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ABSTRACT

We investigate the long-term impact of early exposure to Berlusconi's commercial TV network, Mediaset, on voting behavior and civic engagement in Italy. To do so, we exploit differences in Mediaset signal reception across Italian municipalities due to the network's staggered introduction over the national territory and to idiosyncratic geomorphological factors. We find that municipalities exposed to Mediaset prior to 1985 exhibit greater electoral support for Berlusconi's party in 1994, when he first ran for office, relative to municipalities that were exposed only later on. This difference, estimated between 1 and 2 percentage points, is extremely robust and tends to persist in the following four elections. This effect can hardly be attributed to differential exposure to partisan news bias since, prior to 1985, content on Mediaset channels was dominated by light-entertainment programs and no news programs were broadcast until 1991, by which time the network was accessible to the entire population. Instead, we present evidence that early exposure to commercial TV was associated with a substantial decline in social capital consistent with the diffusion of a culture of individualism and civic disengagement that favored the political success of Berlusconi.

Keywords: mass media, voting, civic engagement
JEL codes: L82, D72, Z13

1. INTRODUCTION

There is increasing evidence that media, particularly television, can influence viewers' political behavior. Most studies on the topic have focused on the effect of exposure to partisan bias in the news on voting. For example, DellaVigna and Kaplan (2007) find that exposure to Fox News (a conservative news network) had a significant positive effect on vote share for the Republican Party in the U.S. 2000 presidential elections. Enikolopov et al. (2011) look instead at the effect of NTV (the only national TV channel independent from the government) on electoral outcomes in the 1999 Russian parliamentary elections, and find that access to NTV was associated with higher support for opposition parties.

However, news-related programs represent only a fraction of total airtime, and other types of content may also influence viewers' political attitudes in other, possibly subtler ways. Previous studies have discussed how access to commercial TV and to specific categories of non-informative content (e.g. light entertainment shows, soap operas, advertising) by exposing viewers to particular cultural models, can have a significant and persistent impact on various aspects of non-political behavior. In his path-breaking work on social capital, Putnam (2000) indicates the diffusion of television - and of entertainment programs in particular - as one of the possible causes of the decline in civic engagement in the U.S. during the post-war period. Related work by Olken (2009) finds a negative relationship between the number of TV channels available across different areas of Indonesia and various measures of social capital. Along similar lines, recent work has uncovered significant effects of commercial TV on fertility choices and divorce rates in Brazil (Chong et al., 2008; Chong and La Ferrara, 2009), women's empowerment in India (Jensen and Oster, 2009), and consumption choices by former Eastern Germans after re-unification (Bursztyn and Cantoni, 2012).

To the extent that adherence to new cultural models influences individual political views and voting choices, exposure to TV could have important and long-lasting political consequences even in the absence of explicit news bias. We investigate the political impact of non-informative media content in the context of Italy where, over the past three decades, the relation between mass media and the political system has been particularly close. In particular, we examine whether early exposure to Berlusconi's private TV network, Mediaset, during the 1980s was associated with higher electoral support for Berlusconi's party in 1994 - when he first ran for office - and in later elections. Our empirical analysis is based on the comparison between areas that had access to Mediaset signal prior to 1985 and areas that were exposed to it only later on. To this end, we combine unique information on the early availability of Mediaset channels at the municipal level with data on electoral outcomes for the period 1976-2013. Since Mediaset transmitters operating in 1985 were inherited from a

multitude of local TV stations that were progressively incorporated into the network, it is unlikely that their geographic distribution was directly functional to the later political ambitions of Berlusconi. Furthermore, our empirical strategy allows us to account for the (potentially endogenous) location and power of the transmitters and to focus on the residual variation in Mediaset signal intensity attributable to idiosyncratic geomorphological factors, which should be uncorrelated with other determinants of voting. Evidence from electoral outcomes in the pre-exposure period (1976-1979) allows for an indirect test of this orthogonality condition.

Our findings document that municipalities that were exposed to Mediaset early on displayed a significantly higher vote share for Berlusconi in 1994. The effect, between 1 and 2 percentage points, is very precisely estimated and persists in the four elections that followed, up until 2008 - almost twenty-five years after the differential exposure to Mediaset and fifteen years after Berlusconi first entered politics. The results are remarkably similar when we restrict the comparison to municipalities with signal intensity just above and just below the threshold of good quality reception, or to pairs of neighboring municipalities that, in the absence of geomorphological obstacles, would have similar signal intensity. The documented effect does not vary across municipalities with different population size, but, interestingly, appears to be stronger in areas where people spend more time watching TV.

To further corroborate our findings we combine the data on signal availability with survey data from the Italian National Election Study for the period 1994-2006, which include rich information on political attitudes, media consumption, and a range of individual characteristics. The individual-data analysis confirms that subjects living in areas with early access to Mediaset were more likely to vote for Berlusconi's party in 1994 and subsequent elections. Furthermore, using information on the respondents' year of birth, we are also able to dissect the average effect of Mediaset across different age groups. In this respect, we uncover a U-shaped relation with the effect of early exposure to Mediaset being especially pronounced for younger and older voters, indeed the categories of individuals that tend to spend more time watching TV. In particular, the very large impact on the younger generations - estimated around 10 percentage points - can go some way in explaining why the effect persisted for over two decades.

Overall, our findings point to a significant and long-lasting effect of TV on electoral results. However, unlike the cases studied by DellaVigna and Kaplan (2007) and Enikolopov et al. (2011), the documented effect can hardly be reconciled with a "partisan-bias-in-news" explanation. In fact no news programs were broadcast on Mediaset until 1991, at which time the network was already available to the entire Italian population. Indeed, during the first half of the 1980s - that is, when people were differentially exposed - Mediaset channels were

devoted exclusively to light-entertainment programs such as soap operas, action dramas, quiz and gossip shows. These categories of content are mostly blamed by Putnam (2000) for the anti-civic effects of television, in contrast with news and other information programs, which are at the top of his pro-civicness hierarchy. The advent of Mediaset produced a substantial shock to both the "quantity" of TV available to Italian viewers - the number of available channels increased from three to six - and to its "quality", shifting content from news and educational content toward light-entertainment programs. According to Putnam's argument, both these changes would result in a decrease in civic engagement among those individuals that were (longer) exposed to Mediaset, which, in turn, could affect their voting behavior.

We explore this hypothesis by looking at the empirical relationship between early exposure to Mediaset, civic engagement and voting behavior. On the one hand, using municipal data on the number of voluntarily associations (one of the measures proposed by Putnam), we find that civic engagement declined significantly between 1981 and 1991 (and then between 1991 and 2001) in areas that had access to Mediaset before 1985 relative to those that did not. On the other hand, we find civic engagement to be strongly negatively correlated with electoral support for Berlusconi's party both at the individual and at the municipal level. These findings are consistent with the view that Mediaset favored the diffusion of a culture of individualism and civic disengagement which, later on, would favor the success of Berlusconi's political message.

It is worth noting that our results do not exclude the possibility that Berlusconi may have also benefited from favorable news slant on Mediaset channels (previously documented by Durante and Knight, 2012). However, since this effect should only bite after 1991, when newscasts were first introduced on Mediaset, it should affect all municipalities in a similar fashion regardless of whether they had access to Mediaset before or after 1985. In other words, to the extent that early access to Mediaset is not correlated with post-1991 news consumption, any effect of pro-Berlusconi news bias should not affect the estimation of our coefficient of interest. Indeed, evidence from individual survey data seems to exclude that individuals that were exposed to Mediaset prior to 1985 were more likely than others to watch news on Mediaset in later years - for example because of habit formation or attachment to the network. Furthermore, early and late Mediaset viewers do not seem to differ systematically in their opinion about Berlusconi's qualities as a man and a politician (such as honesty, ability, and trustworthiness). This suggests that early Mediaset viewers were not more exposed (or vulnerable) to pro-Berlusconi propaganda, but, rather, that they filtered the same information through a different system of values which was presumably influenced by their prior exposure to Mediaset and made them more receptive to Berlusconi's political message. Indeed, greater support for Berlusconi's party by early Mediaset viewers seems to reflect a particu-

lar affinity to its political platform and not a general sympathy towards Berlusconi himself which may extend to domains other than politics. To test this hypothesis we look at whether areas exposed to Mediaset earlier also display higher support for Berlusconi's football team A.C. Milan, presumably the best known non-political venture commonly associated with his name, and we find no evidence in this sense.

Overall, our findings indicate that exposure to commercial TV can affect viewers' political attitudes and voting behavior even in the absence of news coverage. Our results complement previous studies on the impact of news slant, including recent work by Barone et al. (2012) on the consequences of partisan bias on Mediaset news.[1] Our argument is that the introduction of commercial television had additional and farther-reaching implications for Italy's recent political history, which may reflect deeper social trends triggered by early exposure to new, media-fueled cultural models.

The remainder of the paper is organized as follows. Section 2 provides background information on the evolution of Italy's political system and broadcast television industry over the period of interest. Section 3 describes the data used in the empirical analysis and discusses the identification strategy. Section 4 presents the main findings. Section 5 discusses alternative interpretations of the results and presents additional evidence to help distinguishing between them. Section 6 concludes.

2. BACKGROUND

2.1. THE RISE OF COMMERCIAL TV IN ITALY

Since its foundation in 1954 and for over twenty years the state-owned TV corporation (RAI) maintained the absolute monopoly over TV broadcasting in Italy. Throughout this period private companies were not allowed to broadcast on the Italian territory.[2] In 1976, following a ruling by the Italian Constitutional Court, this ban was removed allowing private companies to broadcast though only at the local level. This triggered a rapid expansion in the number of private broadcasting companies, mostly small local actors, which reached 256 in 1977 and over 400 in 1978 (Menduni, 2002).

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[1] Using electoral data on local elections in Italy's Piedmont region, the authors document a sizeable decline in electoral support for the Berlusconi-led centre-right coalition in provinces that switched to digital TV before the elections relative to provinces that switched only after. To the extent that the introduction of digital TV diluted the audience share of Mediaset news programs, the authors interpret this finding as evidence that partisan news bias on Mediaset channels may affect electoral outcomes.

[2] This regulation was motivated by the consideration that the state would better protect and guarantee the impartiality, objectivity and completeness of the television service (ruling 59/1960 by the Constitutional Court).

In addition to small local entrepreneurs, the prospects of large advertising revenues attracted the interest of a few large business groups which started investing in commercial TV. With the purpose of circumventing the legal ban on ultra-local transmission, these groups established *broadcast syndication* agreements by which several formally independent stations would simultaneously broadcast the same content in different local markets. Among the most important ones were *Canale 5*, launched by Berlusconi in 1980, *Prima Rete*, *Italia 1* and *Rete 4*, controlled respectively by the Rizzoli, the Rusconi and the Mondadori group. Very soon, however, the stiff competition and a climate of great regulatory uncertainty led some of these groups to reconsider their strategy. In 1981 a new ruling by the Constitutional Court, confirming the ban on ultra-local transmission, induced *Prima Rete* to leave the market, and convinced the Rusconi and the Mondadori group that antitrust legislation was on its way. Only Berlusconi was prepared to sail closest to the wind (Ginsborg, 2005). Bordering on illegality, he extended his network and explicitly grouped the stations under the common logo of *Canale 5*. In the absence of any intervention on the part of the legislator he then used *Canale 5*'s soaring advertising revenues to acquire two additional channels from his more cautious competitors, *Italia 1* in 1982 and *Rete 4* in 1984. The three channels were then incorporated into Berlusconi's holding Fininvest, which later became Mediaset.

The fate of Mediaset, however, remained vulnerable to possible initiatives by legislators and judicial officials aimed at enforcing the legal restrictions on private broadcasting, which the group had until then ignored. In fact, on October 16, 1984, the attorneys of Turin, Pescara and Rome ordered that Mediaset transmitters be switched off, accusing the network of violating the 1976 ruling by the Constitutional Court. A few days later, however, the government led by Bettino Craxi - leader of the Italian Socialist Party and Berlusconi's long-term political sponsor - issued an emergency decree which removed all geographic restrictions to broadcasting by private companies. The decree - which was initially rejected by the Parliament but forcefully reiterated until finally approved a few months later - would represent a landmark in the evolution of the Italian television system, legalizing Berlusconi's *de facto* monopoly over private broadcasting.

If until then the uncertain legal prospects had delayed the expansion of Mediaset's network, once assured that its dominant position would not be threatened, Berlusconi's group multiplied its efforts to acquire new transmitters and expand its coverage to the entire population. According to the data used in our empirical analysis, at the beginning of 1985 Mediaset operated about 1,700 transmitters, inherited from the former members of the broadcast syndication. In fact, Mediaset never built its own antennas, finding it cheaper to use those of the small local televisions that were progressively incorporated into the network. The latter had been conceived to reach a local audience and lacked the power of RAI transmitters,

so that Mediaset channels could be received with good quality signal by about 50% of the population.

By 1987, however, the number of Mediaset transmitters had doubled to 3,800 and Mediaset channels were accessible to about 87% of the population (Constitutional Court, 1988). Finally, by the end of 1990 Mediaset coverage attained 98% of the population, comparable to that of public channels (Constitutional Court, 1988). By that time the Parliament had approved a new Telecommunication Law which largely confirmed the regulatory framework of the 1985 decree and limited the possibility for the state to assign new broadcasting licenses to other actors, thus ratifying the existence of the RAI-Mediaset duopoly which would persist until these days.

Interestingly, public and private channels differed markedly in terms of programming schedules. Indeed, many entertainment programs launched by Mediaset in the early 1980s represented an absolute novelty in the Italian television landscape, which would profoundly influence Italians' lifestyle models over the following years. Most of the airtime was devoted to foreign TV series, particularly action dramas and soap operas; the rest consisted of internal productions, primarily quiz, gossip and light entertainment shows. According to many observers, such programs contributed to the diffusion of a new cultural model in Italy, centered around values of individualism, materialism and hedonism, which differed markedly from the one based on Catholic values such as family and solidarity.(Porro and Russo, 2000; Ginsborg, 2005)

This new model is well exemplified by the figures of yuppies and playboys that populated these shows, with females characters generally relegated to the role of sexual bodies (Zanardo, 2010; Benini, 2012). On the contrary, news programs were not broadcast on Mediaset until 1991 when, in the midst of the first Iraqi war, *Italia 1* news service was established, followed one year later by the other channels. The absence of newscasts on Mediaset was partly due to the fact that, until 1990, private stations were not allowed to broadcast live, which made virtually impossible to transmit news bulletins. Other types of informative or educational programs (i.e. talk shows, investigative reports, documentaries) were also very scant on Mediaset channels. In general, Berlusconi's revolutionary television-making style stood in sheer contrast with the pedagogical nature of the public TV, which at that time devoted a large share of airtime to newscasts, documentaries, and family films. His approach quickly proved very successful: according to Nielsen data reported by the Constitutional Court (1988), the audience share for Mediaset channels reached 44.7% in 1987, just below that of RAI channels (48.3%); by the same time, Mediaset had already surpassed RAI with regard to total advertising revenue.

2.2. THE ITALIAN POLITICAL SYSTEM AND BERLUSCONI'S ENTRY INTO POLITICS

According to several of his long-time associates, and to his own account, Silvio Berlusconi had no intention to get personally involved in politics until 1993, when a series of corruption scandals led to the collapse of Italy's ruling parties and the abrupt decline of his long-time political patron, Bettino Craxi, until then powerful leader of the Italian Socialist Party (PSI).[3] A historically left-leaning party, the PSI formed part of the coalition led by the Christian Democrats which had uninterruptedly governed Italy since 1963. While a more conservative component had always existed within the PSI, this finally took control of the party in 1976 when Craxi was elected party secretary. The new leader cut the residual links with the left and enthusiastically embraced market-oriented reforms, overturning the Christian Democrats at the center-right of the political spectrum. By doing so he acquired a pivotal position in the political arena, which eventually allowed him to become Prime Minister in the coalition government that emerged after the 1983 elections. Under Craxi the PSI enjoyed growing political success largely due to its leader's ability to promote a more modern and appealing image of the party. In the words of Ginsborg (2005), "Craxi offered a modernizing veneer which Italy's two major parties, the Christian Democrats and Communists, both lacked (...) under his leadership, politics were to be personalized and simplified, they were to have a strong showbiz element, their principal medium was to be television". Indeed, Craxi was among the first ones to recognize the potential impact of commercial TV; from very early on he became Berlusconi's close friend and political sponsor and, as mentioned above, he would play a crucial role in insuring the survival and further consolidation of Berlusconi's media empire.

The political fortunes of Craxi and his party came to an abrupt end with the outbreak of a series of corruption scandals (known as *Tangentopoli*, Italian for "Bribeville") for which, between 1992 and 1993, the entire leadership of the PSI was put on trial. Craxi himself was sentenced to ten years of jail time and avoided prison only by escaping to Tunisia, where he died a few years later. The Christian Democrats and the other parties of the conservative coalition also paid a heavy toll to the scandals and virtually disappeared from the political scene. These events represented a turning point in Italy's recent political history, marking the transition from the so-called "First Republic" to the Second one. In the wake of the emergency, a temporary technocratic government was instituted and, after a 1993 popular referendum had modified the electoral system from a proportional to a (mostly) majoritarian one, early elections were set to be held in March 1994.

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[3] See for instance the testimony of Ezio Cartotto, a then close collaborator of Berlusconi, reported in Veltri and Travaglio (2009).

The prospects looked pretty dire for Mediaset at the time: the group faced serious financial difficulties, had lost its political sponsors, and feared the possible electoral success of the Democratic Party - the heir of Italy's Communist Party - which had remained largely untouched by the scandals and looked as the likely winner of the incoming elections. Indeed, the left-wing party had been traditionally critical of Mediaset's dominant position, and advocated a general reform of the media industry. After careful consideration Berlusconi decided to take action and in December of 1993, three months before the elections, he announced the creation of a new political party, *Forza Italia* ("Forward Italy"), which aspired to occupy the political space left open by the disappearance of the traditional center-right parties.

The new party brought to the extreme consequences the personalization and spectacularization of politics initiated with Craxi and the PSI, leading Seisselberg (1996) to define *Forza Italia* as a "media-mediated personality-party". This was apparent in many aspects of the new party's organization and campaigning; for example, the announcement of Berlusconi's decision to "enter the field" (one of the frequent football metaphors in Berlusconi's speeches) was filmed at his home and aired simultaneously on all three Mediaset channels. Also, the party coordinators and many of the top candidates were selected from the ranks of Mediaset and among the popular figures populating Mediaset prime-time shows. Finally, the selection and training of candidates was entirely entrusted to Publitalia, Mediaset's advertising division (Hopkin and Paolucci, 1999).

Forza Italia's innovative and aggressive communication strategy proved very successful, and in only two months Berlusconi's coalition - which also included the post-fascist *Alleanza Nazionale* ("National Alliance") and the separatist *Lega Nord* ("Northern League") - managed to close the gap with its competitors. In the elections of March 1994 *Forza Italia* became Italy's most voted party with 21% of the votes (outscoring the Democratic Party by a tiny margin), and the center-right coalition gained a solid majority in both branches of Parliament. On May 10th 1994 Berlusconi was sworn in as Italy's Prime Minister for the first time.[4] However, Berlusconi's first governmental experience would be short-lived; in January 1995 the *Lega Nord* withdraw its parliamentary support, forcing Berlusconi to resign and paving the way to a new technocratic government which would govern Italy until new elections were held in early 1996.

Nevertheless, the emergence and swift success of Berlusconi's party would produce a dramatic and long-lasting transformation of Italy's political landscape whose consequences would persist until these days. Indeed, twenty years and five elections later, Berlusconi remains the uncontested leader of the conservative front and, over time, his distinctive politi-

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[4] Figure 1 summarizes the timing of the main events described above.

cal style - characterized by an aggressive rhetoric and a pervasive use of the media - has been emulated even by his political adversaries (though with much less success). The right panel of Figure A.2 summarizes the evolution of electoral support for Berlusconi's center-right coalition over the period 1994-2013: out of the six national elections held over this period, Berlusconi's coalition prevailed by a large margin in 1994, 2001, and 2008, and lost by a very small margin in 1996, 2006, and 2013.[5]

According to many commentators Berlusconi's control of commercial TV has been decisive both for his early electoral success and for his extraordinary political longevity. However, there is little evidence of whether exposure to Mediaset actually affected voting for Berlusconi's party, how persistent this effect might have been, and through which channel it may have operated. In what follows we attempt to shed light on these questions by examining empirically the link between exposure to Mediaset before 1985 - i.e. when geographic differences in the network coverage were still considerable - and electoral support for Berlusconi's party in 1994 and in the following elections.

3. EMPIRICAL STRATEGY

We aim to estimate the long-term impact of the introduction of commercial TV in Italy on voting behavior across Italian municipalities. To do so, we need information on access to Mediaset in the early stages of the network's diffusion, when geographic differences in coverage were still wide. Data on the distribution of Mediaset viewers in the early 1980s are unfortunately not available and, in any case, actual viewership rates would measure an equilibrium outcome - possibly correlated with a range of socio-economic confounds - rather than an exogenous source of variation.

Instead, we construct a measure of Mediaset availability, across narrow geographical areas, based on the location and technical characteristics of its transmitters in year 1985. Estimating the causal effect of exposure to Mediaset on later electoral outcomes requires that Mediaset availability before 1985 is exogenous to voting behavior over the period 1994-2013. Some of the facts discussed in the previous section suggest that this is actually the case.

First of all, the transmitting apparatus was inherited from the local networks that were progressively incorporated into the broadcast syndication. Therefore, the exact location and

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[5] If until recently the Italian political landscape was largely dominated by the center-right and center-left coalitions, in the 2013 elections both coalitions lost considerable support to the advantage of other parties. One new political movement, in particular, the Five-Star Movement (M5S), emerged as the largest electoral force obtaining 25.5% of the votes. Led by blogger and former comedian Beppe Grillo, the M5S started in 2005 as a web-based grassroots protest movement extremely critical of mainstream parties and media, and later on consolidated into an organized political actor running for elections first at the local level, and, finally, at the national level.

power of the transmitters were never chosen by Mediaset, which always avoided (mainly for economic reasons) to get involved in the construction of new antennas. Of course it is still possible, at least in principle, that the syndicate targeted local televisions located in areas that were deemed somehow strategical from an electoral perspective (e.g. marginal electoral districts, or districts with a large share of swing voters). However, the totally muted political conditions between the early 1980s and 1994 (specifically, a different electoral rule and a different party system) would have frustrated any such strategy. Most importantly, Berlusconi's decision to pursue a political career matured just a few months before the 1994 elections, in the wake of political upheavals - the *Tangentopoli* scandals and the collapse of Italy's "First Republic" - which were unforeseeable back in the early 1980s.

For all these reasons, we can reasonably exclude that the geographical expansion of Mediaset before 1985 was (intentionally) driven by the later political ambitions of Berlusconi. Nevertheless, our empirical analysis will exploit only variation in Mediaset availability that is largely driven by idiosyncratic geomorphological factors, rather than by the (potentially endogenous) location and power of the transmitters. In this way, we also reduce the scope for spurious correlation due to variation in omitted factors.

We next discuss in detail our data and identification strategy, and we provide some indirect tests of our main identification assumptions.

3.1. DATA ON SIGNAL INTENSITY

Broadcast television signal is transmitted over the air according to the laws of physics for electromagnetic propagation. In the free space, signal strength decreases in the square of the distance from the transmitter; in practice, however, the patterns of decay are much more complex due to diffraction caused by mountains and other obstacles. We compute the intensity of Mediaset's signal in early 1985 using a professional engineer-developed software that simulates signal propagation according to the Longley-Rice Irregular Terrain Model (ITM) algorithm.

The ITM was originally developed by the US government for frequency-planning purposes and allows one to accurately predict signal strength across narrow geographical cells (Phillips et al., 2011). The version used in this paper is described in Hufford (2002) and has been previously used by Olken (2009),Yanagizawa-Drott (2010), Enikolopov et al. (2011) and DellaVigna et al. (2012).

To implement the ITM algorithm we combine information on transmitters' location and power with a high-resolution geo-orographic map of Italy. Detailed data on the location and technical characteristics of the 1,700 Mediaset transmitters operating in 1985 was ob-

tained directly from the Mediaset group. For each transmitter the documentation includes one technical report sheet indicating the latitude, longitude, altitude and height of the transmitter's location, as well as its transmitting power and frequency (a sample technical report sheet is reported in Appendix Figure A.4).

Using the ITM algorithm we compute Mediaset signal intensity in decibels (dB) at the centroid of all the 8,100 Italian municipalities (*comune*). Municipalities are Italy's lowest administrative units and are fairly small both in terms of surface (mean of 37.2 km^2, median of 21.8 km^2) and population (mean and median equal to 7,010 and 2,296 people, respectively).[6] Descriptive statistics for our complete sample are reported in Table 1.

Figure A.1 reports the distribution of signal intensity across Italian municipalities. While signal intensity ranges from -114 dB to +40 dB, most municipalities display values around zero, that is, the value above which signal reception is perfect; as signal strength turns negative, reception deteriorates considerably. However, in the absence of data on the number of Mediaset viewers in 1985, the precise relationship between signal and reception can only be inferred from previous studies.

Using survey data on viewership of 11 TV channels in Indonesia, for example, Olken (2009) finds that for values of signal intensity below -50 the share of individuals able to watch a given channel is close to zero; viewership increases as signal gets larger, reaching 100% when signal becomes positive. Bursztyn and Cantoni (2012) perform a similar exercise and find that the share of individuals able to receive Western TV in various areas of East Germany increased from about 0 to 80% when signal intensity passed from -86.3 dB to -75.9 dB, thus pointing at better reception at relatively lower levels of signal intensity than Olken (2009)'s findings. Finally, Enikolopov et al. (2011) estimate that a unit increase in signal strength of the independent Russian network NTV is associated with an average increase in the share of viewers of 0.3 percentage points; however, they do not distinguish between areas with positive and negative signal intensity.

Taken together, this evidence confirms that in areas with positive signal intensity all people are exposed, while reception is poorer (and possibly nil) in areas with negative predicted signal. Although the relationship between signal and viewership is not stable across countries and/or periods, it is reasonable to expect that most of the variation in exposure should occur at intermediate values of signal intensity; at the opposite, even large differences in signal strength at both extremes of the distribution should have little or no effect on the quality of reception. To focus on the relevant source of variation, in most of our analysis we will exclude municipalities in the top and bottom 2.5% of the signal distribution (see Figure

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[6] Figures were very similar in 1981, around the time commercial television was introduced in Italy.

3.2. ESTIMATING EQUATION

In the absence of data on actual Mediaset viewers in 1985, we focus on the direct effect of Mediaset signal intensity. Our approach is the same used by Yanagizawa-Drott (2010) and differs from the one used by Olken (2009) and Enikolopov et al. (2011), who have also information on the number of viewers and use signal intensity as an instrument for viewership rates in a two-stage-least-square (2SLS) framework. In contrast, we estimate the reduced form coefficient of exposure to Mediaset or, equivalently, the intention-to-treat effect.[8]

Our identification strategy exploits variation in signal intensity across otherwise similar municipalities. To account for the potentially endogenous location of the transmitters, we simulate what would be the hypothetical signal intensity given the true location and power of the transmitters, but in the absence of any geomorphological obstacles (i.e. assuming terrain is flat). The actual signal intensity and the hypothetical signal intensity in the absence of obstacles are shown in Figure 2. Comparing the two measures within relatively small areas, allows us to disentangle the part of signal intensity that is explained by idiosyncratic terrain characteristics: this is exactly the type of variation that we exploit in our empirical analysis.

In particular, we follow Olken (2009) and regress our outcomes of interest on signal intensity (*Signal*) controlling for signal intensity under the flat terrain hypothesis (*SignalFree*). The underlying idea is that, keeping *SignalFree* constant, the coefficient of *Signal* is identified by residual variation due to idiosyncratic differences in topography, rather than by the (potentially endogenous) location and power of the transmitters. Of course, terrain characteristics could potentially affect the socio-economic environment in other ways; for example, terrain ruggedness could affect the density of population and/or economic activity. To address this concern, in our main specification we control for a range of additional geographic variables, including the municipality's area and its square, average altitude and its square, and average terrain ruggedness.

We also include two sets of fixed effects: electoral districts (EDs) and local labor markets (LLM). There are 475 electoral districts, which generally include multiple adjacent municipalities within a given province. LLMs are instead defined by the Italian National Statis-

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[7] All results remain qualitatively unchanged when including all observations, some of these results are reported in Appendix Table A.1.

[8] Bursztyn and Cantoni (2012) employ yet another approach, assigning German municipalities into treatment and control group when signal intensity is above or below the one available in a particular location (Dresden), which corresponds presumably to a large increase in the quality of reception.

tical Institute (ISTAT) on the basis of workers' commuting patterns. There are 686 LLMs, which (unlike EDs) can include adjacent municipalities belonging to different provinces or regions.[9]

Therefore, identification of the effects of interest exploits residual variation across municipalities that face the same political and economic conditions (respectively, the same candidates and similar labor market opportunities). This is a very demanding exercise, as EDs and LLMs are narrow geographical areas, much smaller than provinces (the administrative unit just above municipalities in the EU-NUTS classification)[10].

The following estimating equation summarizes our empirical strategy:

$$y_m = \beta Signal_m + \gamma SignalFree_m + \delta' T_m + D_{i(m)} + L_{j(m)} + \varepsilon_m \qquad (1)$$

where y_m is the outcome of interest in municipality m; $Signal_m$ and $SignalFree_m$ are, respectively, Mediaset's actual signal intensity in 1985 and the hypothetical signal intensity assuming flat terrain; T_m is a vector of municipal characteristics including area and its square, altitude and its square, and average terrain ruggedness index; $D_{i(m)}$ and $L_{j(m)}$ are the fixed effects for, respectively, the i-th electoral district and the j-th local labor market in which the municipality is located, and ε_m is an error term. To make the estimates representative at the national level even in the presence of heterogeneous effects across municipalities, we weigh observations by municipality population in 1981; standard errors are clustered by electoral district.[11]

Under the assumption that *Signal* is independent of ε_m, the OLS coefficient β consistently estimates the causal effect of *Signal* on *y*. While such assumption is fundamentally untestable, in Table 2 we document the (absence of) correlation between *Signal* and several municipal characteristics that could potentially affect voting behavior. To facilitate the interpretation of the results, we normalize *Signal* dividing it by its standard deviation. Although the univariate correlation coefficients (in column 1) generally differ from zero, most of this correlation is absorbed by the other variables on the right-hand side of equation (see column 2). Comparing the R^2 coefficients in columns 1 and 2, the joint variation in *SignalFree*, topography, and fixed effects explains between 60 and 90 percent of the overall variation for most variables. Once these additional variables are controlled for, *Signal* is no longer correlated with

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[9] Appendix Figure A.3 provides an example of the distribution of EDs and LLMs in the mid-sized region of Abruzzo.

[10] The median area across districts and LLMs is 527 and 352 square kilometers, respectively, as opposed to 2,246 for provinces.

[11] The results are analogous (and, indeed, generally stronger) when running the estimates on the unweighted observations, some of these results are presented in Appendix Table A.1.

population (levels, density and growth), labor market conditions, and the number of firms per capita (also by class size). *Signal* continues to be correlated, instead, with educational attainment and income per capita; in light of this, we will include both these variables as additional controls in our specification.

We next present the data on electoral outcomes, and we conclude this section with another indirect test of our key identification assumption.

3.3. ELECTORAL DATA

We obtained, from the Italian Ministry of Interior, municipality-level data on electoral outcomes in all national elections held between year 1976 and 2013, including turnout, number of blank and spoiled votes, and the number of votes cast for each party. Our main outcome of interest in equation (1) is the share of votes obtained by Berlusconi's parties: *Forza Italia* (FI henceforth) between 1994 and 2006, and the *Popolo Delle Libertà* (PDL henceforth) in 2008 and 2013.[12] We focus on voting for the Lower House (*Camera*) because the different electoral system in the Upper House (*Senato*) fostered the formation of joint lists, often changing across different areas of the country. For instance, in the 1994 elections *Forza Italia* ran together with the *Lega Nord* in northern regions and with *Alleanza Nazionale* in the south, so it is difficult to isolate the electoral support for each member of the coalition. Summary statistics for the vote share of the FI-PDL are reported in Table 1.

We consider also the vote share of the other main parties in Italy. As discussed in section 2, the Italian political system is traditionally characterized by a high degree of instability and fragmentation, with the frequent formation and dissolution of parties and coalitions, which culminated into the passage from the "First" to the "Second Republic" between 1992 and 1994. Nevertheless, we were able to track the evolution of 7 major parties (or groups of parties) contemporaneous to the FI-PDL during the period 1994-2013: its traditional allies, *Alleanza Nazionale* (AN, before it joined the PDL in 2007) and the *Lega Nord* (NL); a group of minor parties at the centre of the political spectrum (CENTRE), which also joined the centre-right coalition between 1996 and 2006, but run independently in the other elections; the Democratic Party (PD), heir of the former Communist Party and the main party of the centre-left; some minor parties allied of the PD (ALLIES) and, finally, some extremist leftist parties (LEFT).

Going back to the First Republic, i.e. before the formation of *Forza Italia*, we include the Italian Communist Party (PCI); all the members of the centre-right coalition led by the Chris-

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[12] The *Popolo Delle Libertà* ("People of Freedom") party was created in 2007 from the merger of *Forza Italia* and its traditional right-wing ally, *Alleanza Nazionale*.

tian Democrats (DC) and the Italian Socialist Party of Bettino Craxi (PSI), which included also three other minor parties, namely the Social-Democratic Party (PSDI), the Republican Party (PRI) and the Liberal Party (PLI); finally, we include two non-aligned parties, the neo-fascist Italian Social Movement (MSI) and the Radical Party (RP). Figure A.2 plots the electoral support for the main parties and coalitions during the First and Second Republic (years 1976-1992 and 1994-2013, respectively), while the Appendix Table A.3 contains a brief description of each party.

3.4. PLACEBO ESTIMATES

We conclude this section by regressing the vote share of each party during the period 1976-1992 on *Signal* and all the other variables in equation (1), namely *Signal free*, controls for geomorphological characteristics, fixed effects for electoral district and local labor markets, log per capita income and schooling. The coefficient of *Signal* in the estimated equation for each party and year is reported in Table 3.

The first two rows correspond to the period before Mediaset started its transmissions in the early 1980s. All coefficients are very close to zero and (largely) not statistically significant, providing additional empirical support for the assumption that, conditional on the other control variables in equation (1), Mediaset signal intensity in 1985 is uncorrelated with other determinants of voting behavior at the local level. Notice that such estimates would differ from zero insofar as any determinant of voting behavior, both observed and unobserved, differs systematically between municipalities that were differentially exposed to Mediaset. In this sense, the placebo estimates for the period 1976-1979 provide a compelling test of our main identification assumption (even more than the balance tests in Table 2).

Turning to the period 1983-1992, i.e. after the introduction of Mediaset but before the creation of Forza Italia, the only notable change is represented by a significant increase in electoral support for the PSI in municipalities with better reception of Mediaset channels. The coefficient on *Signal* increases from 0.36 in 1979 (non-statistically significant) to 0.64 in 1992 (significant at the 5% level). This finding is, in many aspects, not surprising. As we discussed in Section 2, the PSI adhered more to the values put forth by commercial TV than traditional mass parties, such as the Christian Democrats and the Communists, whose rhetoric was rather centered around family values and working class instances, respectively (Ginsborg, 2005); in many aspects it can be considered as the precursor of *Forza Italia*. We next examine the relationship between earlier exposure to Mediaset and the vote share of the FI-PDL over the period 1994-2013.

4. RESULTS

In what follows we estimate the effect of early exposure to Mediaset on electoral support for Berlusconi's party. We will also examine voting for the other main parties of the Second Republic.

Table 1 reports the average and median vote share of the FI-PDL across Italian municipalities in all national elections since 1994, distinguishing between municipalities with perfect and less-than-perfect (or nil) reception of Mediaset before 1985 ($Signal \geq 0$ and $Signal < 0$, respectively). The vote share is consistently higher, by 1 to 2 percentage points on average, in the first group of municipalities. We next examine whether such relationship is robust to controlling in several ways for other differences between municipalities that were earlier and later exposed.

4.1. BASELINE OLS ESTIMATES

In Table 4 we report several specifications of the OLS equation (1) for the effect of pre-1985 exposure to Mediaset on voting for FI in 1994, the first election in which Berlusconi ran for office. The univariate regression in column 1, documents a positive relationship between the actual intensity of Mediaset signal and voting for Berlusconi; the effect is statistically significant at the 1% level and rather large, a one standard deviation increase in *Signal* corresponding to a 3-percentage-point increase in the vote share of FI.

In column 2 we control for signal intensity under the flat terrain hypothesis (*SignalFree*) and in column 3 we add the geomorphological controls. The fact that the coefficient of *Signal* remains unaffected suggests that endogeneity in the location and power of Mediaset transmitters is not driving the result. Consistent with this, the univariate regression of FI's vote share on *SignalFree* is not significantly different from zero (coefficient -0.568, standard error 0.483).

In column 4 we add electoral district and local labor market fixed effects. The point estimate on *Signal* decreases to slightly less than 1 percentage point and remains virtually unaffected in column 5, where we control in addition for the number of eligible voters, log-income per capita, and education (i.e. the variables that were statistically significant in the balance test of Table 2). The findings are basically unaffected when we run the estimates on the unweighted sample or we do not trim municipalities on the tails of the distribution of *Signal* (Appendix Table A.1.). Overall, these results suggest that earlier exposure to Mediaset (before 1985) brought an electoral advantage to Berlusconi when he first ran for election one decade later (in 1994).

17

This effect is not short-lived. In Table 5, we estimate the same specification for all national elections of the Second Republic: 1994, 1996, 2001, 2006, 2008 and 2013. Throughout most of this period, the estimated coefficient of *Signal* remains very stable, between 0.7 and 1 percentage points. Therefore, voters that were longer exposed to Mediaset seem to experience a *persistent* shift in political preferences, relative to voters that were exposed only for a shorter period of time.

Such difference vanishes only in 2013, about 20 years after the entry of Berlusconi into politics. As we already discussed in Section 2, the 2013 elections were characterized by a profound disenchantment with all the major parties that dominated the political scene during the Second Republic (analogously to what happened at the end of the First Republic in 1992). Against this backdrop, it is not surprising that the political message of Berlusconi was greeted with skepticism, possibly also by voters that had been longer exposed to his own televisions. Indeed, the PDL lost about 6.5 million of votes between 2008 and 2013, which were evenly distributed across municipalities that were differentially exposed to Mediaset.

In Table 6 we compare the effect of Mediaset on FI-PDL with that on other parties over the period 1994-2013. Interestingly, Berlusconi's party is the only one that displays significantly higher electoral support in areas exposed to Mediaset prior to 1985 in every election. In particular, the same pattern does not apply to the other members of the conservative coalition. In fact, there is no impact on electoral support for *Alleanza Nazionale*, and we find evidence of a *negative* and significant effect on the vote share of the *Lega Nord*, Berlusconi's traditional ally in the North. Such negative effect is especially pronounced in 1996 (-0.795, significant at the 1% level), the only election in which the *Lega* did not join Berlusconi's coalition. Pre-1985 access to Mediaset is also associated with lower vote shares for the Democratic Party and other left-wing parties (although this effect is not statistically significant for some elections).[13] Although it may seem surprising that higher support for Berlusconi's party among early Mediaset viewers came at the expense of both the *Lega* and left-wing parties, this is consistent with the fact that these parties catered primarily to working class voters (Tambini, 2001) which were likely to be particularly exposed to Mediaset content.

Figure 5 summarizes the results discussed above. The graph reports, on the horizontal axis, the coefficient on *Signal* estimated using our baseline specification in separate regressions of vote share for all parties in all elections, and, on the vertical axis, the corresponding t-statistics; we distinguish the results for the pre-1983 elections (marked with Xs), for the 1983-1992 period (hollow circles), and for the post-1992 elections (solid circles). While no

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[13] In fact, the negative impact on the center-left parties is especially pronounced in the Center and Southern regions: when focusing on the subsample of municipalities in these regions, the effect is much larger and more precisely estimated than for the overall sample (results available upon request).

party displays a significant coefficient prior to the introduction of Mediaset, and only the PSI exhibits a significant (positive) coefficient between 1983 and 1992 - for reasons explained above - the coefficients for the FI-PDL (black solid circles) are abnormally large, in terms of both magnitude and statistical significance, in all elections but the last one.

4.2. ALTERNATIVE EMPIRICAL STRATEGIES

The estimated coefficients on *Signal* in Tables 4 and 5 capture the reduced form (or the intention-to-treat) effect of early exposure to Mediaset on voting. Ideally, we would like to estimate instead the effect of signal-driven changes in actual viewership. However, data on viewership are not available at the municipality-level.

Still, we know from Olken (2009) that potential viewership increases with signal strength as long as the latter is negative, it reaches 100% when signal equals zero and it remains constant thereafter. To test whether the documented effect of signal strength on voting is consistent with such pattern, we estimate a local linear regression (LLR) of the voting for FI in 1994 on *Signal*. Figure 3 shows that the relationship between signal strength and voting has a similar shape to that between signal strength and potential viewership, as documented by Olken (2009). In particular, it is upward sloped over negative values of signal (when viewership should also increase), and it remains constant for values of signal strength above zero (when actual reception should also be constant).

In the right graph of Figure 3 we estimate the LLR separately for negative and positive values of *Signal*. The predicted vote differs by about 2 percentage points (statistically significant at the 1% confidence level) between municipalities with signal intensity just above and just below *Signal* = 0, the value for which reception changes from less-than-perfect to perfect. As long as municipalities with similar values of signal intensity are also similar along other dimensions, exposure to Mediaset is as good as randomly assigned across municipalities around the threshold. In the spirit of regression discontinuity analysis (Lee and Lemieux, 2010), we can thus attribute the discrete change in the predicted vote share to the causal effect of exposure. [14]

In the same vein, we restrict the analysis to pairs of adjacent municipalities in which one of the two has positive signal intensity (i.e. perfect reception) and the other one has negative signal intensity (i.e. imperfect or nil reception). Overall we identify 3,021 such neighbor-pairs. The means' comparison tests in column 1 of Table 7 confirm that, even within this

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[14] Of course, the threshold *Signal* = 0 approximates with some unavoidable error the level of signal intensity that allows for perfect reception. If anything, however, this should bias the estimate downward.

sub-sample, municipalities with perfect reception of Mediaset channels display significantly higher vote shares for Berlusconi's parties, relative to those with only imperfect reception.

The bottom part of Table 7 compares several socio-economic characteristics between exposed and non-exposed municipalities within the restricted sample of neighbor-pairs (analogously to what we did in Table 2 for the whole sample of the OLS regressions). Although the two groups are balanced in terms of most variables, exposed municipalities seem significantly larger (both in terms of population and electorate) and exhibit higher educational attainment. For this reason, we further restrict the sample to pairs of neighbor municipalities with a difference in *SignalFree* lower than 1 or 0.5. In this way, we approximate the ideal experiment of comparing municipalities that are equally distant from transmitters, so that any difference in reception is solely due to idiosyncratic geomorphological factors. This further restriction increases difference in electoral support for the FI-PDL to about 1 percentage point (a magnitude that is remarkably similar to that estimated by the OLS regressions), while eliminating at the same time any residual difference in terms of other municipality characteristics, see columns 2 and 3 of Table 7.

In the last three columns of the table we control in addition for territory characteristics (area, altitude and ruggedness) and neighbor-pair fixed effects. The latter keep constant any other (possibly unobserved) characteristic in common between each two adjacent municipalities.[15] The inclusion of pair fixed effects and of the additional controls greatly improves on the precision of the estimates (the standard errors in columns 4-6 are much smaller than those in columns 1-3); apart from that, the results largely confirm those based on simple mean comparisons.

More in general, the results obtained using these alternative methods are very similar (also in terms of magnitude) to the OLS estimates on the full sample of municipalities. In the rest of the paper, we thus discuss only the OLS estimates obtained on the full sample of municipalities.

4.3. HETEROGENEITY

One potential issue with the OLS estimates concerns the weighting scheme. In the presence of heterogeneous effects, weighting by population guarantees the representativeness of the estimated coefficient at the national level; on the other hand, one may worry that the results are driven by the relationship between exposure to Mediaset and voting in a few large cities. To address this concern, in Table 8 we first re-estimate our baseline specification on the

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[15] See Acemoglu et al. (2012) for a similar approach.

unweighted observations (column 1); then, we restrict the sample to smaller municipalities (columns 2 to 5).[16]

The coefficient on *Signal* in the unweighted regression is slightly larger than the weighted one. Most importantly, the point estimate is very similar for municipalities with different population size, and increases strongly only when we focus on the very small ones (less than 500 inhabitants). These results further confirm that the effect of signal strength is capturing variation across a multitude of small cities with scattered access to Mediaset (rather than being driven by a handful of large cities).

In columns 6 to 8 we also estimate separate regressions for municipalities in the North, Center and South. We find evidence of a considerable heterogeneity across macro-regions: the effect is small and not statistically significant in the North; it is very large and statistically significant in the South; and it takes intermediate values in the Center, very close to the average effect at the national level.

It is instructive to relate such differences to the observed patterns in TV consumption prior to the advent of Mediaset, as it seems natural to expect a larger impact of potential exposure in areas where people actually watched more TV. Appendix Table A.2 reports the average number of hours spent watching TV in municipalities of different size and in different macro-regions, based on a survey on media consumption conducted by ISTAT on a representative sample of the Italian population in 1983 (ISTAT, 1985). The pattern of TV consumption across different sub-samples lines up nicely with the estimated coefficient of *Signal*: there are in fact no significant differences in average TV viewership between municipalities of different size, while respondents in the North report watching fewer hours of TV than those in the Center and South. A graphical representation of the relation between the effect of early exposure to Mediaset and pre-existing TV consumption patterns is provided in Figure 4.[17]

We next explore survey data that combine detailed information on political views and a rich set of individual characteristics, allowing us to explore additional dimensions of heterogeneity in the effect of Mediaset.

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[16] All regressions in Table 8 use the specification in the last column of Table 5, pooling together all elections in the 1994-2013 period and including year fixed-effects. We obtain analogous results when running separate regressions for each election year.

[17] No information on viewership rates is available for municipalities with less than 500 inhabitants.

The Italian National Election Study (ITANES) is a series of pre- and post-electoral surveys conducted on a representative sample of the Italian population in coincidence with national parliamentary elections since 1972. For our analysis we focus on the surveys conducted in 1994, 1996, 2001 and 2006. Between 2,000 and 3,000 individuals were interviewed in each wave, for a total of 10,317.

The surveys contains detailed information on the respondents' (self-reported) voting choice, opinion on political leaders, degree of political participation, sources of political information, media consumption, and a range of individual characteristics including age, gender, education, employment and marital status. Crucially, the survey also reports the code of the municipality where the respondent resides (1878 municipalities in total), which allows us to assign to each respondent a value for Mediaset pre-1985 signal intensity.

In Table 9 we explore the relation between pre-1985 access to Mediaset and various individual outcomes. We first examine whether individual-level analysis confirms the positive association between early exposure to Mediaset and voting for Berlusconi's party. To do so, in column 1 we regress a dummy variable for voting for *Forza Italia* on *Signal*, *SignalFree*, all municipal controls included in our baseline municipal regressions (area, area squared, altitude, altitude squared, ruggedness, income, education), a range of individual controls (gender, age, education, employment, marital status, and household size), and election-year fixed effects. The results confirm that individuals living in areas that had access to Mediaset prior to 1985 are more likely to vote for Berlusconi's party (coefficient of 0.033 significant at the 1% level). Since many electoral districts and local labor markets include only a few respondents, this first specification does not include the full set of fixed effects used in our municipal regressions. Instead, in column 2 we include fixed effects for 110 provinces (the administrative level just above municipalities) and find that the effect of *Signal* on the propensity to vote for *Forza Italia* remains positive and significant (at the 10% level). According to the estimated coefficient, a one standard deviation increase in pre-1985 signal intensity is associated with an increase in the probability of voting for *Forza Italia* of 2 percentage points, a magnitude that is comparable to that estimated in the municipal regressions.

The use of individual data also allows us to shed some light on why early exposure to Mediaset has such a persistent effect. In particular, using information on the respondents' year of birth, we can examine whether this effect is more pronounced for individuals that were exposed to Mediaset content at younger ages. In columns 3 and 4 of Table 9 we estimate our baseline specification only on the sample of individuals that voted for the first time in 1994, when Berlusconi first run for office, or later. When focusing on this group of younger

voters the estimated coefficient is much larger than for the overall sample (almost five-fold in the specification with province fixed effects, column 4). This pattern is confirmed in Figure 6 which plots the results of a series of analogous regressions estimated separately for the sample of individuals born after each given year between 1915 and 1981 (hence gradually excluding older cohorts). Clearly, exposure to Mediaset has a much larger effect on individuals born after 1975, and especially on those that were between 8 and 10 year-old in 1985 (the year our treatment variable refers to).

That the size of the coefficient decreases when focusing on even younger individuals (i.e. born after 1978, after 1979, etc.) is presumably related to the fact that, as Mediaset coverage gradually expanded to the entire territory between 1985 and 1990, the actual length of differential exposure for these subjects was decreasing; that the precision of the estimates decreases as we focus on ever younger voters can be instead explained by the fact that the sample size is gradually shrinking. While this exercise is instructive of the particular vulnerability of younger voters to the influence of commercial television, it does not provide a comprehensive picture of its effect on all age groups. To this end, we divide our sample in six ten-year birth cohorts and estimate the coefficient on *Signal* using our baseline specification separately for each group (see Figure 7). Once again, the results confirm that the effect of exposure to Mediaset is larger for the youngest cohort (born after 1975) than for any other.Interestingly, exposure to Mediaset also appears to have a significant positive effect on older voters (born before 1936), which is not surprising given that the elderly, as well as the young, tend to spend a relatively high fraction of their time watching TV, see Appendix Table A.2.

Taken together these results suggest that exposure to Mediaset was especially important in shaping the views and future political attitudes of individuals in young and very young age. To the extent that exposure to cultural messages and political rhetoric at early stages of personal development tends to have long-lasting effects on political behavior (Kaplan and Mukand, 2011; Yanagizawa-Drott and Madestam, 2011), this could go some way in explaining the persistence of the Mediaset effect.[18]

Taken together, the results in this section point at the existence of a strong and persistent link between early exposure to Mediaset content and receptiveness to Berlusconi's political message. In the following section we shed light on the possible channel(s) through which the documented political effect of commercial television may have operated.

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[18] Our findings are also in line with previous evidence on the impact of exposure to TV in young age on cognitive and behavioral outcomes (Gentzkow and Shapiro, 2008; Huesmann et al., 2003).

5. CHANNELS

5.1. PARTISAN NEWS BIAS

The evidence presented so far points at significant and persistent effects of early exposure to Mediaset on political outcomes. In particular, it suggests that individuals in municipalities with access to Mediaset prior to 1985 were more likely to vote for Berlusconi's party in 1994, when he first ran for office, and in subsequent elections.

Previous research has documented that exposure to media can have significant effect on individual voting behavior and, ultimately, on electoral competition (DellaVigna and Kaplan, 2007; Enikolopov et al., 2011). These contributions have focused exclusively on the impact of exposure to partisan bias in political news coverage. As discussed in section 2, however, no newscasts were broadcast on Mediaset until 1991. This was partly due to the fact that, until 1990, private stations were prohibited from broadcasting live, which made virtually impossible to transmit news bulletins. Other forms of informative content (i.e. political talk shows, investigative journalism reports) were similarly scant on Mediaset channels' programming, which consisted primarily of light entertainment programs such as soap operas, action dramas, quiz and variety shows, cartoons and sport. Figure 8 compares the share of airtime devoted to different types of programs on Mediaset and RAI channels, as reported by the statistics on culture assembled by ISTAT (1987). As of 1987, the first year for which data are available, the share of airtime devoted to all informative programs combined was close to zero and, given the trend, it was presumably even lower in the years before.

Based on the timing of the introduction of news programs on Mediaset channels, as well as of the entry of Berlusconi into politics, it seems therefore unlikely that any effect of early access to Mediaset is due to (differential) exposure to political media bias before 1985. Yet, it is possible that early Mediaset viewers developed some form of attachment to the network that made them more likely to watch any Mediaset program, including newscasts once these were introduced, and hence to be exposed to pro-Berlusconi bias.

Using individual data on news consumption from the ITANES surveys we can test this hypothesis by examining to what extent early access to Mediaset is associated with viewership of Mediaset news programs in and after 1994. In particular, ITANES respondents were asked to report whether they watched news on TV and, if so, on what channel. We construct two dummy variables that equal one if a respondent reports watching news most frequently on Mediaset and public channels respectively, and use them as dependent variables in our baseline specification (see last four columns of Table 9). Interestingly, we find no significant effect of early exposure to Mediaset on the probability of watching news on Mediaset (or RAI) both for the overall sample, and for younger voters only.

24

As an indirect test of the news bias channel, we also look at differences in beliefs about Berlusconi between early and late Mediaset viewers. Indeed, if early viewers were exposed to more favorable coverage of *Forza Italia* and of its leader, one would expect to observe systematic differences in the evaluation of Berlusconi between the two groups. Luckily, some questions in the ITANES surveys provide the opportunity to explore this aspect; in some waves, in fact, respondents were asked what their overall evaluation of Berlusconi was (on a 1-10 scale), and whether they believed him to have each of the following qualities: honest, qualified, trustworthy, telegenic (2001 and 2006), sincere, coherent, and dependable (2001 only). In Table 10 we estimate our baseline specification using as dependent variable the respondents' overall evaluation of Berlusconi (column 1), a dummy for positive responses on each personal attribute (columns 2 to 8), and the sum of the binary indicators for all attributes (column 9). Again, we document no systematic differences between early and late Mediaset viewers in their evaluation of Berlusconi along any of these dimensions.

Overall, we find little evidence that voters that had access to Mediaset earlier were more exposed (or vulnerable) to pro-Berlusconi news bias later on, nor that they formed a more positive opinion of Berlusconi as a person and as a political leader. An alternative interpretation is that early Mediaset viewers were more likely to vote for Berlusconi not because they gathered different information about him (or his political platform), but, rather, because they evaluated this information through a different set of values that commercial TV contributed to disseminate. We discuss this hypothesis in greater detail in sections 5.2 and 5.3.[19]

5.2. GENERAL SYMPATHY FOR BERLUSCONI

Another possible explanation of the higher support for Berlusconi's party among early Mediaset viewers is that these individuals developed a special bond with Berlusconi himself - for example out of gratitude for the unprecedented entertainment opportunities offered by his network - and were hence more likely to support any initiative he would embark on. Their support for *Forza Italia* would hence not reflect a particular affinity to the party's political platform but would rather be just another way to express their attachment to Berlusconi.

An indirect way to test this hypothesis is to look at whether early Mediaset viewers were also more likely to support Berlusconi's non-political ventures. In particular, we investigate the

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[19] As mentioned in the introduction, it is important to note that we do not aim to downplay the potential impact of partisan news bias on voting in the context of Italy (discussed by Durante and Knight, 2012, and, more recently, by Barone et al., 2012). Rather, we argue that, given the content available on Mediaset channels in the early stage of their diffusion, an explanation based solely on exposure to partisan news bias seems insufficient to explain the documented differences in voting behavior between early and late Mediaset viewers.

relation between Mediaset access and the evolution of popular support for Milan A.C., the soccer team acquired by Berlusconi in 1987 and whose triumphs over the following decade greatly contributed to Berlusconi's successful public image. To this end we collect comprehensive data on the number of Milan A.C. organized supporters' clubs (Milan clubs) that were present across Italian municipalities as of 2012 (available from the Italian Association of Milan Clubs). Furthermore, to account for any systematic differences in the overall presence of soccer fans, we also collect data on the number of organized supporters' clubs of F.C. Internazionale (or Inter), the other top team from Milan comparable to Milan A.C. in terms of reputation and number of supporters. According to our data there is at least one Milan Club in 643 municipalities (about 8% of the total), and at least one Inter Club in 811 municipalities (about 10%). To test the relationship between early access to Mediaset and support for Milan A.C., we construct a dummy variable which equals one for those municipalities where at least one Milan club is present and zero otherwise, and regress it on *Signal* in a specification identical to that used for the voting regressions. The results are presented in Table 11: the first specification includes the full set of geographic municipal controls; in column 2 we also include both electoral district and local labor fixed effects; finally in column 3 we also control for population, (log) municipal per capita income, and education. In columns 4 to 6 we estimate the same specifications using as dependent variable a dummy for the presence of at least one Inter club in a municipality.

We find no evidence of a systematic relation between early access to Mediaset and support for Berlusconi's team; if anything, Mediaset signal is associated with higher support for Inter F.C. (column 4), although this effect too becomes statistically insignificant when fixed effects and additional controls are included. To the extent that support for his soccer team reflects a general sympathy towards Berlusconi, the evidence presented does not support the view that early Mediaset viewers were more supportive of all Berlusconi's initiatives; it hence seems like their disproportionate support for Berlusconi's party might be due to a specific affinity between Mediaset's non-informative content and Berlusconi's political message.

5.3. Non-informative content and values

In his seminal work on the decline of social capital in the United States in the post-war period, Putnam (2000) devotes an entire chapter to discussing the role of television and its impact on social capital. According to Putnam, both the amount of time spent watching TV and the type of content viewers are exposed to can influence their degree of civic (dis)engagement. With regard to the quantity of exposure, Putnam's intuitive argument is that the more time individuals spend watching TV, the less they will devote to various forms of civic engagement (e.g.

participation in association, attendance of public meeting, etc.). With regard to the quality of content, Putnam draws a stark distinction between informative and non-informative content: at one extreme, news and educational content can in principle foster political participation and civic engagement; at the other extreme, light entertainment programs can be detrimental to social capital.

Putnam explicitly classifies specific program categories in terms of their pro-civic potential: "at the top of the pro-civic hierarchy are news programs and educational television (...) at the other hand of the scale fell action dramas (exemplified in an earlier era by Hazzard and Miami Vice), soap-operas (such as Dallas and Melrose Place) and so-called reality TV". Strikingly, all these examples of "uncivic" TV shows were introduced in Italy by Mediaset. More in general, Figure 8 shows that action dramas, soap operas and light entertainment programs accounted for more than 70% of Mediaset total airtime in the 1980s.

In accordance to Putnam's argument, one possibility is that the introduction of commercial TV may have favored a decline in civic engagement both by expanding the quantity and variety of content available to viewers, and by favoring the diffusion of the least pro-civic programs. If this was the case, this pattern should presumably have been more pronounced in areas that had access to Mediaset programs early on. To test this hypothesis in Table 12 we investigate the relation between Mediaset signal intensity prior to 1985 and the evolution of civic engagement between 1981 and 2001, as measured by the number civic associations. This is, in fact, the only measure of civic engagement, among those originally suggested by Putnam, for which municipal data dating back to the 1980s are available. The data come from the national census and are only available at ten-year intervals (1981, 1991, 2001). While in the top panel the dependent variable is the number of voluntary associations per capita, in the bottom panel we use the ratio between the number of voluntary associations - which the Italian census classifies as economic units - and the total number of economic units in a municipality.

In the first three columns we regress the number of voluntary associations in each census year on pre-1985 signal intensity using our baseline specification. Reassuringly, signal strength in 1985 is not correlated with the number of per capita voluntarily associations in 1981, i.e. before the expansion of Mediaset (column 1). The relation between the two variables becomes negative and statistically significant after the introduction of Mediaset, both in 1991 and in 2001 (columns 2 and 3, respectively). These results are suggestive of a decline in civic engagement - both between 1981 and 1991, and between 1991 and 2001 - in municipalities that were exposed to Mediaset earlier relative to those that were exposed only later. This pattern is confirmed in column 4 when we pool together observations for all census years and interact pre-1985 signal intensity in 1985 with a dummy for the post-1981 period. Finally,

the effect remains virtually unchanged in column 5 when we also include municipality fixed effects, hence exploiting only differential changes over time in the same municipality.

With regard to the magnitude of the effect, a one standard deviation increase in signal intensity is associated with a decline in civic engagement of 3.5 voluntarily associations per 10,000 inhabitants or, equivalently, 6.2 associations per 1,000 economic units. These are sizeable effects, corresponding respectively to 40 and 36 percent of the standard deviation in the number of voluntary associations per capita and per economic unit in 1981.

Overall, the results in Table 12 suggest that municipalities that were exposed to Mediaset before 1985 experienced a decline in civic engagement over the following years, relative to municipalities that were exposed only later on. Although we are not in the position to distinguish what part of the documented effect may be due to an increase in TV consumption rather than to changes in the type of content, both these two mechanisms would be consistent with Putnam's argument.

5.4. VALUES AND VOTING

Why would the diffusion of a culture of individualism and civic disengagement, favored by the advent of commercial TV, result in increased electoral support for Berlusconi's party? Considering the specificity of Berlusconi's political rhetoric and his contentious views on issues such as corruption, tax evasion, or gender equality, it is not unreasonable to believe that individuals subscribing to pro-civic values would find his political message unattractive, and vice versa. Indeed, extensive anecdotal evidence attests to substantially different views between Berlusconi's political supporters and opponents on a range of culturally charged issues which often transcend, and in some cases go against, the traditional right-left ideological divide.

The ITANES data allow us to explore this issue more systematically, as the survey includes a range of questions that allows for the construction of individual measures of civic engagement analogous to those used by Putnam (2000). In particular, respondents are asked whether they belong to any voluntary association, whether they are interested in politics, sign petitions, attend public meetings and demonstrations. Based on the response to each of these questions we attempt to characterize *Forza Italia*'s voters along these dimensions of civic engagement. Specifically, in Table 14, we regress a dummy for voting for *Forza Italia* on various measures of political and social engagement (both separately and jointly), controlling for baseline individual characteristics, and electoral year fixed effects. Since in this case we are exploiting variation at the individual level, we also include municipality fixed effects. The results suggest that, relative to the average individual in each municipality, *Forza Italia*

28

voters are significantly less likely to participate in voluntary associations (column 1 and 7), and tend to be significantly less interested and actively engaged in politics (columns 2 to 6). Although these findings can hardly be given a causal interpretation, the evidence is consistent with the view that *Forza Italia* is especially popular among segments of the population characterized by low levels of civic engagement, so it may have benefited from the decline in social capital triggered by the diffusion of Mediaset content.

To further corroborate these findings, we finally examine the relationship between civic engagement and voting for *Forza Italia* at the municipal level. To do so we combine data on electoral outcomes for all elections between 1994 and 2006 with census data on the number of civic associations in 1991 and 2001. In the first row of Table 15 we regress the average vote share of each main party on the number of per capita voluntary associations in the closest census year and our baseline set of controls.[20] The results confirm that Berlusconi's party enjoys significantly higher electoral support in areas with relatively low levels of civic engagement. Furthermore, *Forza Italia* displays the largest coefficient among all parties, most of which, both on the right and on the left, tend to receive lower support in areas with low civic engagement.

The relation between civic engagement and voting for *Forza Italia* seems quite general and not driven by exposure to Mediaset. Evidence of this is provided in the second row where we restrict the sample to municipalities with pre-1985 signal intensity above 0, that is, municipalities that should not differ much in exposure to Mediaset. When doing so the qualitative results remain very similar and, if anything, the pattern documented in the first row becomes even more extreme. Finally, to make sure that the results are not driven by differences in unobservable municipal characteristics, in the lower panel of Table 15, we replicate the analysis including municipality fixed effects, thus identifying the effect only from variation in voting and civic engagement over time within the same municipality. When doing so the qualitative results remain unchanged while the magnitude of all coefficients increases.

6. CONCLUSION

Mass media can have a profound impact on individual socio-cultural attitudes. Exposure to television, for example, can discourage participation in the local community and favor civic disengagement (Putnam, 2000; Olken, 2009); this, in turn, can translate into an electoral advantage for those political forces whose platform is more in line with the cultural values put forth by TV.

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[20] We use the number of voluntary associations reported in the 1991 census for the elections in 1994 and 1996, and that reported in the 2001 census for the elections of 2001 and 2006.

In this paper we examine how the introduction of commercial TV has influenced the co-evolution of civic values and political preferences in Italy over the past three decades. We first document that Italian municipalities that were first exposed to Berlusconi's commercial TV network, Mediaset, in the early 1980s displayed higher electoral support for Berlusconi's party once he entered politics, in 1994, and in the following decades. The difference in voting behavior between early and late Mediaset viewers cannot be explained by differential exposure to pro-Berlusconi bias in news coverage; in fact, news programs were only introduced on Mediaset in 1991, when the network was already available to the entire population. Instead, we suggest that the sort of non-informative content introduced on Mediaset channels, favored the diffusion of a culture of individualism and civic disengagement that, later on, would make voters more receptive to Berlusconi's political message. In line with this argument, we document that areas that had access to Mediaset earlier on experienced a marked decline in civic engagement in the following decades relative to those that did not.

Overall, our results confirm previous findings on the role of media, and television in particular, as an important determinant of socio-political attitudes. Most importantly, our study is the first one to show that, even in the absence of overt news bias, television may have far-reaching effects on individual political preferences through the diffusion of new cultural models. To the extent that socio-cultural attitudes tend to evolve very slowly, it may take time for the effect of media-fueled cultural models to unravel. For the same reason, however, the consequences on social and political outcomes may be especially profound and long-lasting.

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Figure 1: Timeline of events, 1980-1994
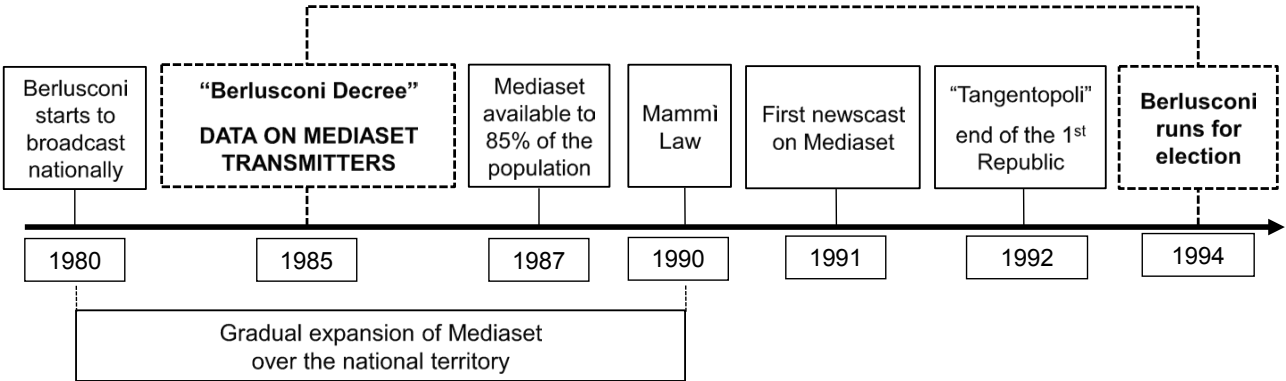
Figure 2: Geographic distribution of Mediaset signal intensity in 1985

(a) Signal   (b) Signal free

<-16.5	-10.7 - -7.2	-4.6 - -2.7
-16.5 - -10.7	-7.2 - -4.6	-2.7 - -1.4

-1.4 - 0.2	2.4 - 6.2
0.2 - 2.4	6.2 - 39.5
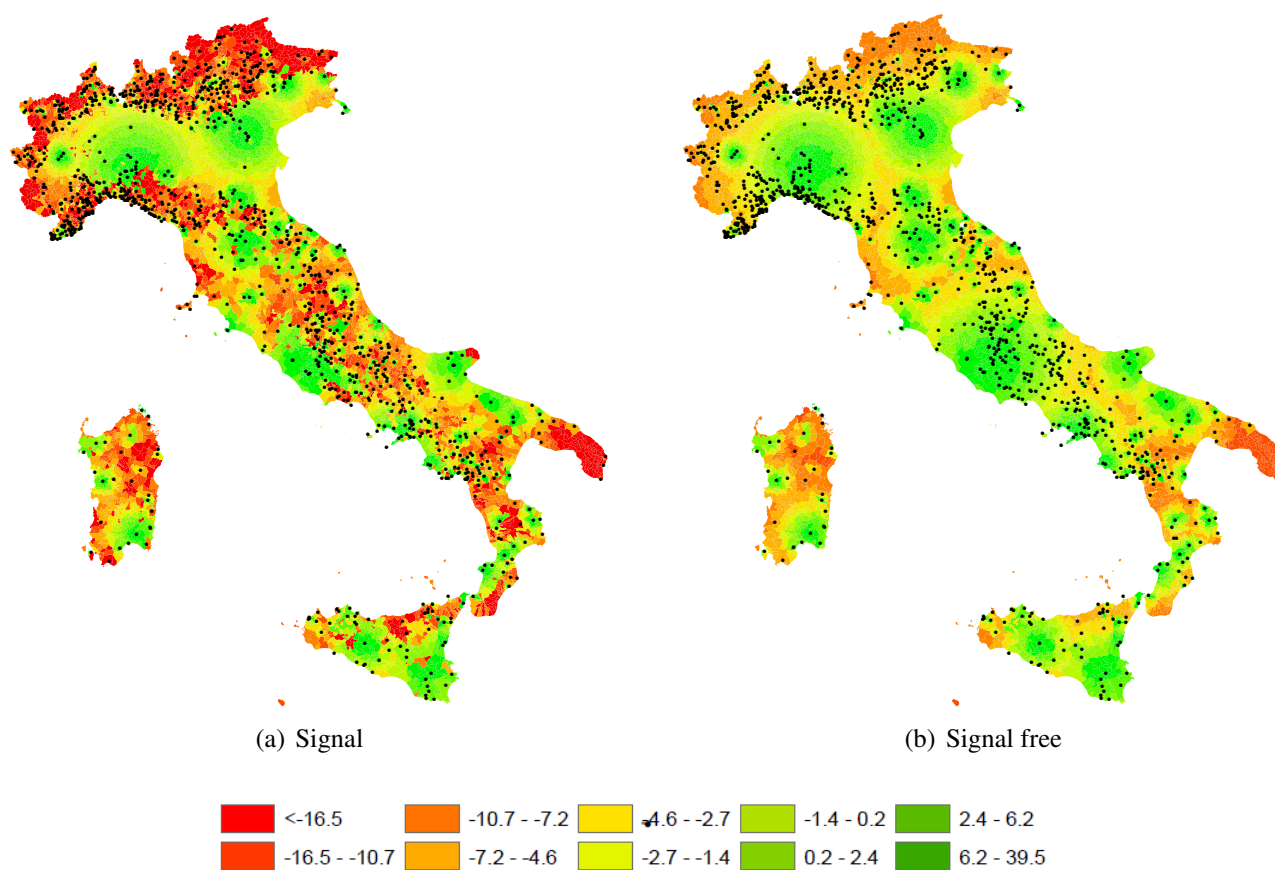
The maps represent the geographic distribution of the simulated intensity of Mediaset's signal in 1985 respectively under real conditions (left), and in the absence of geomorphological obstacles (right).

Figure 3: Mediaset signal intensity in 1985 and voting for *Forza Italia* in 1994 (local linear regressions)
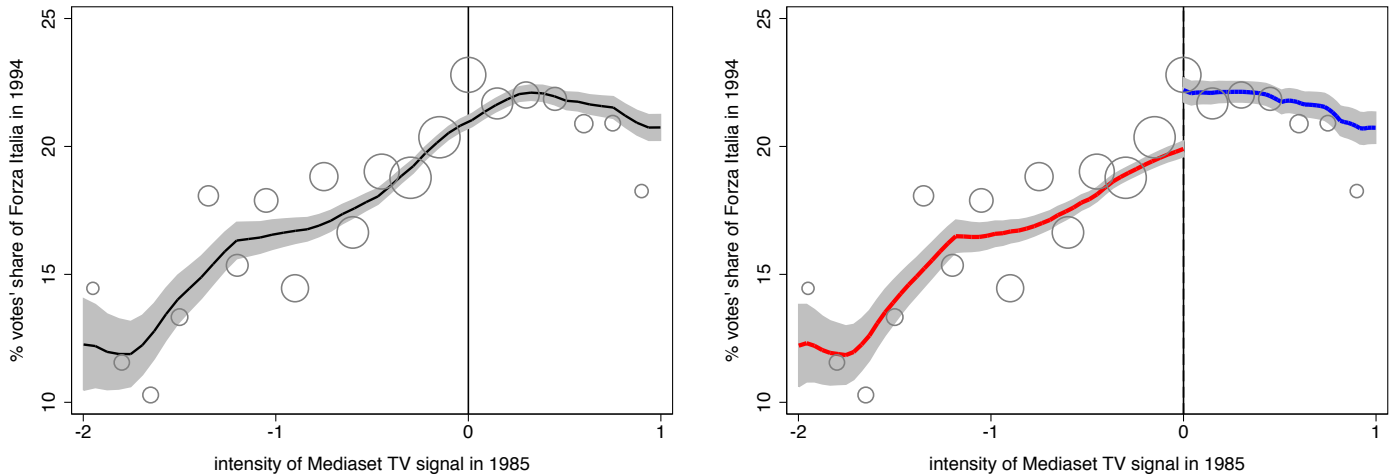
The graph on the left summarizes the results of the estimation of a local linear regression of *Forza Italia*'s vote share on Mediaset signal intensity in 1985 (controlling for all baseline controls). The graph on the right summarizes the results of a similar exercise; in this case however we estimate the local linear regression separately for negative and positive values of signal intensity.

Figure 4: Mediaset signal intensity, voting for *Forza Italia* and TV consumption
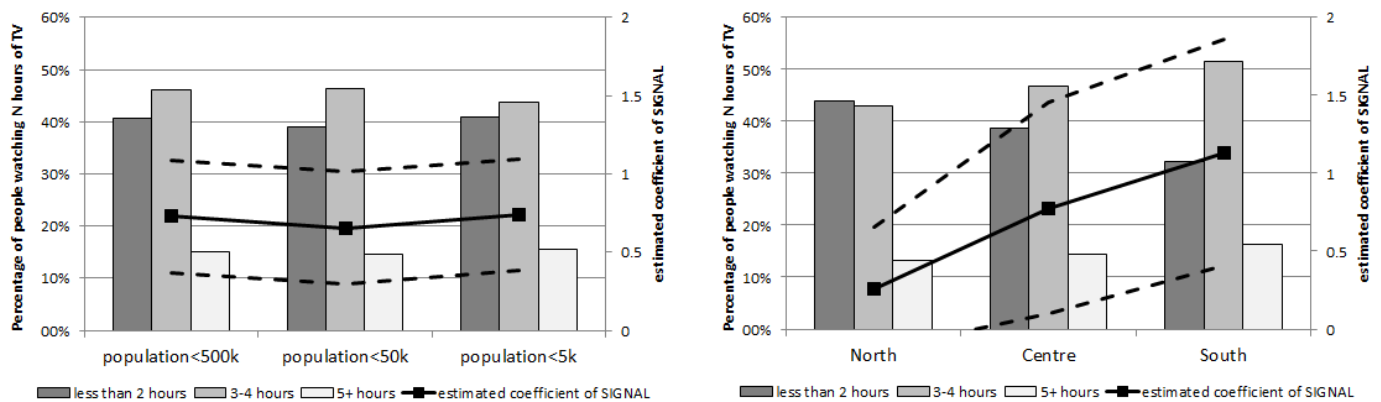
The graphs above report the estimated coefficients (and respective confidence intervals) of a series of regressions of *Forza Italia*'s vote share on Mediaset signal intensity in 1985 (controlling for all baseline controls) for different samples of municipalities divided by size of the population (<500K, <50k, <5k) and macro-geographic areas (North, Center, South). For each sample, the corresponding columns report the share of the population watching TV for less than 2 hours per day (dark grey), between 3 and 4 hours per day (light grey), and 5 or more hours per day (white).

Figure 5: Mediaset signal intensity and voting for all parties (1976-2013)
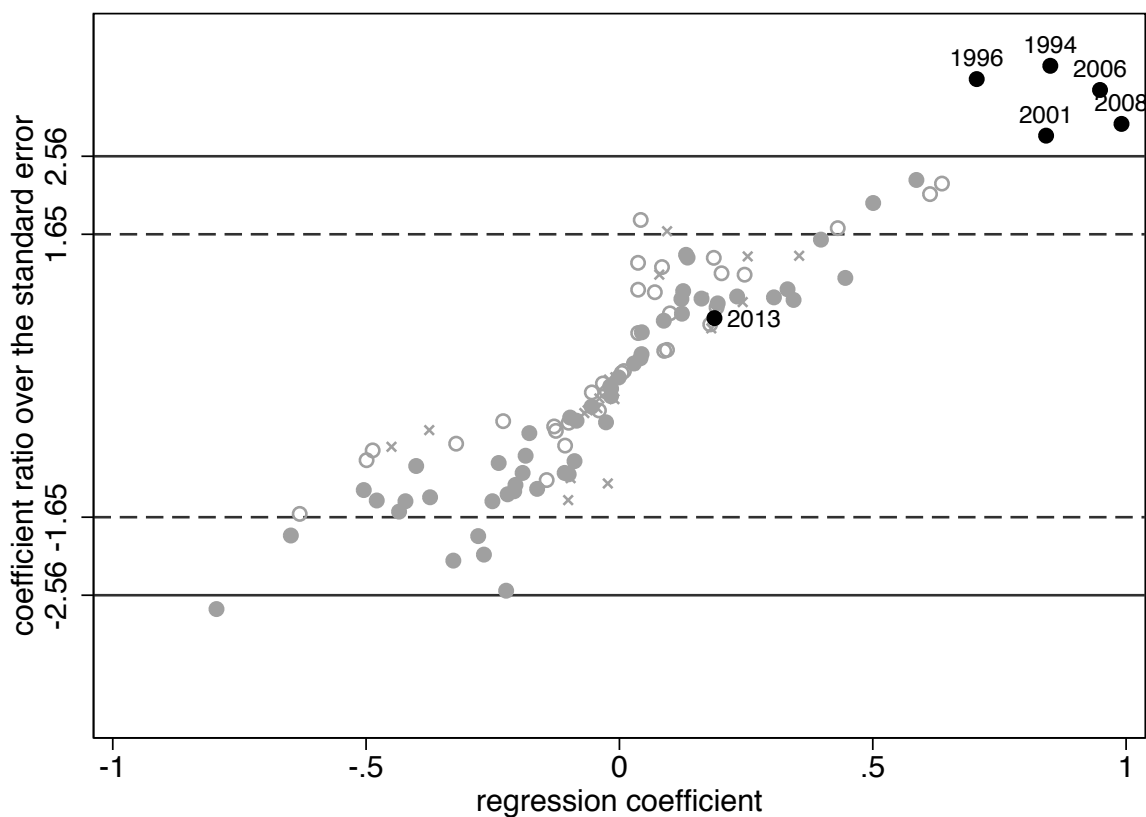
The graph summarizes the results of a series of regressions of vote share on Mediaset signal intensity in 1985 for all main parties in all elections between 1976 and 2006 (controlling for all baseline controls). It reports on the horizontal axis the magnitude of the estimated coefficient, and on the vertical axis the corresponding t-statistic. The results for the elections held between 1976 and 1979 are indicated with Xs, those for the elections held between 1983 and 1992 with hollow circles, and those for the elections held between 1994 and 2006 with solid circles. Finally, the black solid circles indicate the estimated coefficients for *Forza Italia*.

Figure 6: Effect of *Signal* on voting for *Forza Italia* for increasingly younger voters

The graph reports the estimated coefficients (and respective confidence intervals) of a series of regressions of reported voting for *Forza Italia* on Mediaset signal intensity in 1985, for different samples of individuals born after each given year between 1915 and 1982 (hence gradually excluding older cohorts). All regressions include the following individual and municipal controls: *Education, Gender, Age, Employment status, Marital status, Number of family members, Signal free, Education, Log Income per capita, Area Area², Altitude, Altitude², Ruggedness.*

Figure 7: Effect of *Signal* on voting for *Forza Italia* by 10-year birth cohorts
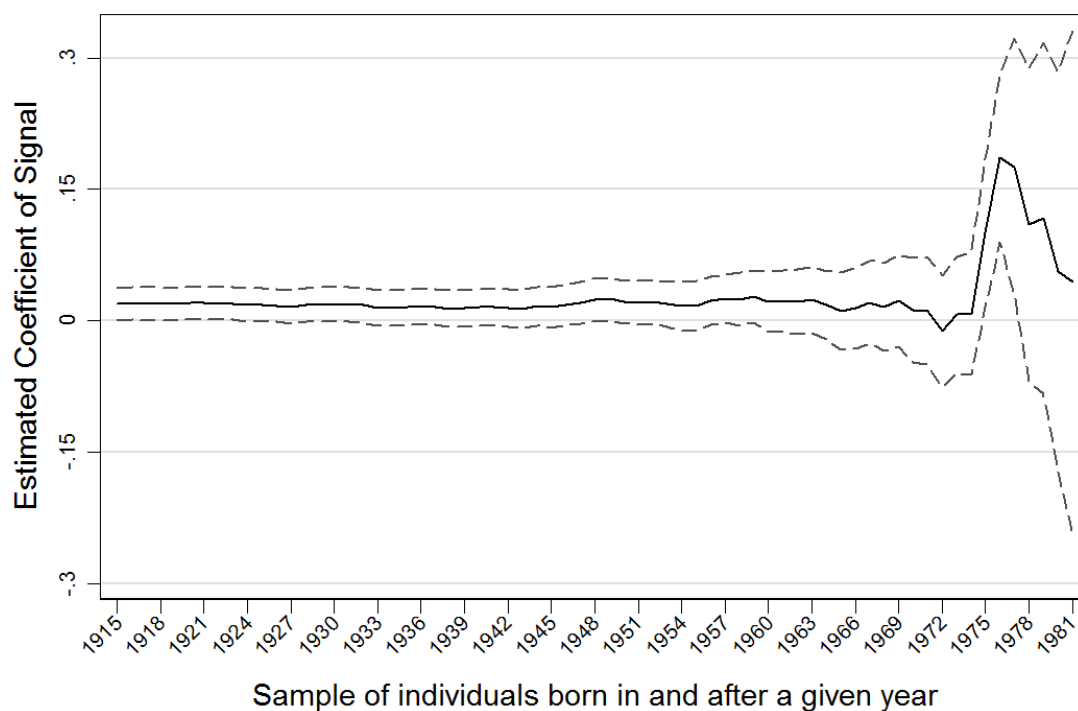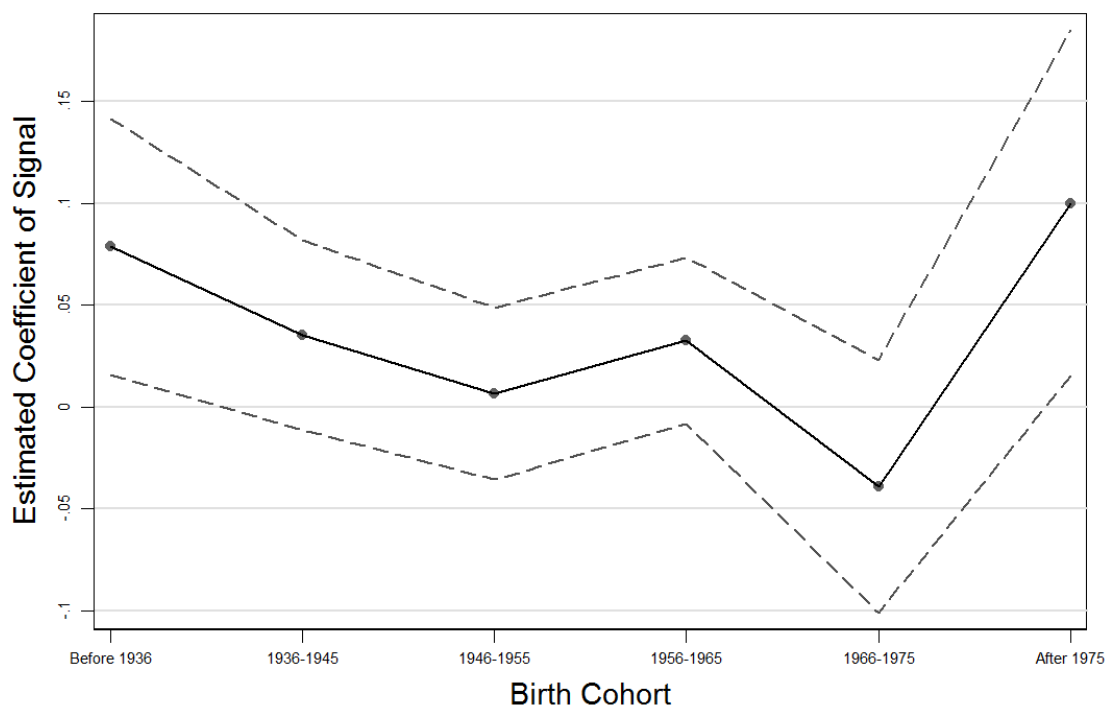

The graph reports the estimated coefficients (and respective confidence intervals) of a series of regressions of reported voting for *Forza Italia* on Mediaset signal intensity in 1985, for six ten-year birth cohorts: individuals born before 1936, between 1936 and 1945, between 1946 and 1955, between 1956 and 1965, between 1966 and 1975, and after 1975. All regressions include the following individual and municipal controls: *Education*, *Gender*, *Age*, *Employment status*, *Marital status*, *Number of family members*, *Signal free*, *Education*, *Log Income per capita*, *Area Area²*, *Altitude*, *Altitude²*, *Ruggedness*.

Figure 8: Share of airtime devoted to different types of programs on Mediaset and RAI (1987-1997)

Information (news, educational TV, journalism)

Mediaset (Berlusconi) — Rai (public TV)

Light entertainment (quiz, gossip, cartoons)

Mediaset (Berlusconi) — Rai (public TV)

TV series, dramas and soap-operas

Mediaset (Berlusconi) — Rai (public TV)

Movies

Mediaset (Berlusconi) — Rai (public TV)
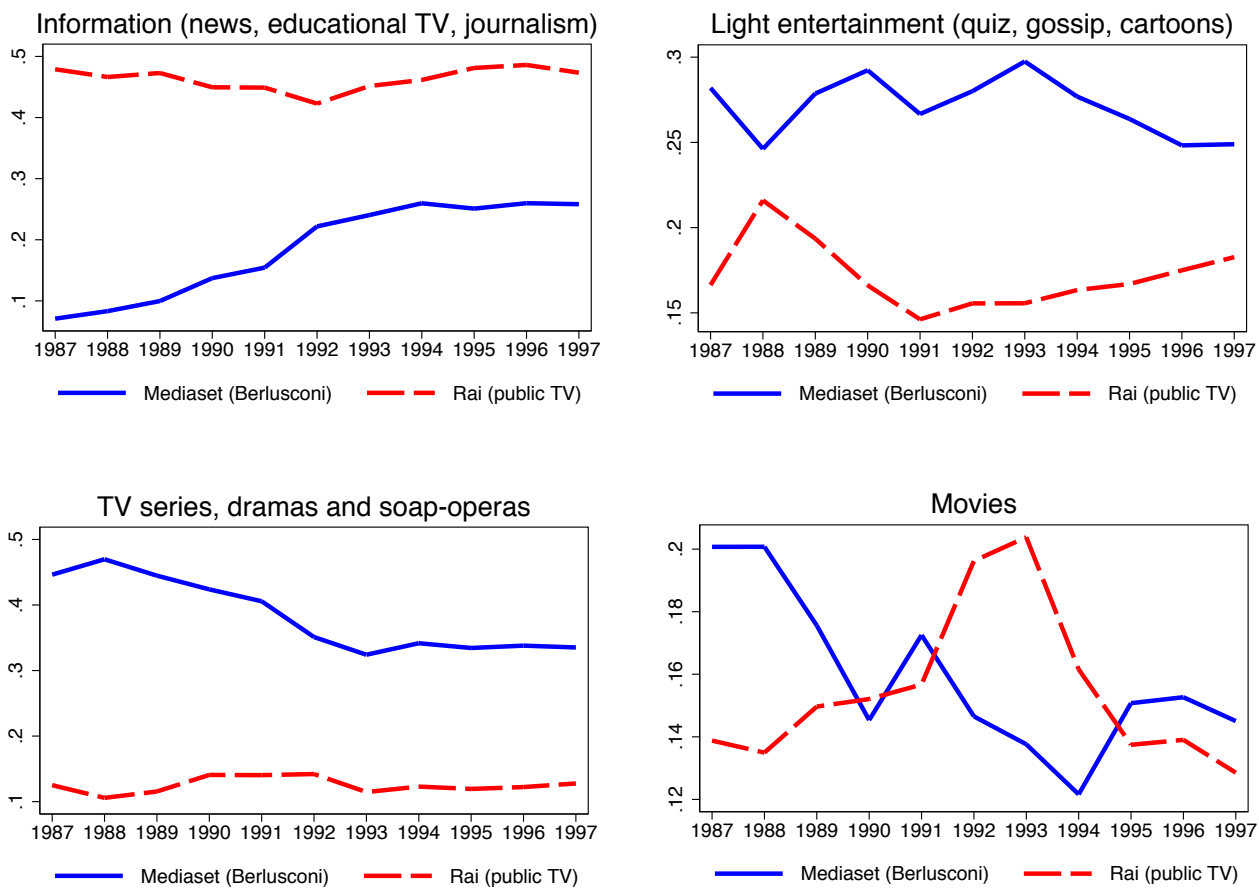
Table 1: Descriptive statistics

	unweighted				weighted by 1981 population			
	obs.	mean	st.dev.	median	obs.	mean	st.dev.	median
Signal	8086	-0.398	1.017	-0.234	8062	0.008	0.831	0.013
SignalFree	8086	-0.063	1.001	-0.246	8062	0.358	1.155	0.208
Signal>0	8095	0.313	0.464	0.000	8062	0.516	0.500	1.000
Population (1000s) 1981	8062	7.010	45.449	2.296	8062	301.6	683.7	24.4
Area (100s km^2)	8093	0.372	0.499	0.218	8062	1.557	2.829	0.627
Electorate (1000s) 1994	8014	6.034	36.042	2.070	7988	239.0	548.5	21.8
Voting turnout 1994	8014	84.2	10.5	87.6	7988	85.9	7.8	88.1
FI 1994	8014	18.9	7.8	19.4	7988	19.5	8.2	19.7
FI 1996	8014	17.9	6.3	17.3	7987	19.2	6.4	18.2
FI 2001	8014	26.5	7.9	26.7	7985	27.1	6.7	27.1
FI 2006	8016	22.9	7.2	23.0	7986	22.9	6.1	22.4
PDL 2008	8089	33.7	10.1	33.5	8059	35.9	8.9	35.7
PDL 2013	8016	20.8	6.8	20.4	7988	20.8	6.1	20.0
Sub-sample: *Signal ≥ 0*								
FI 1994	2523	20.8	7.1	21.2	2512	21.1	7.4	20.9
FI 1996	2523	18.9	6.1	18.1	2512	20.1	6.7	18.9
FI 2001	2523	28.6	7.1	28.9	2510	28.3	6.4	28.3
FI 2006	2523	23.9	6.5	24.0	2510	23.5	5.8	22.7
PDL 2008	2527	35.5	9.2	34.6	2514	37.1	8.5	37.5
PDL 2013	2523	22.0	6.3	21.2	2512	21.2	5.9	20.0
Sub-sample: *Signal < 0*								
FI 1994	5491	18.1	8.0	18.6	5476	17.7	8.5	18.6
FI 1996	5491	17.4	6.3	16.9	5475	18.3	5.8	17.3
FI 2001	5491	25.6	8.0	25.6	5475	25.8	6.9	25.3
FI 2006	5493	22.5	7.4	22.4	5476	22.3	6.4	21.8
PDL 2008	5562	32.9	10.4	33.0	5545	34.6	9.2	33.7
PDL 2013	5493	20.3	7.0	19.9	5476	20.4	6.3	19.7

Table 2: Correlates of Mediaset signal intensity in 1985

Dependent variable:	obs.	mean	(1) univariate OLS		(2) OLS with controls and FEs	
			Signal	R²	Signal	R²
Population, thousands (1981)	7,583	6.940 (0.511)	69.731 (63.591)	0.252	9.186 (7.537)	0.999
Population density, people per km² (1981)	7,583	256.764 (6.957)	734.947** (325.535)	0.115	49.143 (61.778)	0.927
Population growth, 1981-2001	7,583	0.033 (0.003)	0.027 (0.018)	0.012	0.002 (0.010)	0.621
Activity rate, percentage (1991)	7,583	41.290 (0.055)	2.547*** (0.279)	0.047	0.137 (0.152)	0.858
Employment rate, percentage (1991)	7,583	35.036 (0.090)	3.158*** (0.566)	0.021	0.137 (0.162)	0.953
Unemployment rate, percentage (1991)	7,583	6.865 (0.058)	-0.845** (0.357)	0.005	-0.101 (0.175)	0.792
Log income per capita, euro equivalent liras (1985)	7,512	1.627 (0.003)	0.109*** (0.035)	0.039	0.025*** (0.008)	0.913
Education, percentage completing high school or college (1981)	7,583	8.532 (0.039)	1.410** (0.693)	0.146	0.729*** (0.236)	0.833
Firms per capita (1981)	7,583	0.055 (0.000)	0.001 (0.001)	0.043	-0.000 (0.001)	0.724
Self-employed	7,583	54.603 (0.142)	-4.089*** (0.962)	0.061	-0.674 (0.484)	0.745
Firms 2-49 workers (1981)	7,583	44.898 (0.140)	3.765*** (0.913)	0.058	0.647 (0.477)	0.737
Firms 50-499 workers (1981)	7,583	0.487 (0.011)	0.301*** (0.058)	0.037	0.020 (0.033)	0.515
Firms 500+ workers (1981)	7,583	0.012 (0.001)	0.022** (0.011)	0.037	0.006 (0.005)	0.564

The table reports the observations available for a number of variables in our dataset, their mean and their relationship with the intensity of Mediaset signal in 1985. In particular, column (1) reports the coefficient and R² of the univariate OLS regression of each row variable on the intensity of Mediaset signal in 1985 (*Signal*) and the simulated intensity in the absence of geomorphological obstacles (*SignalFree*) while column (2) presents the results of an analogous regression controlling also for district and local labor market fixed effects and the following municipal controls: *Area, Area², Altitude, Altitude², Ruggedness*. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Mediaset signal intensity and voting for all parties (1976-1992)

Dependent variable: party vote share

	MSI	PLI	DC	PRI	PSDI	PSI	PCI	RP	others	null	turnout
					Before Mediaset						
1976	0.123	-0.101	-0.008	-0.043	0.166	0.243	-0.375	-0.023	-0.069	0.094*	0.029
	(0.166)	(0.070)	(0.452)	(0.115)	(0.182)	(0.283)	(0.592)	(0.018)	(0.159)	(0.056)	(0.232)
1979	-0.003	-0.096	-0.021	-0.063	0.253	0.355	-0.450	-0.010	-0.040	0.079	0.181
	(0.159)	(0.081)	(0.465)	(0.156)	(0.182)	(0.253)	(0.543)	(0.036)	(0.150)	(0.067)	(0.328)
					After Mediaset						
1983	0.100	-0.144	-0.229	0.186	0.192	0.431*	-0.487	0.037	-0.125	0.037	0.094
	(0.137)	(0.118)	(0.433)	(0.135)	(0.241)	(0.250)	(0.559)	(0.028)	(0.195)	(0.074)	(0.311)
1987	-0.100	-0.040	-0.322	-0.025	0.247	0.613**	-0.499	0.037	0.009	0.084	0.088
	(0.183)	(0.100)	(0.407)	(0.130)	(0.210)	(0.289)	(0.507)	(0.037)	(0.163)	(0.066)	(0.305)
1992	0.202	-0.107	-0.631	0.005	-0.055	0.637**	-0.033	0.042*	-0.129	0.070	0.179
	(0.169)	(0.132)	(0.392)	(0.139)	(0.281)	(0.284)	(0.361)	(0.023)	(0.218)	(0.072)	(0.299)

The table reports the estimated coefficient of Mediaset signal intensity in 1985 on the vote share of all main parties in all elections held between 1976 and 1992. Each row indicates an election year and each column a party (results for vote share of other parties, share of spoiled ballots and turnout are also reported). All regressions include electoral district and local labor market fixed effects, alongside the following municipal controls: *SignalFree*, *Electorate*, *Log income per capita*, *Education*, *Area*, *Area²*, *Altitude*, *Altitude²*, *Ruggedness*. A short description of parties' characteristics is reported in Table A.3. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Mediaset signal intensity and voting for *Forza Italia* in 1994 (OLS estimates)

Dependent variable: *Forza Italia* vote share

	(1)	(2)	(3)	(4)	(5)
Signal	2.842***	3.205***	3.651***	0.897***	0.851***
	(0.866)	(0.706)	(0.762)	(0.234)	(0.235)
SignalFree		-0.289	0.026	-0.664**	-0.640**
		(0.723)	(0.475)	(0.262)	(0.255)
Area (100s km²)			-0.973	0.853**	0.873**
			(0.695)	(0.380)	(0.404)
Area²			0.030	-0.079	-0.069
			(0.054)	(0.093)	(0.093)
Altitude (1000s m)			-6.268	-12.732***	-10.975***
			(4.494)	(1.580)	(1.626)
Altitude²			-0.074	7.136***	6.374***
			(3.961)	(1.271)	(1.291)
Ruggedness			0.007*	-0.002***	-0.002**
			(0.004)	(0.001)	(0.001)
Electorate (1000s)					-0.004
					(0.004)
Log income per capita (1000s €)					5.115***
					(0.764)
Education					-0.088***
					(0.030)
Constant	19.729***	19.808***	21.302***	23.532***	14.998***
	(0.568)	(0.578)	(0.751)	(2.589)	(2.906)
Observations	7,583	7,583	7,573	7,573	7,502
Electoral district FEs	NO	NO	NO	YES	YES
Local labor market FEs	NO	NO	NO	YES	YES
Year FE	NO	NO	NO	NO	YES
R^2	0.050	0.051	0.108	0.918	0.921

Signal and *Signal free* represent the simulated intensity of Mediaset's signal in 1985, under real conditions and in the absence of geomorphological obstacles respectively. *Area*, *Altitude*, *Area²*, and *Altitude²* represent the municipality's surface and average altitude and the respective squared terms. *Ruggedness* is the municipality's average terrain ruggedness index. *Electorate* is the number of eligible voters in the concerned elections. *Log income per capita* is the logarithm of per capita income in 1985. *Education* is the share of the population with at least a high-school diploma. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 5: Mediaset signal intensity and voting for *Forza Italia* 1994-2013 (OLS estimates)

Dependent variable: *Forza Italia* vote share

	1994	1996	2001	2006	2008	2013	1994-2013
Signal	0.850***	0.705***	0.842***	0.948***	0.991***	0.188	0.666***
	(0.235)	(0.204)	(0.301)	(0.285)	(0.337)	(0.279)	(0.231)
Constant	15.216***	10.875***	24.051***	15.274***	30.456***	12.010***	12.836***
	(2.915)	(2.633)	(3.289)	(3.281)	(3.746)	(3.901)	(2.996)
Observations	7,503	7,502	7,500	7,501	7,565	7,503	45,074
Year FE	NO	NO	NO	NO	NO	NO	YES
R^2	0.921	0.873	0.815	0.790	0.862	0.802	0.716

Signal represents the simulated intensity of Mediaset's signal in 1985, under real conditions. All regressions include electoral district and local labor market fixed effects alongside the following municipal controls: *Signal free, Electorate, Log income per capita, Education, Area, Area^2, Altitude, Altitude^2, Ruggedness*. The last column also includes year fixed effects. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Mediaset signal intensity and voting for all parties (1994-2013)

Dependent variable: *party vote share*

	FI-PDL	AN-PDL	NL	CENTRE	PD	ALLIES	LEFT	others	null	turnout
1994	0.850***	0.332	-0.267**	-0.178	-0.401	-0.162	-0.328**	0.029	0.126	0.305
	(0.235)	(0.329)	(0.128)	(0.266)	(0.381)	(0.123)	(0.152)	(0.200)	(0.127)	(0.333)
1996	0.705***	0.398	-0.795***	-0.221	-0.479	-0.055	-0.208	0.132	0.122	0.446
	(0.204)	(0.250)	(0.292)	(0.160)	(0.329)	(0.152)	(0.154)	(0.093)	(0.137)	(0.391)
2001	0.842***	0.042	-0.279*	-0.185	-0.422	-0.097	-0.205	0.134	0.044	0.344
	(0.301)	(0.204)	(0.149)	(0.198)	(0.288)	(0.199)	(0.161)	(0.098)	(0.173)	(0.389)
2006	0.948***	0.123	-0.085	-0.018	-0.505	-0.238	-0.191	-0.001	-0.026	0.232
	(0.285)	(0.170)	(0.161)	(0.148)	(0.378)	(0.234)	(0.168)	(0.073)	(0.049)	(0.251)
2008	0.991***		-0.374	-0.251	-0.649*	-0.016	-0.100	0.162	0.044	0.194
	(0.337)		(0.264)	(0.171)	(0.348)	(0.108)	(0.087)	(0.180)	(0.087)	(0.230)
2013	0.188		-0.089	0.088	-0.435	-0.108	-0.224**	0.586**	-0.017	0.501**
	(0.279)		(0.089)	(0.136)	(0.274)	(0.095)	(0.089)	(0.257)	(0.070)	(0.249)
1994-2013	0.666***	0.184	-0.273**	-0.063	-0.392	-0.132	-0.196*	0.170*	0.112	0.242
	(0.231)	(0.207)	(0.129)	(0.111)	(0.284)	(0.096)	(0.104)	(0.091)	(0.081)	(0.248)

The table reports the estimated coefficient of Mediaset signal intensity in 1985 on the vote share of all main parties in all elections held between 1994 and 2013. Each row indicates an election year and each column a party (results for vote share of other parties, share of spoiled ballots and turnout are also reported). All regressions include electoral district and local labor market fixed effects, alongside the following municipal controls: *SignalFree, Electorate, Log income per capita, Education, Area, $Area^2$, Altitude, $Altitude^2$, Ruggedness*. A short description of parties' characteristics is reported in Table A.3. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 7: Mediaset signal intensity and voting for *Forza Italia* 1994-2013
(matching estimates)

	Mean comparison			**With FEs and controls**		
	All	diff. in SF < 1	diff. in SF < 0.5	All	diff. in SF < 1	diff. in SF < 0.5
FI 1994	0.645*	0.808*	0.949*	0.554***	0.821***	0.905***
	(0.346)	(0.417)	(0.520)	(0.139)	(0.216)	(0.294)
FI 1996	0.701**	0.869**	0.796	0.608***	0.802***	0.703**
	(0.288)	(0.381)	(0.494)	(0.150)	(0.220)	(0.281)
FI 2001	0.698**	1.052**	1.286**	0.648***	1.015***	1.104***
	(0.340)	(0.452)	(0.574)	(0.180)	(0.285)	(0.376)
FI 2006	0.605*	0.798*	1.097**	0.560***	0.803***	0.965***
	(0.327)	(0.442)	(0.541)	(0.177)	(0.275)	(0.354)
PDL 2008	0.424	0.759	1.099	0.375*	0.801**	0.954**
	(0.445)	(0.691)	(0.820)	(0.216)	(0.331)	(0.430)
PDL 2013	0.263	0.837	0.765	0.270	0.902***	0.831**
	(0.311)	(0.518)	(0.615)	(0.176)	(0.289)	(0.364)
FI-PDL 1994-2013	0.556**	0.854**	0.998**	0.511***	0.859***	0.912***
	(0.279)	(0.377)	(0.464)	(0.104)	(0.157)	(0.205)
Electorate, 1000s (1994)	5.689***	-0.246	-0.018	2.440	-0.151	-0.523
	(2.193)	(0.929)	(0.902)	(1.530)	(0.585)	(0.495)
Population, 1000s (1981)	6.940**	-0.175	-0.039	3.167	-0.039	-0.621
	(2.766)	(1.120)	(1.083)	(1.978)	(0.728)	(0.595)
Unemployment rate, % (1991)	-0.083	-0.026	-0.075	-0.056	0.073	0.103
	(0.256)	(0.329)	(0.425)	(0.116)	(0.177)	(0.236)
Log per capita income (1985)	0.022	-0.001	0.004	0.016***	-0.001	-0.000
	(0.015)	(0.020)	(0.023)	(0.006)	(0.008)	(0.009)
Education (1981)	0.588***	-0.095	-0.145	0.403***	-0.131	-0.254
	(0.213)	(0.246)	(0.293)	(0.120)	(0.168)	(0.208)
Firms per capita (1981)	-0.001	-0.001	-0.002	-0.001*	-0.002	-0.002
	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)
Area	0.086	-0.002	0.026			
	(0.055)	(0.032)	(0.030)			
Altitude	-0.000	0.007	-0.002			
	(0.013)	(0.017)	(0.019)			
Ruggedness	-7.416	-15.946	-16.703			
	(8.145)	(11.199)	(13.366)			

The table illustrates the difference in vote share for Berlusconi's party (top rows) and in a range of controls (bottom rows) between neighboring municipalities with *Signal* above and below zero (i.e. that could and could not receive Mediaset channels in 1985). The first column reports the coefficients of a series of regressions of the row-variable on a dummy for *Signal* greater than zero for the overall sample of neighbor-pairs fulfilling this condition. The second and third columns report analogous coefficients estimated on the sub-sample of neighbor-pairs with difference in *SignalFree* respectively smaller than 1 dB and smaller than 0.5 dB (i.e. more and more similar to each other in signal intensity in the absence of geomorphological factors). The last three columns report the estimated coefficients of similar regressions including neighbor-pair fixed effects, and the following municipal controls: *Area*, *Area²*, *Altitude*, *Altitude²*, *Ruggedness*. Standard errors clustered at the municipality-level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Mediaset signal intensity and voting for Forza Italia (1994-2013)

Dependent variable: vote share of *Forza Italia*

	unweighted	sub-samples by population in 1981				by geographical area		
		<500,000	<50,000	<5,000	<500	North	Center	South
Signal	0.859***	0.820***	0.758***	0.821***	2.014***	0.394	0.836**	1.156***
	(0.170)	(0.208)	(0.209)	(0.206)	(0.462)	(0.239)	(0.405)	(0.411)
Constant	20.538***	21.495***	18.210***	20.697***	18.933***	13.776***	24.467***	17.187***
	(2.568)	(2.560)	(2.444)	(1.736)	(3.818)	(2.586)	(5.433)	(2.283)
Observations	30,002	29,982	29,517	22,043	2,608	16,890	3,700	9,412
Controls & local FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
R^2	0.615	0.666	0.659	0.662	0.569	0.800	0.819	0.637

The table reports the coefficient of Mediaset signal intensity in 1985 on vote share for Berlusconi's party in all the elections held between 1994 and 2013 (pooled). The first column reports the results for the entire sample of municipalities (not weighted by population); the following four columns report the results separately for municipalities of different population size; the last three columns report the results separately for Northern, Center and Southern municipalities. Standard errors clustered at the electoral district level in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 9: Mediaset signal intensity, voting and news consumption (individual data)

	Voting *Forza Italia*				Favorite Newscast			
	Full Sample		**First Vote 1994**		**Full Sample**		**First Vote 1994**	
					RAI	*Mediaset*	*RAI*	*Mediaset*
Signal	0.033***	0.020*	0.071**	0.098*	-0.020	0.016	-0.096	0.067
	(0.012)	(0.011)	(0.035)	(0.052)	(0.016)	(0.016)	(0.062)	(0.062)
Constant	0.339***	0.039	0.794***	0.228	0.353***	0.643***	0.337	0.607
	(0.064)	(0.081)	(0.207)	(0.302)	(0.107)	(0.108)	(0.367)	(0.377)
Observations	8127	8127	739	739	7392	7392	687	687
Province FE	NO	YES	NO	YES	YES	YES	YES	YES
R^2	0.042	0.063	0.045	0.084	0.073	0.071	0.078	0.073

Individual data from the 1994, 1996, 2001 and 2006 waves of the Italian National Election Study (ITANES). In the first four columns the dependent variable is a dummy that equals one for those respondents that report having voted for *Forza Italia* and zero otherwise. In the following for columns the dependant variable is a dummy that equals one for respondents that report their favorite news program to be broadcast on RAI or Mediaset channels respectively and zero otherwise. Columns 1, 2, 5 and 6 report the results for the entire sample of respondents, while the other columns only for the sub-sample of individuals voting for the first time in 1994 or later. All regressions include year fixed effects alongside the following individual and municipal controls: *Education*, *Gender*, *Age*, *Employment status*, *Marital status*, *Number of family members*, *Signal free*, *Education*, *Log income per capita*, *Area Area²*, *Altitude*, *Altitude²*, *Ruggedness*. Standard errors clustered at the municipal level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Mediaset signal intensity and opinion about Berlusconi (individual data)

	Rating	Honest	Qualified	Sincere	Trustworthy	Coherent	Dependable	Telegenic	Sum quality
Signal	0.088	0.035	0.009	-0.025	0.045*	-0.044	-0.085	0.015	0.191
	(0.077)	(0.032)	(0.030)	(0.042)	(0.026)	(0.040)	(0.056)	(0.024)	(0.126)
Constant	3.325***	0.017	0.795***	0.211	0.169	0.138	0.220	0.842***	2.236***
	(0.557)	(0.170)	(0.154)	(0.246)	(0.151)	(0.211)	(0.241)	(0.141)	(0.724)
Observations	9546	4174	4748	2542	4824	2622	2218	4831	5030
R^2	0.119	0.115	0.087	0.095	0.114	0.079	0.134	0.064	0.093

Individual data from the 1994, 1996, 2001 and 2006 waves of the Italian National Election Study (ITANES). *Rating* indicates the respondents' overall evaluation of Berlusconi on a 1-10 scale; *Honest*, *Qualified*, *Sincere*, *Trustworthy*, *Coherent*, *Dependable*, *Telegenic* are dummy variables that equal to one if a respondent reported to believe Berlusconi to have that specific quality; *Sum quality* is the sum of the binary indicators for all seven attributes. All regressions include year and province fixed effects alongside the following individual and municipal controls: *Education*, *Gender*, *Age*, *Employment status*, *Marital status*, *Number of family members*, *Signalfree*, *Education*, *Log income per capita*, *Area Area^2*, *Altitude*, *Altitude^2*, *Ruggedness*. Standard errors clustered at the municipal level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 11: Mediaset signal intensity and support for Milan A.C.

Dependent variable: presence of a team's organized supporters' club in the municipality (0-1)

	(1) Milan A.C.	(2) Milan A.C.	(3) Milan A.C.	(4) Inter F.C.	(5) Inter F.C.	(6) Inter F.C.
Signal	0.006 (0.039)	0.022 (0.024)	-0.002 (0.023)	0.133*** (0.047)	0.029 (0.030)	-0.003 (0.028)
SignalFree	0.039 (0.038)	0.007 (0.030)	-0.005 (0.029)	-0.036 (0.041)	-0.011 (0.029)	-0.031 (0.029)
Area (100s km^2)	0.226*** (0.036)	0.300*** (0.055)	0.176*** (0.053)	0.233*** (0.036)	0.406*** (0.057)	0.224*** (0.054)
Area^2	-0.013*** (0.003)	-0.036** (0.015)	-0.020 (0.013)	-0.015*** (0.003)	-0.050*** (0.015)	-0.027** (0.012)
Altitude (1000s m)	-0.343 (0.231)	-0.357** (0.160)	-0.137 (0.161)	-0.693*** (0.228)	-1.146*** (0.157)	-0.749*** (0.156)
Altitude^2	0.136 (0.193)	0.247* (0.128)	0.147 (0.128)	0.336** (0.169)	0.647*** (0.128)	0.464*** (0.120)
Ruggedness	-0.000* (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Population (1000s)			0.001** (0.000)			0.001 (0.001)
Log income per capita (1000s €)			0.042 (0.072)			0.145 (0.089)
Education (% high-school + college)			0.014*** (0.004)			0.023*** (0.005)
Constant	0.251*** (0.035)	-0.146 (0.257)	-0.617** (0.285)	0.381*** (0.032)	0.453 (0.278)	-0.556* (0.294)
Observations	7,641	7,641	7,569	7,641	7,641	7,569
Electoral district FE	NO	YES	YES	NO	YES	YES
Local labor market FE	NO	YES	YES	NO	YES	YES
R^2	0.265	0.730	0.740	0.263	0.687	0.707

The table reports the estimated effect of Mediaset signal intensity in 1985 on the presence of Milan A.C. and Inter F.C. organized supporters' clubs as of 2012. *Area*, *Altitude*, *Area^2*, and *Altitude^2* represent the municipality's surface and average altitude and the respective squared terms. *Ruggedness* is the municipality's average terrain ruggedness index. *Population* is the municipal population in 1981. *Log income per capita* is the logarithm of per capita income in 1985. *Education* is the share of the population with at least a high-school diploma. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 12: Mediaset signal intensity and number of voluntary associations

	1981	1991	2001	1981-2001	
	Number of voluntary associations per 100 inhabitants				
Signal	-0.000	-0.020**	-0.021**	0.010	
	(0.004)	(0.008)	(0.009)	(0.007)	
Post exposure X Signal				-0.035***	-0.035***
				(0.009)	(0.007)
Constant	0.111	0.223**	0.448***	0.118	0.103***
	(0.081)	(0.105)	(0.153)	(0.075)	(0.003)
R^2	0.513	0.529	0.734	0.697	0.787
	Number of voluntary associations per 100 economic units				
Signal	-0.047	-0.288**	-0.397***	0.173	
	(0.098)	(0.137)	(0.147)	(0.108)	
Post exposure X Signal				-0.623***	-0.631***
				(0.106)	(0.073)
Constant	3.724***	5.328***	6.832***	3.705***	2.090***
	(1.398)	(1.809)	(2.142)	(1.159)	(0.039)
R^2	0.447	0.424	0.572	0.540	0.716
Observations	7,561	7,566	7,499	22,626	22,870
Municipal controls	YES	YES	YES	YES	NO
Electoral districts FEs	YES	YES	YES	YES	NO
Local Labor Market FEs	YES	YES	YES	YES	NO
Year FE	NO	NO	NO	YES	YES
Municipality FE	NO	NO	NO	NO	YES

In the top panel the dependent variable is the number of voluntary associations in a municipality per 100 inhabitants in Census years 1981, 1991 and 2001. In the bottom panel the dependent variable is the number of voluntary associations in a municipality per 100 economic units in Census years 1981, 1991 and 2001. *Post exposure X Signal* is the interaction between *Signal* and a dummy variable equal to one for years after 1985. Municipal controls include *Signal free*, *Electorate*, *Log income per capita*, *Education*, *Area*, *Area^2*, *Altitude*, *Altitude^2*, *Ruggedness*. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 13: Exposure to Mediaset and membership in associations (individual data)

	Voluntary	*Religious*	*Sport*	*Youth*	*Environment*
Signal	-0.026***	0.002	0.016	0.003	0.004
	(0.009)	(0.010)	(0.014)	(0.009)	(0.008)
Constant	-0.145**	0.057	0.192**	0.086	-0.064
	(0.071)	(0.058)	(0.087)	(0.068)	(0.058)
Observations	7602	7604	7601	5608	7601
R^2	0.042	0.046	0.080	0.055	0.029

Individual data from the 1994, 1996, 2001 and 2006 waves of the Italian National Election Study (ITANES). *Voluntary*, *Religious*, *Sport*, *Youth*, *Environment* are dummy variables equal to one if the respondent reports to be a member of a voluntary, religious, sport, youth or environmental organization respectively. All regressions include year and province fixed effects alongside the following individual and municipal controls: *Education*, *Gender*, *Age*, *Employment status*, *Marital status*, *Number of family members*, *Signal free*, *Education*, *Log income per capita*, *Area*, *Area^2*, *Altitude*, *Altitude^2*, *Ruggedness*. Standard errors clustered at the municipal level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 14: Profile of *Forza Italia* voters

Dependent variable: vote for *Forza Italia* (0-1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Member of a voluntary association	-0.053*** (0.013)						-0.040*** (0.013)
Interested in politics		-0.061*** (0.013)					-0.043*** (0.013)
Attended political debates			-0.019 (0.013)				
Took part in a rally				-0.122*** (0.019)			
Signed a petition					-0.035* (0.018)		
Sum of political actions						-0.034*** (0.009)	-0.028*** (0.009)
Constant	0.234*** (0.052)	0.216*** (0.051)	0.242*** (0.047)	0.211*** (0.060)	0.435*** (0.062)	0.244*** (0.047)	0.223*** (0.051)
Observations	6,162	6,163	8,165	4,104	6,356	8,168	6,158
R^2	0.224	0.225	0.267	0.206	0.305	0.269	0.228

Individual data from the 1994, 1996, 2001 and 2006 waves of the Italian National Election Study (ITANES). *Member of a voluntary association* is a dummy variable equal to one if the respondent reports to be member of a voluntary association. *Interested in politics*, *Attended political debate*, *Took part in a rally*, *Signed a petition* are dummy variables equal to one if the respondent agrees with the stated question. *Sum of political actions* is the sum of the four political participation dummy variables. Year and municipality fixed effects are included in all regressions alongside the following individual controls: *Education*, *Gender*, *Age*, *Employment status*, *Marital status*, *Number of family members*. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 15: Number of voluntary associations and voting preferences (1994-2013)

Dependent variable: party vote share

	FI	AN	LN	PPI	PDS	PV	RC	PR
All municipalities	-3.211***	1.123***	-0.643	0.433	2.160***	-0.586***	0.399**	0.123
	(0.422)	(0.334)	(0.592)	(0.829)	(0.419)	(0.128)	(0.160)	(0.162)
Municipalities with *Signal* > 0	-4.236***	1.758**	-0.693	3.269**	3.959***	-1.350***	0.288	-0.112
	(0.971)	(0.863)	(1.320)	(1.301)	(0.847)	(0.257)	(0.358)	(0.460)
With municipality fixed effects								
All municipalities	-4.932***	1.737***	-0.403	-0.490	4.545***	-1.031***	0.646***	0.339
	(0.598)	(0.563)	(0.936)	(1.033)	(0.566)	(0.199)	(0.230)	(0.346)
Municipalities with *Signal* > 0	-6.124***	2.581*	-0.903	4.152*	6.912***	-2.115***	0.837	-0.063
	(1.454)	(1.363)	(2.378)	(2.216)	(1.124)	(0.386)	(0.519)	(0.850)

The table reports the estimated effect of our measure of social capital (number of voluntary associations per 100 economic units) at the municipal level on the vote share of various parties. For each election year we assign the number of voluntary associaions recorded in the previous Census year (1991 for 1994, 1991 for 1996, 2001 for 2001, etc.). The specifications in the top panel include the following municipal controls: *Electorate, Log income per capita, Education, , Area, Area^2, Altitude, Altitude^2, Ruggedness*. Those in the bottom panel include municipality fixed effects. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Figure A.1: Distribution of Mediaset signal intensity in 1985
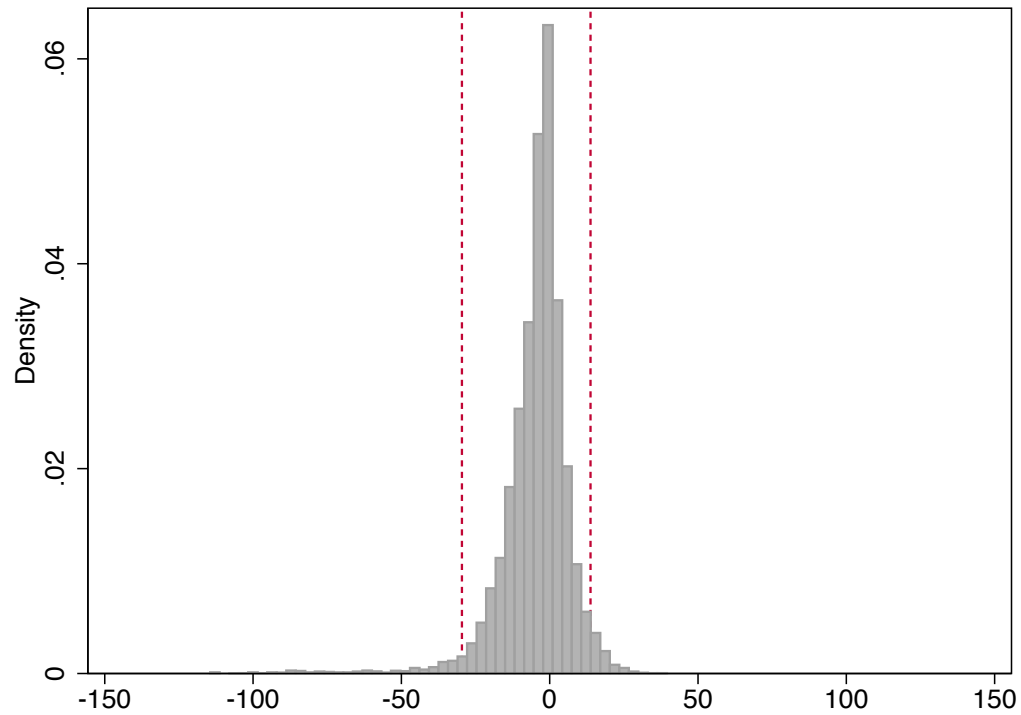
The figure reports the distribution of 1985 signal intensity across Italian munici-palities. The dashed red lines indicate the top and bottom 2.5% of the distribution.

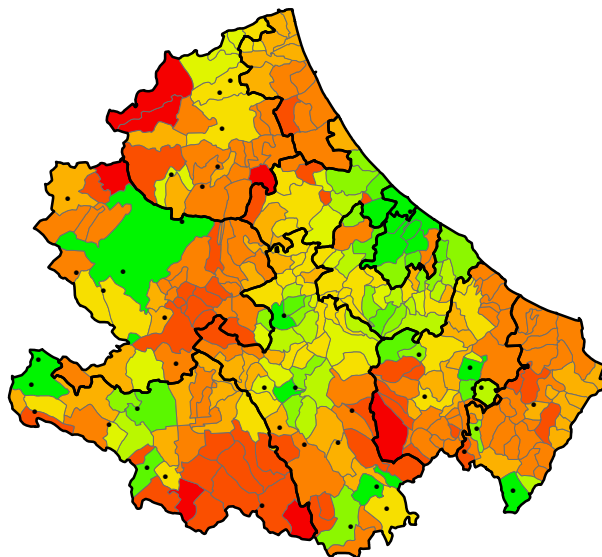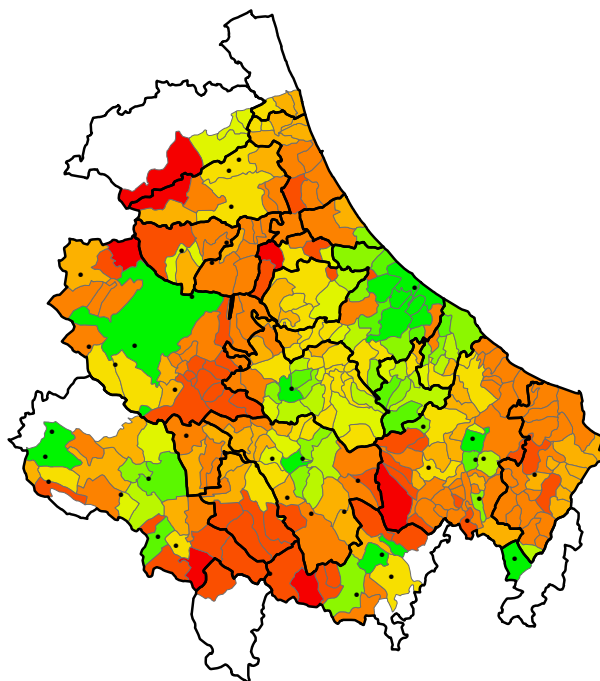Figure A.2: Vote share of the main Italian parties and coalitions (1976-2013)
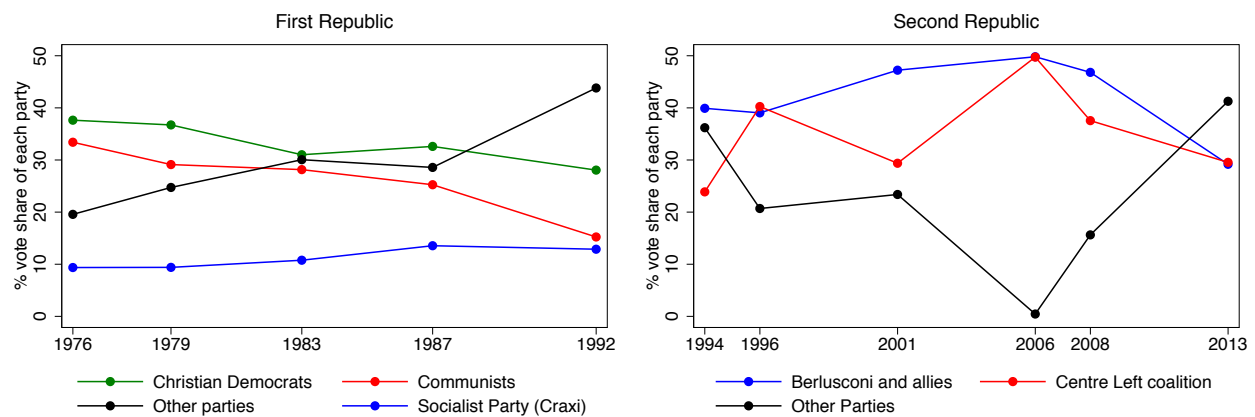
Figure A.3: Electoral districts and local labor markets in the region of Abruzzo

(a) Electoral Districts

(b) Local labor markets

Figure A.4: Example of a technical report sheet for one of 1985 Mediaset's transmitters

Table A.1: Mediaset signal intensity and voting for *Forza Italia*, 1994 (OLS estimates, untrimmed and unweighted)

Dependent variable: vote share for *Forza Italia*

	no trimming				unweighted			
Signal	2.391***	3.145***	0.649***	0.494***	2.813***	2.032***	0.863***	0.979***
	(0.525)	(0.628)	(0.138)	(0.152)	(0.456)	(0.401)	(0.188)	(0.196)
SignalFree		-0.439	-0.600***	-0.363*		0.097	-0.277	-0.398*
		(0.535)	(0.229)	(0.217)		(0.380)	(0.206)	(0.204)
Area (100s km²)		-1.010	0.972***	0.787*		-4.338***	0.916***	0.542
		(0.694)	(0.346)	(0.410)		(0.665)	(0.333)	(0.336)
Area²		0.044	-0.141*	-0.042		0.451***	-0.120	-0.034
		(0.053)	(0.076)	(0.096)		(0.174)	(0.083)	(0.085)
Altitude (1000s m)		-4.734	-14.513***	-9.781***		-13.512***	-13.932***	-9.750***
		(4.484)	(1.479)	(1.626)		(2.535)	(1.283)	(1.376)
Altitude²		-1.401	8.462***	5.282***		6.792***	7.945***	5.303***
		(3.887)	(1.116)	(1.262)		(2.125)	(1.017)	(1.223)
Ruggedness		0.006*	-0.001	-0.003***		0.004***	-0.002**	-0.002***
		(0.003)	(0.001)	(0.001)		(0.002)	(0.001)	(0.001)
Electorate (1000s)				-0.005				0.003
				(0.004)				(0.005)
Log income per capita (1000s €)				5.016***				4.760***
				(0.738)				(0.613)
Education (% high-school + college)				-0.092***				-0.107***
				(0.029)				(0.032)
Constant	19.435***	20.886***	21.693***	14.563***	20.054***	23.607***	22.622***	19.019***
	(0.525)	(0.752)	(0.455)	(2.702)	(0.357)	(0.559)	(0.278)	(3.326)
Observations	7,604	7,594	7,594	7,502	7,604	7,594	7,594	7,502
Electoral district FE	NO	NO	YES	YES	NO	NO	YES	YES
Local labor market FE	NO	NO	YES	YES	NO	NO	YES	YES
R²	0.059	0.103	0.884	0.920	0.060	0.153	0.700	0.765

Signal and *SignalFree* represent the simulated intensity of Mediaset's signal in 1985, under real conditions and in the absence of geomorphological obstacles respectively. *Area*, *Altitude*, *Area²*, and *Altitude²* represent the municipality's surface and average altitude and the respective squared terms. *Ruggedness* is the municipality's average terrain ruggedness index. *Electorate* is the number of eligible voters in the concerned elections. *Log income per capita* is the logarithm of per capita income in 1985. *Education* is the share of the population with at least a high-school diploma. In the first four columns observations are weighted by population in 1981. Standard errors clustered at the electoral district level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table A.2: TV consumption (number of hours watched per day)

	Share of individuals in each group by number of hours			
	Less than 2	3-4 hours	5-6 hours	6+ hours
Overall sample	38.8%	46.7%	11.9%	2.7%
By population size:				
Less than 500,000	40.6%	46.1%	12.2%	2.9%
Less than 50,000	39.0%	46.4%	11.9%	2.7%
Less than 5,000	40.8%	43.8%	12.2%	3.2%
By geographical area:				
North	43.9%	42.9%	10.6%	2.7%
Centre	38.8%	46.7%	12.5%	2.0%
South	32.2%	51.6%	13.2%	3.0%
By respondent's age				
aged 6-10	27.3%	50.7%	18.7%	3.3%
aged 11-13	24.1%	54.2%	18.2%	3.5%
aged 14-19	31.8%	51.5%	13.8%	2.8%
aged 20-24	38.6%	48.6%	10.4%	2.4%
aged 25-34	41.8%	46.8%	9.8%	1.6%
aged 35-44	47.9%	43.0%	7.3%	1.8%
aged 45-54	44.7%	43.2%	9.7%	2.3%
aged 55-64	36.8%	46.9%	12.8%	3.5%
aged 65+	38.2%	43.5%	14.2%	4.0%

This table reports the results of a survey conducted by the Italian National Statistical Institute (ISTAT) in 1983 on the habits and behavior of Italian households, which included a set of question on media consumption. Each entry of the table indicates the fraction of individuals in each group (rows) spending a given amount of time watching TV (columns). Source: ISTAT (1985)

Table A.3: Political Parties in Italy

Name	Acronym	Foundation	Dissolution	Description
Movimento Sociale Italiano (Italian Social Movement)	MSI	26/12/1946	27/1/1995	Neo-fascist political party, founded in 1946 by supporters of Mussolini; pushed to the sidelines of Italian politics for several decades, gained some political recognition only in the 1980s. Best performance: 8.0% in 1972.
Partito Liberale Italiano (Italian Liberal Party)	PLI	8/10/1922	6/2/1994	Centrist party with rather small electoral support. During the 1980s formed part of the five-party governing coalition led by the Christian Democrats. Best performance: 7.0% in the 1963.
Democrazia Cristiana (Christian Democrats)	DC	15/12/1942	29/1/1994	Most-voted Italian party in the post-war period with vote share varying between 30% and 40%. It led the five-party coalition that governed Italy until 1994 when the party disappeared. Best performance: 48.5% in 1948.
Partito Repubblicano Italiano (Italian Republican Party)	PRI	21/04/1895	–	Centrist party, leaning towards the left or the right depending on political contingencies. During the 1980s it formed part of the five-party governing coalition. After 1994, it joined to the center-left coalition. Best performance: 5.1% in 1983.
Partito Socialdemocratico Italiano (Italian Socialist Democratic Party)	PSDI	11/01/1947	–	Traditionally a center-left party, formed part of the five-party ruling coalition in the 1980s. Since the 1990s has suffered a progressive loss of support. Best performance: 5.1% in 1972.
Partito Socialista Italiano (Italian Socialist Party)	PSI	14/08/1892	12/11/1994	Traditionally a left-wing party, joined the five-party ruling coalition in the 1980s under the leadership of Bettino Craxi who was elected PM twice. Best performance: 14.2% in 1987.
Partito Comunista Italiano (Italian Communist Party)	PCI	21/01/1921	03/02/1991	Popular left-wing party with vote share between 25% and 35%. Largest communist party in Western Europe, it represented the major opposition to the DC-lead center-right governments. Best performance: 34.6% in 1976.
Partito Radicale (Italian Radical Party)	PR	05/02/1956	–	Traditionally a center-left party, became popular in the 1970s for supporting the referendum campaigns in favor of divorce and abortion. It supported Berlusconi's candidacy in 1994 and 1996. Best performance: 3.7% in 1979.
Forza Italia (Onward Italy)	FI	18/01/1994	27/03/2009	Conservative party founded by Silvio Berlusconi in 1993, and leading partner of the center-right coalition. Best performance: 29.4% in 2001.
Alleanza Nazionale (National Alliance)	AN	27/01/1995	22/03/2009	Right-wing party of national-conservative nature. Traditional electoral partner of *Forza Italia* participated in all the governments led by Berlusconi. Best performance: 15.7% in 1996.
Popolo delle Libertà (People of Freedom)	PDL	27/03/2009	–	Created in 2008 from the merger of FI and AN. Best performance: 37.8% in 2008.
Lega Nord (Northern League)	LN	04/12/1989	–	Right-wing separatist and populist party. Traditional electoral partner of *Forza Italia* in the North participated in all the governments led by Berlusconi. Best performance: 10.1% in 1996.
Partito Democratico (Democratic Party)	PD	03/02/1991	–	Emerged from the dissolution of the Communist Party, it progressively embraced a social democratic and reformist ideology. It incorporated the centrist Margherita in 2007. Best performance: 33.2% in 2008.