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No News, Big News.

The Political Consequences of Entertainment TV

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ABSTRACT

We investigate the electoral effects of early exposure to Silvio Berlusconi's commercial television network, Mediaset, exploiting its staggered expansion across Italian municipalities during the 1980s. We find that municipalities with access to Mediaset prior to 1985 exhibited greater support for Berlusconi's party in 1994, when he first ran for office, and in the four following elections. This effect cannot be attributed to pro-Berlusconi news bias since no news programs were broadcast on Mediaset until 1991, when access to the network was already ubiquitous. We discuss alternative channels through which exposure to non-news content may have influenced Mediaset viewers' political attitudes.

Keywords: mass media, voting, civic engagement

JEL codes: L82, D72, Z13

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1. INTRODUCTION

There is increasing evidence that partisan bias in TV news programs affects voting behavior. For example, DellaVigna and Kaplan (2007) document that exposure to Fox News, a conservative news network, had a positive effect on vote share for the Republican Party in the 2000 U.S. presidential elections. Similarly, Enikolopov et al. (2011) find that access to NTV, an independent news channel in Russia, was associated with lower support for Vladimir Putin's ruling party in the 1999 parliamentary elections.

However, news programs represent just a fraction of total TV airtime. According to the 2010 CRE Video Consumer Mapping Study, Americans devote only 18.2% of their total watching time to news, with the rest divided between entertainment programs (46.8%), sports (12.1%), and advertising (21.8%).¹ These other categories of (non-news) TV content may influence viewers' attitudes in various ways. For example, as previous studies have discussed, by priming particular cultural models, light entertainment shows, soap operas, and advertising can have important and persistent effects on various aspects of non-political behavior, from civic engagement (Putnam, 2000; Olken, 2009) to gender attitudes (Jensen and Oster, 2009), fertility choices (La Ferrara et al., 2012; Kearney and Levine, 2014), divorce rates (Chong and La Ferrara, 2009), and consumption decisions (Bursztyrn and Cantoni, 2012).² It seems therefore natural to explore whether this influence extends to viewers' political attitudes and behavior.

This research investigates the impact of non-news media content on voting in the context of Italy where, over the past three decades, the relationship between mass media and politics has been especially close. Specifically, we examine whether differential exposure to Berlusconi's private TV network, Mediaset, before 1985 increased electoral support for Berlusconi's party, *Forza Italia*, in 1994, when he first ran for office, and in five later elections. Crucially, in the early stages of its diffusion, when some areas had access to the network and others did not, Mediaset channels were entirely devoted to light-entertainment programs, while news programs were not introduced until 1991, by which time access to the network was virtually ubiquitous.

Our empirical analysis compares areas that had access to Mediaset 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

¹ A very similar pattern holds for Italy, the country on which this study focuses (Nielsen, 2010).

² Also related to our research is work by Bertrand et al. (2010) on the impact of advertising for financial services in South Africa. The study – which focuses on mailers rather than TV – documents that seemingly non-informative features of advertising, such as the gender of the person portrayed in the mailer, can have a sizable effect on consumers' decision to apply for a loan.

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 location was directly functional to Berlusconi's later political ambitions. 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 plausibly uncorrelated with other determinants of voting.

Our results document that municipalities exposed to Mediaset prior to 1985 display a significantly higher vote share for *Forza Italia* in 1994. This effect is sizable – between 1 and 2 percentage points – and persists until the 2008 elections, almost twenty-five years after the differential exposure to Mediaset and fifteen years after Berlusconi first entered politics. We find analogous and even stronger results when restricting the comparison to pairs of neighboring municipalities that, in the absence of geomorphological obstacles, would have experienced similar signal intensity. The effect is similar for municipalities with different population size, but, interestingly, appears to be stronger in areas where people spent more time watching TV before 1985.

To further corroborate these findings we combine the data on signal availability with individual 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 *Forza Italia* in 1994 and subsequent elections. When we parse the data by year of birth, we uncover a U-shaped relationship between the respondent's age and the size of the effect, the latter being greater 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 to be approximately 10 percentage points – likely contributes to the persistence of the effect over more than two decades.

Taken together, these results point to a significant and long-lasting effect of early exposure to Mediaset on viewers' later political behavior. As mentioned above, given the timing of the introduction of news programs on Mediaset, such an effect can hardly be attributed to differential exposure to pro-Berlusconi news bias on Mediaset channels. Hence, in the last part of the paper we attempt to shed light on the possible channels through which greater exposure to the sort of light-entertainment programs that dominated Mediaset programs before 1985 may have influenced later voting behavior.

First, early Mediaset viewers – those exposed prior to 1985 – could have developed some

form of attachment to the network that made them more likely to watch Mediaset newscasts when these became available. However, evidence from the individual-level data seems to exclude the possibility that early viewers were more likely than others to watch news on Mediaset in later years. Furthermore, early and late Mediaset viewers do not appear to differ systematically in their opinion about Berlusconi's qualities as a man and a politician (i.e., honesty, ability, trustworthiness). This indicates that early Mediaset viewers were not more exposed (or vulnerable) to pro-Berlusconi propaganda.

Second, we examine whether greater support for *Forza Italia* by early Mediaset viewers reflects a general sympathy towards Berlusconi. As an indirect test of this hypothesis, we look at whether areas exposed to Mediaset earlier also display higher support for Berlusconi's football team, Milan A.C., presumably the best known non-political venture commonly associated with his name. However, our results provide no support for this view.

Finally, we explore the possibility that exposure to the entertainment content offered on Mediaset channels favored the diffusion of a system of values and beliefs centered around individualism and civic disengagement, which later on would be at the heart of Berlusconi's political rhetoric. This hypothesis draws on the argument, originally put forth by Robert Putnam (2000), that commercial TV – in particular light entertainment programs – promotes canons of individualism and consumerism (as opposed to civic attitudes and engagement) and on the fact that Berlusconi's political message largely mirrored such values. In line with this hypothesis, we document that areas exposed to Mediaset earlier exhibit a substantial and persistent decline in civic engagement, as measured by the number of voluntary association per capita, relative to areas exposed only later, and that individuals characterized by low levels of civic engagement are disproportionately more likely to vote for Berlusconi's party. Finally, we also discuss previous evidence from text analysis of Berlusconi's political speeches that confirms that his political message epitomized the same cultural values that his channels had contributed to promoting.

Our research relates to the political economy literature on the impact of mass media on democratic politics, including recent work on Italy by Durante and Knight (2012) and Barone et al. (2013) documenting the presence and electoral impact of pro-Berlusconi bias on Mediaset news.³ Our findings expand the current debate by providing novel and robust evidence that

³ Durante and Knight (2012) study the evolution of speaking time devoted to politicians of different parties by Italy's top seven news channels between 2001 and 2007, and find that coverage on Mediaset channels is systematically slanted in favor of Berlusconi's conservative coalition. Using electoral data on local elections in Italy's Piedmont region, Barone et al. (2013) show instead that electoral support for Berlusconi's coalition declined in areas that switched to digital TV before the elections relative to areas that switched only after. To the extent that the access to digital TV diluted the audience share of Mediaset news programs, the authors attribute this pattern to decreased exposure to pro-Berlusconi news bias.

television can have a profound and long-lasting influence on viewers' political attitudes and behavior even in the absence of news bias. Furthermore, they suggest the possibility that this effect may reflect deeper social trends triggered by exposure to media-fueled cultural models that ultimately reverberate in the political sphere.

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 during 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 possible interpretations of the results and presents additional evidence to help distinguish between them. Section 6 concludes.

2. BACKGROUND

2.1. THE RISE OF COMMERCIAL TV IN ITALY

Since its foundation in 1954 and for more than twenty years the state-owned TV corporation RAI, maintained an absolute monopoly on TV broadcasting in Italy. Throughout this period private companies were not allowed to broadcast on the grounds that the state would better protect and guarantee the impartiality, objectivity, and completeness of television service (ruling 59/1960 by the Constitutional Court). In 1976 the ban was removed and private companies were allowed to broadcast, though only at the local level.

To circumvent this restriction, a few business groups established broadcast syndication agreements among a multitude of small local stations. Although formally independent, these stations would broadcast the same content simultaneously across different local markets resembling, in practice, the functioning of a wider network. One such network, *Canale 5*, was launched by Berlusconi in 1980; the other important ones were *Prima Rete*, *Italia 1*, and *Rete 4*, controlled respectively by the Rizzoli, the Rusconi, and the Mondadori groups.

In 1981, however, the Constitutional Court reiterated the ban on transmissions beyond the local level, inducing *Prima Rete* to leave the market, and convincing Rusconi and Mondadori that antitrust legislation was on its way. Only Berlusconi was prepared to sail closest to the wind, as he extended his network and explicitly grouped the stations under the common logo of *Canale 5* (Ginsborg, 2005). In the absence of any intervention on the part of the legislator, between 1982 and 1984 he also acquired *Italia 1* and *Rete 4* from his more cautious competitors. The three channels were then incorporated into Berlusconi's holding Fininvest, which later became Mediaset.

The fate of Mediaset, however, remained vulnerable to judicial initiatives aimed at enforcing

the restrictions on private broadcasting, which the group had until then ignored. In October 1984, the attorneys of Turin and Rome accused Mediaset of violating the dictate by the Constitutional Court and imposed the disconnection of its transmitters. 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 removing all geographic restrictions on broadcasting beyond the local level.

The so-called “Berlusconi decree”, initially rejected by the Parliament but forcefully reiterated and finally approved, would represent a landmark in the evolution of the Italian television system. If until then the uncertain legal prospects had delayed the expansion of Mediaset, once assured that its dominant position would not be threatened, the 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. Since the latter had been conceived to reach a local audience, it lacked the power of RAI transmitters, and Mediaset channels could be received with a good quality signal by only half of the population.

By 1987, however, the number of transmitters had doubled to 3,800, and Mediaset was accessible to about 87% of the population, and reached 98% by the end of 1990 (Constitutional Court, 1988). At that time, the Parliament approved a new Telecommunication Law that largely confirmed the regulatory framework of the 1985 decree and limited the possibility of assigning new broadcasting licenses to other actors.

Thus, at the beginning of the 1990s, the Italian TV market consisted of a RAI-Mediaset duopoly. Interestingly, at that time public and private channels differed markedly in terms of content. Indeed, many entertainment programs launched by Mediaset in the early 1980s represented an absolute novelty in the Italian television landscape that would profoundly influence Italians’ lifestyle models over the years that followed (Porro and Russo, 2000; Ginsborg, 2005). Most of the airtime was devoted to foreign TV series, particularly action dramas and soap operas, and the rest consisted of internal productions, primarily quiz, gossip, and light entertainment shows. News programs were not broadcast until 1991, and other types of informational or educational programs, such as talk shows, investigative reports, and documentaries were also very scant on Mediaset. More generally, Berlusconi’s television-making style stood in stark contrast to the pedagogical nature of public TV, which devoted a large share of airtime to newscasts, documentaries, and family films. This revolutionary approach proved very successful: according to Nielsen data cited by the Constitutional Court

(1988), in 1987 Mediaset reached an audience share comparable to that of RAI, and it was the uncontested leader in the advertising market.

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 of becoming personally involved in politics until the abrupt decline of his long-time political patron, Bettino Craxi, between 1992 and 1993.⁴ At that time, a series of corruption scandals (*Tangentopoli*, Italian for “Bribeville”) marked the transition from the First to the Second Republic. In the wake of the emergency, a temporary technocratic government was instituted and early elections were called for March 1994.

The prospects looked pretty dire for Mediaset at the time, as the group faced serious financial difficulties, had lost its political sponsors, and feared the electoral success of the Democratic Party – the heir of Italy’s Communist Party – which had remained largely untouched by the scandals. 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 1993, three months before the elections, he announced the creation of a new political party, *Forza Italia* (“Forward Italy”), which aspired to occupy the space left by the collapse of the traditional center-right parties.⁵

Forza Italia was defined by Seisselberg (1996) as a “media-mediated personality-party”. This was apparent in many aspects of the new party’s organization and campaigning: 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, the party coordinators and many of the top candidates were selected from the ranks of Mediaset and from among the popular figures populating Mediaset prime-time shows, and the selection and training of candidates was entirely entrusted to Publitalia, Mediaset’s advertising division (Hopkin and Paolucci, 1999). This innovative and aggressive communication strategy proved very successful. In the 1994 elections, *Forza Italia* received the relative majority of the votes, and the center-right coalition with the post-fascist *Alleanza Nazionale* (“National Alliance”) and the separatist *Lega Nord* (“Northern League”) gained a solid majority in both branches of Parliament. On May 10, 1994, Berlusconi was sworn in as Italy’s Prime Minister for the first time.

⁴ See, for instance, the testimony of Ezio Cartotto, a then close collaborator of Berlusconi, as reported in Veltri and Travaglio (2009).

⁵ In 2007 *Forza Italia* changed its name into *Popolo Delle Libertà* (“People of Freedom”) after merging with its traditional right-wing ally, *Alleanza Nazionale*. For simplicity, here we always refer to it as *Forza Italia*.

The first Berlusconi government was short-lived, as the *Lega Nord* soon withdrew from the coalition, leading to new elections in 1996. Nevertheless, the emergence and swift success of Berlusconi's party in 1994 produced a dramatic transformation of Italy's political landscape, the consequences of which persist today. Indeed, twenty years and five elections later, Berlusconi remains the uncontested leader of the center-right coalition and his distinctive political 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). Out of the six national elections held over this period, the center-right prevailed in 1994, 2001, and 2008, and lost by a very small margin in 1996, 2006, and 2013.⁶

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 the channels through which it may have operated. In what follows we attempt to shed light on these questions.

3. EMPIRICAL STRATEGY

Figure 1 summarizes the timing of the main events described above, as well as our empirical strategy for estimating the effect of early exposure to Mediaset on subsequent electoral outcomes. Specifically, we relate variation in the availability of Mediaset prior to 1985, when differences in coverage across geographical areas were still considerable, to electoral support for *Forza Italia* in 1994 and in the elections that followed.

We thus obtained, from the Italian Ministry of Interior, municipality-level data on electoral outcomes in all national elections held between 1976 and 2013. 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.⁷ Summary statistics for the vote share of *Forza Italia* are reported in Table 1.

As to the main explanatory variable, we need information on access to Mediaset in the early stages of the network's diffusion, when geographic differences in coverage were still wide. Unfortunately, data on the distribution of Mediaset viewers in the early 1980s are 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

⁶ Figure A.2 in the Appendix shows the vote share obtained by the main political coalitions in both the First and Second Republic.

⁷ 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.

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 1985. To the extent that availability prior to 1985 is exogenous to voting behavior over the period 1994-2013, this approach allows us to estimate consistently the effect of Mediaset on later electoral outcomes.

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 location and power of the transmitters were never chosen by Mediaset, which always avoided (mainly for economic reasons) getting involved in the construction of new antennas. In principle, it is still possible – although not very probable – that the syndicate targeted local televisions in politically strategic areas (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, different electoral rules and different parties) would have frustrated any such strategy. Most importantly, Berlusconi’s decision to pursue a political career matured a few months before the 1994 elections, in the wake of political upheavals that were unforeseeable back in the early 1980s (see Section 2.2).

For all these reasons, we can reasonably exclude the possibility 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 from idiosyncratic geomorphological factors, so as to exclude the effect of other factors possibly correlated with the location and power of transmitters (e.g., proximity to large cities).

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

3.1. DATA ON SIGNAL INTENSITY

A 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, however the patterns of decay are much more complex due to diffraction caused by mountains and other obstacles.

We compute the intensity of the Mediaset signal in early 1985 using a professional engineer-developed software that simulates signal propagation, based on 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' locations 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 were obtained directly from the Mediaset group. For each transmitter we obtained a technical report 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 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 km², median of 21.8 km²) and population (mean and median equal to 7,010 and 2,296 people, respectively), see Table 1.

Figure A.1 reports the distribution of Mediaset signal across Italian municipalities in 1985. Reception of Mediaset channels is optimal when signal intensity is positive, while it is imperfect or nil for values below zero. 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, 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 the signal gets stronger, reaching 100% when the signal becomes positive. By contrast, Bursztyrn and Cantoni (2012) find that reception in East Germany increased from about 0% to 80% when the signal changed from -86.3 dB to -75.9 dB, suggesting fairly good reception also at lower intensities. 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 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; in contrast, even large differences in signal strength at both extremes of the distribution should have little or no effect on the quality of recep-

tion. For this reason we exclude municipalities in the top and bottom 2.5% of the signal distribution (see Figure A.1).⁸

We compute our main explanatory variable, *Signal*, by dividing the original signal intensity by its standard deviation. Table 1 reports the mean and median of *Signal* across municipalities. The variable is positive (meaning good Mediaset reception) in about one-third of municipalities, but this accounted for more than half of the population. This is not surprising, given that local televisions aimed at reaching larger cities.

Table 1 also reports the average and median vote share of *Forza Italia* 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 former municipalities. However, such differences may reflect heterogeneity along other dimensions, for instance the larger size of cities exposed to Mediaset.

Next, we discuss how to isolate the causal effect of Mediaset on voting from variation in these other omitted factors.

3.2. ESTIMATING EQUATION

Our identification strategy exploits variation in signal intensity across otherwise similar municipalities. This approach is the same used by Yanagizawa-Drott (2010), but it differs from the one used by Olken (2009) and Enikolopov et al. (2011), who also have information on the number of viewers and use signal intensity as an instrument for viewership rates in a two-stage-least-squares framework. In the absence of this information, we estimate the reduced form coefficient of exposure to Mediaset.⁹

To account for the potentially endogenous location of the transmitters, we simulate the hypothetical signal intensity in the absence of any geomorphological obstacles (i.e., assuming terrain is flat). The actual and hypothetical signal intensity are shown in Figure 2. Comparing the two measures within relatively small areas allows us to disentangle the part of signal intensity driven by idiosyncratic terrain characteristics: this is exactly the type of variation that we exploit in our empirical analysis. Specifically, 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,

⁸ The results are qualitatively unchanged when including all observations, see Table A.1.

⁹ Bursztyrn and Cantoni (2012) employ yet another approach, assigning German municipalities into treatment and control groups 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.

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). The 475 electoral districts generally include multiple adjacent municipalities within a given province. The 686 LLMs are instead defined by the Italian National Statistical Institute (ISTAT) on the basis of workers’ commuting patterns, and unlike the EDs can include adjacent municipalities belonging to different provinces or regions.¹⁰

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)¹¹.

The following estimating equation summarizes our empirical strategy:

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

where FI_m is the percentage of votes obtained by *Forza Italia* 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.¹²

Under the assumption that *Signal* is independent of ε_m , the OLS coefficient β consistently

¹⁰ As an example, the Appendix Figure A.3 shows the partition of the mid-sized region of Abruzzo into EDs and LLMs.

¹¹ The median area across EDs and LLMs is 527 and 352 square kilometers, respectively, in contrast to 2,246 for provinces.

¹² The results are generally stronger when estimating the effect on the unweighted observations, see Table A.1.

estimates the causal effect of *Signal* on y . While such an assumption is fundamentally untestable, in Table 2 we report the (absence of) correlation between *Signal* and several municipal characteristics that could potentially affect voting behavior. 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% of the overall variation for most variables. Once these additional variables are controlled for, *Signal* is no longer correlated with 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.

4. RESULTS

In what follows we estimate the effect of early exposure to Mediaset on electoral support for *Forza Italia*.

4.1. BASELINE OLS ESTIMATES

Table 3 shows the estimated coefficients for several specifications of equation (1). The dependent variable is the vote share of *Forza Italia* 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* is associated with a 3-percentage-point increase in the vote share of *Forza Italia*.

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 *Forza Italia*'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 when 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 estimate the effect on the unweighted sample or we do not trim municipalities on the tails of the distribution of *Signal*.¹³ 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).

This effect is not short-lived. In Table 4, we estimate the same specification for all national elections of the Second Republic: 1994, 1996, 2001, 2006, 2008, and 2013. In all elections but the very last, the estimated coefficient of *Signal* remains very stable, between 0.7 and 1 percentage point. Therefore, voters that were longer exposed to Mediaset seem to experience a *persistent* shift in political preferences relative to voters that were exposed for a shorter period of time.

This difference vanishes only in 2013, about 20 years after the entry of Berlusconi into politics. The 2013 elections were characterized by a profound disenchantment with the major parties of the Second Republic (both on the right and the left of the political spectrum), analogous to what happened at the end of the First Republic in 1992. Indeed, the new *Movimento 5 Stelle* (“Five Star Movement”) emerged as the largest electoral force with 25.5% of the votes.¹⁴ 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 television channels. Indeed, *Forza Italia* lost about 6.5 million votes between 2008 and 2013.

To better assess the significance of the results obtained so far, in Figure 4 we compare the estimated coefficients for *Forza Italia*, in Table 4, with the coefficients obtained by re-estimating equation (1) for all other parties. Specifically, the left graph plots the distribution for the parties contemporaneous to *Forza Italia* in the Second Republic (1994-2013). Although the political landscape changed frequently over this period, we were able to identify 7 such parties (or blocks of small parties) running in at least three (out of five) elections: the extreme left, the *Partito Democratico*, its allies in the centre-left coalition, the centre block, *Alleanza Nazionale*, the *Lega Nord*, and the residual share of other parties. With the exception of the 2013 election, the effect on voting for *Forza Italia* in all elections is clearly abnormal relative to the full distribution. Not surprisingly, the latter is shifted to the left of zero, given that other parties suffered on average an electoral disadvantage in municipalities that were early exposed to Mediaset.

The graph on the right repeats this exercise for the period 1976-1992, before the advent of *Forza Italia*. We were able to track the electoral results of all main Italian parties of the First

¹³ The complete results are presented in the Appendix Table A.1.

¹⁴ 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.

Republic: *Democrazia Cristiana, Partito Socialista, Partito Comunista, Partito Liberale, Socialisti Democratici Italiani, Partito Liberale, Partito Repubblicano, Partito Radicale*, and the residual share of other parties. Also in this case, the coefficients estimated for *Forza Italia* in all elections but the last one lie to the right of the distribution. In line with these differences in point estimates, the coefficients for the other parties (both before and after 1994) are generally not statistically significant.

4.2. ADDITIONAL EVIDENCE FROM NEIGHBORING MUNICIPALITIES

The results in Tables 3 and 4 are based on a continuous measure of signal intensity. However, the quality of signal reception should change markedly around $Signal=0$ (Olken, 2009). For this reason, we restrict the analysis to pairs of adjacent municipalities such that one has positive signal intensity (i.e., good reception) and the other 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 5 confirm that, even within this sub-sample, municipalities with good reception of Mediaset display significantly higher vote shares for Berlusconi's parties.

The bottom part of Table 5 compares several socio-economic characteristics between exposed and non-exposed municipalities within the restricted sample of neighbor-pairs (analogous 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 in columns 2 and 3 we further restrict the sample to pairs of neighbor municipalities with a difference in *SignalFree* lower than 1 or 0.5 dB. 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. When doing so, the difference in electoral support for *Forza Italia* increases to 1 percentage point, a magnitude similar to the OLS coefficient in Table 3, while there is no difference in other municipality characteristics.

In the last three columns of the table we control in addition for territory characteristics (area, altitude, and ruggedness) and for neighbor-pair fixed effects, thus keeping constant all common characteristics between any two adjacent municipalities.¹⁵ The inclusion of pair fixed effects and additional controls does not affect the point estimates; it only improves their precision (the standard errors in columns 4-6 are much smaller than those in columns 1-3).

Overall, the results obtained using this alternative (matching) strategy are remarkably similar

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

to the OLS estimates. In the rest of the paper, we thus focus on 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 6 we first re-estimate our baseline specification on the 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 it increases when we focus on the very small ones (less than 500 inhabitants). These results further confirm that the estimated effect of signal strength is capturing variation across a multitude of small cities with scattered access to Mediaset, rather than between a few 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 has intermediate values in the Center.

It is instructive to relate such differences to the observed patterns in TV consumption prior to the advent of Mediaset. Table A.2 in the Appendix reports the average number of hours spent watching TV in municipalities of different size and in different macro-regions, based on a survey of 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 aligns well 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 relationship between the effect of early exposure to Mediaset and pre-existing TV consumption patterns is provided in Figure 3.¹⁷

¹⁶ All regressions in Table 6 use the specification in the last column of Table 4, 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.

Next, we move to survey data combining detailed information on political views with a rich set of individual characteristics, which allows us to explore additional dimensions of heterogeneity in the effect of Mediaset.

4.4. INDIVIDUAL-LEVEL RESULTS

The Italian National Election Study (ITANES) is a series of surveys conducted on a representative sample of the Italian population immediately before and after all national 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 interviewees.

The survey 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 (1,878 municipalities in total), which allows us to assign to each respondent a value for Mediaset pre-1985 signal intensity.

In column 1 of Table 7 we regress a dummy variable for voting *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, household size), and year fixed effects. The results of the individual-level analysis confirm the positive association between early exposure to Mediaset and voting for Berlusconi's party (coefficient of 0.033 significant at the 1% level).

Since many electoral districts and local labor markets include only one or a few respondents, we cannot include the full set of fixed effects used in our municipal regressions. However, when we include fixed effects for 110 provinces (the administrative level just above municipalities) the coefficient of interest remains positive and statistically significant (column 2). According to this estimate, 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 regressions across municipalities.

The use of individual data allows us to shed some light on the extreme persistence of the Mediaset effect. Specifically, using information on the respondents' year of birth, we next examine whether the effect is more pronounced for individuals that were exposed to Mediaset content at younger ages. In columns 3 and 4 of Table 7 we estimate our baseline specification

only on the sample of individuals that voted for the first time in 1994, when Berlusconi first ran 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 5, which plots the results of a series of analogous regressions estimated separately for the sample of individuals born after each year between 1915 and 1981 (hence gradually excluding older cohorts). The effect of early exposure to Mediaset is much larger on individuals born after 1975, and especially on those that were between 8 and 10 years old in 1985.

The magnitude of the coefficient decreases when focusing on even younger individuals (i.e. those born after 1978, after 1979, etc.), presumably because, as Mediaset coverage gradually expanded to the entire territory between 1985 and 1990, there were only minor differences in exposure across individuals in these cohorts. The precision of the estimates is also lower, due to reduction in the sample size when focusing on the youngest cohorts.

In Figure 6 we further parse the data in 6 ten-year birth cohorts and estimate the regression separately for each group. The results confirm that the effect of exposure to Mediaset is largest for the youngest cohort (born after 1975). Interestingly, exposure to Mediaset also appears to have a significant positive effect on older voters (born before 1936). This is not surprising given that the elderly, like the young, tend to spend a relatively high fraction of their time watching TV (see Table A.2 in the Appendix).

Taken together these results suggest that exposure to Mediaset was especially important in shaping the views and future political attitudes of individuals at young and very young ages. 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 toward explaining the persistence of the Mediaset effect.¹⁸

5. DISCUSSION OF THE RESULTS

The results presented thus far point to a persistent link between (differential) exposure to Mediaset prior to 1985 and receptiveness to Berlusconi's political message after 1994. As discussed above, neither newscasts nor other informational programs, such as political talk shows or investigative journalism reports, were broadcast on Mediaset prior to 1985.

The Appendix Figure A.5 compares the share of airtime devoted to different types of programs respectively on Mediaset and RAI channels, as reported by the statistics on culture

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

gathered by ISTAT (1987). As of 1987, the first year for which such data are available, the share of airtime devoted to all informational programs combined was close to zero and, given the trend, this share was presumably even lower in previous years. The first newscast was introduced on Mediaset only in 1991, at which time the network was available to nearly the entire population, so the correlation between differential exposure prior to 1985 and voting patterns after 1994 cannot simply be attributed to pro-Berlusconi news bias on Mediaset channels.

In this section we attempt to shed some light on alternative mechanisms through which early exposure to Mediaset may affect later voting for *Forza Italia*, focusing in particular on three possible channels.

5.1. DIFFERENTIAL EXPOSURE TO NEWS BIAS AFTER 1991

One possibility is that early Mediaset viewers developed a form of attachment to the network that made them more likely to watch any Mediaset program, including newscasts once these were introduced. Their higher propensity to vote for *Forza Italia* would hence be explained by greater exposure to pro-Berlusconi bias on Mediaset news *after* he entered politics. One implication of this argument is that early Mediaset viewers should be more likely than others to watch newscasts on Mediaset channels. Furthermore, if favorable coverage of *Forza Italia* and its leader was effective, one would expect more positive perceptions of Berlusconi among such viewers.

We investigate these possibilities using information from the ITANES survey on respondents' news consumption, namely whether they watched news on TV and, if so, on what channel. With this information, we construct two dummy variables that equal one if a respondent reports watching news most frequently on Mediaset and RAI, respectively, and use them as dependent variables in our baseline specification. The results, shown in Table 8, suggest that early exposure does not affect the probability of watching news on Mediaset later on, both for the overall sample and for the sub-sample of younger voters.

We then look at differences in beliefs about Berlusconi between early and late Mediaset viewers. To this end we exploit the fact that, in some waves, ITANES respondents were asked to report their overall evaluation of Berlusconi (on a 1-10 scale), and on what scale they believed him to be of the following: honest, qualified, trustworthy, telegenic (2001 and 2006), sincere, coherent, and dependable (2001 only). In Table 9 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 lines.

Overall, we find little evidence that voters who had access to Mediaset earlier were more exposed (or more 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. This does not mean, of course, that partisan news bias had no impact on voting for *Forza Italia*, as recent findings by Barone et al. (2013) suggest. Rather, given the content available on Mediaset channels in the early stage of their diffusion, news bias alone does not seem to explain the documented differences in voting between early and late viewers.

5.2. GENERAL SYMPATHY FOR BERLUSCONI

Another possible explanation for 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 channels – and were hence more likely to support any initiative he would embark upon. Their support for *Forza Italia* would hence not reflect a particular affinity for the party's political platform but would rather be just another way to express their attachment to Berlusconi.¹⁹

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 relationship 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 his public image. To this end we collected comprehensive data on the number of Milan A.C. supporters' clubs (Milan clubs) that were present across Italian municipalities as of 2012. Furthermore, to account for any systematic differences in the overall presence of soccer fans, we also collected data on the number of organized 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

¹⁹ A related possibility is that early Mediaset viewers were simply more likely to know who Berlusconi was and, hence, a sense of familiarity would lead them to support his (political) initiatives. Though potentially relevant for the 1994 elections, this factor has hardly played a role in the following elections because, after running for election in 1994, Berlusconi became the country's most prominent politician.

that 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 10: the first specification includes the full set of geographic municipal controls; in column 2 we also include 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 relationship between early access to Mediaset and support for Milan A.C. To the extent that support for his soccer team reflects general sympathy towards Berlusconi, the evidence presented contradicts the view that early Mediaset viewers were more supportive of all Berlusconi's initiatives. This suggests that exposure to Mediaset has implications specifically for the political sphere.

5.3. CULTURAL CHANGE AND POLITICAL BEHAVIOR

The last hypothesis we consider is that exposure to the entertainment content offered on Mediaset channels favored the diffusion of a particular cultural model – centered around values of individualism and civic disengagement – that, later on, would be central to Berlusconi's successful political rhetoric.

The idea that exposure to TV may impact viewers' socio-political attitudes has been discussed, most prominently, by Robert Putnam in his seminal work on the decline of social capital in the United States (2000).²⁰ According to Putnam, the amount of time spent watching TV as well as the type of content viewers are exposed to can influence their degree of civic engagement. With regard to quantity, the argument is, quite intuitively, that TV watching time detracts from various forms of civic engagement (e.g., participation in associations and attendance at public meetings). With regard to the type of content, Putnam draws a stark distinction between informational and non-informational content: at one extreme, news and educational content can in principle foster political participation and civic engagement; at the other extreme, light entertainment programs (i.e., action dramas, soap operas, and light entertainment shows) would promote canons of individualism and consumerism, which in turn undermine civic attitudes and engagement. As discussed in Section 2.1, such programs occupied the majority of Mediaset airtime during the 1980s – about 70%, in contrast to less than 30% on RAI, see Figure A.5.

In the present context, the introduction of Mediaset TV may have favored a decline in civic

²⁰ Consistent with Putnam's hypothesis, Olken (2009) documents a negative impact of the introduction of television on social capital in the context of Indonesia.

engagement both by expanding the quantity and variety of content available to viewers, and by favoring the diffusion of the least pro-civic programs. Such a decline would have presumably been more pronounced in areas that had access to Mediaset programs early on. We test this hypothesis in Table 11 by examining the relationship between Mediaset access prior to 1985 and the evolution of civic engagement between 1981 and 2001. As a proxy for civic engagement we use the number civic associations per capita, the only measure among those originally used by Putnam for which municipal data are available from the census since the 1980s (specifically for 1981, 1991, and 2001). 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 relationship between the two variables becomes negative and statistically significant after the introduction of Mediaset, both in 1991 and in 2001 (columns 2 and 3). These results are suggestive of a decline in civic engagement in municipalities that were exposed to Mediaset earlier relative to those that were exposed later. This pattern is confirmed in column 4 when we pool together observations for all census years and interact signal intensity in 1985 with a dummy for the post-1981 period. The coefficient of the interaction term is virtually unchanged in column 5 when we also include municipality fixed effects, hence exploiting only differential changes over time within the same municipality.²¹ 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. This is a sizable effect, corresponding to 40 percent of the standard deviation in the number of voluntary associations per capita in 1981. Overall, these results point to a significant and persistent decline of social capital in municipalities that had access to Mediaset earlier on, and support the view that Berlusconi's channels contributed to the diffusion of a new value system centered around individualism and civic disengagement.²²

But in what way could the diffusion of a such value system have favored Berlusconi's political rise? Several Italian scholars and commentators have pointed out that, like no other politician before him, Berlusconi's political message embodied the new values and aspirations that were then rapidly spreading throughout Italian society, and that, in fact, his entire political project reflected a vision of society inspired by individualism and economic am-

²¹ We obtain very similar results using as an alternative measure of civic engagement 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 (results available upon request).

²² 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 possibilities are consistent with Putnam's argument.

bition, and by the perception of the State as a limit to individual entrepreneurial freedom (Bobbio et al., 1995; Gaudiano and Pira, 2004; Ginsborg, 2005).

That this vision was central to Berlusconi's political rhetoric emerges from a systematic text analysis of the entire corpus of Berlusconi's political speeches conducted by Bolasco et al. (2009).²³ This analysis documents that concepts such as "freedom" and "economic success" are among those Berlusconi refers to most frequently, while expressions such as "tolerance" and "common good" are significantly more rare. Analogous results emerge from the authors' comparison of the content of Berlusconi's inaugural speeches as prime minister to those of other prime ministers in the post-1994 period. Berlusconi referred more frequently than others to concepts such as "possession" and "entrepreneurial freedom", whereas he significantly under-utilized expressions such as "obligation" and "social responsibility". This suggests that, through the content and form of his political discourse, Berlusconi offered political representation to the deeper socio-cultural demands that his media had, at the very least, contributed to fueling.²⁴

In light of this, it is important to examine whether, in fact, adherence to the system of values promoted by Mediaset content was associated with greater support for Berlusconi's party. The ITANES data allow us to explore this issue as they include information regarding various forms of civic engagement such as participation in voluntary associations, interest in politics, signing of petitions, and attendance at public meetings and demonstrations. Combining this information with respondents' party preferences, in Table 12 we examine whether *Forza Italia* supporters tend to display lower levels of civic engagement than supporters of other parties. Specifically, 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, electoral year fixed effects, and municipality fixed effects. The results suggest that, relative to the average individual in each municipality, *Forza Italia* 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

²³ Overall, Bolasco et al. (2009) analyze 111 political speeches given by Berlusconi between 1994 and 2005, for a total of 32,500 words.

²⁴ In addition to the values that Berlusconi's political message evoked, it was also the language that he employed that made his political rhetoric unique and especially appealing to TV viewers. Political commentators generally agree on Berlusconi's capacity to "approximate the language of politics to that of commercial communication" (Gaudiano and Pira, 2004), to use a communication style characterized by spontaneity, over-simplification, and the use of popular metaphors (often borrowed from sport) most accessible to ordinary people.

in social capital triggered by the diffusion of Mediaset content.

6. CONCLUSION

Over the past decade political economists have been increasingly interested in understanding to what extent mass media in general, and television in particular, can affect viewers' political attitudes and, ultimately, their voting decisions. This literature has focused on the impact of news coverage, but has overlooked the possibility that content other than news – which accounts for most of TV airtime – may also affect political views in other, possibly more subtle, ways.

This research attempts to fill this gap by investigating the political consequences of the introduction of commercial television in Italy over the past three decades. Our analysis documents that areas 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. This effect is large, significant, extremely persistent, and particularly pronounced for older and especially younger voters, who were more likely to watch TV.

Crucially, the documented difference in voting behavior between early and late Mediaset viewers cannot be attributed to greater exposure to pro-Berlusconi bias in the news since news programs were introduced on Mediaset only in 1991, when the network was already available to the entire population. It should instead relate to greater exposure to non-news content, namely the light entertainment programs that dominated Mediaset channels in the 1980s. We test several channels through which such an effect may operate. Among these, the hypothesis that finds most support in the data is that the Mediaset channels favored the diffusion of a values system centered around individualism and civic disengagement that, later on, would be at the heart of Berlusconi's political rhetoric. In particular, we find that early access to Mediaset is associated with a sizable and persistent decline in civic engagement, and that individuals characterized by low levels of civic engagement are disproportionately more likely to vote for Berlusconi's party.

To the best of our knowledge, our study is the first to rigorously document that media content other than news can have a significant and long-lasting influence on viewers' political preferences. Our findings complement previous evidence on the effect of partisan news bias and further enrich the ongoing debate on the role of the media in democratic politics, and on the need for appropriate regulation to guarantee media neutrality towards political actors.

Finally, our results dovetail nicely with previous work on the impact of non-news TV content on socio-cultural attitudes, such as gender roles or civic engagement; in particular, they

suggest that media-fuelled cultural changes may translate into – and be further reinforced by – increased consensus for political forces able to represent citizens’ evolving cultural demands.

REFERENCES

- Acemoglu, D., C. García-Jimeno, and J. Robinson (2012). Finding eldorado: Slavery and long-run development in colombia. *Journal of Comparative Economics*.
- Barone, G., F. D'Acunto, and G. Narciso (2013). Telecracy: Testing for channels of persuasion. *Working Paper*.
- Bertrand, M., D. Karlan, S. Mullainathan, E. Shafir, and J. Zinman (2010). What's advertising content worth? evidence from a consumer credit marketing field experiment. *The Quarterly Journal of Economics* 125(1), 263–306.
- Bobbio, N., G. Bosetti, and G. Vattimo (1995). *La sinistra nell'era del karaoke*. Donzelli.
- Bolasco, S., L. Giuliano, and N. Galli de Paratesi (2009). *Parole in libertà. Un'analisi statistica e linguistica dei discorsi di Berlusconi*. Manifestolibri.
- Bursztyn, L. and D. Cantoni (2012, August). A tear in the iron curtain: The impact of western television on consumption behavior. CEPR Discussion Papers 9101, C.E.P.R. Discussion Papers.
- Chong, A. and E. La Ferrara (2009). Television and divorce: Evidence from brazilian novels. *Journal of the European Economic Association* 7(2-3), 458–468.
- Constitutional Court (1988). Sentenza n. 826/1988 del 13-14 luglio 1988. Technical report.
- DellaVigna, S., R. Enikolopov, V. Mironova, M. Petrova, and E. Zhuravskaya (2012). Cross-border media and nationalism: Evidence from serbian radio in croatia? Technical report, CEPR Discussion Papers.
- DellaVigna, S. and E. Kaplan (2007). The fox news effect: Media bias and voting. *The Quarterly Journal of Economics* 122(3), 1187–1234.
- Durante, R. and B. Knight (2012, 05). Partisan control, media bias, and viewer responses: Evidence from berlusconi's italy. *Journal of the European Economic Association* 10(3), 451–481.
- Enikolopov, R., M. Petrova, and E. Zhuravskaya (2011). Media and political persuasion: Evidence from russia. *The American Economic Review* 101(7), 3253–3285.
- Gaudiano, L. and F. Pira (2004). *La nuova comunicazione politica: riflessioni sull'evoluzione delle teorie e degli strumenti in Italia*, Volume 167. Franco Angeli.
- Gentzkow, M. and J. M. Shapiro (2008). Preschool television viewing and adolescent test scores: Historical evidence from the coleman study. *The Quarterly Journal of Economics* 123(1), 279–323.
- Ginsborg, P. (2005). *Silvio Berlusconi: Television, power and patrimony*. Verso Books.

- Hopkin, J. and C. Paolucci (1999). The business firm model of party organisation: Cases from Spain and Italy. *European Journal of Political Research* 35(3), 307–339.
- Huesmann, L. R., J. Moise-Titus, C.-L. Podolski, and L. D. Eron (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977–1992. *Developmental Psychology* 39(2), 201–221.
- Hufford, G. (2002). The ITS irregular terrain model, version 1.2. 2 the algorithm. *Institute for Telecommunication Sciences, National Telecommunications and Information Administration, US Department of Commerce*. <http://flattop.its.blrdoc.gov/itm.html>.
- ISTAT (1985). Indagine sulle strutture ed i comportamenti familiari.
- ISTAT (1987). Statistiche culturali.
- Jensen, R. and E. Oster (2009). The power of TV: Cable television and women's status in India. *The Quarterly Journal of Economics* 124(3), 1057–1094.
- Kaplan, E. and S. Mukand (2011). The persistence of political partisanship: Evidence from 9/11. Technical report, mimeo.
- Kearney, M. S. and P. B. Levine (2014, January). Media influences on social outcomes: The impact of MTV's 16 and Pregnant on teen childbearing. Working Paper 19795, National Bureau of Economic Research.
- La Ferrara, E., A. Chong, and S. Duryea (2012). Soap operas and fertility: Evidence from Brazil. *American Economic Journal: Applied Economics* 4(4), 1–31.
- Olken, B. (2009). Do television and radio destroy social capital? Evidence from Indonesian villages. *American Economic Journal: Applied Economics* 1(4), 1–33.
- Phillips, C., D. Sicker, and D. Grunwald (2011). The stability of the Longley-Rice irregular terrain model for typical problems. *arXiv preprint arXiv:1109.1843*.
- Porro, N. and P. Russo (2000). Berlusconi and other matters: The era of football-politics. *Journal of Modern Italian Studies* 5(3), 348–371.
- Putnam, R. D. (2000). *Bowling Alone*. New York: Simon & Schuster.
- Seisselberg, J. (1996). Conditions of success and political problems of a media-mediated personality-party: The case of Forza Italia. *West European Politics* 19(4), 715–743.
- Veltri, E. and M. Travaglio (2009). *L'odore dei soldi*. Editori Riuniti.
- Yanagizawa-Drott, D. (2010). Propaganda and conflict: Theory and evidence from the Rwandan genocide. Technical report, Working Paper, Harvard University.
- Yanagizawa-Drott, D. and A. Madestam (2011). Shaping the nation: The effect of fourth of July on political preferences and behavior in the United States. *Working Paper*.

Figure 1: Timeline of events, 1980-1994

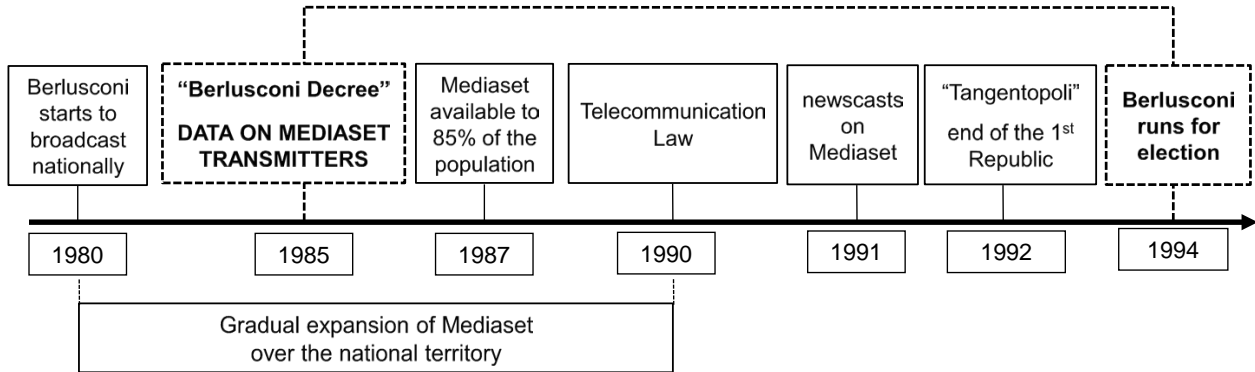
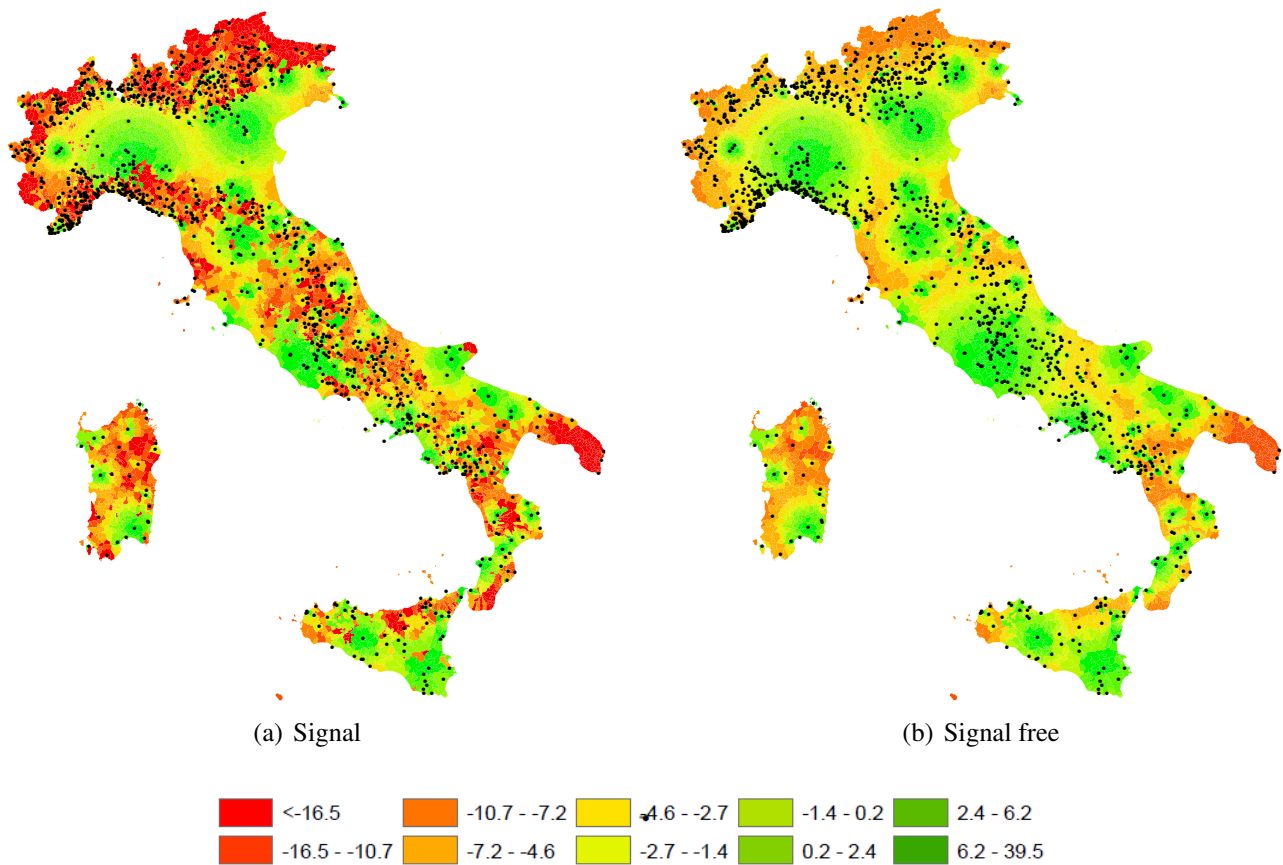
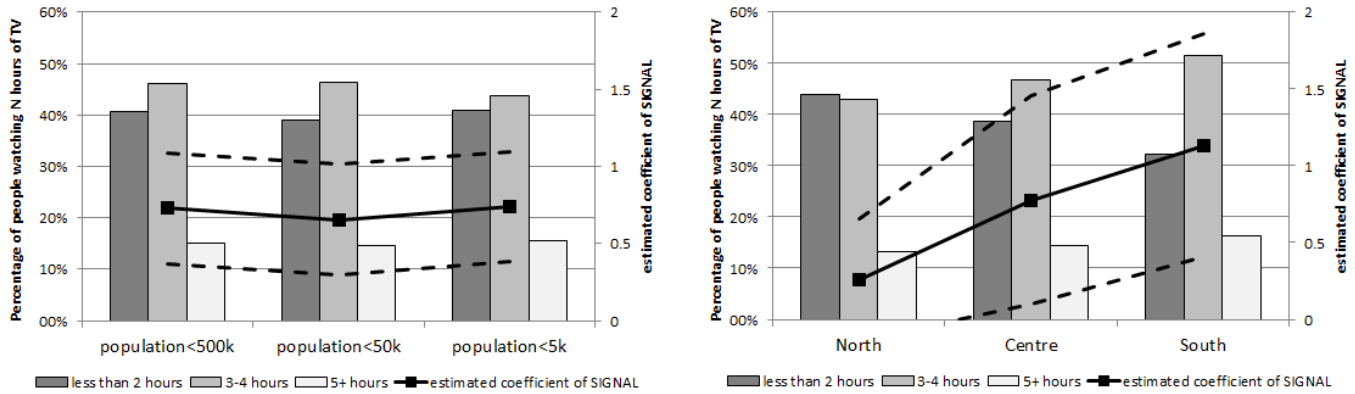


Figure 2: Geographic distribution of Mediaset signal intensity in 1985



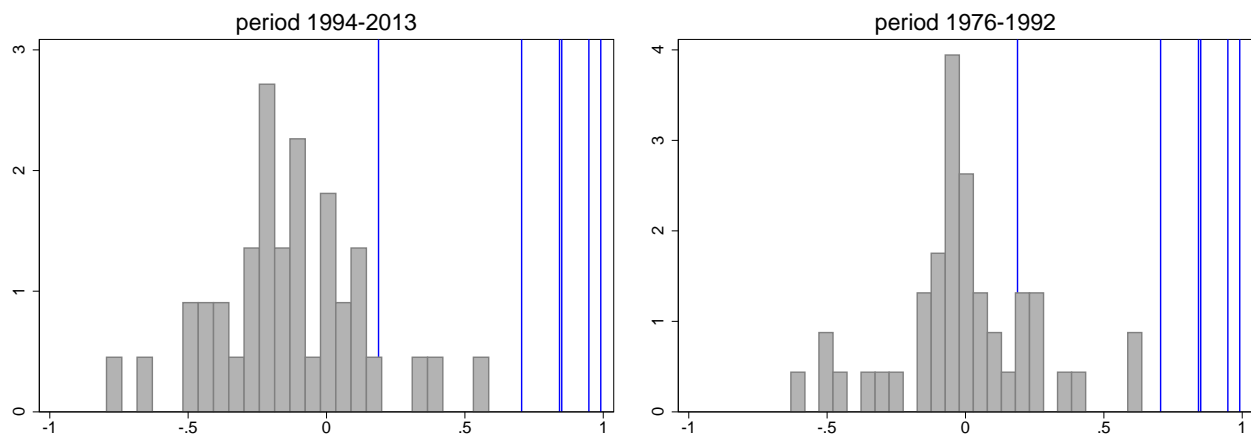
The maps represent the geographic distribution of the simulated intensity of Mediaset's signal in 1985, respectively, under real conditions (left) and in the absence of geomorphological obstacles (right).

Figure 3: Mediaset signal intensity, voting for *Forza Italia*, and TV consumption



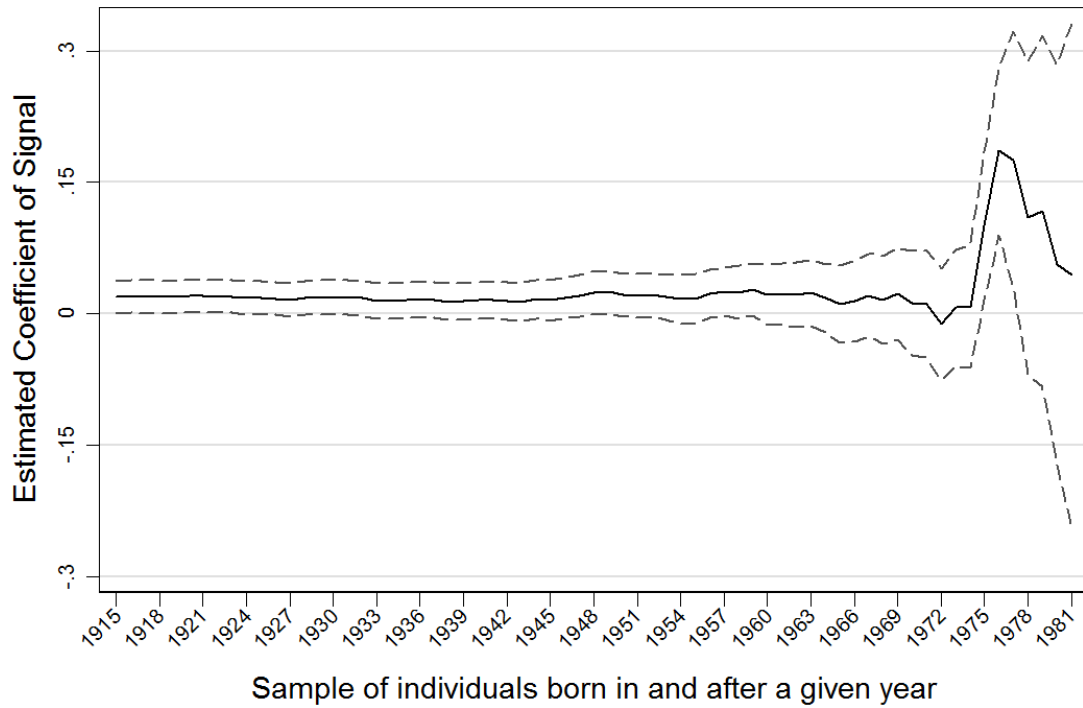
The graphs above report the estimated coefficients (and respective confidence intervals) of a series of regressions of *Forza Italia*'s vote share on Mediaset signal intensity in 1985 (controlling for all baseline controls) for different samples of municipalities divided by size of the population (<500K, <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 4: Mediaset signal intensity and voting for all parties (1976-2013)



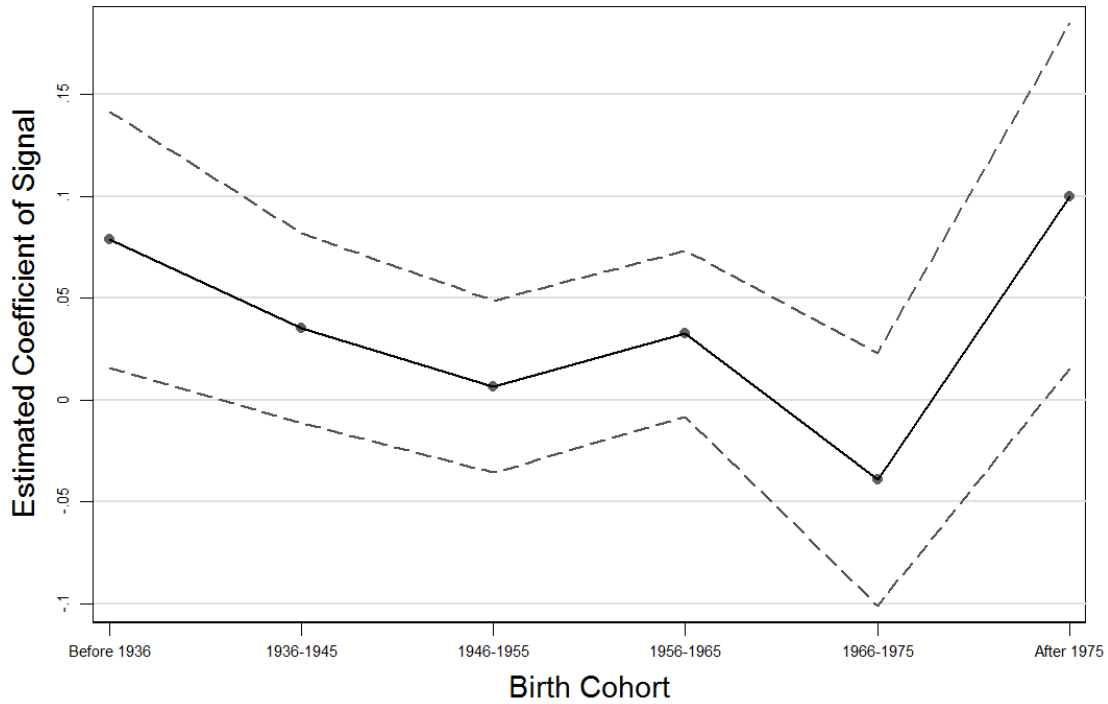
The graphs show the distribution of estimated effect of Mediaset signal intensity on all parties but *Forza Italia* in all elections during the periods 1994-2013 and 1976-1992. The blue vertical lines correspond to the estimated effects on the vote share of *Forza Italia*.

Figure 5: 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*, *Schooling*, *Log Income per capita*, *Area Area²*, *Altitude*, *Altitude²*, and *Ruggedness*.

Figure 6: 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*, *Schooling*, *Log Income per capita*, *Area Area²*, *Altitude*, *Altitude²*, and *Ruggedness*.

Table 1: Descriptive statistics

	Unweighted				Weighted by 1981 population				
	<i>obs.</i>	<i>mean</i>	<i>st.dev.</i>	<i>median</i>	<i>obs.</i>	<i>mean</i>	<i>st.dev.</i>	<i>median</i>	
<i>Signal</i>	8086	-0.398	1.017	-0.234	8062	0.008	0.831	0.013	
<i>SignalFree</i>	8086	-0.063	1.001	-0.246	8062	0.358	1.155	0.208	
<i>Signal>0</i>	8095	0.313	0.464	0.000	8062	0.516	0.500	1.000	
<i>Population (1000s) 1981</i>	8062	7.010	45.449	2.296	8062	301.6	683.7	24.4	
<i>Area (100s km²)</i>	8093	0.372	0.499	0.218	8062	1.557	2.829	0.627	
<i>Electorate (1000s) 1994</i>	8014	6.034	36.042	2.070	7988	239.0	548.5	21.8	
<i>Voting turnout 1994</i>	8014	84.2	10.5	87.6	7988	85.9	7.8	88.1	
<i>Forza Italia 1994</i>	8014	18.9	7.8	19.4	7988	19.5	8.2	19.7	
<i>Forza Italia 1996</i>	8014	17.9	6.3	17.3	7987	19.2	6.4	18.2	
<i>Forza Italia 2001</i>	8014	26.5	7.9	26.7	7985	27.1	6.7	27.1	
<i>Forza Italia 2006</i>	8016	22.9	7.2	23.0	7986	22.9	6.1	22.4	
<i>Forza Italia 2008</i>	8089	33.7	10.1	33.5	8059	35.9	8.9	35.7	
<i>Forza Italia 2013</i>	8016	20.8	6.8	20.4	7988	20.8	6.1	20.0	
		Sub-sample: <i>Signal</i> ≥ 0							
<i>Forza Italia 1994</i>	2523	20.8	7.1	21.2	2512	21.1	7.4	20.9	
<i>Forza Italia 1996</i>	2523	18.9	6.1	18.1	2512	20.1	6.7	18.9	
<i>Forza Italia 2001</i>	2523	28.6	7.1	28.9	2510	28.3	6.4	28.3	
<i>Forza Italia 2006</i>	2523	23.9	6.5	24.0	2510	23.5	5.8	22.7	
<i>Forza Italia 2008</i>	2527	35.5	9.2	34.6	2514	37.1	8.5	37.5	
<i>Forza Italia 2013</i>	2523	22.0	6.3	21.2	2512	21.2	5.9	20.0	
		Sub-sample: <i>Signal</i> < 0							
<i>Forza Italia 1994</i>	5491	18.1	8.0	18.6	5476	17.7	8.5	18.6	
<i>Forza Italia 1996</i>	5491	17.4	6.3	16.9	5475	18.3	5.8	17.3	
<i>Forza Italia 2001</i>	5491	25.6	8.0	25.6	5475	25.8	6.9	25.3	
<i>Forza Italia 2006</i>	5493	22.5	7.4	22.4	5476	22.3	6.4	21.8	
<i>Forza Italia 2008</i>	5562	32.9	10.4	33.0	5545	34.6	9.2	33.7	
<i>Forza Italia 2013</i>	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	(1)		(2)	
	<i>obs.</i>	<i>mean</i>	Univariate OLS <i>Signal</i>	OLS with controls and FEs <i>Signal</i>
Population, thousands (1981)	7,583	6.940 (0.511)	69.731 (63.591)	9.186 (7.537)
Population density, people per km ² (1981)	7,583	256.764 (6.957)	734.947** (325.535)	49.143 (61.778)
Population growth, 1981-2001	7,583	0.033 (0.003)	0.027 (0.018)	0.002 (0.010)
Activity rate, percentage (1991)	7,583	41.290 (0.055)	2.547*** (0.279)	0.137 (0.152)
Employment rate, percentage (1991)	7,583	35.036 (0.090)	3.158*** (0.566)	0.137 (0.162)
Unemployment rate, percentage (1991)	7,583	6.865 (0.058)	-0.845** (0.357)	-0.101 (0.175)
Log income per capita, euro equivalent liras (1985)	7,512	1.627 (0.003)	0.109*** (0.035)	0.025*** (0.008)
Education, percentage completing high school or college (1981)	7,583	8.532 (0.039)	1.410** (0.693)	0.729*** (0.236)
Firms per capita (1981)	7,583	0.055 (0.000)	0.001 (0.001)	-0.000 (0.001)
Self-employed	7,583	54.603 (0.142)	-4.089*** (0.962)	-0.674 (0.484)
Firms 2-49 workers (1981)	7,583	44.898 (0.140)	3.765*** (0.913)	0.647 (0.477)
Firms 50-499 workers (1981)	7,583	0.487 (0.011)	0.301*** (0.058)	0.020 (0.033)
Firms 500+ workers (1981)	7,583	0.012 (0.001)	0.022** (0.011)	0.006 (0.005)

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. Specifically, 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 electoral district and local labor market fixed effects and the following municipal controls: *Area*, *Area*², *Altitude*², and *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 *Forza Italia* in 1994 (OLS estimates)Dependent variable: *Forza Italia* vote share

	(1)	(2)	(3)	(4)	(5)
<i>Signal</i>	2.842*** (0.866)	3.205*** (0.706)	3.651*** (0.762)	0.897*** (0.234)	0.851*** (0.235)
<i>SignalFree</i>		-0.289 (0.723)	0.026 (0.475)	-0.664** (0.262)	-0.640** (0.255)
<i>Area (100s km²)</i>			-0.973 (0.695)	0.853** (0.380)	0.873** (0.404)
<i>Area²</i>			0.030 (0.054)	-0.079 (0.093)	-0.069 (0.093)
<i>Altitude (1000s m)</i>			-6.268 (4.494)	-12.732*** (1.580)	-10.975*** (1.626)
<i>Altitude²</i>			-0.074 (3.961)	7.136*** (1.271)	6.374*** (1.291)
<i>Ruggedness</i>			0.007* (0.004)	-0.002*** (0.001)	-0.002** (0.001)
<i>Electorate (1000s)</i>					-0.004 (0.004)
<i>Log income per capita (1000s €)</i>					5.115*** (0.764)
<i>Education</i>					-0.088*** (0.030)
	(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 *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. 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* 1994-2013 (OLS estimates)

Dependent variable: *Forza Italia* vote share

	1994	1996	2001	2006	2008	2013	1994-2013
<i>Signal</i>	0.850*** (0.235)	0.705*** (0.204)	0.842*** (0.301)	0.948*** (0.285)	0.991*** (0.337)	0.188 (0.279)	0.666*** (0.231)
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, and *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 5: 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
<i>Forza Italia</i> 1994	0.645* (0.346)	0.808* (0.417)	0.949* (0.520)	0.554*** (0.139)	0.821*** (0.216)	0.905*** (0.294)
<i>Forza Italia</i> 1996	0.701** (0.288)	0.869** (0.381)	0.796 (0.494)	0.608*** (0.150)	0.802*** (0.220)	0.703** (0.281)
<i>Forza Italia</i> 2001	0.698** (0.340)	1.052** (0.452)	1.286** (0.574)	0.648*** (0.180)	1.015*** (0.285)	1.104*** (0.376)
<i>Forza Italia</i> 2006	0.605* (0.327)	0.798* (0.442)	1.097** (0.541)	0.560*** (0.177)	0.803*** (0.275)	0.965*** (0.354)
<i>Forza Italia</i> 2008	0.424 (0.445)	0.759 (0.691)	1.099 (0.820)	0.375* (0.216)	0.801** (0.331)	0.954** (0.430)
<i>Forza Italia</i> 2013	0.263 (0.311)	0.837 (0.518)	0.765 (0.615)	0.270 (0.176)	0.902*** (0.289)	0.831** (0.364)
<i>Forza Italia</i> 1994-2013	0.556** (0.279)	0.854** (0.377)	0.998** (0.464)	0.511*** (0.104)	0.859*** (0.157)	0.912*** (0.205)
Electorate, 1000s (1994)	5.689*** (2.193)	-0.246 (0.929)	-0.018 (0.902)	2.440 (1.530)	-0.151 (0.585)	-0.523 (0.495)
Population, 1000s (1981)	6.940** (2.766)	-0.175 (1.120)	-0.039 (1.083)	3.167 (1.978)	-0.039 (0.728)	-0.621 (0.595)
Unemployment rate, % (1991)	-0.083 (0.256)	-0.026 (0.329)	-0.075 (0.425)	-0.056 (0.116)	0.073 (0.177)	0.103 (0.236)
Log per capita income (1985)	0.022 (0.015)	-0.001 (0.020)	0.004 (0.023)	0.016*** (0.006)	-0.001 (0.008)	-0.000 (0.009)
Education (1981)	0.588*** (0.213)	-0.095 (0.246)	-0.145 (0.293)	0.403*** (0.120)	-0.131 (0.168)	-0.254 (0.208)
Firms per capita (1981)	-0.001 (0.001)	-0.001 (0.002)	-0.002 (0.003)	-0.001* (0.001)	-0.002 (0.001)	-0.002 (0.002)
Area	0.086 (0.055)	-0.002 (0.032)	0.026 (0.030)			
Altitude	-0.000 (0.013)	0.007 (0.017)	-0.002 (0.019)			
Ruggedness	-7.416 (8.145)	-15.946 (11.199)	-16.703 (13.366)			

The table illustrates the difference in vote share for *Forza Italia* (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*, *Area*², *Altitude*, *Altitude*², and *Ruggedness*. Standard errors clustered at the municipality-level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Mediaset signal intensity and voting for Forza Italia (1994-2013)

Dependent variable: vote share of *Forza Italia*

	Sub-samples by population in 1981				By geographical area			
	<i>unweighted</i>	< 500,000	< 50,000	< 5,000	< 500	North	Center	South
<i>Signal</i>	0.859*** (0.170)	0.820*** (0.208)	0.758*** (0.209)	0.821*** (0.206)	2.014*** (0.462)	0.394 (0.239)	0.836*** (0.405)	1.156*** (0.411)
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 *Forza Italia* 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 7: Mediaset signal intensity and voting (individual data)

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

	Full Sample		First Vote 1994	
	(1)	(2)	(3)	(4)
<i>Signal</i>	0.033*** (0.012)	0.020* (0.011)	0.071** (0.035)	0.098* (0.052)
Observations	8,127	8,127	739	739
Province FE	NO	YES	NO	YES
R ²	0.042	0.063	0.045	0.084

Individual data from the 1994, 1996, 2001, and 2006 waves of the Italian National Election Study (ITANES). The dependent variable is a dummy that equals one for those respondents that report having voted for *Forza Italia* and zero otherwise. Columns 1 and 2 report the results for the entire sample of respondents, while columns 3 and 4 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*, and *Ruggedness*. Standard errors clustered at the municipal level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Mediaset signal intensity and news consumption (individual data)

Dependent variable: Favorite Newscast (0-1)

	Full Sample		First Vote 1994	
	RAI	Mediaset	RAI	Mediaset
	(1)	(2)	(3)	(4)
<i>Signal</i>	-0.020 (0.016)	0.016 (0.016)	-0.096 (0.062)	0.067 (0.062)
Observations	8,127	8,127	739	739
Province FE	YES	YES	YES	YES
R ²	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). The dependent 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 and 2 report the results for the entire sample of respondents, while columns 3 and 4 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*, and *Ruggedness*. Standard errors clustered at the municipal level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Mediaset signal intensity and opinion about Berlusconi (individual data)

	<i>Rating</i>	<i>Honest</i>	<i>Qualified</i>	<i>Sincere</i>	<i>Trustworthy</i>	<i>Coherent</i>	<i>Dependable</i>	<i>Telegenic</i>	<i>Sum quality</i>
<i>Signal</i>	0.088 (0.077)	0.035 (0.032)	0.009 (0.030)	-0.025 (0.042)	0.045* (0.026)	-0.044 (0.040)	-0.085 (0.056)	0.015 (0.024)	0.191 (0.126)
Observations	9,546	4,174	4,748	2,542	4,824	2,622	2,218	4,831	5,030
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 equal to one if a respondent reported believing Berlusconi had 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 Area²*, *Altitude*, *Altitude²*, and *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 support for Milan A.C.

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

	(1)	(2)	(3)	(4)	(5)	(6)
	Milan A.C.	Milan A.C.	Milan A.C.	Inter F.C.	Inter F.C.	Inter F.C.
<i>Signal</i>	0.006 (0.039)	0.022 (0.024)	-0.002 (0.023)	0.133*** (0.047)	0.029 (0.030)	-0.003 (0.028)
<i>SignalFree</i>	0.039 (0.038)	0.007 (0.030)	-0.005 (0.029)	-0.036 (0.041)	-0.011 (0.029)	-0.031 (0.029)
<i>Area (100s km²)</i>	0.226*** (0.036)	0.300*** (0.055)	0.176*** (0.053)	0.233*** (0.036)	0.406*** (0.057)	0.224*** (0.054)
<i>Area²</i>	-0.013*** (0.003)	-0.036** (0.015)	-0.020 (0.013)	-0.015*** (0.003)	-0.050*** (0.015)	-0.027** (0.012)
<i>Altitude (1000s m)</i>	-0.343 (0.231)	-0.357** (0.160)	-0.137 (0.161)	-0.693*** (0.228)	-1.146*** (0.157)	-0.749*** (0.156)
<i>Altitude²</i>	0.136 (0.193)	0.247* (0.128)	0.147 (0.128)	0.336** (0.169)	0.647*** (0.128)	0.464*** (0.120)
<i>Ruggedness</i>	-0.000* (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
<i>Population (1000s)</i>			0.001** (0.000)			0.001 (0.001)
<i>Log income per capita (1000s €)</i>			0.042 (0.072)			0.145 (0.089)
<i>Education (% high-school + college)</i>			0.014*** (0.004)			0.023*** (0.005)
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*, *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. *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 11: Mediaset signal intensity and number of voluntary associations

	1981	1991	2001	1981-2001	
<i>Signal</i>	-0.000 (0.004)	-0.020** (0.008)	-0.021** (0.009)	0.010 (0.007)	
<i>Post exposure X Signal</i>				-0.035*** (0.009)	-0.035*** (0.007)
R ²	0.513	0.529	0.734	0.697	0.787
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

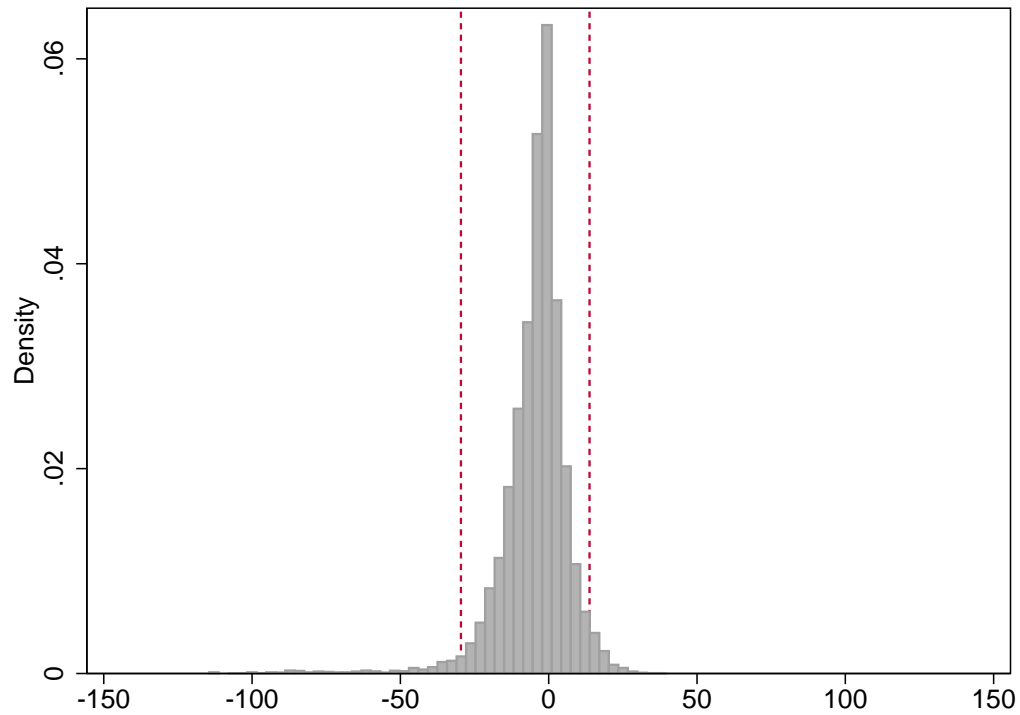
The dependent variable is the number of voluntary associations in a municipality per 100 inhabitants in Census years 1981, 1991, and 2001. *Post exposure X Signal* is the interaction between *Signal* and a dummy variable equal to one for years after 1985. Municipal controls include *Signal free*, *Electorate*, *Log income per capita*, *Education*, *Area*, *Area*², *Altitude*, *Altitude*², and *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 12: Profile of *Forza Italia* votersDependent variable: vote for *Forza Italia* (0-1)

<i>Member of a voluntary association</i>	-0.053*** (0.013)									-0.040*** (0.013)
<i>Interested in politics</i>		-0.061*** (0.013)								-0.043*** (0.013)
<i>Attended political debates</i>			-0.019 (0.013)							
<i>Took part in a rally</i>				-0.122*** (0.019)						
<i>Signed a petition</i>					-0.035* (0.018)					
<i>Sum of political actions</i>						-0.034*** (0.009)	-0.028*** (0.009)			
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 being a member of a voluntary association. *Interested in politics*, *Attended political debate*, *Took part in a rally*, and *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*, and *Number of family members*. Standard errors 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 signal intensity in 1985 across Italian municipalities. 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)

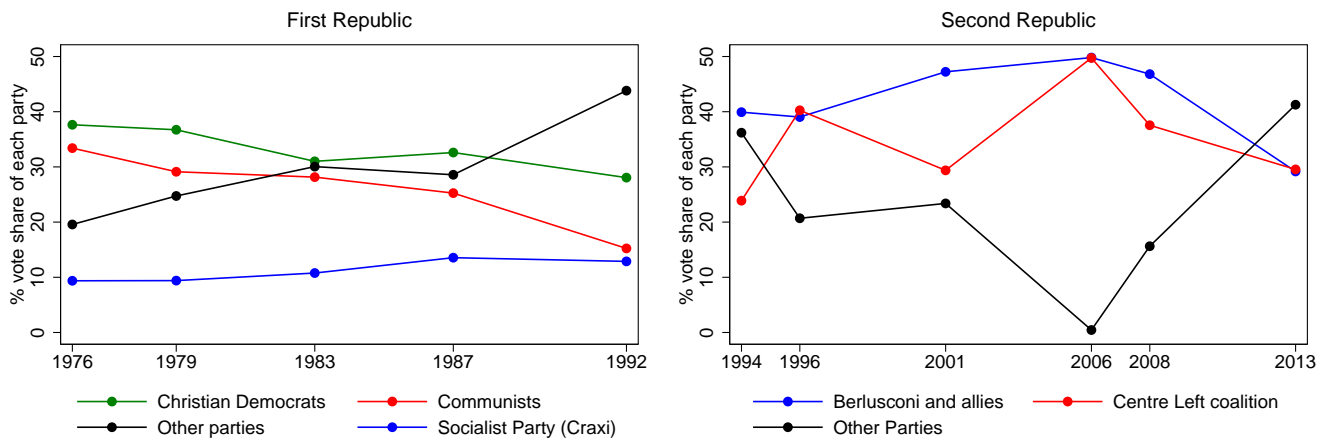
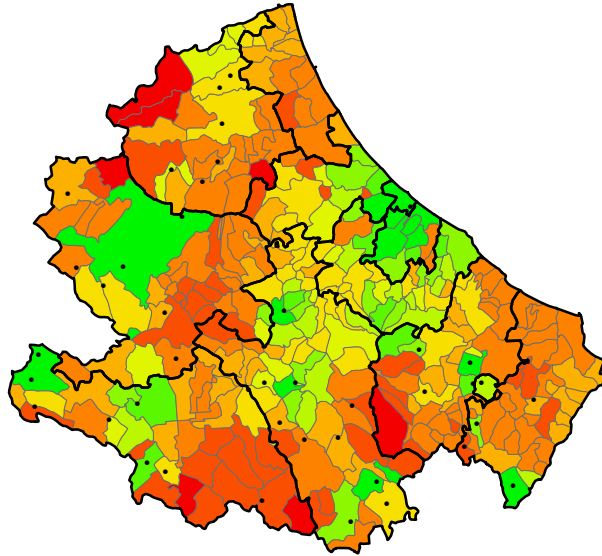
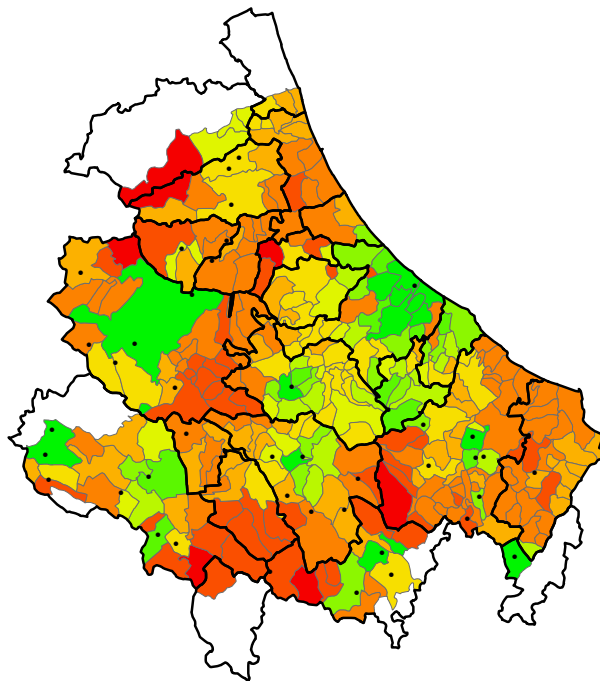


Figure A.3: Electoral districts and local labor markets in the region of Abruzzo



(a) Electoral Districts



(b) Local labor markets

Figure A.4: Example of a technical report sheet for one of the Mediaset transmitters active in 1985

SCHEDA B **IMPIANTO PRIVATO** **RADIOFONICO** **TV**

ATTENZIONE Se l'impianto e' di solo collegamento al deve rispondere soltanto ai punti 36,37,38,39,40,41 ed ai punti dal 58 al 66.
 Per la 'nessa in onda' al risponda soltanto ai punti 36,37,38,39,40,41.
 Per i ripetitori di programmi esteri o nazionali non va compilata ovviamente la scheda di 'nessa in onda', ma va indicato al punto 67 per !! solo primo impianto della catena, la stazione straniera o RAI ricevuta; gli impianti successivi vanno trattati normalmente.

36 R.E.T.E. SICILIANA Denominazione emittente **37** 001 N. impianto

38 GALATI, MAMERTINO, S. IACOPO, Indirizzo impianto Tx o nome localita'

39 Centro abitato

40 M.E. Provincia **41** GALATI, MAMERTINO, Comune

DIREZIONE CENTRALE SERVIZI RADIOELETTRICI
 31 GEN. 1985
 DCSR/SEGR/ 06064

42 14 46 30 Longitud. **43** 38 01 27 Lat. (antenna) **44** 931 Quota s.l.m.

45 **46** **47** **48**
 Tipologie della ubicazione dell'impianto

50 63425 Portante **51** 63645 Portante audio(per TV) **52** 41 Canale(TV) **53** Tipo offset **54** Posiz. offset(TV)

55 Potenza apparato **56** EL INDUSTRIALE Costruttore apparato **57** 1962 Anno costruzione

58 085 Riceve il segnale da: **59** o da: **60** o da:

61 Mediante **62** Mediante **63** Mediante **64** Riceve il segnale da:

65 511.25 Freq. (MHz) **66** Freq. (MHz) **67** Freq. (MHz) **68** Freq. (MHz)

69 M.E. Sigle province interessate dal serv. di radiodiff. **70** Tipo di servizio

71 Localita' 1 esclusa deliberatamente dal servizio **72** Prov. **73** Metodo usato

74 Localita' 2 esclusa deliberatamente dal servizio **75** Prov. **76** Metodo usato

77 Localita' 3 esclusa deliberatamente dal servizio **78** Prov. **79** Metodo usato

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				
<i>Signal</i>	2.391*** (0.555)	3.145*** (0.628)	0.649*** (0.138)	0.494*** (0.152)	2.813*** (0.456)	2.032*** (0.401)	0.863*** (0.188)	0.979*** (0.196)
<i>SignalFree</i>		-0.439 (0.535)	-0.600*** (0.229)	-0.363* (0.217)		0.097 (0.380)	-0.277 (0.206)	-0.398* (0.204)
<i>Area (100s km²)</i>		-1.010 (0.694)	0.972*** (0.346)	0.787* (0.410)		-4.338*** (0.665)	0.916*** (0.333)	0.542 (0.336)
<i>Area²</i>		0.044 (0.053)	-0.141* (0.076)	-0.042 (0.096)		0.451*** (0.174)	-0.120 (0.083)	-0.034 (0.085)
<i>Altitude (1000s m)</i>		-4.734 (4.484)	-14.513*** (1.479)	-9.781*** (1.626)		-13.512*** (2.535)	-13.932*** (1.283)	-9.750*** (1.376)
<i>Altitude²</i>		-1.401 (3.887)	8.462*** (1.116)	5.282*** (1.262)		6.792*** (2.125)	7.945*** (1.017)	5.303*** (1.223)
<i>Ruggedness</i>		0.006* (0.003)	-0.001 (0.001)	-0.003*** (0.001)		0.004*** (0.002)	-0.002** (0.001)	-0.002*** (0.001)
<i>Electorate (1000s)</i>				-0.005 (0.004)				0.003 (0.005)
<i>Log income per capita (1000s €)</i>				5.016*** (0.738)				4.760*** (0.613)
<i>Education (% high-school + college)</i>				-0.092*** (0.029)				-0.107*** (0.032)
Constant	19.435*** (0.525)	20.886*** (0.752)	21.693*** (0.455)	14.563*** (2.702)	20.054*** (0.357)	23.607*** (0.559)	22.622*** (0.278)	19.019*** (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
R ²	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%
<i>By population size:</i>				
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%
<i>By geographical area:</i>				
North	43.9%	42.9%	10.6%	2.7%
Center	38.8%	46.7%	12.5%	2.0%
South	32.2%	51.6%	13.2%	3.0%
<i>By respondent's age</i>				
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%

The 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 questions on media consumption. Each entry in the table indicates the fraction of individuals in each group (rows) spending a given amount of time watching TV (columns). Source: ISTAT (1985)

Figure A.5: Share of airtime devoted to different types of programs on Mediaset and RAI (1987-1997)

