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The Political Legacy of Entertainment TV

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July 2015

Abstract

We investigate the political impact of entertainment television in Italy over the past thirty years by exploiting the staggered introduction of Silvio Berlusconi's commercial TV network, Mediaset, in the early 1980s. We find that individuals in municipalities that had access to Mediaset prior to 1985 - when the network only featured light entertainment programs - were significantly more likely to vote for Berlusconi's party in 1994, when he first ran for office. This effect persists for almost two decades and five elections, and is especially pronounced for heavy TV viewers, namely the very young and the old. We relate the extreme persistence of the effect to the relative incidence of these age groups in the voting population, and explore different mechanisms through which early exposure to entertainment content may have influenced their political attitudes.

Keywords: television, entertainment, voting, political participation, Italy.

JEL codes: L82, D72, Z13

1 Introduction

There is increasing evidence that exposure to biased news on TV can influence viewers' voting decisions. DellaVigna and Kaplan (2007) document that exposure to Fox News 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,[1] and other categories of content could arguably also influence viewers' attitudes. In fact, previous research has documented that, by priming particular cultural models, light entertainment shows, soap operas, and advertising can have important and persistent effects on various types 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 (Bursztyn and Cantoni, 2012). Yet, whether and how exposure to non-news content affects viewers' political decisions remains largely unexplored. Another limitation of existing work on the influence of TV on voting is that it has only looked at short-run effects - i.e. in one election - and little is known on how long-lasting such impact may be.

This research attempts to fill both these gaps by investigating the impact of entertainment TV on voting in Italy over the past thirty years. In particular, we examine whether differential exposure to Berlusconi's commercial TV network, Mediaset, in the 1980s was associated with higher electoral support for Berlusconi's party *Forza Italia* in 1994, when he first ran for office, and in the following five elections. Crucially, in the early stages of Mediaset diffusion, when some areas had access to the network and others did not, Mediaset channels were entirely devoted to light entertainment programs, and newscasts were only introduced in 1991, when access to the network was virtually ubiquitous.

Our empirical analysis exploits variation in early access to Mediaset

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[1] According to the 2010 CRE Video Consumer Mapping Study, Americans devote only 18.2% of their total watching time to news, compared to 46.8% to entertainment programs and 21.8% to advertising.

across Italian municipalities determined by the location of the network's transmitters that were active in 1985. These transmitters were inherited from a multitude of local TV stations that were progressively incorporated into the network in the early 1980s, more than a decade before Berlusconi even considered entering politics; hence, it is unlikely that their location was directly functional to Berlusconi's later political ambitions. Nonetheless, it is possible that Mediaset coverage in 1985 may be correlated with local socio-economic characteristics that may affect electoral outcomes in ways other than through TV.

We address this concern using two alternative approaches. First, we regress the voting share of *Forza Italia* in each municipality on the local intensity of Mediaset signal. We control for electoral district fixed effects, local labor market fixed effects, the hypothetical signal intensity in the absence of geomorphological obstacles, and various terrain characteristics. In this context, the identification of the effect is based on the residual variation in signal intensity - within very small geographical areas - attributable to idiosyncratic geomorphological factors that are plausibly uncorrelated with other determinants of voting. Our identification assumption is corroborated by the fact that variation in 1985 signal intensity is uncorrelated with population density and other socio-economic characteristics, and, most importantly, with the electoral performance of any party prior to 1994. Our second approach is based on the comparison between neighboring municipalities. In particular, we look at differences in electoral outcomes between pairs of neighbors with similar hypothetical signal intensity but different actual exposure to Mediaset. Such strategy approximates, in a very intuitive fashion, the ideal experiment of exposing to Mediaset only one of two municipalities with comparable characteristics and similar distance from the transmitters.

Both approaches deliver very similar results. In particular, we find that in municipalities that were exposed to Mediaset prior to 1985 the vote share of *Forza Italia* in the 1994 elections was significantly higher than in those that were not. This effect is sizeable - about 1 percentage point - and very robust to different specifications and controls. Furthermore, the effect persists until the 2008 elections, almost twenty-five years after the differential exposure to Mediaset and fifteen years after Berlusconi entered

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politics.[2]

To study whether the effect of exposure to Mediaset varies across different categories of viewers, we use individual survey data on TV consumption and political behavior available for the same period.[3] We find that the effect of early exposure to Mediaset increases with TV consumption, both across geographical areas and socio-economic characteristics. In particular, the effect is larger for people living in Southern Italy, for females, for the less educated, and for the unemployed. We also uncover an interesting U-shaped relation with respect to age: both TV consumption and the effect of Mediaset on voting is much larger (about 10 percentage points) for individuals that, at the time of the differential exposure, were either very young (10 year-old or less) or old (55 year-old or more). This finding can partly explain the extreme persistence of the effect over several elections. Indeed, individuals that were very young in 1985 reached the voting age in 1994 or later and gradually replaced the oldest cohorts that were exiting the electorate. Since the estimated effect of Mediaset exposure is very similar for the two groups, this implies that, although the age composition of Mediaset-affected voters changed over time, their overall electoral "power" remained very stable.

Finally, we attempt to shed light on the possible channels through which exposure to entertainment TV may have influenced viewers' later voting behavior. In this respect, we find that the influence of Mediaset on the two most affected age groups, i.e. the very young and the old, operated through very different mechanisms. On the one hand, individuals exposed to Mediaset as children became significantly less interested and participative in politics as adults and hence, presumably, more vulnerable to Berlusconi's political rhetoric. On the other hand, old viewers exposed to Mediaset entertainment content prior to 1985 were significantly more likely to watch news on Mediaset after 1991, when the network launched its own newscasts - newscasts which were characterised by a strong pro-*Forza Italia* bias (Du-

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[2]For the sample of neighbouring municipalities the effect also persists in the 2013 elections.

[3]The data used are available from the Italian National Statistical Institute (ISTAT) and the Italian National Election Study (ITANES) conducted by the Istituto Cattaneo, an independent research institution conducting research on electoral participation and political trends in Italy since 1968.

rante and Knight, 2012). Hence, our findings suggest that, while for young viewers early exposure to entertainment content had a direct impact on political attitudes, for old viewers this effect was indirect, driven by increased attachment to the network and later exposure to partisan news bias.

Our research contributes to the political economy literature on media and voting in three ways. First, we document that exposure to entertainment content can influence viewers' political preferences and voting decisions, and explore possible explanations for this relationship. In this respect our findings are complementary to previous evidence on the electoral impact of exposure to news content surveyed in DellaVigna and Gentzkow (2010) and Stromberg (2015).[4] Second, spanning a period of almost three decades, our study documents that even transitory shocks to media exposure can have a long-lasting impact on political behavior, and relates such persistence to the heterogeneity in media effects across age groups. These results dovetail nicely with previous evidence on the long-lasting effect of mass media on non-political attitudes discussed above, and suggest that media-driven cultural changes may translate into different political preferences. Finally, by documenting considerable heterogeneity in the effect of TV with respect to viewers' age, gender, and socio-economic factors, our findings underscore the possibility that particular segments of the population, especially the very young, may be disproportionately affected by television; a finding, the latter, that relates to previous evidence on the impact of television on children's attitudes and abilities (Gentzkow and Shapiro, 2008; Huang and Lee, 2010).

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 concludes.

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[4]In this respect, our work is especially related to Barone et al. (2015) who study the electoral impact of pro-Berlusconi bias on Mediaset news exploiting the staggered introduction of digital TV, which diluted the audience share of Mediaset news programs. They show that provinces in the Italian region of Piedmont that switched to digital TV before the 2010 regional elections exhibit lower electoral support for the centre-right coalition relative to provinces that switched only after the elections.

2 Background

2.1 The rise of commercial TV in Italy

For more than twenty years after its foundation in 1954, 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 stay the course, 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 demanded 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
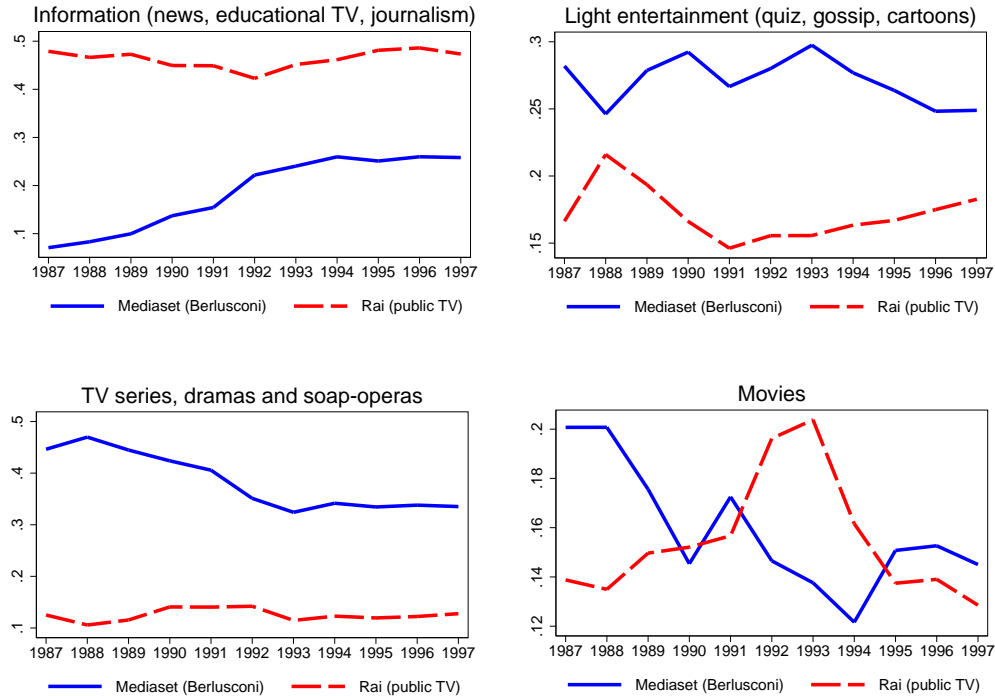
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an emergency decree removing all geographic restrictions on broadcasting beyond the local level.

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. Until then the uncertain legal prospects may have delayed the expansion of Mediaset. However, 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. Moreover, 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, they lacked the power of RAI transmitters, and only about half of the population could receive Mediaset channels with a good quality signal.

By 1987, however, the number of transmitters had doubled to 3,800, and Mediaset was accessible to about 87% of the population (Constitutional Court, 1988); by the end of 1990 that number had reached 98%, comparable to RAI's virtually universal coverage. At the same 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, 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). As shown in Figure 1, the majority of airtime was devoted to foreign TV series, particularly action dramas and soap operas, and the rest consisted of 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 rarely found on Mediaset. More generally, Berlusconi's television-making style

Figure 1: Share of airtime devoted to different types of programs on Mediaset and RAI 1987-1997

Information (news, educational TV, journalism)

Light entertainment (quiz, gossip, cartoons)

TV series, dramas and soap-operas

Movies

Mediaset (Berlusconi)   Rai (public TV)

Note: the source of these data is the series *"Statistiche Culturali"*, published by ISTAT.

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 by 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.[5] 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 in 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.[6]

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; finally 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 a 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.

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

[6]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* quickly 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. Twenty-five years later, Berlusconi remains the 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.[7]

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 Data and empirical strategy

Figure 2 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*) encouraged the formation of joint lists, often changing across different areas of the country.[8]

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[7]Figure A1 in the Appendix shows the vote share obtained by the main political coalitions in the Second Republic.

[8]For instance, in the 1994 elections *Forza Italia* ran together with the *Lega Nord* in

Figure 2: Timeline of events, 1980-1994

In Table 1 we report summary statistics for the vote share of *Forza Italia*.

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. Futhermore, actual viewership rates would measure an equilibrium outcome – possibly correlated with a range of socio-economic confounds – rather than an exogenous source of variation. Instead, we construct a measure of Mediaset availability, across narrow geographical areas, based on the location and technical characteristics of its transmitters in 1985. This approach allows us to consistently estimate the effect of Mediaset on later electoral outcomes, provided that availability prior to 1985 is exogenous to voting behavior over the period 1994-2013.

Some of the facts discussed in the previous section suggest that this is actually the case. First of all, the transmitting infrastructure 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 likely - 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 entirely changed political conditions between the early 1980s and

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northern regions and with *Alleanza Nazionale* in the south, so it is difficult to isolate the electoral support for each member of the coalition.

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 would decrease with the square of the distance from the transmitter, however in reality 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 program 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 (2014), 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

Table 1: Descriptive statistics

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

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.[9]

Using the ITM algorithm we compute Mediaset signal intensity in decibels (dB) at the centroid of all 8,100 Italian municipalities (*comune*). Municipalities represent the lowest administrative units in Italy and are fairly small both in terms of surface (mean of 37.2 km^2, median of 21.8 km^2) and population (mean and median equal to 7,010 and 2,296 people, respectively), see Table 1.

The left map in Figure 3 reports the distribution of Mediaset signal across Italian municipalities in 1985. Reception of Mediaset channels is op-

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[9]A sample technical report sheet is reported in the Web Appendix (Figure A3)

Figure 3: Geographic distribution of Mediaset signal intensity in 1985

Signal   *SignalFree*

Note: 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).

timal 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, Bursztyn 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 – they do not distinguish between areas with positive and negative signal intensity.

Taken together, this evidence confirms that in areas with positive signal intensity the whole populations is exposed, while reception is poorer (and

possibly nil) in areas with negative signal. Although the relationship be-
tween 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, whereas even large differences in
signal strength at both extremes of the distribution should have little or no
effect on the quality of reception. For this reason we exclude municipalities
in the top and bottom 2.5% of the signal distribution.[10]

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,
which account 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, distin-
guishing between municipalities with perfect and less-than-perfect (or nil)
reception of Mediaset before 1985 ($Signal \geq 0$ and $Signal < 0$, respec-
tively). 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   Empirical strategy

Our identification strategy exploits variation in signal intensity across oth-
erwise similar municipalities. This approach is the same used by Yanagizawa-
Drott (2014), 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 information on viewership, we

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[10]The distribution of signal intensity and the upper and lower trimming are shown in
the Web Appendix (Figure A2). The results are qualitatively unchanged when including
all observations.

estimate the reduced form coefficient of exposure to Mediaset.[11]

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). This hypothetical signal intensity is shown on the right map of Figure 3. The difference between actual and hypothetical signal intensity within relatively small areas is driven by idiosyncratic terrain characteristics: this is exactly the type of variation that we exploit in our empirical analysis. In practice, we implement this idea using both linear regression and matching methods.

3.2.1 OLS regression

Following Olken (2009) we regress our outcomes of interest on signal intensity ($Signal$) controlling for signal intensity under the flat terrain hypothesis ($SignalFree$). The underlying idea is that, keeping $SignalFree$ constant, the coefficient of $Signal$ is identified by residual variation due to idiosyncratic differences in topography, rather than by the (potentially endogenous) location and power of the transmitters.[12] 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 (LLMs). The 475 EDs include multiple adjacent municipalities within a given province. The 686 LLMs are instead defined by ISTAT on the basis of workers' commuting patterns, and unlike the EDs can include adjacent municipalities belonging to different provinces or regions.[13] The following estimating equation summarizes our empirical

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[11]Bursztyn 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.

[12]Yanagizawa-Drott (2014) adopts a very similar approach, namely regressing the outcome of interest on actual signal intensity and controlling for a polynomial in distance from the transmitters as well as for terrain characteristics.

[13]As an example, the Appendix Figure A4 shows the partition of the mid-sized region

strategy:

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

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 an index for average terrain ruggedness; $ED_{i(m)}$ and $LLM_{j(m)}$ are the fixed effects for, respectively, the i-th district and the j-th 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.[14]

3.2.2 Matching neighboring municipalities

As an alternative empirical strategy, we exploit the change in the quality of reception around $Signal = 0$ (Olken, 2009). In particular, we compare electoral results between any two neighboring municipalities, i and j, such that $Signal_i > 0$ and $Signal_j \leq 0$. Overall, we identify 3,021 such neighbor-pairs. Comparing electoral results within this sub-sample approximates the ideal experiment of exposing to Mediaset only one of two municipalities characterized by similar conditions and similar distance from the transmitters. To make the comparison even more convincing, we further restrict the sample to pairs of neighbor municipalities with a difference in $SignalFree$ lower than 1 or 0.5 dB, and we control in addition for terrain characteristics (area, altitude, and ruggedness) and for neighbor-pair fixed effects, thus keeping constant all common characteristics between any two adjacent municipalities.[15]

In the end, both the OLS and matching estimates exploit variation in exposure to Mediaset across very small municipalities, for which the (en-

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of Abruzzo into electoral districts and local labor markets.

[14]As discussed in Section 4.2, the results are generally stronger when estimating the effect on the unweighted observations.

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

dogenous) location of transmitters should be a lesser concern. In the OLS regression (1), the targeting of large cities (e.g., Milan or Rome) by Mediaset transmitters is indeed absorbed by the control variable $SignalFree$, so the coefficient $Signal$ would be identified out of residual variation in $Signal$ across smaller municipalities. As to the matching procedure, the median and average population in the sub-sample of neighbor municipalities differentially exposed (but similar in terms of $SignalFree$) equal 2,164 and 5,857, respectively.

We next provide empirical support for our main identification assumption.

3.3   Exogeneity

The empirical identification of β in equation (1) exploits variation in actual signal intensity ($Signal$) across municipalities that face the same political and economic conditions - as captured, respectively, by the set of ED and LLM fixed effects - and controlling for residual differences within EDs and LLMs in the hypothetical signal intensity absent geomorphological obstacles ($SignalFree$), ruggedness, and other terrain characteristics generating such obstacles. This is a very demanding specification, as EDs and LLMs are narrow geographical areas, much smaller than provinces (the administrative unit just above municipalities in the EU-NUTS classification).[16] Although the fundamental identification assumption that residual variation in $Signal$ is independent of ε_m is essentially untestable, in Tables 2 and 3 we provide an indirect test of conditional independence by looking at the correlation of $Signal$ with, respectively, political preferences in the 1970s and 1980s (i.e., the lagged values of the main outcome variable) as well as with other municipal characteristics that could potentially affect voting behavior.

Table 2 shows the correlation between $Signal$ and the voting share of the main parties and coalitions at the national elections in 1976, 1979, 1983, 1987, and 1992. The first two elections represent a genuine pre-treatment period, as Mediaset transmissions started only in 1980. The

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

Table 2: Correlation of Mediaset signal intensity in 1985 with electoral results during the period 1976-1992

			(1) OLS		(2) OLS with controls	
Dependent variable:	obs.	mean	Signal	R²	Signal	R²
Italian Communist Party, 1976	7,561	33.337	1.740	0.005	-0.520	0.806
		(0.137)	(1.160)		(0.579)	
Pentapartito, 1976	7,561	54.948	-0.442	0.005	0.240	0.806
		(0.132)	(1.069)		(0.512)	
Other parties, 1976	7,375	9.200	-1.042	0.003	0.256	0.935
		(0.093)	(1.046)		(0.247)	
Italian Communist Party, 1979	7,577	28.973	1.607	0.002	-0.657	0.830
		(0.138)	(1.168)		(0.539)	
Pentapartito, 1979	7,573	55.146	-0.719	0.001	0.393	0.813
		(0.128)	(1.107)		(0.480)	
Other parties, 1979	7,577	11.672	-0.499	0.009	0.230	0.913
		(0.081)	(1.013)		(0.236)	
Italian Communist Party, 1983	7,650	27.996	1.490	0.002	-0.680	0.829
		(0.138)	(1.214)		(0.558)	
Pentapartito, 1983	7,584	53.597	-0.825	0.005	0.399	0.809
		(0.127)	(1.169)		(0.489)	
Other parties, 1983	7,584	12.523	-0.293	0.020	0.291	0.902
		(0.082)	(0.991)		(0.277)	
Italian Communist Party, 1987	7,584	25.233	0.810	0.002	-0.724	0.838
		(0.133)	(1.144)		(0.512)	
Pentapartito, 1987	7,584	54.714	-1.130	0.001	0.436	0.829
		(0.128)	(1.227)		(0.459)	
Other parties, 1987	7,584	15.062	0.668	0.007	0.253	0.913
		(0.088)	(1.006)		(0.265)	
Italian Communist Party, 1992	7,583	15.179	0.387	0.000	-0.074	0.862
		(0.105)	(0.862)		(0.369)	
Pentapartito, 1992	7,583	50.561	-2.995*	0.007	-0.202	0.891
		(0.145)	(1.568)		(0.413)	
Other parties, 1992	7,579	28.791	2.989**	0.007	0.279	0.942
		(0.136)	(1.461)		(0.255)	

Note: The table reports the number of observations, mean, and correlation with the intensity of Mediaset signal in 1985 of the voting share of the main political parties and coalitions between 1976 and 1992. Specifically, column (1) reports the coefficient and R^2 of the univariate OLS regression of each variable on the intensity of Mediaset signal in 1985 (*Signal*) controlling for the simulated intensity in the absence of geomorphological obstacles (*SignalFree*), while column (2) adds local fixed effects and terrain characteristics. Regressions are weighted by municipality population in 1981, with the exception of those for total population, population density, and population growth. Standard errors clustered at the electoral district level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

following three elections occurred after the introduction of Mediaset but before the advent of *Forza Italia*. As such the results for this period allow us to assess any correlation between exposure to Mediaset and preferences for parties other than *Forza Italia*. Specifically, we focus on the electoral results of the Italian Communist Party, the only party to survive (although with different names) the passage from the First to the Second Republic; the center-right coalition *Pentapartito*, formed by the Christian Democrats and four smaller parties; and a residual group comprising other (minor) parties.[17]

The univariate regression of electoral outcomes on *Signal*, reported in column (1) of the table, is generally not significantly different from zero. This is particularly true for the pre-treatment period (1976 and 1979) as well as for the first elections held after the introduction of Mediaset (1983 and 1987).[18] The coefficients for the *Pentapartito* and for the other parties turn significant in the last election of the First Republic (1992). If anything, exposure to Mediaset seems associated with lower political support for the center-right coalition to the advantage of other smaller parties, however such correlation also disappears when controlling for the other regressors in equation (1), see column (2) of Table 2. In general, the point estimates in multivariate regressions are always very small in terms of magnitude (relative to the mean value of the dependent variable, also reported in the table) and they are never statistically significant.

Overall, there is neither evidence that the location of Mediaset transmitters aligned with pre-existing political preferences across municipalities, nor that differential exposure to Mediaset after 1980 had a significant impact on voting for any party before *Forza Italia*. The same results hold when we compare neighbor municipalities applying the matching procedure described above, particularly when we restrict to those with minor

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[17]The four other members of the *Pentapartito* were the Italian Socialist Party - an historical leftist party turning to the center-right of the political spectrum in 1976 - the Liberal Party, the Republican Party, and the Social-Democratic Party.

[18]For space reasons, the balance test in Table 2 considers only the total voting share obtained by the *Pentapartito* and by all "other parties" (outside the Italian Communist Party and the *Pentapartito*) but the results are similar when distinguishing between all parties inside these aggregates. A graph with the distribution of coefficients obtained for all parties is presented later in the paper (Section 4.1).

Table 3: Correlation of Mediaset signal intensity in 1985 with municipality characteristics

Variable:	obs.	mean	(1) OLS Signal	(1) OLS R^2	(2) OLS with controls Signal	(2) OLS with controls R^2
Population, thousands (1981)	7,574	6.940	69.254	0.252	9.184	0.999
		(0.511)	(63.580)		(7.535)	
Population per sq. Km (1981)	7,574	256.764	733.816**	0.114	49.098	0.927
		(6.957)	(325.460)		(61.765)	
Population growth, 1981-2001	7,574	0.033	0.027	0.012	0.002	0.621
		(0.003)	(0.018)		(0.010)	
Activity rate, percentage (1991)	7,574	42.260	2.544***	0.047	0.136	0.858
		(0.046)	(0.279)		(0.152)	
Employment rate, percentage (1991)	7,574	35.084	3.162***	0.021	0.137	0.953
		(0.087)	(0.566)		(0.162)	
Unemployment rate, percentage (1991)	7,574	6.933	-0.855**	0.005	-0.106	0.791
		(0.047)	(0.358)		(0.174)	
log income per capita, euros (1985)	7,503	1.739	0.109***	0.039	0.025***	0.913
		(0.003)	(0.035)		(0.008)	
Education, % higher education (1981)	7,574	13.187	1.409**	0.146	0.730***	0.833
		(0.068)	(0.693)		(0.236)	
Firms per capita (1981)	7,574	0.051	0.001	0.043	-0.000	0.724
		(0.000)	(0.001)		(0.001)	
Voluntarily association X 100 pop. (1981)	7,574	0.103	-0.001	0.033	0.003	0.497
		(0.001)	(0.007)		(0.005)	
Voluntarily association X 100 firms (1981)	7,574	2.091	-0.112	0.014	-0.004	0.434
		(0.020)	(0.134)		(0.102)	

Note: The table reports the number of observations, mean, and correlation with the intensity of Mediaset signal in 1985 of municipality characteristics. Specifically, column (1) reports the coefficient and R^2 of the univariate OLS regression of each variable on the intensity of Mediaset signal in 1985 (*Signal*) controlling for the simulated intensity in the absence of geomorphological obstacles (*SignalFree*), while column (2) adds local fixed effects and terrain characteristics. Regressions are weighted by municipality population in 1981, with the exception of those for total population, population density, and population growth. Standard errors clustered at the electoral district level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

differences in $SignalFree$.[19]

In Table 3 we explore the correlation between *Signal* and other municipality characteristics: total population, population density, population growth, labor market conditions, education, number of firms per capita, and social capital (as measured by the number of voluntarily associations). With the notable exception of social capital, the other factors are significantly correlated with *Signal* in the univariate regressions (column 1). As should be expected, the expansion of Mediaset throughout the Italian territory was not random, instead targeting more densely populated and economically developed areas. However, most of the correlation with these local characteristics is absorbed by the other variables on the right-hand

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[19]These results are available in Tables A1 and A2 of the Web Appendix.

side of equation (1) (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 socio-economic characteristics. Once these additional covariates are included in the regression, $Signal$ is no longer correlated with population (levels, density, and growth), labor market conditions, and the number of firms per capita. $Signal$ continues to be correlated, instead, with educational attainment and income per capita; in light of this, we will include the latter variables as additional controls in our specification.

In sum, although there are (unconditional) differences between municipalities that were exposed to Mediaset earlier and later, in all but two cases the (conditional) difference controlling for the other covariates in equation (1) is not significantly different from zero. Most importantly, there are no differences (either conditionally or unconditionally) in voting towards any party or coalition before *Forza Italia*. This last finding provides a particularly compelling argument in favor of the assumption that, although the expansion of Mediaset was not random, it was not systematically correlated with pre-existing political preferences.

4 Results

4.1 Baseline estimates

Table 4 shows the effect of $Signal$ on voting for *Forza Italia* in 1994 - the first election in which Berlusconi ran for office. The univariate regression in column (1) is positive and statistically significant at the 1% level. In terms of magnitude, a one standard deviation increase in $Signal$ is associated with a 3-percentage-point increase in the vote share of *Forza Italia*. This is quite a large effect, corresponding to 40 percent of a standard deviation of the dependent variable.

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*

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

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

Note: This table reports OLS estimates of the effect of early exposure to Mediaset on the vote share of *Forza Italia* at the 1994 national elections. *Signal* and *SignalFree* are the simulated intensity of Mediaset's signal in 1985 under real conditions and in the absence of geomorphological obstacles, respectively. *Area*, *Altitude*, *Area^2*, and *Altitude^2* are 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; specifications in columns (4) and (5) include in addition electoral district and local labor market fixed effects. Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

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 also control 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 3).

Our estimate of the effect of Mediaset could still be biased if signal intensity was correlated with some unobservable municipal characteristics that affect voting patterns in ways other than through TV. Although the existence of such correlation is untestable, a test à la Altonji et al. (2005) can be informative of how large omitted variable bias would need to be in order to explain the estimated coefficient of interest. We perform such a test using the formal procedure developed by Oster (2013). Applying this approach to our full specification (column 5 of Table 4) we find that, for the estimated effect to be zero, the degree of selection on unobservables would need to be about eight times larger than that on observables. Under the assumption of equal selection, the biased-adjusted coefficient would be quantitatively similar to the original one (0.752 compared to 0.850).

Overall, our findings suggest that that exposure to Mediaset before 1985 brought an electoral advantage to Berlusconi when he ran for election one decade later. Interestingly, this effect appears to be very persistent over time. In Table 5, we estimate the same specification for all the following elections: 1994, 1996, 2001, 2006, 2008, and 2013. In all but the last election, the estimated coefficient of *Signal* remains very stable, between 0.7 and 1 percentage point.

These results are strengthened when we restrict to neighbor municipalities that were differentially exposed to Mediaset, following the procedure described in Section 3.2; see Table 6. In particular, when we restrict to neighbor-pairs with a difference in *SignalFree* lower than 1 or 0.5 dB, the effect of exposure to Mediaset is somewhat larger than in OLS regressions and it persists also in 2013 (last two columns of the table). Overall, results are very similar between the two methods, so we stick to OLS regressions on the full sample throughout the rest of the paper.

Finally, in Figure 4 we compare the effect of *Signal* on voting for *Forza*

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

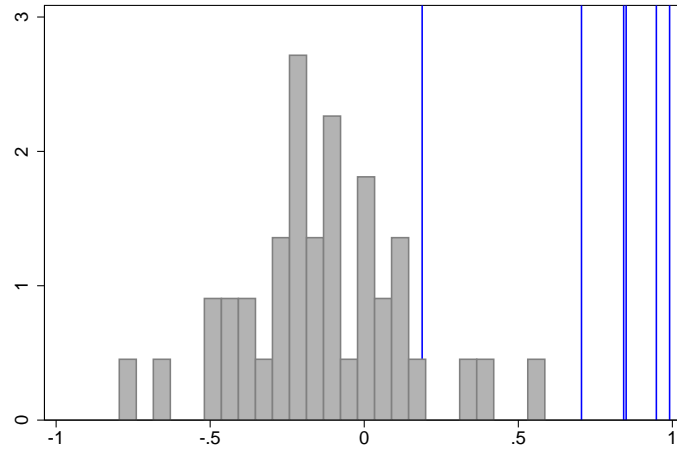|	(1) 1994	(2) 1996	(3) 2001	(4) 2006	(5) 2008	(6) 2013	(7) 1994-2013
Signal	0.850***	0.705***	0.842***	0.948***	0.991***	0.188	0.666***
	(0.235)	(0.204)	(0.301)	(0.285)	(0.337)	(0.279)	(0.231)
Constant	15.216***	10.875***	24.051***	15.274***	30.456***	12.010***	12.836***
	(2.915)	(2.633)	(3.289)	(3.281)	(3.746)	(3.901)	(2.996)
Observations	7,503	7,502	7,500	7,501	7,565	7,503	45,074
Year FE	NO	NO	NO	NO	NO	NO	YES
R^2	0.921	0.873	0.815	0.790	0.862	0.802	0.716

Note: This table reports OLS estimates of the effect of early exposure to Mediaset on the vote share of *Forza Italia* in each election between 1994 and 2013 (columns 1-6) as well as the average effect when pooling all elections (column 7). *Signal* is the simulated intensity of Mediaset's signal in 1985. All regressions control for *SignalFree*, *Area*, *Altitude*, *Area²*, *Altitude²*, *Ruggedness*, *Electorate*, *Log income per capita*, *Education*, electoral district and local labor market fixed effects; the specification in column (7) includes in addition year fixed effects . Observations are weighted by municipality population in 1981. Standard errors clustered at the electoral district level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

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

	Means comparison			FEs and topography		
Election:	All	$|SF| < 1$	$|SF| < 0.5$	All	$|SF| < 1$	$|SF| < 0.5$
1994	0.645*	0.808*	0.949*	0.554***	0.821***	0.905***
	(0.346)	(0.417)	(0.520)	(0.139)	(0.216)	(0.294)
1996	0.701**	0.869**	0.796	0.608***	0.802***	0.703**
	(0.288)	(0.381)	(0.494)	(0.150)	(0.220)	(0.281)
2001	0.698**	1.052**	1.286**	0.648***	1.015***	1.104***
	(0.340)	(0.452)	(0.574)	(0.180)	(0.285)	(0.376)
2006	0.605*	0.798*	1.097**	0.560***	0.803***	0.965***
	(0.327)	(0.442)	(0.541)	(0.177)	(0.275)	(0.354)
2008	0.424	0.759	1.099	0.375*	0.801**	0.954**
	(0.445)	(0.691)	(0.820)	(0.216)	(0.331)	(0.430)
2013	0.263	0.837	0.765	0.270	0.902***	0.831**
	(0.311)	(0.518)	(0.615)	(0.176)	(0.289)	(0.364)
1994-2013	0.556**	0.854**	0.998**	0.511***	0.859***	0.912***
	(0.279)	(0.377)	(0.464)	(0.104)	(0.157)	(0.205)

Note: The table illustrates the difference in vote share for *Forza Italia*, in each election between 1994 and 2013, 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 regression of the vote share of *Forza Italia* on a dummy for *Signal* greater than zero across the total sample of neighbor-pairs. The second and third columns report analogous coefficients estimated on the sub-sample of neighbor-pairs with difference in *SignalFree* smaller than 1 dB and 0.5 dB, respectively. The last three columns report the estimated coefficients of similar regressions including neighbor-pair fixed effects and the following municipal controls: *Area*, *Area²*, *Altitude*, *Altitude²*, and *Ruggedness*. Standard errors clustered at the municipality-level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure 4: Mediaset signal intensity and voting for all parties, 1994-2013

Italia, as measured by the estimated coefficients in Table 5, with the effect on all other parties contemporaneous to *Forza Italia*. Although the political landscape changed frequently during the Second Republic, we were able to identify 7 such parties (or coalitions) running in at least three 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. The effect on voting for *Forza Italia* is generally abnormal relative to the distribution of coefficients for the other parties, possibly with the exception of the 2013 election (although the effect persists also in 2013 in the matching estimates, see Table 6).[20]

4.2 Heterogeneity

The Survey on the Structure and Behavior of Italian Households ("Indagine sulle strutture ed i comportamenti familiari") collects detailed information

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[20]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. 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.

on habits and time-use for a representative sample of the Italian population in 1983 (ISTAT, 1985). The main results concerning TV consumption are reproduced in Table 7. Panel A of the table shows that the number of hours spent watching TV increases considerably when moving from Northern to Southern Italy. This squares well with the absence of a statistically significant effect of early Mediaset exposure in the North, a large and statistically significant effect in the South, and an intermediate effect in the Center - see columns (1)-(3) of Table 8. By contrast, neither TV consumption nor the estimated coefficient of Mediaset vary significantly with the size of municipalities; see Panel B of Table 7 and columns (4)-(6) in Table 8, respectively.[21]

In order to explore additional dimensions of heterogeneity, we take advantage of individual-level data from the Italian National Election Study (ITANES), an ongoing survey conducted immediately before and after all national elections since 1972. Each wave covers a representative sample of the Italian population – between 2,000 and 3,000 individuals. We focus throughout on all waves between 1994 and 2013. The survey contains detailed information on the respondents' (self-reported) voting choice, political participation, media consumption, and a range of individual characteristics such as age, gender, education, and employment. 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 columns (1) of Table 9 we pool together all individuals interviewed during the period 1994-2013 and we regress a dummy for voting *Forza Italia* on *Signal*, *SignalFree*, a range of individual controls (gender, age, education, employment, marital status, household size), and year fixed effects. The effect of early exposure to Mediaset is positive and strongly statistically significant, and it remains identical when we add all municipality controls (area, area squared, altitude, altitude squared, ruggedness, income, education) and fixed effects for the 110 Italian provinces (columns

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[21]One potential issue with the baseline estimates in Tables 4 and 5 is that results are driven by a few large cities in the sample. The results in Table 8 suggest that this is not the case, as the coefficient of interest remains very stable across municipalities of different size. Indeed, the unweighted OLS coefficient is slightly larger than the weighted one.

Table 7: TV consumption in 1983

	hours of TV per day (distribution)				heavy TV viewers	average n. hours
	≤ 2 hours	3-4 hours	5-6 hours	6+ hours		
all sample	0.39	0.47	0.12	0.03	0.15	2.86
Panel A: by geographical area						
North	0.44	0.43	0.11	0.03	0.13	2.71
Centre	0.39	0.47	0.13	0.02	0.14	2.85
South	0.32	0.52	0.13	0.03	0.16	3.06
Panel B: by size of the population in 1981						
less than 500,000	0.41	0.46	0.12	0.03	0.15	2.89
less than 50,000	0.39	0.46	0.12	0.03	0.15	2.86
less than 5,000	0.41	0.44	0.12	0.03	0.15	2.84
Panel C: by gender, education, and employment condition						
females	0.35	0.48	0.13	0.03	0.16	2.99
males	0.42	0.45	0.10	0.02	0.12	2.72
high school dropout	0.36	0.48	0.13	0.03	0.16	2.95
high school or college	0.49	0.42	0.08	0.02	0.09	2.48
not employed	0.28	0.51	0.17	0.04	0.21	3.27
employed	0.50	0.43	0.06	0.01	0.08	2.43
Panel D: by age of the respondent:						
children (below 10)	0.27	0.51	0.19	0.03	0.22	3.30
youth (10-24)	0.33	0.51	0.14	0.03	0.16	3.06
adults (25-44)	0.45	0.45	0.09	0.02	0.10	2.61
pre-retirees (45-54)	0.45	0.43	0.10	0.02	0.12	2.66
retirees (55 or above)	0.37	0.45	0.13	0.04	0.17	2.96

Note: The table reports the results of a survey conducted by the Italian National Statistical Institute (ISTAT) in 1983 on the habits of Italian households, which included a set of questions on media consumption. The first four columns report the fraction of individuals in each group (rows) watching a given number of hours of TV per day. The category of heavy TV viewers in column (5) includes individuals watching 5 hours or more. The average number of hours in column (6) is approximated by attributing 1 hour to individuals reporting up to 2, 3.5 hours to those reporting 3 to 4, 5.5 hours to those reporting 5 to 6, and 7 hours to those reporting 6 or more. Source: ISTAT (1985)

Table 8: Heterogeneity in the effect of Mediaset across geographical areas

	(1)	(2)	(3)	(4)	(5)	(6)
	by geographical area			by population in 1981		
	North	*Center*	*South*	*< 500k*	*< 50k*	*< 5k*
Signal	0.257	0.777*	1.134**	0.727***	0.654***	0.741***
	(0.242)	(0.411)	(0.441)	(0.219)	(0.219)	(0.216)
Constant	8.660***	15.798*	22.529***	14.972***	29.540***	18.959***
	(2.690)	(8.576)	(2.357)	(2.717)	(2.623)	(1.831)
Observations	25,400	5,550	14,124	45,044	44,346	33,135
R2	0.811	0.893	0.729	0.704	0.686	0.662

Note: This table reports OLS estimates of the effect of early exposure to Mediaset on the vote share of *Forza Italia* in all elections between 1994 and 2013 across different samples of municipalities. *Signal* is the simulated intensity of Mediaset's signal in 1985. All regressions control for *SignalFree*, *Area*, *Altitude*, *Area^2*, *Altitude^2*, *Ruggedness*, *Electorate*, *Log income per capita*, *Education*, and fixed effects for electoral districts, local labor markets, and years. 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 9: Heterogeneity in the effect of Mediaset across different groups of individuals

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	total sample			gender		education		employed	
				female	*male*	*low*	*high*	*no*	*yes*
Signal	0.026***	0.029**	0.028**	0.031**	0.022	0.039**	0.019	0.037**	0.016
	(0.010)	(0.011)	(0.012)	(0.015)	(0.018)	(0.018)	(0.017)	(0.016)	(0.018)
Observations	10,600	10,489	10,489	5,107	5,382	4,980	5,509	5,292	5,197
municipality controls	NO	YES	YES	YES	YES	YES	YES	YES	YES
province FE	NO	NO	YES	YES	YES	YES	YES	YES	YES
R^2	0.066	0.069	0.081	0.094	0.075	0.107	0.075	0.090	0.085

Note: This table reports OLS estimates of the effect of early exposure to Mediaset on the probability of voting *Forza Italia* for individuals interviewed by the Italian National Election Study (ITANES) between 1994 and 2013. *Signal* is the simulated intensity of Mediaset's signal in 1985. All regressions control for *Signal free* and for the following individual characteristics: *Education, Gender, Age, Employment status, Marital status*, and *Number of family members*. The specifications on columns (2) to (9) control also for municipality characteristics (*Education, Log income per capita, Area Area^2, Altitude, Altitude^2*, and *Ruggedness*) and columns (3) to (9) add province fixed effects. The specifications in columns (4) to (9) consider different sub-samples indicated on top of each column. Standard errors clustered at the municipal level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

2 and 3 of the table, respectively); standard errors are clustered at the municipality-level.[22] 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 almost 3 percentage points, a magnitude comparable to that estimated across municipalities.

Distinguishing between different groups of individuals, the effect is larger for females, the less educated and individuals out of employment (i.e., inactive or unemployed), whereas it is not significantly different from zero for males, more educated and employed individuals; see columns (4) to (9) of Table 9. This heterogeneity in the effect of Mediaset lines up nicely with differences in TV consumption by gender, education, and employment status, shown in the Panel C of Table 7.[23]

Finally, the age profile of TV consumption and Mediaset influence is also very similar. Panel D of Table 7 reports the number of hours of TV watched by children (below 10 years of age), youth (10-24), adults (24-44), pre-retired (45-54) , and retirees (55 or older).[24] Children and retirees comprise a larger fraction of heavy TV users, probably because they spend a higher fraction of time at home, so it is likely they were more exposed to Mediaset in the early 1980s. Indeed, we find that the later voting behavior of individuals who were in these two age categories in 1985 is more influenced by early exposure to Mediaset, while there is no significant effect on the other age cohorts. As a consequence, the magnitude of the Mediaset effect exhibits a similar U-shaped age profile as TV consumption - see Figure 5.
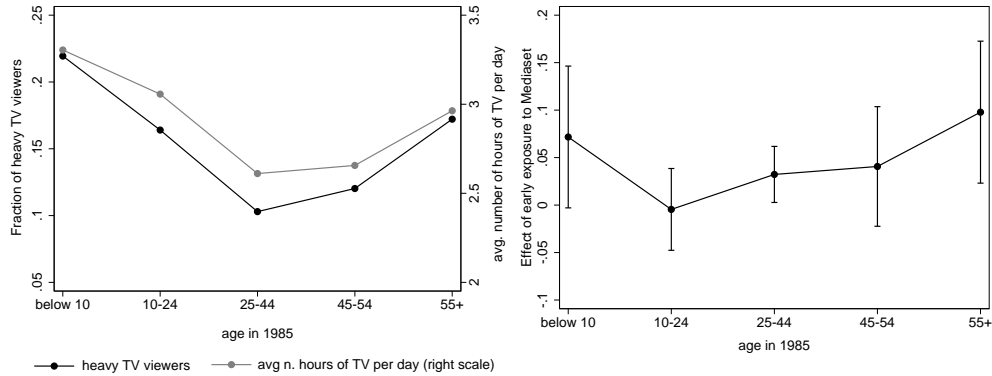
Summarizing, TV consumption and the magnitude of the Mediaset effect exhibit similar gradients both across geographical areas and individual groups.

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[22]We cannot include the same set of fixed effects used in municipal regressions since many electoral districts and labor markets include only one or a few respondents, yet it is reassuring that fixed effects at the provincial level – the administrative level just above municipalities – do not affect the coefficient of interest.

[23]Unfortunately, the aggregate data available from (ISTAT, 1985) do not allow for disentangling the separate effect of each individual characteristic on TV consumption. For instance, it could be that TV consumption depends mainly on employment condition, and male and educated individuals watch fewer hours of TV only because they have a higher probability of being employed.

[24]During the 1980s the retirement age was between 55 and 60 years of age for most categories of workers.

Figure 5: TV consumption and effect of early exposure to Mediaset by cohorts

Note: The left graph shows the fraction of heavy TV viewers and the average number of hours of TV per day by age group (from Table 7). The right graph shows OLS estimates and confidence intervals of the effect of early exposure to Mediaset on the probability of voting *Forza Italia* for the same age groups. The OLS specification is the same as in columns (3) to (9) of Table 9.

4.3 Potential explanations and additional results

Based on the findings discussed above one may wonder how the effect of Mediaset could persist for so long, given that the differential exposure to the network pre-1985 only lasted a few years.

The relative magnitude of the effect on different age cohorts, depicted in Figure 5, provides some important insights in this respect. The average effect of Mediaset on the probability of voting *Forza Italia* across all individuals (2.8 percentage points) is driven by a much larger and very similar effect on younger and older cohorts (7.8 and 9.8 percentage points, respectively). The former group comprises individuals that in 1985 were younger than 10, whereas the latter comprises individuals that in 1985 were older than 55. One possible explanation for the persistence of the effect over two decades is that younger cohorts joining the voting population in 1994 or later progressively replaced the older ones who were gradually exiting - leaving the overall share of voters affected by Mediaset largely unaffected. To assess the plausibility of this hypothesis, we exploit additional information on the age composition of Italian voters between 1994 and 2006, available from the Istituto Cattaneo.[25] Based on these data, and on the

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[25]The Istituto Cattaneo is an independent organization conducting research on electoral participation and political trends in Italy. During the period 1994-2006 it collected individual-level data – age, gender, and main occupation – on a representative sample of

Table 10: Age distribution of voters and implied effect of Mediaset in each election

	1994	1996	2001	2006
share of voters 55 or older in 1985 (born on or before 1930)	0.21	0.18	0.13	0.09
share of voters below 10 in 1985 (born after 1975)	0.01	0.02	0.10	0.14
share of voters below 10 or 55+ in 1985	0.22	0.20	0.23	0.23
implied effect of Mediaset on voting for Forza Italia	0.022	0.019	0.021	0.019

Note: The implied effect of Mediaset on voting for *Forza Italia* (last row of the table) is computed by multiplying the share of younger and older voters (first two rows of the table) by the coefficients estimated for such age groups (reported in the right graph of Figure 5).

specific effects estimated for the two age-groups of interests, in Table 10 we compute the implied effect of Mediaset in each election between 1994 and 2006. Taken together, the two age-groups account for about 20 percent of total voters in 1994; this share remains very stable in subsequent elections as the the increase in the number of voters that were younger than 10 in 1985 almost exactly compensates for the reduction in the number of voters that were older than 55 in 1985.
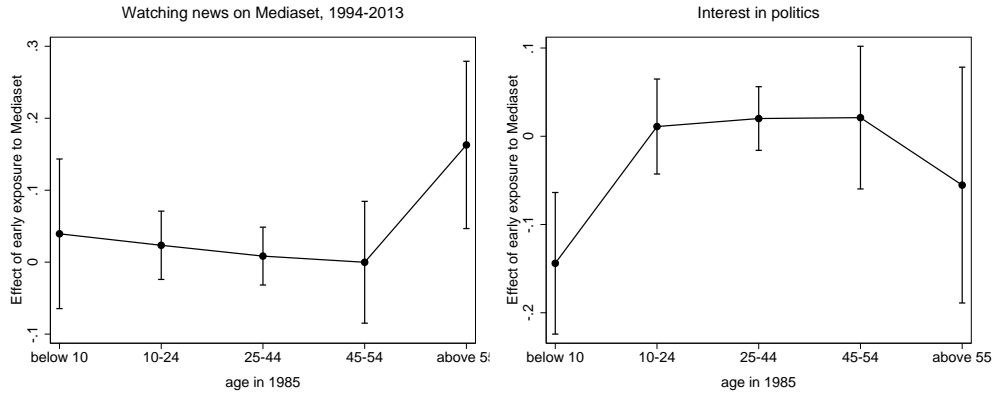
Although this back-of-the-envelope calculation does not fully explain the extreme persistence of the Mediaset effect, it shows that this is largely consistent with the fact that the youngest and oldest cohorts who spent more time watching TV in 1985 were more exposed to and influenced by Mediaset content.

Another relevant question is through what mechanisms pre-1985 exposure to Mediaset may have affected the political preferences of both young and old viewers, especially since no news or informational programs were available on Mediaset channels at that time.

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 on Mediaset. Since, after Berlusconi entered politics, news coverage on Mediaset channels has been traditionally biased in favor of his party, this could explain the higher propensity of early Mediaset viewers to vote for *Forza Italia*. To test this hypothesis we exploit the fact that the ITANES surveys conducted be-

Italian voters, as reported on the identity documents presented to election officials. The age distribution in each of these elections is plotted in Figure A5 of the Web Appendix.

Figure 6: Early exposure to Mediaset, news consumption, and interest in politics

Note: The graphs show the effect of early exposure to Mediaset on the probability of watching news on the same network (left graph) and being interested in politics (right graphs) for ITANES respondents interviewed during the period 1994-2013, by age group. The age-specific coefficients are estimated by OLS using the same as in columns (3) to (9) of Table 9.

tween 1994 and 2013 ask respondents to report their favorite news channel. Based on this information, we construct a dummy variable for watching news on Mediaset and regress it on Mediaset signal intensity in 1985 (plus province fixed effects and municipal controls) separately for the different age groups. The results are reported in the left panel of Figure 6. While for the older cohorts earlier exposure to Mediaset is indeed associated with a higher probability of watching news on Mediaset in and after 1994, this is not the case for any of the other age groups, including the youngest.

An alternative explanation, put forth by Putnam (2000) in his work on the decline of social capital in the U.S., is that exposure to TV - and specifically to light entertainment content - negatively affects individuals' propensity to get interested and participate in politics, especially for younger generations. We explore this hypothesis using data from the ITANES surveys on respondents' self-reported interest in politics. As before, we estimate our baseline regression separately for each age group and plot the coefficients. The results, depicted in the right hand panel of Figure 6, show that individuals exposed to Mediaset at an age of 10 or less display significantly lower levels of interest in politics as adults - this is not the case for any other age group. In the context of Italy, less politically engaged and in-

formed individuals were arguably more receptive to Berlusconi's populist rhetoric and aggressive campaign style, and less sympathetic to traditional left-wing parties which relied heavily on the activism of a large number of party members. Indeed, data from the ITANES surveys confirm that *Forza Italia* voters are generally less interested in politics than other voters, and less likely to engage in any political activity, from participating in rallies to signing of petitions (see Table A3 of the Web Appendix).

Taken together, our findings suggest that exposure to entertainment TV had a long-lasting effect on the political preferences of both younger and older generations, although through different mechanisms. While for young viewers early exposure to entertainment content had a direct impact on political attitudes, for old viewers this effect was indirect, mediated by increased attachment to the network and later exposure to partisan news bias.

We cannot of course exclude that the effect of early exposure to Mediaset may operate through other channels as well. For instance, early Mediaset viewers may have been more likely to know who Berlusconi was when he first ran for office in 1994; yet, this could have hardly been a factor in subsequent elections since, after his 1994 victory, Berlusconi became one of the country's best known public figures. A related possibility is that early Mediaset viewers developed a sense of gratitude toward Berlusconi for the unprecedented entertainment opportunities offered by his channels, and were hence more likely to support any initiative he would embark upon. As an indirect test of this hypothesis we examine whether early Mediaset viewers were also more likely to support Berlusconi's soccer team A.C. Milan, presumably the best known non-political venture commonly associated with his name. Our results, available upon request, provide no support for this hypothesis.

5   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 preferences in other, possibly subtler ways. Furthermore, previous studies have focused on how exposure to TV influences voting in the short-run, i.e. in one election, but evidence on whether this effect is long-lasting or short-lived is scant.

This research attempts to fill these gaps 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 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, and robust to different empirical strategies and it persists for five elections and almost two decades. Crucially, the documented effect must relate, directly or indirectly, to the exposure of early Mediaset viewers to light entertainment content which dominated Mediaset channels in the 1980s when news and informational programs were virtually absent.

Using individual survey data we also document that the effect of Mediaset is particularly pronounced for older and especially younger voters, who tended to spend more time watching TV. Indeed, the particular age distribution of the individuals that were most influenced by Mediaset can go a long way in explaining the persistence of the effect at the aggregate level, since, over time, younger viewers gradually replaced older ones in the voting population. Finally, we find evidence that early exposure to Mediaset influenced young and old viewers in different ways. Older voters became attached to the network and were more likely to watch pro-Berlusconi slanted news when these were introduced. In contrast, individuals exposed to Mediaset at a very young age became less interested in politics as adults, and, as such, potentially more receptive to Berlusconi's powerful populist rhetoric.

Our study is the first to rigorously document that exposure to entertainment content on TV can have a significant influence on viewers' political preferences, and that the impact of TV on voting can be very long-lasting. Our findings also indicate that particular categories of individuals, especially the very young, may be especially vulnerable to the influence of

TV, and that such influence may operate through different and rather age-specific mechanisms.

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Web Appendix – Not for publication

Figure A1: Vote share of the main political coalitions during the Italian Second Republic (19994-2013)
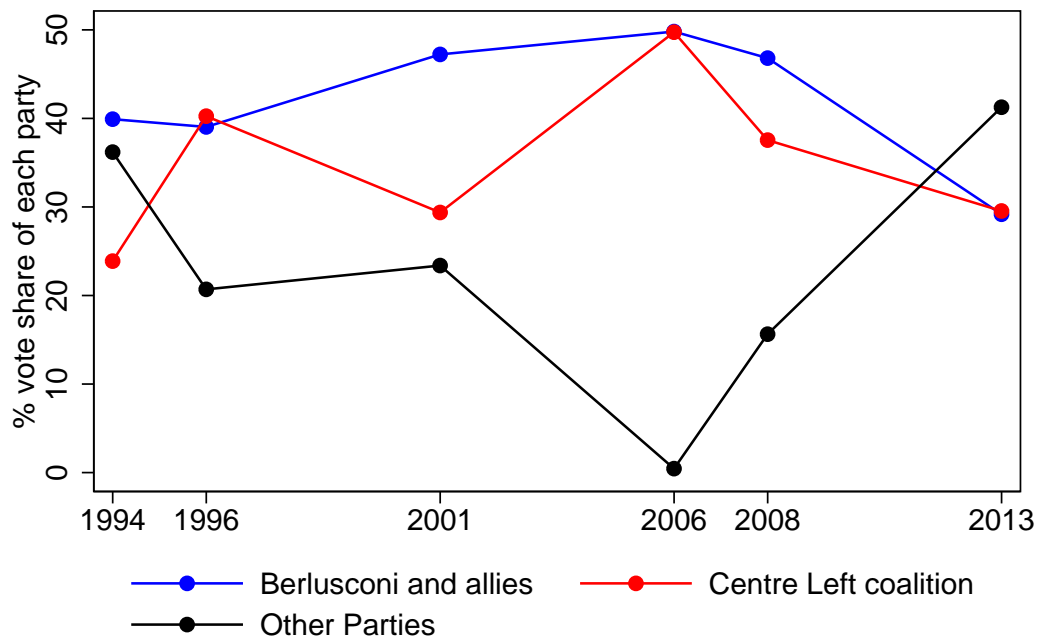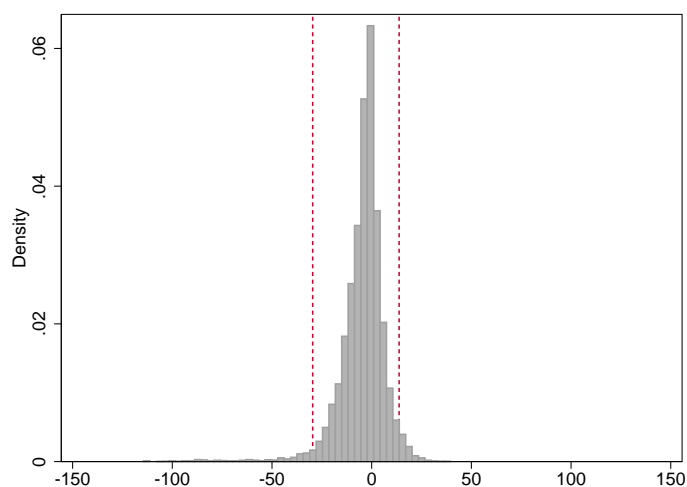
Table A1: Differences in electoral results during the period 1976-1992 between neighboring municipalities exposed and not exposed to Mediaset in 1985

	Means comparison			FEs and topography		
	All	$SF < 1$	$SF < 0.5$	All	$SF < 1$	$SF < 0.5$
Italian Communist Party, 1976	-0.291	-0.044	-0.273	-0.370	-0.193	-0.417
	(0.619)	(0.919)	(1.080)	(0.294)	(0.446)	(0.599)
Pentapartito, 1976	-0.105	-0.147	0.099	0.059	-0.030	0.280
	(0.586)	(0.880)	(1.056)	(0.297)	(0.441)	(0.575)
Other parties, 1976	0.389	0.172	0.145	0.307**	0.164	0.101
	(0.330)	(0.300)	(0.405)	(0.143)	(0.167)	(0.201)
Italian Communist Party, 1979	-0.337	-0.112	-0.265	-0.318	-0.214	-0.375
	(0.620)	(0.902)	(1.050)	(0.276)	(0.410)	(0.556)
Pentapartito, 1979	-0.054	0.097	0.559	0.049	0.210	0.748
	(0.581)	(0.882)	(1.057)	(0.289)	(0.442)	(0.578)
Other parties, 1979	0.368	0.050	-0.080	0.254**	0.047	-0.133
	(0.236)	(0.277)	(0.372)	(0.127)	(0.176)	(0.199)
Italian Communist Party, 1983	-0.417	-0.080	-0.350	-0.424	-0.180	-0.335
	(0.622)	(0.901)	(1.050)	(0.277)	(0.427)	(0.564)
Pentapartito, 1983	-0.015	0.205	0.840	0.130	0.373	1.006*
	(0.595)	(0.857)	(1.027)	(0.287)	(0.452)	(0.561)
Other parties, 1983	0.521**	0.067	-0.153	0.394***	0.043	-0.240
	(0.261)	(0.355)	(0.430)	(0.135)	(0.205)	(0.229)
Italian Communist Party, 1987	-0.743	-0.257	-0.816	-0.680***	-0.327	-0.767
	(0.593)	(0.864)	(1.000)	(0.264)	(0.404)	(0.546)
Pentapartito, 1987	0.103	0.205	0.823	0.193	0.280	0.841
	(0.584)	(0.880)	(1.052)	(0.270)	(0.416)	(0.538)
Other parties, 1987	0.577*	0.124	0.126	0.446***	0.109	0.090
	(0.302)	(0.360)	(0.466)	(0.136)	(0.192)	(0.234)
Italian Communist Party, 1992	-0.532	-0.279	-0.331	-0.479**	-0.229	-0.184
	(0.459)	(0.620)	(0.697)	(0.200)	(0.342)	(0.435)
Pentapartito, 1992	0.042	0.411	0.779	0.185	0.484	0.752
	(0.678)	(1.030)	(1.258)	(0.260)	(0.390)	(0.515)
Other parties, 1992	0.411	-0.076	-0.199	0.231	-0.219	-0.296
	(0.609)	(0.927)	(1.167)	(0.177)	(0.275)	(0.370)

Note: The table reports differences in electoral results during the period 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 regression of the vote share of each party in a given election on a dummy for *Signal* greater than zero across the total sample of neighbor-pairs. The second and third columns report analogous coefficients estimated on the sub-sample of neighbor-pairs with difference in *SignalFree* smaller than 1 dB and 0.5 dB, respectively. The last three columns report the estimated coefficients of similar regressions including neighbor-pair fixed effects and the following municipal controls: *Area*, *Area²*, *Altitude*, *Altitude²*, and *Ruggedness*. Standard errors clustered at the municipality-level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure A2: Distribution of Mediaset signal intensity in 1985

Note: 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.

Table A2: Differences in the municipality characteristics between neighboring municipalities exposed and not exposed to Mediaset in 1985

	Means comparison			FEs and topography		
	All	$SF < 1$	$SF < 0.5$	All	$SF < 1$	$SF < 0.5$
Population, thousands (1981)	6.940**	-0.175	-0.039	3.167	-0.039	-0.621
	(2.766)	(1.120)	(1.083)	(1.978)	(0.728)	(0.595)
Population per sq. Km (1981)	78.147***	59.856	58.217	66.027***	44.586**	45.107
	(27.376)	(56.187)	(88.589)	(13.504)	(21.768)	(32.178)
Population growth, 1981-2001	0.004	0.002	0.015	0.005	0.003	0.017
	(0.010)	(0.015)	(0.018)	(0.006)	(0.009)	(0.011)
Activity rate, percentage (1991)	0.177	0.228	0.557	0.096	0.179	0.523**
	(0.221)	(0.377)	(0.501)	(0.103)	(0.169)	(0.241)
Employment rate, percentage (1991)	0.034	0.002	0.256	-0.053	-0.078	0.165
	(0.371)	(0.575)	(0.735)	(0.104)	(0.162)	(0.234)
Unemployment rate, percentage (1991)	-0.083	-0.026	-0.075	-0.056	0.073	0.103
	(0.256)	(0.329)	(0.425)	(0.116)	(0.177)	(0.236)
log income per capita, euros (1985)	0.022	-0.001	0.004	0.016***	-0.001	-0.000
	(0.015)	(0.020)	(0.023)	(0.006)	(0.008)	(0.009)
Education, % higher education (1981)	0.588***	-0.095	-0.145	0.403***	-0.131	-0.254
	(0.213)	(0.246)	(0.293)	(0.120)	(0.168)	(0.208)
Firms per capita (1981)	-0.001	-0.001	-0.002	-0.001*	-0.002	-0.002
	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)
Voluntarily association X 100 pop. (1981)	0.001	-0.006	-0.016	0.002	-0.008	-0.022*
	(0.006)	(0.011)	(0.015)	(0.004)	(0.008)	(0.012)
Voluntarily association X 100 firms (1981)	-0.003	-0.216	-0.406	0.027	-0.249	-0.504**
	(0.122)	(0.217)	(0.272)	(0.093)	(0.161)	(0.226)

Note: The table reports the differences 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 regression of each row variable on a dummy for *Signal* greater than zero across the total sample of neighbor-pairs. The second and third columns report analogous coefficients estimated on the sub-sample of neighbor-pairs with difference in *SignalFree* smaller than 1 dB and 0.5 dB, respectively. The last three columns report the estimated coefficients of similar regressions including neighbor-pair fixed effects and the following municipal controls: *Area*, *Area²*, *Altitude*, *Altitude²*, and *Ruggedness*. Standard errors clustered at the municipality-level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure A3: 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 si deve rispondere soltanto
             ai punti 36,37,38,39,40,41 ed ai punti dal 58 al 68.
             Per la 'messa in onda' si risponde soltanto ai punti 36,37,38,39,40,41.
             Per i ripetitori di programmi esteri o nazionali non va compilata
             ovviamente la scheda di 'messa in onda', ma va indicato al punto 67
             per il solo primo impianto della catena, la stazione straniera o RAI
             ricevuta; gli impianti successivi vanno trattati normalmente.

R,E,T,E, ,S,I,C,I,L,I,A, , , , , , , , , , , , , , , , , , ,|36 |,0,0,1|37
Denominazione emittente   N. Impianto

G,A,L,A,T,I, ,M,A,R,T,I,N,O, ,1, ,S,.,I,A,C,O,P,O, ,|38
Indirizzo Impianto Tx o nome localita'

| , , , , , , , , , , , , , , |39
Centro abitato

|M,E|40   G,A,L,A,T,I, ,M,A,R,T,I,N,O|41
Provincia   Comune

DIREZIONE CENTRALE SERVIZI
RADIOELETTRICI

3 1 GEN. 1985

DCSR/SEGR/   06064

|1,4,4,6,3,0|42 |3,8,0,1,2,7|43 |,9,3,1|44
Longitud.   Lat.(antenna)   Quota s.l.m.

☐45   ☐46   ☐47   ☒48
Tipologia della ubicazione dell'impianto

|6,3,1,2,5, , , |50 |6,3,6,7,5, , , |51 |4,1|52   ☐53 | , , , , , |54
Portante   Portante audio(per TV)   Canale(TV)   Tipo offset   Posiz. offset(TV)

| , , ,0,2,0, , |55 |E,L, ,I,N,D,U,S,T,R,I,A,L,E|56 |4,9,6,2|57
Potenza apparato   Costruttore apparato   Anno costruzione

|,0,S,S|58 | , , , |59 | , , , |60
Riceve il segnale da: o da: o da:

|E|61   ☐62   ☐63 | , , , , , , , |64
Mediante   Mediante   Mediante   Riceve il segnale da:

| ,5,1,1,.,2,5,|65 | , , , , , , , |66 | , , , , , , , |67 | , , , , , , , |68
Freq.(MHz)   Freq.(MHz)   Freq.(MHz)   Freq.(MHz)

|M,E, , , , , , , , , , , , , |69   ☒70
Sigla provincie interessate dal serv. di radiodiff.   Tipo di servizio

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

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

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

A4

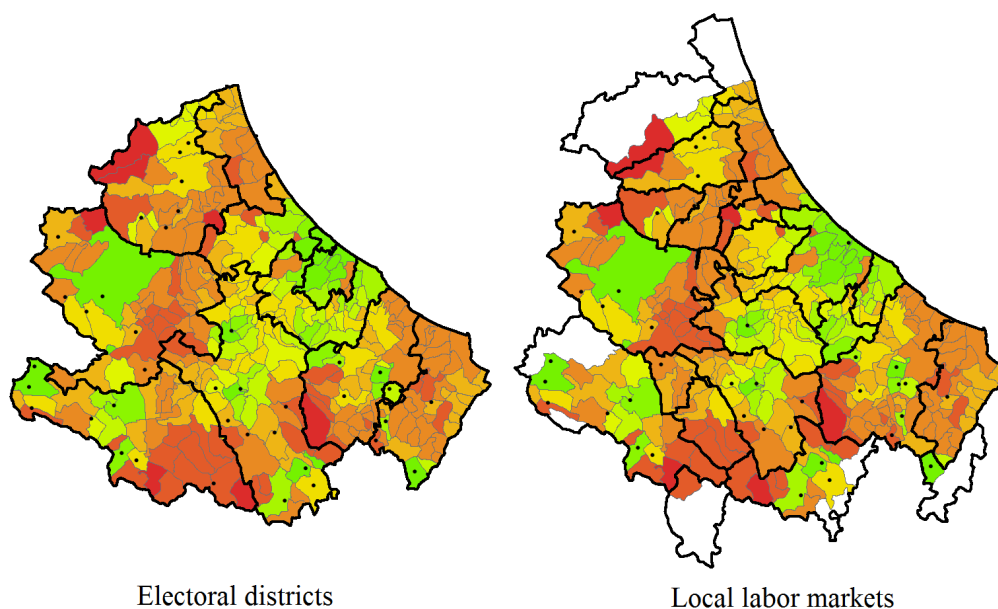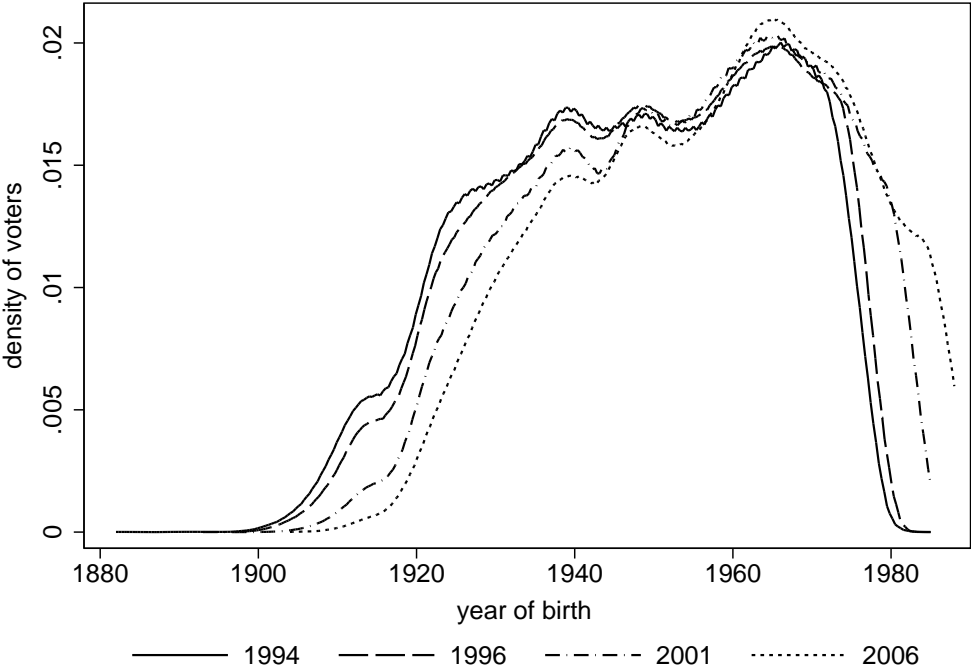Figure A4: Electoral districts and local labor markets in the region of Abruzzo

Electoral districts   Local labor markets

Table A3: Profile of *Forza Italia* voters

	(1)	(2)	(3)	(4)	(5)	(6)
interested in politics		-0.061***				
		(0.013)				
attended political debates			-0.019			
			(0.013)			
took part in a rally				-0.122***		
				(0.019)		
signed a petition					-0.035*	
					(0.018)	
sum of political actions						-0.034***
						(0.009)
Constant	0.234***	0.216***	0.242***	0.211***	0.435***	0.244***
	(0.052)	(0.051)	(0.047)	(0.060)	(0.062)	(0.047)
Observations	6,162	6,163	8,165	4,104	6,356	8,168
R2	0.224	0.225	0.267	0.206	0.305	0.269

Note: This table reports OLS regressions of a dummy equal to 1 for ITANES respondents reporting to vote for *Forza Italia* on different measures of civic and political engagement. All regressions control for municipality and year fixed effects, and for the following individual-level controls: *Education*, *Gender*, *Age*, *Employment status*, *Marital status*, and *Number of family members*. Standard errors clustered at the municipal level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Figure A5: Age distribution of voters at the national elections, 1994-2006