		0.748	0.736	0.029
Trust in the Church:	-None	0.213	0.233	−0.049
	-Little	0.387	0.378	0.018
	-Some	0.323	0.302	0.045
	-High	0.077	0.086	−0.033
N of observations:		1117	6930	

Notes: The table presents the means for the characteristics or respondents during the "No coverage" period and in other days of the campaign. The last column reports the standardized difference between the two periods averages. "*" indicates that the standard difference surpasses the.25 conventional threshold for significance.

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