

Market-Based Lobbying: Evidence from Advertising Spending in Italy[†]

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We analyze a novel lobbying channel: firms shifting spending toward a politician's business in the hope of securing favorable regulation. We examine the evolution of advertising spending in Italy during 1993–2009, a period in which Berlusconi was in power three separate times, while maintaining control of Italy's major private television network, Mediaset. We document a significant pro-Mediaset bias in the allocation of advertising during Berlusconi's political tenure, especially for companies in more regulated sectors. We estimate that Mediaset profits increased by one billion euros during this period and that regulated firms anticipated sizeable returns, stressing the economic importance of this channel. (JEL D72, L51, L82, M31)

Politicians face an inherent tension when setting policy. While they have incentives to represent the interests of their constituents, they also may face conflicting incentives with respect to special interest groups. An extensive literature has studied this *direct lobbying* relationship: firms attempt to curry favor with politicians, via campaign contributions or other means, in exchange for policy favors (Grossman and Helpman 2001; Ansolabehere, de Figueiredo, and Snyder 2003; Blanes i Vidal, Draca, and Fons-Rosen 2012; Querubin and Snyder 2013; Bertrand, Bombardini, and Trebbi 2014).¹

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[†]Go to <http://dx.doi.org/10.1257/app.20150042> to visit the article page for additional materials and author disclosure statement(s) or to comment in the online discussion forum.

¹As noted, the medium of exchange here includes, but is more general than, campaign contributions. In Di Tella and Franceschelli (2011), for example, media firms exchange more positive coverage of government scandals for advertising spending by the government.

An additional conflict of interest arises for politicians with business holdings. Politicians in this situation have an interest to distort policy to benefit the firm(s) they have a stake in, and thus reap the private benefits in the form of profits. A significant literature has focused on this *businessman-politician* channel (Fisman 2001; Cingano and Pinotti 2013).

In this paper, we consider a different channel for the conflict of interest for politicians with business holdings. Specifically, we study whether third parties, typically firms, attempt to curry favor with conflicted politicians by shifting their business toward firms controlled by a politician. The politician benefits financially from the increased business, and the third parties presumably expect favorable regulation in return. We label this channel, involving lobbying through business proxies, as *indirect lobbying*. This issue has received limited attention in the literature, and this paper represents the first attempt to formally model and empirically investigate this indirect lobbying channel.

Figure 1 illustrates how this channel differs from the channels previously identified in the literature. The *direct lobbying* channel, mentioned above, involves firms lobbying politicians directly for regulation. The *businessman-politician* channel applies to the case in which politicians are stakeholders in a firm. Through firm revenue, these politicians directly reap the benefits of favorable political decisions. The *indirect lobbying* channel operates through business proxies. Firms provide favors to politicians indirectly by directing business orders to the firm controlled by the politician. Politicians benefit and provide favorable regulations in return. This channel, like the second channel, only applies when rules do not forbid the concentration of political and business interests.

To provide evidence on the business transfers behind this channel, we consider an egregious case of concentration of business and political interests: the case of Italy since the mid 1990s. In the Spring of 1994, Silvio Berlusconi, previously a successful entrepreneur and owner of Italy's main private television network, was elected prime minister. Unlike the United States, Italy has no rules forbidding the concentration in one person of business interest and prominent political positions and also does not have the tradition of blind trusts for politicians with interests in companies. As such, Berlusconi retained control of his business holdings in the media, inducing a conflict of interest with his role as prime minister.

In this context, the *indirect lobbying* distortions take the form of advertising decisions. The Italian broadcast television is dominated by two groups: the public broadcasting corporation (RAI) and a private network, Mediaset, controlled by Berlusconi. The profitability of the three Mediaset channels, which are free-to-air, depends on advertising revenue. In this context, the *indirect lobbying* channel involves firms attempting to curry favor with the government by shifting some of their advertising from public channels to Berlusconi's channels when Berlusconi is in power.

The setting is ideally suited to identify the *indirect lobbying* channel for three reasons. First, while firm spending is often hard to observe, we have data on advertising spending at the firm-quarter level from Nielsen. Second, over our sample period (1993 to 2009) Berlusconi's coalition is in and out of power three times, providing us with the necessary political variation. Third, the absence of conflict of interest rules makes the setting a textbook example.

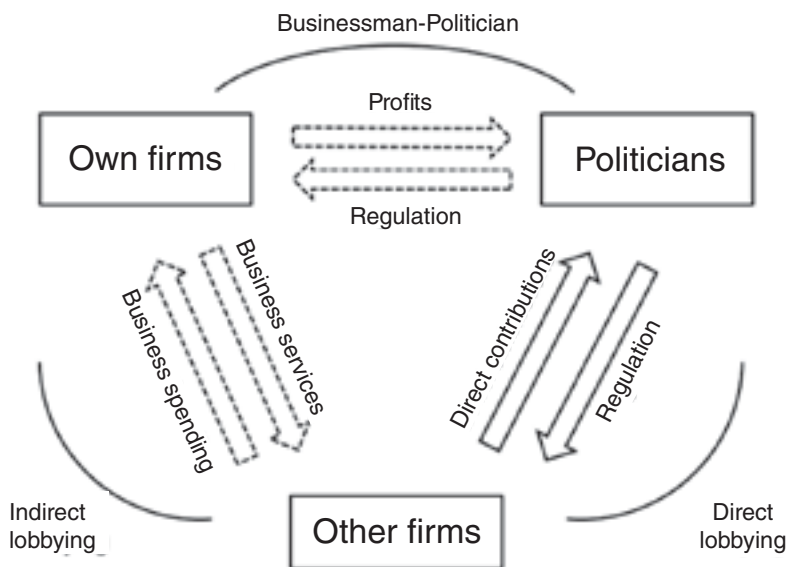


FIGURE 1. CONFLICT OF INTEREST CHANNELS

Notes: This figure illustrates three channels for ties between special interests and politicians. The standard lobbying relationship, which we label *direct lobbying*, involves transfers from firms to politicians, for example, in the form of campaign contributions, in the hope of more favorable regulation in return. The other two channels are dotted because they apply only in the presence of businessmen-politicians. The *businessman-politician* channel denotes the fact that politicians with business interests are tempted to issue favorable regulation toward their own companies so as to reap higher business earnings. The *indirect lobbying* channel, the one studied in this paper, consists of the purchase of business services by firms from the business connected to the politician. The politician earns extra business profits, and the firms hope for regulatory favors in return.

While our analysis is focused on Italy, the *indirect lobbying* channel identified here applies broadly, given that politicians often have major business holdings. In some cases, the business interests are in the media, as in Italy. For example, Thaksin Shinawatra, prime minister of Thailand between 2001 to 2006, owned the country's largest free-to-air television, and Sebastián Piñera, former president of Chile, owned Chile's most influential TV station.² In other cases, the holdings are outside the media sector, as in the case of Nitin Gadkari, leader of India's opposition party BJP between 2010 and 2013, and Cristina Fernandez de Kirchner, Argentina's president and owner of a luxury hotel.³

To illustrate the *indirect lobbying* channel in our context and to provide testable hypotheses, we begin by developing a simple model of the advertising market. We

² Additional examples include Andrej Babis, leader of Czech Republic's second largest party and owner of multiple newspapers and two national TV channels and, in the United States, Michael R. Bloomberg, mayor of New York from 2002 to 2013 and main shareholder of the news conglomerate Bloomberg LP.

³ In December 2013, La Nacion, an Argentine newspaper, published a series of reports revealing that companies owned by Lazaro Baez, a construction magnate, had made year-round block bookings for dozens of rooms in a luxury hotel in Patagonia owned by President Cristina Fernandez de Kirchner and her late husband, Nestor Kirchner. Mr. Baez, a former bank clerk and longstanding friend of Kirchner, has been a beneficiary of public works contracts in Patagonia in the decade in which the Kirchners have ruled Argentina. The paper found no evidence that the rooms were ever occupied.

consider two types of firms, regulated and unregulated, that must decide how to allocate their advertisements between the two networks. In addition to the economic benefits associated with advertising, regulated firms receive a political benefit from advertising on Berlusconi's network when he is in power. When Berlusconi comes to power, demand for advertising on his network thus increases. This shift in demand induces an increase in the price of advertising in Berlusconi's channels and also a change in the composition of advertising spending: regulated companies shift spending towards Berlusconi's channels, while unregulated firms do otherwise (given the price change). In the context of the model, market-based lobbying increases the profits of Berlusconi's companies and lowers the profits of the competing public network.

To test the predictions of this model, we use sector-level and firm-level data by Nielsen on quarterly advertising expenditure by firm and media outlet between 1993 and 2009. We then compare the advertising spending on the different TV channels when Berlusconi is in power versus when he is not. In this respect, we exploit the repeated switches in political balance: Berlusconi was prime minister in 1994, between 2001 and 2006, and from 2008 to the end of our sample. Further, to test the predictions on regulation, we conduct a survey of Italian economists eliciting measures of regulation by industry, and use the responses to construct a continuous measure of the degree of regulation in a sector. (As an alternative, we also develop an internet-based measure of regulation, as described below.)

We first present a time-series analysis, comparing outcomes in the advertising market during periods in which Berlusconi is in power to periods when he is not in power. Consistent with the predictions, advertising spending on Mediaset, relative to the public network, is higher when Berlusconi is in power. The result is clearly visible for both the second and third Berlusconi government (the estimates for the first government are noisy given its short duration) and does not depend on shifts in the audience shares, which remain fairly constant. The result is driven by an increase in advertising prices on Mediaset and a corresponding reduction in prices on the public network. Consistent with a relatively inelastic supply of advertising slots, we find no changes in the total quantity of advertisements on the two networks.

Building upon this evidence, we conduct a difference-in-differences analysis, comparing more regulated industries to less regulated industries. Consistent with the predictions of the model, we find that regulated sectors, relative to unregulated sectors, spend more on Mediaset, relative to the public network, when Berlusconi is in power. In contrast to the time-series evidence, which was driven by a price response, this shift is mainly driven by a quantity response, with regulated sectors, relative to unregulated sectors, purchasing more slots on Mediaset, relative to the public network, when Berlusconi is in power. This effect is stronger for the peak-hours programming, which is of higher value to the networks.

We then consider several robustness checks. Our results are robust to the inclusion of both linear and quadratic sector-specific time trends and to the use of a discrete (versus continuous) measure of regulation. The results are also not sensitive to different definitions of the television advertising market nor to the inclusion of advertising in the printed media. The results are also robust to controls for audience rates for specific demographic groups and, in the difference-in-differences analysis,

interactions of these audience rates with our regulation measure, indicating that the results are unlikely to be explained by compositional shifts in the audience when Berlusconi comes to power. A more important role is played by weighting by total advertising spending, since the results are larger for sectors with higher spending on television advertising. We also document that the results are similar when using an alternative measure of regulation based upon the occurrence of internet content of industry names together with words indicating regulation, as developed in Saiz and Simonsohn (2013).⁴

We also test for a dynamic version of advertising responses. Our baseline analysis is based upon a static comparison of periods in which Berlusconi is in power to periods when he is not in power, assuming that current political state is all that matters. As an alternative, we develop a forward-looking measure of the discounted expected future probability of Berlusconi's presence in government to capture the fact that firms may switch advertising slots in advance of an expected defeat (or victory) in an upcoming election. The forward-looking measure leads to similar results, but in a horse-race with the static measure, the latter captures the conflict of interest effect. This is consistent with the view that political exchanges in the context we are studying are inherently short term.

We then show, in the context of our theoretical model, how these estimates can be used to uncover both the profits to Berlusconi's group and the expected returns to these politically motivated advertisers. In particular, we estimate an increase of profits for Mediaset of over €1 billion over the nine years of Berlusconi government, accounting for 20 percent of the market capitalization of Mediaset in 1997. We also estimate the expected returns from favorable regulation for the regulated firms to be €2 billion over nine years. These large magnitudes indicate the first-order role played by the indirect lobbying channel.

Throughout the paper, we also consider a number of alternative interpretations of our findings, two of which we confront with data. First, as noted above, we show that our results are not driven by changes in the audience, in terms of either size or composition, when Berlusconi comes to power. Second, we show that the shifts in advertising occur during the period when Berlusconi comes to power, suggesting that market-based lobbying reflects current or future, as opposed to past, policy favors.

A final alternative explanation is that Berlusconi, when in power, expropriates from regulated firms with a grabbing hand, as in Shleifer and Vishny (1998). Given that Berlusconi owns Mediaset, the expropriation may happen at least in part through the advertising channel. That is, Berlusconi may threaten to punish regulated industries for not advertising on Mediaset. In this case, the increase in advertising prices on Mediaset, which we interpret as reflecting policy favors, may instead reflect punishment that is avoided by advertising on Mediaset. While we cannot rule out this interpretation, we note two important similarities between this alternative interpretation and our indirect lobbying interpretation. First, on net, regulated firms are better

⁴We thank Matthew Gentzkow for suggesting a measure along these lines.

off under both interpretations by advertising on Mediaset, and, second, both interpretations depend upon the confluence of the business owner with the politician.

Our findings have policy implications. In particular, they provide an additional rationale for rules designed to address conflicts of interest—such as the ones in place for the US Congress—which require divestiture for politicians with business interests. While the traditional rationale for such separation is to avoid self-serving legislation (the *businessman-politician* channel), we point out that the concentration of business and political interests also allows for alternative forms of lobbying—through business purchases—which are harder to monitor and regulate.⁵

Our research relates to several literatures. First, as noted above, there is a large literature on direct lobbying. This literature, also commonly referred to as involving special interest politics, investigates strategies, such as lobbying and campaign contributions, used by firms to influence government policy. We note that, in addition to these direct lobbying strategies, firms can influence policy-making indirectly by strategically manipulating their business decisions to favor firms owned by politicians. This indirect lobbying channel differs from traditional direct lobbying strategies in several ways. Crucially, indirect lobbying directly benefits politicians, rather than political parties or campaigns, which typically receive campaign contributions. In addition, purchases from firms owned by politicians are presumably harder for voters to track than political contributions since they do not have to be reported and are also less concentrated around election dates. Finally, the supply and demand structure of the advertising market, and the availability of detailed spending data, allow us to estimate the financial benefit to the politician and, indirectly, the expected value of the favors provided to firms; this is typically difficult for studies using abnormal returns. One caveat that our analysis shares with much of the existing literature on lobbying is that it only focuses on one side of the exchange between firms and politicians—i.e., firms' spending decisions—and does not document the policy favors provided to firms in exchange.

Second, our paper contributes to the literature on the relevance of firms' political connections (Fisman 2001; Khwaja and Mian 2005; Faccio 2006; Knight 2007; Coulomb and Sangnier 2012; Fisman et al. 2012; Luechinger and Moser 2012). While we label this channel *businessman-politician*, many of these papers do not involve direct ownership of firms by politicians. In several of these papers, the response of stock returns to events is used to estimate the value of a connection. In our case, instead we use price and quantity shifts in a market to back out the value of regulation to the firms.

Finally, our research also relates to the growing body of work on the relation between the mass media and politics,⁶ including research more specifically focused on interactions between advertising and politics, such as Di Tella and Franceschelli

⁵ A caveat is that our design does not allow us to estimate whether divestment would lead special interests to shift to substitute lobbying channels, such as campaign contributions.

⁶ These studies include, among others, Strömberg (2004); Groseclose and Milyo (2005); George and Waldfogel (2006); DellaVigna and Kaplan (2007); Gentzkow and Shapiro (2010); Chiang and Knight (2011); Enikolopov, Petrova, and Zhuravskaya (2011); Larcinese, Puglisi, and Snyder (2011); and, for the specific context of Italy, Durante and Knight (2012) and Barone, D'Acunto, and Narciso (2015).

(2011), and other forms of bias in advertising markets, such as Reuter and Zitzewitz (2006). While these studies have typically examined the impact of the advertising market on media bias, we instead examine how political ownership can distort competition in the advertising market.

The remainder of the paper is as follows. In Section I, we propose a simple model of the advertising market designed to develop our key hypotheses. In Section II, we describe the setting and data and in Section III, we present the evidence. Finally, in Section IV, we conclude.

I. Model

A large number (N) of firms each have a continuum of potential advertisements, indexed by a . For each advertisement, the firm must decide whether to air it on the private network, owned by Berlusconi (Mediaset), on the public network (RAI), or to not air it at all. Let n index the two networks and let B denote Berlusconi's network and P denote the public network. Firms, indexed by f , differ in their degree of regulatory oversight, with $f = R$ denoting regulated firms and $f = U$ denoting unregulated firms. Let r denote the fraction of firms that are regulated. Finally, there are two coalitions: a Berlusconi government and a center-left government.

Firm f receives three benefits from advertising. The first is an economic benefit e_n of reaching consumers of network n ; this benefit is independent of which government is in power.⁷ The second is a political benefit b that regulated firms receive when advertising on Mediaset. This political benefit is positive ($b > 0$) for regulated firms when Berlusconi is in power and is zero otherwise. There is no such benefit from advertising on the public network, and unregulated firms receive no political benefits from placing advertisements on either network. Finally, there is an idiosyncratic benefit ε_{fn}^a from firm f placing advertisement a on network n . This benefit can be interpreted as the quality of the match between the target audience of the advertisement and the audience of the network and is independent across advertisements. Firms receive only an idiosyncratic benefit of ε_{f0}^a from not placing an advertisement. These idiosyncratic benefits are distributed type-I extreme value with precision ρ , leading to a logit structure.

Firms pay a price p_n for airing an advertisement on network n . These prices, as described below, are determined by market conditions.⁸ In order to guarantee positive prices in equilibrium, we assume that the economic benefits to advertising are sufficiently large.⁹

⁷Empirically, we take into account the possibility that when Berlusconi is in power the popularity of his TV channels may increase, hence the economic benefit e_B may increase, by controlling for the audience share of Mediaset channels in each quarter.

⁸We assume that prices are the same for all firms (no price discrimination) and that there are no quantity discounts (the price paid per advertisement is independent of the number of advertisements purchased).

⁹In particular, we assume that $e_B > \frac{1}{\rho} \ln \left(\frac{N_B}{N - N_B - N_P} \right)$ and $e_P > \frac{1}{\rho} \ln \left(\frac{N_P}{N - N_B - N_P} \right)$.

Given all of this, the demand for placing an advertisement, expressed in shares of potential advertising slots placed on the two networks (B and P), for regulated (R) and unregulated (U) firms, is as follows:

$$(1) \quad S_{BR} = \frac{\exp[\rho(e_B + b - p_B)]}{1 + \exp[\rho(e_B + b - p_B)] + \exp[\rho(e_P - p_P)]}$$

$$S_{PR} = \frac{\exp[\rho(e_P - p_P)]}{1 + \exp[\rho(e_B + b - p_B)] + \exp[\rho(e_P - p_P)]}$$

$$S_{BU} = \frac{\exp[\rho(e_B - p_B)]}{1 + \exp[\rho(e_B - p_B)] + \exp[\rho(e_P - p_P)]}$$

$$S_{PU} = \frac{\exp[\rho(e_P - p_P)]}{1 + \exp[\rho(e_B - p_B)] + \exp[\rho(e_P - p_P)]}.$$

In terms of the supply side, we assume a perfectly inelastic supply curve: each network has a fixed number of time slots devoted to advertising, given by N_B for Mediaset and N_P for public, where $N > N_B + N_P$. While our results are robust to an elastic supply curve, this assumption simplifies the analysis, and, as shown below, is consistent with the data given that aggregate quantities are relatively stable over time.

In equilibrium, prices equate the demand for advertisements with the supply of advertisements on the two networks:

$$(2) \quad N[rS_{BR} + (1 - r)S_{BU}] = N_B$$

$$N[rS_{PR} + (1 - r)S_{PU}] = N_P.$$

With two equations and two unknown prices, we solve for the equilibrium prices $p_B^*(b)$ and $p_P^*(b)$ as a function of the political benefits to regulated firms (b). When the left is in power, the political benefits b are zero and, hence, inspection of (1) shows that $S_{BR} = S_{BU}$ and $S_{PR} = S_{PU}$. In this case, the equilibrium condition reduces to

$$N \frac{\exp[\rho(e_B - p_B^*(0))]}{1 + \exp[\rho(e_B - p_B^*(0))] + \exp[\rho(e_P - p_P^*(0))]} = N_B$$

$$N \frac{\exp[\rho(e_P - p_P^*(0))]}{1 + \exp[\rho(e_B - p_B^*(0))] + \exp[\rho(e_P - p_P^*(0))]} = N_P.$$

This leads to the following closed form solutions for equilibrium prices:

$$p_B^*(0) = e_B - \frac{1}{\rho} \ln \left(\frac{N_B}{N - N_B - N_P} \right)$$

$$p_P^*(0) = e_P - \frac{1}{\rho} \ln \left(\frac{N_P}{N - N_B - N_P} \right).$$

Prices on the network are increasing in the economic benefit of advertising on the network (e_B and e_P), are decreasing in the supply of advertisements by the network (N_B and N_P), and are increasing in the overall supply of advertisements (N). Moreover, the equilibrium price difference $\Delta^*(b) = p_B^*(b) - p_P^*(b)$ has a simple closed form solution for $b = 0$:

$$\Delta^*(0) = e_B - e_P - \frac{1}{\rho} \ln (N_B/N_P).$$

When Berlusconi is in power, we have that $b > 0$. Given that there is now a distinction between regulated and unregulated firms, there is no closed form solution for prices. There are, however, simple comparative statics. In particular, we have:

PROPOSITION 1: *When Berlusconi comes to power, the price on Mediaset increases but by less than the political benefits: $0 < p_B^*(b) - p_B^*(0) < b$. There is no change in the price on RAI: $p_P^*(b) - p_P^*(0) = 0$. Thus, the price difference also increases but by less than the political benefits: $0 < \Delta^*(b) - \Delta^*(0) < b$. Moreover, for small values of b , the price increase on Mediaset can be approximated by the product of b and r : $p_B^*(b) - p_B^*(0) \approx br$. Finally, given this, the increase in the price difference can be approximated by the product of b and r : $\Delta_B^*(b) - \Delta_B^*(0) \approx br$.*

We provide a proof in the Appendix. The intuition for the final result is that, when Berlusconi comes to power, the willingness to pay for an advertisement on Mediaset by regulated firms increases by b . This is only relevant for a fraction r of firms, and thus, for small values of b , the price increases by the product of these two factors, rb .

So far we have considered the shares of potential advertising slots placed on the two networks, S_{nf} , where firms have three options: advertise on Mediaset, advertise on the public channels, or not advertise at all. Since the share of advertisements in the third group is not observable, we derive the implied “two-option” share of advertising on Mediaset, conditional on advertising at all.

PROPOSITION 2: *When Berlusconi comes to power, the share of advertisements on Mediaset, relative to Mediaset and RAI, for regulated, relative to unregulated firms, increases.*

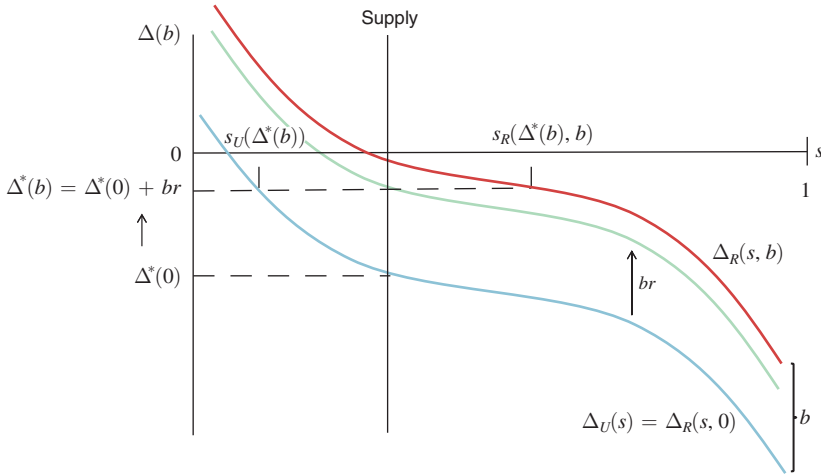


FIGURE 2. ADVERTISING SHARES AND PRICE DIFFERENCES FOR REGULATED AND UNREGULATED FIRMS

Notes: s denotes the share of advertisements placed on Mediaset, relative to the total placed on Mediaset and RAI. $\Delta(b)$ denotes the price difference on Mediaset relative to RAI, and $\Delta^*(b)$ the equilibrium value. $\Delta_R(s, b)$ and $\Delta_U(s)$ denote the inverse demand curves for regulated and unregulated firms, respectively. N_B and N_P denote the fixed supply of advertisements on Mediaset and RAI, respectively. b denotes the political benefit from advertising on Mediaset for regulated firms, and r the fraction of regulated firms.

PROOF:

In terms of notation, we refer to the three-option share as S and the two-option share as s . The two-option Mediaset share for regulated and unregulated firms is given by

$$s_R(\Delta, b) = \frac{S_{BR}}{S_{BR} + S_{PR}} = \frac{\exp[\rho(e_B - e_P + b - \Delta)]}{1 + \exp[\rho(e_B - e_P + b - \Delta)]}$$

$$s_U(\Delta) = \frac{S_{BU}}{S_{BU} + S_{PU}} = \frac{\exp[\rho(e_B - e_P - \Delta)]}{1 + \exp[\rho(e_B - e_P - \Delta)]}$$

When the left is in power, $b = 0$ and $s_R(\Delta, b) = s_U(\Delta)$. Since $s_R(\Delta, b)$ is increasing in b , we have that $s_R(\Delta, b) > s_U(\Delta)$ when $b > 0$. ■

Propositions 1 and 2 are illustrated in Figure 2, with the share s of advertisements placed on Mediaset, relative to Mediaset and RAI, on the x -axis and the difference in prices Δ between Mediaset and RAI on the y -axis. The inverse demand functions for regulated and unregulated firms are given by $\Delta_U(s)$ and $\Delta_R(s, b)$ and can be interpreted as the difference in willingness to pay for a share s of advertisements on Mediaset for regulated and unregulated firms. These inverse demand curves are downward sloping and have an S-shape given the logit expressions.

When the left is in power, the willingness to pay does not differ between regulated and unregulated firms (i.e., $\Delta_R(s, 0) = \Delta_U(s)$), and the relevant demand curve is the one at the bottom of Figure 2. The equilibrium price difference, $\Delta^*(0)$ in this case, is determined as the net price that equates demand of advertisements on Berlusconi’s channel to the supply of advertisements on Mediaset, relative to

RAI, which is perfectly inelastic. As shown in Figure 2, the equilibrium price difference equals $\Delta^*(0)$, and the share of advertisements placed on Mediaset, relative to Mediaset and RAI, is the same for regulated and unregulated firms and is equal to $N_B/(N_B + N_P)$.

When the right comes to power, the willingness to pay on Mediaset increases by b for regulated firms, and shifts upward to the demand function at the top of Figure 2. The equilibrium is then obtained by considering the average willingness to pay, which is a convex combination with weight r of the shifted demand curve for the regulated firms and of the original demand curve, which still applies to the unregulated firms. We plot this curve in between the other two curves. Equilibrium is now obtained at the intersection between the supply curve and the new average willingness to pay. As shown, for small values of b , the price increases by approximately br , that is, $\Delta^*(b) \approx \Delta^*(0) + br$. At this new price, the share of advertisements placed on Mediaset for regulated firms increases to $s_R(\Delta^*(b), b)$ and the share of advertisements placed on Mediaset for unregulated firms decreases to $s_U(\Delta^*(b))$.

Given that most of our empirical analysis focuses on expenditure shares, defined as expenditures on Mediaset relative to combined expenditures on Mediaset and RAI, we next consider how expenditure shares change when Berlusconi comes to power. We first consider aggregate shifts before turning our focus to differences between regulated and unregulated firms.

PROPOSITION 3: *When Berlusconi comes to power, the aggregate expenditure share on Mediaset, relative to Mediaset and RAI, increases.*

PROOF:

Since quantities are fixed by assumption and prices increase on Mediaset, relative to RAI (Proposition 1), aggregate expenditures on Mediaset, relative to RAI, increase. ■

PROPOSITION 4: *When Berlusconi comes to power, the aggregate expenditure share on Mediaset, relative to Mediaset and RAI, for regulated, relative to unregulated firms, increases.*

The proof is provided in the Appendix. The intuition is that, given the assumptions of the model, expenditure shares are the same for regulated and unregulated firms when the left is in power. When Berlusconi comes to power, expenditure shares increase mechanically for both regulated and unregulated firms due to the increase in price on Mediaset. Due to the behavioral response, however, regulated firms increase their advertising on Mediaset and unregulated firms decrease their advertising on Mediaset. Hence, when Berlusconi comes to power, expenditure shares increase for Mediaset disproportionately for regulated firms.

Extensions.—We next consider two extensions of the model, with details of the analysis in an online Appendix. In the first extension we allow for a political benefit b' for regulated firms from advertising on RAI when the left is in power, previously assumed to be zero. This generalization captures the idea that a left-leaning

government may want to reduce the profits of Mediaset. In the online Appendix, we extend the four propositions described earlier in the paper. In terms of Proposition 1, we show that, when the right comes to power, the price on RAI falls, but by less than b' . For small values of b' , this fall in prices can be approximated by rb' . Given this and the fact that the price on Mediaset rises by rb , the increase in the price difference can be approximated by $\Delta_B^*(b) - \Delta_B^*(0) \approx (b + b')r$. Propositions 2, 3, and 4 are all strengthened under this extension, given that the relative increase in demand for advertising on Mediaset for regulated firms when the right comes to power is strengthened.

In the second extension we remove the assumption of no benefits to unregulated firms and allow for a political benefit b'' for these firms from advertising on Mediaset when the right is in power. We assume that this benefit is smaller for unregulated firms than for regulated firms: $b'' < b$. In the online Appendix, we extend the four propositions described above. In terms of Proposition 1, we show that, when the right comes to power, the price on Mediaset increases, but by less than $b + b''$. For small values of b'' , this increase in prices can be approximated by $br + b''(1 - r)$. Given this, the increase in the price difference is approximately $br + b''(1 - r)$. Propositions 2 and 4 are weakened given that the distinction between regulated and unregulated firms is now smaller, but still hold so long as $b'' < b$. Proposition 3 is strengthened given the larger price increase on Mediaset when the right comes to power.

II. Data

Political Timeline.—Our analysis focuses on the 1993–2009 period, with a timeline in online Appendix Table 1. In 1993, a series of corruption scandals led to the collapse of the five-party centrist coalition that had dominated Italy's political landscape for over three decades. A technocratic government, led by Carlo Azeglio Ciampi, was instituted and early elections were set for March 1994. Having lost his main political sponsors and fearing the possible success of the left-wing coalition, Silvio Berlusconi, until then a successful entrepreneur and the owner of Italy's largest private media conglomerate, decided to enter the political field. In December 1993 he announced the creation of a new political party, *Forza Italia* ("Forward Italy"). In just three months, Berlusconi's party became Italy's most voted-for party and led the right-wing coalition to gain a solid majority in both branches of parliament. On May 1994, Berlusconi was sworn in as Italy's prime minister.

His first government, however, was short-lived. In January 1995, the *Lega Nord*, *Forza Italia*'s electoral partner, withdrew its support, forcing Berlusconi to resign. This paved the way for a new technocratic government led by Lamberto Dini, an independent, which governed Italy until new elections in March 1996. The left-wing coalition won the elections and in April 1996 its leader, Romano Prodi, became prime minister. In October 1998, due to divisions within the ruling coalition, Prodi's government fell; two other left-wing governments followed, until the elections of May 2001, when the right-wing coalition won and Berlusconi returned to power, this time for the entire five-year legislature. The left-wing coalition won the following

elections, held in May 2006, and Prodi became prime minister for the second time. The narrow margin of control of the majority in the upper house, however, caused the fall of Prodi's government in the spring of 2008, triggering new elections that brought back to power the right-wing coalition. Berlusconi's third government, instituted in May 2008, lasted until November 2011, when, due to concerns about the possible default of Italy's economy, and to a series of corruption and sex scandals, it was replaced by a technocratic government led by Mario Monti.

Overall, during the 17-year period of our sample (1993–2009), Berlusconi was in power for 30 out of 68 quarters (i.e., 1994:II through 1994:IV, 2001:II through 2006:I, 2008:II through 2009:IV, the end of our sample period). Our first measure for “Berlusconi in power” is an indicator variable for the quarters during which Berlusconi was prime minister.

Forward-Looking Measure of Berlusconi in Power.—In addition, we also calculate a forward-looking measure that accounts for Berlusconi's prospects of being in office in the future. The measure captures the expected discounted probability that Berlusconi will be in power in the future, since advertisers may be more willing to invest in Berlusconi's network if they believe that he is likely to be in office, and to provide favors, in the future.

In the online Appendix, we describe how we calculate this discounted probability. To summarize, we proceed in four steps. First, we use the vote shares for Berlusconi's party in all elections (national, local, and European) held in Italy between 1994 and 2010 to compute a measure of his vote share were a general election to be held in a particular year. Second, we convert these vote shares into probabilities of winning, conditional on an election being held, using a mapping inferred from two sets of prediction market prices. Third, using the electoral calendar and the empirical probability of an unscheduled election being held, we calculate the probability of an election being held in each year over the relevant time horizon (T). Finally, using the above inputs, we calculate the discounted likelihood of Berlusconi being in office, under the assumptions of a five-year time horizon ($T = 5$) and a discount factor of 0.9. As Figure 3 shows, this discounted probability measure co-moves with the electoral results, but compared to the simple indicator for Berlusconi in power it displays considerable variation within and outside the periods of his governments.

Advertising Expenditure.—Total advertising spending on all media in Italy has grown from €3,712 million in 1993 to €7,094 million in 2009. Broadcast TV is the largest segment, accounting for roughly 60.5 percent of advertising expenditure in 1993 as well as in 2009. Since the mid-1980s, the Italian broadcast TV industry has been dominated by two players: RAI, the public service broadcaster, and Mediaset, the commercial television network founded and controlled by Berlusconi. Both RAI and Mediaset operate three national channels and capture a similar share of total TV audience (39.2 percent and 38.8 percent, respectively, in 2009). However, given the legal limitations on advertising time for public channels, Mediaset captures a larger share of TV advertising spending than RAI (63.7 percent and 25.5 percent, respectively, in 2009). Other competitors include a small national network, La7, which, in

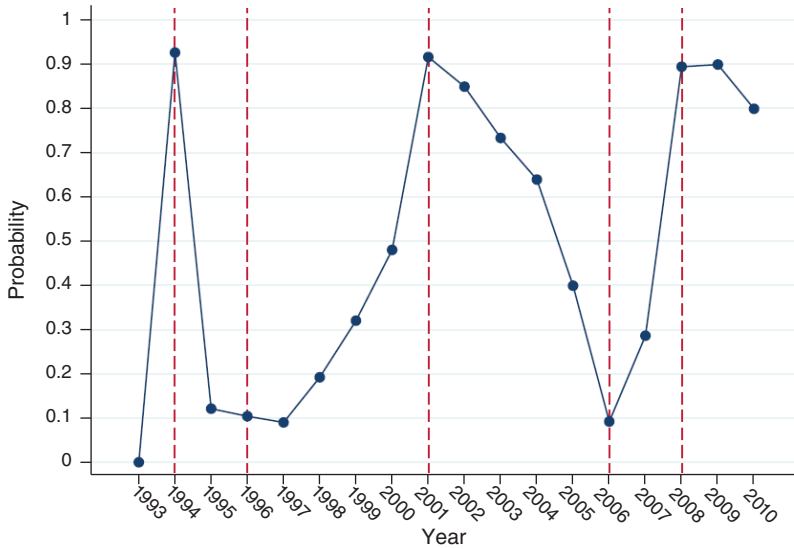


FIGURE 3. DISCOUNTED PROBABILITY MEASURE OF BERLUSCONI IN POWER

Notes: The measure in Figure 3 represents the expected discounted probability that Berlusconi will be in power over the next five years, with annual discount factor of 0.9. The measure for quarter j in year t uses the election outcomes in year t (typically in the spring) to create a measure of the probability for Berlusconi of winning an election, were the election to be held in year t . The probability is then projected into the future, assuming an exogenous probability that early election could be held each year.

2009 accounted for 3 percent of the audience and 3 percent of advertisement revenues, as well as a multitude of minor local channels.¹⁰

Our primary data on advertising expenditure comes from the Nielsen AdEx database and is at the sector level. These data include comprehensive information on quarterly advertising expenditure for 22 industrial sectors by medium and outlet for the period 1993–2009.¹¹ The dataset has information on total expenditure, average price, and number of seconds purchased.

To estimate the quantity of ads placed by firms, Nielsen employs different methods depending on the medium. For television, a robot continuously follows all monitored channels, including the three RAI channels and the three Mediaset channels. The robot records the time and duration of the spot (in seconds) and automatically recognizes the brand/product if the spot is already present in the database; if not, the recognition is done manually. For the press, Nielsen personnel monitors 61 newspapers and over 300 periodicals to measure the space occupied by an ad.¹² The coverage is almost universal: in terms of the total size of the “reference” markets,

¹⁰ Advertising expenditure varies considerably across sectors with the bulk of spending coming from a handful of industries such as automobiles and telecommunications. In addition to total spending, industries differ substantially with respect to the distribution of advertising budgets across different media, with some spending mainly on TV (i.e., toys, foodstuffs), others on printed press (i.e., apparel, tourism), and others, more recently, on the Internet (i.e., electronics, financial services).

¹¹ Data for 1990 to 1992 is available, but coverage is incomplete.

¹² This involves estimating the number of pages (or lines), the position in the page, whether the ad is in color or black and white, the font, etc.

in 2009, the coverage was 97 percent for television, 98 percent for newspapers, and 96 percent for periodicals.¹³

Once the quantities of TV and press ads are estimated, gross investment amounts are calculated by applying the tariffs published in the official price lists of the media companies (“concessionarie”) that sell advertising space on behalf of the various television and press outlets. Net amounts are then calculated by applying discount factors that vary by medium on a monthly basis. These discount factors are estimated by Nielsen based on soft information received through regular contacts with the media companies; when the balance sheets of the media companies are published, so that ad revenues can be assessed, Nielsen revises the estimated discounts. This procedure implies that the average estimated discount is not sector-specific, hence the data does not reflect the possible margin of discounts for a particular sector. Given this, we cannot examine whether regulated firms curry favor with Berlusconi by paying inflated prices for a given advertising slot.

Audience.—To control for the audience of different TV channels over time, we use data on the relative audience share of Mediaset channels. The source is Auditel, the research company responsible for television audience measurement in Italy. Also, since demographic groups may differ in their values to advertisers, we also obtained the Mediaset audience share by gender, by age group, and by educational group. We were able to obtain this detailed information only for the period 2001–2009.

Regulation Measures.—A key prediction of the model is that the market-based lobbying should be concentrated among the firms in sectors with higher scope for regulatory favors. To test this prediction, we searched for industry-level measures of exposure to regulation. However, the few available measures do not fit our setting because they do not correspond to the Nielsen industry classification, they do not capture adequately the scope for regulatory favors, and are not necessarily applicable to the Italian context.¹⁴

To get around such difficulties, we designed a survey to measure the sector-level scope for regulatory favors in the Italian context. Specifically, in January 2012, we e-mailed a 2-question survey to 26 Italian economists. The first question asked “*How much, in your opinion, can firms in the following sectors benefit, individually or collectively, from government policies (for example public expenditure, regulations, or subsidies) in Italy?*” The survey listed the 22 industrial sectors as defined by Nielsen, including the names of 3 major companies per sector to provide examples. The respondents rated each sector on a scale from 1 to 10, with 1 indicating

¹³ Broadly speaking, the “reference” markets include outlets with national or regional reach, and exclude outlets with an exclusively local target.

¹⁴ The OECD, for example, calculates a number of regulatory indices, such as for the energy, transport, and communication sectors (ETCR), for the professional services and retail distribution sectors, and the economy-wide indicators of product market regulation (PMR). Unfortunately, these indices are not suitable for our analysis for two reasons. First, each index focuses on a small number of sectors and compares regulatory conditions across countries; we instead need cross-sector comparability within Italy. (The only sector we can match to the Nielsen industries is telecommunications.) Second, the OECD indices mostly focus on state control of businesses, barriers to entry, obstacles to trade, and price controls. But the notion of “regulatory favors” is broader and includes ad hoc temporary provisions such as scrapping subsidies, direct purchases by government of goods and services, etc.

“not at all” and 10 indicating “very much”. A second question (not required) asked for qualitative feedback on what determined their answer. The survey made no reference to this project, and as of the time of the survey, none of the authors had posted the project on the Internet, nor presented it. Hence, it is reasonable to assume that the respondents were blind to the purpose of the survey.

We received 10 responses, for a response rate of 38 percent, which is respectable for an online survey. The correlation across respondents in the rating of each industry is high, with the correlation coefficient between the responses of any two reviewers varying between 0.31 and 0.83.¹⁵ We average across the ten respondents the industry rating, and use both the continuous measure for regulation, as well as an indicator variable for industries scoring above the median.

Online Appendix Table 2 lists the 22 industries and their scores.¹⁶ The ranking lines up with common notions of regulation: high on the list are telecommunications, pharmaceutical, media, and the financial sector. It may appear surprising that the automobile industry is relatively high on the list too. However, in Italy, automobile bailouts for FIAT, consisting of incentives for purchases of new cars, have been very substantial. Low on the list instead are industries such as housing, alcohol, food, leisure, apparel, and personal items.¹⁷

As an alternative measure of regulation, we capture dispersed information on the internet using the methodology of Saiz and Simonsohn (2013). Namely, we count the number of search results containing the industry name and a word indicating regulation, and divide by the number of search results for the industry name.¹⁸ This ratio proxies for the frequency with which an industry is associated with regulation. We average across a number of keywords and take logs of the resulting measure to limit the skewness of the variable. We also construct a similar measure using, instead of the industry name, the names of the top five advertising spenders in the industry. As the scatter plots in online Appendix Figures 1a and 1b show, the survey-based measure and the crowd-sourced measure are clearly positively correlated, if not perfectly aligned (the correlation coefficient is 0.5 with both measures). As the baseline, we use the survey-based one given that it reflects the evaluation of experts, but complement it with the crowd-sourced one, which benefits from a larger sample.

Summary Statistics: In Appendix Table 1, we present summary statistics for some key variables. The summary statistics are weighted by total advertising spending in

¹⁵This correlation excludes three respondents who assigned score 10 to all industries. These three respondents are included in the calculation of the indices. Excluding them does not alter the ranking of industries.

¹⁶The regulation scores can also be seen in Figure 5.

¹⁷When using the regulation measures in the firm-level analysis, a firm may operate in multiple sectors. If that is the case, we compute the weighted average of the regulation score for the different sectors of operation, weighted by the share of advertising by that company which went into that sector in that quarter.

¹⁸Following Saiz and Simonsohn (2013), we conduct the searches on exalead.com. Unlike Google, exalead performs an actual search of the occurrence of search terms in the stored webpages, as opposed to a sampling of a small subset of pages. In addition, again unlike Google, when searching for a combination of search terms it searches for the actual occurrence of the combination of keywords, while Google reportedly computes the joint occurrence of the keywords with statistical methods. The searches, which we do in Italian to maximize the fit with the setting, are for the industry name occurring near a regulation proxy in the document. A search could thus be for (“Automobile”) NEAR (“licenza” OR “autorizzazione” OR “permesso”).

that quarter-year, for consistency with the main tables. As shown, all sectors have some spending in a quarter on Berlusconi's TV so we focus on the intensive, as opposed to extensive, margin. In a firm-level analysis, to be discussed below, we do investigate this extensive margin.¹⁹

III. Estimates

We test the predictions of the model outlined in Section I, starting with the time-series prediction that the quarters in which Berlusconi is in government should be associated with higher advertising revenue in the media he owns (Proposition 3). Next, we consider the differential prediction for the regulated sectors: the effect of a Berlusconi government on advertising revenue should be larger for more regulated firms (Proposition 4). Then, we break down the revenue into quantity (number of seconds) and prices to test Propositions 1 and 2.

Time-Series Spending.—We provide graphical evidence on the time-series patterns in Figure 4, panel A. In the figure we indicate the first, second, and third Berlusconi governments with shaded areas labeled, respectively, B1, B2, and B3. We plot the share of advertising on Berlusconi's television network, relative to the total amount placed on Berlusconi's television network and public television.²⁰ The share of spending hovers around 60 percent in the period 1993 to 2000, only to increase sizably to 66 percent in 2001 and drift up to 69 percent by 2005, the years of the second Berlusconi government. The timing of the increase lines up very well with the second Berlusconi government, with a sizeable increase in the first quarter of 2001, when Berlusconi's electoral victory in the upcoming elections was widely anticipated. The share decreases to 66 percent between 2006 and 2007, to reach a peak of 70 percent during the third Berlusconi government in 2008 and 2009. Thus, while there is no visible impact during the first Berlusconi government, likely because it was so short (three quarters), the two largest increases in the series correspond with the second and third Berlusconi government. Note also that the drop between the second and third governments is relatively small. This could be driven again by the relatively short time period or by the fact, as shown in Figure 3, that Berlusconi's popularity rose quickly during this period. In online Appendix Figure 2, we also include spending on the press, and the patterns are quite similar, with a large ramp-up during the second Berlusconi government and again during the third Berlusconi government. One notable difference is that, when including spending on the press, there is a decline between the second and third Berlusconi governments in this case.

Broadly speaking, the evidence in Figure 4, panel A is consistent with market-based lobbying being predicated upon current or future regulatory favors. An alternative possibility is that the advertising patterns in the regulated sectors reflect *past* favors provided by Berlusconi for these sectors. If this were the case, however,

¹⁹Online Appendix Table 3 presents summary statistics for the firm-level dataset.

²⁰The series is de-seasonalized and weighted by total spending on television advertising.

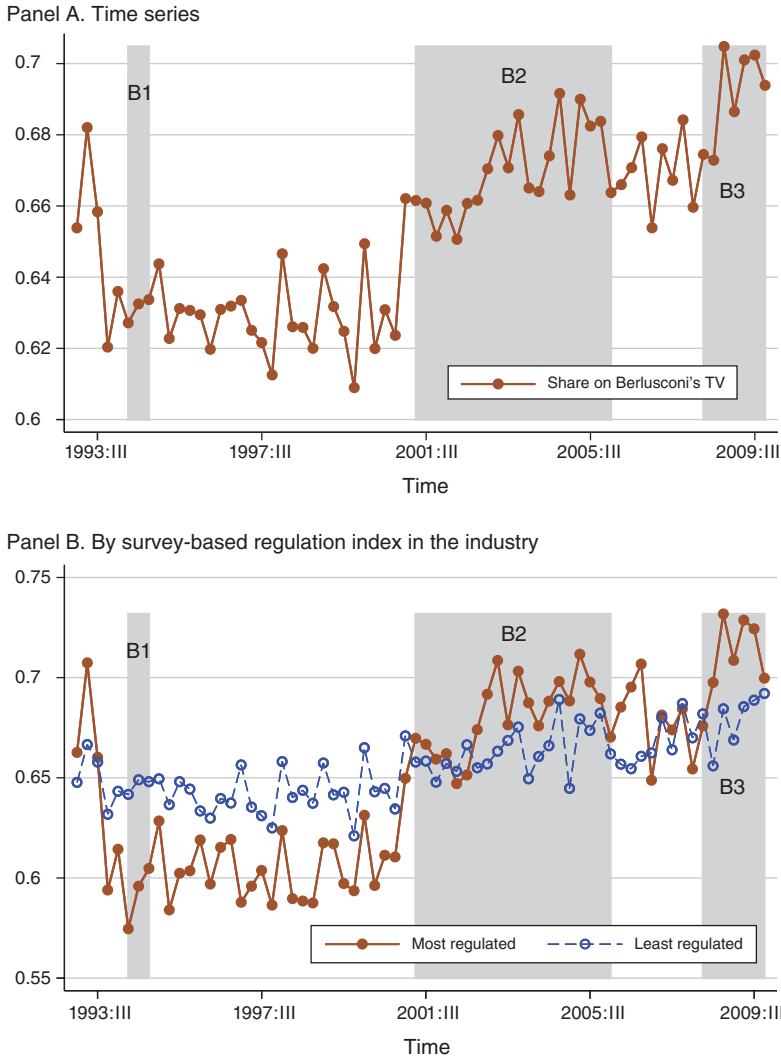


FIGURE 4. SHARE OF ADVERTISING ON BERLUSCONI'S TELEVISIONS, DESEASONALIZED

Notes: Panel A plots the residual of the share of advertising on Berlusconi's television after controlling for four quarter fixed effects to de-seasonalize the series. Panel B plots the same series separately for industries high or low in regulation, using the regulation index in Table 2. The series in both figures are weighted by the total spending on TV advertising.

we would expect the increase in advertising to increase toward the end and even after the time that Berlusconi is in power, unlike what we see in Figure 4, panel A.

The figures are suggestive of a sizeable effect, but they do not control for the audience share: it is possible that the shifts in advertising shares correspond to changes in the relative attractiveness of advertising. In Table 1, we thus estimate the model

$$(3) \quad s_{iqt} = \alpha_i + \beta d_{Bqt} + \Gamma \mathbf{X}_{qt} + \delta_q + \varepsilon_{iqt},$$

TABLE 1—AD SPENDING AND BERLUSCONI GOVERNMENTS: TIME SERIES

Dependent variable:	Share spent on Berlusconi's TV over spending on Berlusconi + public TV			Share spent on Berlusconi's TV and press over total ad spending		
	(1)	(2)	(3)	(4)	(5)	(6)
Berlusconi in power	0.026*** (0.007)	0.015*** (0.004)		0.015** (0.006)	0.018*** (0.004)	
1st Berlusconi government (1994)			-0.003 (0.009)			0.014** (0.007)
2nd Berlusconi government (2001–2006)			0.019*** (0.005)			0.023*** (0.005)
3rd Berlusconi government (2008–2009)			0.014* (0.007)			-0.007 (0.005)
Audience share Mediaset	0.649*** (0.207)	0.236*** (0.079)	0.245*** (0.077)	0.061 (0.196)	0.089 (0.090)	0.055 (0.088)
Observations	1,496	1,496	1,496	1,496	1,496	1,496
R^2	0.70	0.80	0.80	0.86	0.92	0.93
Mean of dependent variable	0.68	0.68	0.68	0.44	0.44	0.44
Effect size (percent of mean)	3.8%	2.3%		3.3%	4%	
Sector fixed effects	X	X	X	X	X	X
Calendar quarter fixed effects	X	X	X	X	X	X
Sector-specific linear trend		X	X		X	X

Notes: Each observation is a sector \times quarter-year. The sample includes 22 sectors over the years 1993–2009. Weighted least squares estimates, using as weights ad spending on Berlusconi + public TV for columns 1–3 and total ad spending for columns 4–6. Standard errors clustered by sector in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

where s_{iqt} is the share of advertising spending of sector i in quarter q of year t in Berlusconi's media over the total spending in the relevant media. In columns 1–3 we focus on television, while in columns 4–6 we expand the analysis to include the print media. The key parameter, β , captures the average difference in advertising share when Berlusconi is in power ($d_B = 1$). In all specifications we control for sector fixed effects α_i , calendar quarter fixed effects δ_q , and the Mediaset audience \mathbf{X}_{qt} . In addition, in columns 2–3 and 5–6 we also control for sector-specific linear trends.²¹ The observations are weighted by the total spending in that sector on TV (columns 1–3) and all media (columns 4–6), and the standard errors are clustered at the sector level, allowing for arbitrary correlation within a sector.

The results indicate a clear impact of the Berlusconi governments on advertising revenue for Mediaset. After controlling for linear time trends (column 2), the share of television advertising expenditure captured by Mediaset increases by 1.5 percentage points (a 2.3 percent increase) when Berlusconi is in power, compared to when he is not. These results hold after controlling for the audience measure which, as expected, is strongly correlated with the share of TV ads. When we consider separately the three Berlusconi governments (column 3), consistent with the graphical

²¹In this time-series specification, the results are the same if we include linear time trends that are not sector-specific.

evidence, we find statistical evidence of an effect for both the second and third government, but not the first. In columns 4–6, we show that the results are similar for the combined advertising on the television and printed press. In summary, both the graphical evidence and the time-series regressions support Proposition 3.

Spending by Regulation, Survey Measure.—These results provide evidence of market-based lobbying, with firms shifting advertising toward Berlusconi's media holdings when he is in power. We now test the prediction (Proposition 4) that the effect should be larger for high-regulation sectors. An advantage of this second prediction is that it is robust to any time series shift since it is identified by differential shifts across sectors.

In Figure 4, panel B we split the plot of advertising shares by the median industry level of regulation using the survey measure (corresponding to the split in Table 1). Firms in high-regulation industries experience upward shifts in advertising shares during all three Berlusconi governments, compared to firms in low-regulation industries. Again, the timing lines up well with the government changes. In Table 2, we estimate the difference-in-differences specification

$$(4) \quad s_{iqt} = \alpha_i + \beta d_{Bqt} + \zeta d_{Bqt} \times r_i + \Gamma \mathbf{X}_{qt} + \delta_q + \varepsilon_{iqt}.$$

The focus is on coefficient ζ on the interaction between the indicator for Berlusconi in power (d_B) and the regulation variable (r_i). The clustering and weighting is as in Table 1.

The estimates first control for audience, sector, and calendar quarter fixed effects (column 1) and then in addition for 68 quarter-year fixed effects (column 2). By including quarter-year fixed effects, this latter specification controls for any time-series pattern due to, for example, business cycles, and, hence, the Berlusconi indicator and the audience share are absorbed by the full time controls. Further, we add sector-specific linear time trends (column 3). Throughout these specifications, the effect of Berlusconi coming to power is larger for sectors with larger regulations scores, a result that is significant even in the most stringent specification. We obtain similar results using an above-median indicator for regulation instead of the continuous measure (column 4). The results hold when including also spending on the press (columns 5–8).

In Table 2, we categorize firms into levels of regulation using the survey measure. We now present disaggregate results by sector so as to both provide evidence on which sectors are driving the results, and to allow potentially for different groupings. We run a specification as in (4), but instead of using the regulation measure r , we use a full set of fixed effects for all the sectors. The specification includes sector fixed effects, calendar quarter fixed effects, and sector-specific time trends, as in column 2 of Table 1. In Figure 5, we plot the estimated coefficients, with the sectors ranked by the survey measure. The figure shows a clear monotonic pattern: the effect is larger for sectors rated as more regulated. While no sector alone is driving the results, the biggest change in advertising when Berlusconi comes to power is for the telecommunication and finance and insurance industries. For telecommunications, the importance of regulated licences is obvious, but regulation is also critical

TABLE 2—AD SPENDING AND BERLUSCONI GOVERNMENTS: BY SURVEY-BASED REGULATION PROXY

Dependent variable:	Share spent on Berlusconi's TV over spending on Berlusconi + public TV				Share spent on Berlusconi's TV and press over total ad spending			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Berlusconi in power × Survey regulation score	0.016*** (0.004)	0.017*** (0.004)	0.008*** (0.002)		0.018*** (0.004)	0.018*** (0.004)	0.007** (0.003)	
Berlusconi in power × High regulation				0.020** (0.008)				0.015* (0.009)
Berlusconi in power	-0.055*** (0.018)				-0.075*** (0.019)			
Audience share Mediaset	0.667*** (0.215)				0.074 (0.201)			
Observations	1,496	1,496	1,496	1,496	1,496	1,496	1,496	1,496
R ²	0.72	0.76	0.82	0.82	0.87	0.88	0.93	0.93
Survey-based measure of regulation		Continuous regulation score from survey responses		Above-median indicator		Continuous regulation score from survey responses		Above-median indicator
Sector fixed effects	X	X	X	X	X	X	X	X
Calendar quarter fixed effects	X				X			
Quarter-year fixed effects		X	X	X		X	X	X
Sector-specific linear trend			X	X			X	X

Notes: Each observation is a sector × quarter-year. The sample includes 22 sectors over the years 1993–2009. Weighted least squares estimates, using as weights ad spending on Berlusconi + public TV for columns 1–4 and total ad spending for columns 5–8. Notice that in columns 2–4 and 6–8, the indicator for Berlusconi in power and the audience share controls are absorbed by the quarter-year fixed effects. The regulation score comes from a survey of economists (see Table 1) and is used as a continuous variable in columns 1–3 and 5–7. In columns 4 and 8, the high regulation measure is an indicator variable that takes value one for sectors with regulation score above median and zero otherwise. Standard errors clustered by sector in parentheses.

- ***Significant at the 1 percent level.
- **Significant at the 5 percent level.
- *Significant at the 10 percent level.

for the finance industry, especially as legislation created highly-regulated private pension plans.

Figure 5 also allows for a different test of Proposition 4, based on a count of the number of sectors that experience an increase (as opposed to a decrease) in spending with Berlusconi in power. Of the industries that we code as more regulated according to the survey-based measure, 11 out of 11 experience increases in spending. Among the remaining ones, instead, we observe 6 increases out of 10, a much more muted pattern. As depicted in online Appendix Figure 3, a very similar pattern emerges when using the crowd-sourced measure of regulation (in logs).²²

Spending by Regulation, Crowd-Sourced Measure.—In the benchmark results, we use survey responses by experts to identify the degree of regulation in a sector. As a second, auxiliary measure we employ a crowd-sourced measure constructed with Internet searches of a sector name combined with words indicating regulation (details are in Section II).

²²Our predictions imply that the relative increase in the Mediaset advertising share is larger for regulated firms. In online Appendix Figure 4, we plot the corresponding figure for the share of advertising on Berlusconi's TV and printed press.

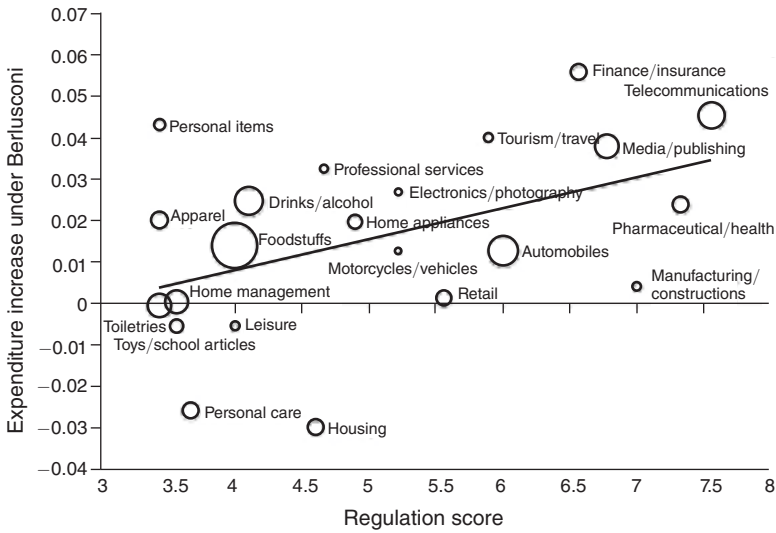


FIGURE 5. SECTOR-BY-SECTOR ESTIMATES OF CHANGE IN SHARE OF ADVERTISING SPENDING ON TELEVISION WITH BERLUSCONI IN POWER (by survey-based regulation score)

Notes: The figure plots the coefficients from a regression of the share of spending on Berlusconi’s television channels (relative to total spending on TV) on the interactions between sectors dummies and a dummy for Berlusconi in power against the survey-based measure of regulation. Controls include: sector fixed effects, calendar quarter fixed effects, and sector-specific time trends, as in column 2 of Table 1. Each circle’s center represents the corresponding sector’s coefficient, while the circle’s area is proportional to the sector’s average total spending (used as weight in the regression). The line represents the linear fit. For 11 out of 11 sectors with above-median regulation score the expenditure share on Mediaset is higher when Berlusconi is in power. This is the case, instead, for only 6 out of 11 sectors with below-median regulation score.

In Table 3, we re-estimate specification (4) with the full set of controls using the crowd-sourced regulation measure that employs the sector name (columns 1 and 2) and the measure that employs the names of the top-5-spending firms in a sector (columns 3 and 4). In both specifications, we find a larger impact of Berlusconi in power on the advertising share for more regulated industries. The effect is statistically significant using the continuous regulation variable, and directionally consistent but not significant using a median split. We find similar, if less statistically significant, results for the measure of spending that includes the press (columns 5–8).

Online Appendix Figures 5a–b present the parallel graphical evidence for the measure of television spending using the median split of the industries by the crowd-sourced measure of regulation. As in the main results, the increases in advertising spending are larger for the industries classified as more regulated during the second and third Berlusconi governments.

Audience.—A possible alternative explanation for our results involves changes in the economic benefit from advertising on his media when Berlusconi comes to power. In particular, if the audience changes in a way that is favorable from the perspective of advertisers, there is an incentive to shift advertising to Mediaset that does not involve market-based lobbying. A first possibility is that the overall Mediaset audience increases when Berlusconi comes to power. However, this is not the case,

TABLE 3—AD SPENDING AND BERLUSCONI GOVERNMENTS: BY CROWD-SOURCED REGULATION PROXY

Dependent variable:	Share spent on Berlusconi's TV over spending on Berlusconi + public TV				Share spent on Berlusconi's TV and press over total ad spending			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Berlusconi in power × Crowd-sourced regulation score	0.003** (0.001)		0.005** (0.002)		0.003 (0.002)		0.004* (0.002)	
Berlusconi in power × High regulation indicator		0.01 (0.009)		0.013 (0.009)		0.007 (0.009)		0.01 (0.009)
Crowd-sourced measure of regulation	Uses sector name		Uses names of top-5 spending firms		Uses sector name		Uses names of top-5 spending firms	
Observations	1,496	1,496	1,496	1,496	1,496	1,496	1,496	1,496
R ²	0.81	0.81	0.82	0.81	0.93	0.93	0.93	0.93
Sector fixed effects	X	X	X	X	X	X	X	X
Quarter-year fixed effects	X	X	X	X	X	X	X	X
Sector-specific linear trend	X	X	X	X	X	X	X	X

Notes: Each observation is a sector × quarter-year. The sample includes 22 sectors over the years 1993–2009. Weighted least squares estimates, using as weights ad spending on Berlusconi + public TV for columns 1–4 and total ad spending for columns 5–8. Notice that the indicator for Berlusconi in power and the audience share controls are absorbed by the quarter-year fixed effects. The regulation score is a crowd-sourced measure using the number of hits to a search with a sector name (or the name of top firms in a sector) and names for regulation. The variables are used as a continuous variable in columns 1, 3, 5, and 7, while in the other columns we use an above-media indicator. Standard errors clustered by sector in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

as the audience is relatively stable over time (Figure 6, panel A). Moreover, note that the preceding analysis controls for the size of the audience.

In addition to size, however, Mediaset channels may also become more attractive to advertisers when Berlusconi is in power if there is a change in the composition of the audience.²³ To address this concern, we use audience share data disaggregated by different demographic groups available for the years 2001–2009, which include two of the Berlusconi governments. As online Appendix Figures 6a–c show, there are no significant differences in the audience composition when Berlusconi is in power.

Further, in Table 4 we examine the impact of controlling for demographic-specific audiences. Note that the magnitude of the effect is somewhat smaller when using this shorter time period, falling from 0.015 in column 2 of Table 1 to 0.009 with a standard error of 0.004 (not reported here). Columns 1 to 3 report the time-series evidence using the specification with the full set of controls. As shown, the results are largely unaffected when controlling for audience rates disaggregated by gender (column 1), age (column 2), and education (column 3). Thus, the shift in advertising

²³Durante and Knight (2012) document that conservatives are more likely to watch news on public television when Berlusconi comes to power. For two reasons, this does not necessarily imply a change in the composition of the audience in terms of gender, age, and education. First, Durante and Knight (2012) focus on news programming, while here we examine a more complete set of television programming. Second, it is not clear that there is a strong link between these demographics and political ideology.

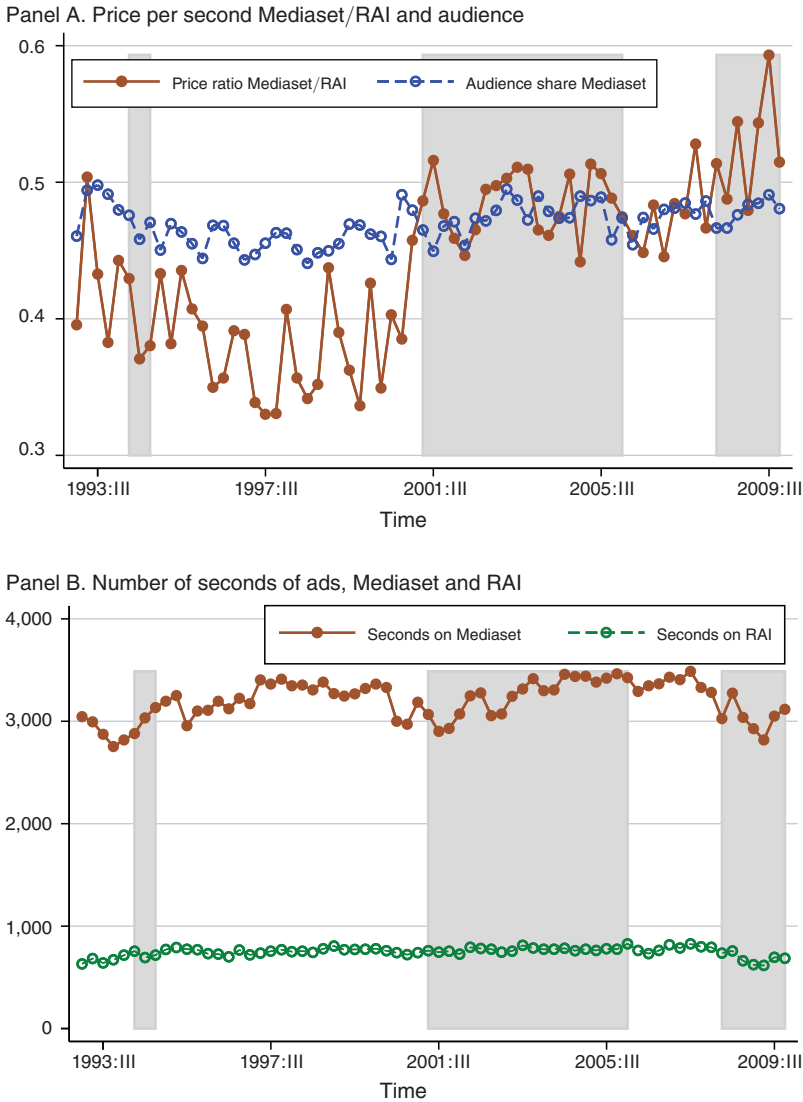


FIGURE 6. PRICE PER SECOND MEDIASET/RAI AND AUDIENCE

Notes: Price ratio is the ratio of the average price per second on Mediaset over that on RAI. Audience share is the ratio of Mediaset audience rate over (Mediaset + RAI) audience rate. Seconds expressed in '000s. As in Figure 4, the series are de-seasonalized.

spending toward Mediaset when Berlusconi comes to power does not appear to be driven by compositional changes in the audience.

We then examine, in columns 4 through 7, the role of audience in the results by regulation, allowing for the audience variables to have a differential effect by the regulation level in a sector. Note again that the magnitude of the effect is somewhat smaller when using this shorter time period, falling from 0.008 in column 3 of Table 2 to 0.005 with a standard error of 0.002 (not reported here). As shown, the results are largely unaffected when including as controls interaction terms between the regulation score and the overall audience (column 4), as well as the demographic-specific

TABLE 4—AD SPENDING AND BERLUSCONI GOVERNMENTS: AUDIENCE CONTROLS (2001–2009)

Dependent variable:	Share spent on Berlusconi's TV over spending on Berlusconi + public TV						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Berlusconi in power	0.012*** (0.004)	0.010*** (0.003)	0.009** (0.004)				
Berlusconi in power × Survey regulation score				0.004** (0.002)	0.006*** (0.002)	0.004*** (0.002)	0.006*** (0.002)
Variable	Interaction of the regulation score with "Variable"						
Audience share Mediaset Overall				0.087 (0.182)			
Audience share Mediaset Men	0.639*** (0.200)				0.399** (0.152)		
Audience share Mediaset Women	-0.266 (0.208)				-0.314 (0.241)		
Audience share Mediaset Young (<=24-year-old)		-0.087 (0.220)				0.248** (0.095)	
Audience share Mediaset Adults (>24 and <=54 yr)		0.344 (0.241)				-0.167 (0.168)	
Audience share Mediaset Old (>=55-year-old)		0.244 (0.174)				-0.101 (0.205)	
Audience share Mediaset Less than high school			0.366* (0.193)				-0.301 (0.181)
Audience share Mediaset High school and college			0.086 (0.212)				0.315*** (0.109)
Observations	792	792	792	792	792	792	792
R ²	0.83	0.83	0.83	0.84	0.84	0.84	0.84
Sample period	Years 2001–2009						
Sector fixed effects	X	X	X	X	X	X	X
Calendar quarter fixed effects	X	X	X				
Quarter-year fixed effects				X	X	X	X
Sector-specific linear trend	X	X	X	X	X	X	X

Notes: Each observation is a sector × quarter-year. The sample includes 22 sectors over the years 2001–2009. The shorter year span is due to the availability of demographic-specific audience controls only for this period. Weighted least squares estimates, using as weights ad spending on Berlusconi + public TV. Note that the standalone variable “Berlusconi in power” and the standalone audience shares are absorbed by the quarter-year fixed effects. Standard errors clustered by sector are in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

audience shares (columns 5–7).²⁴ The results are similar if we use as the dependent variable Mediaset’s share of total ad spending for TV and printed press combined. The shift in ad spending by regulated firms toward Mediaset does not appear to be driven by changes in the attractiveness of those channels during the periods when he was prime minister.

Quantity versus Price Effects.—In Table 5, we decompose the main results along two dimensions. First, we consider the impact on both price and quantity (i.e., seconds) of advertising to test Propositions 1 and 2. Second, we consider a further cut

²⁴We also replicated column 4 using the 1993–2009 sample, given that total Mediaset audience is available for the entire period, with very similar estimates to the benchmark ones.

TABLE 5—DECOMPOSITION: QUANTITY VERSUS PRICE AND PEAK VERSUS OFF-PEAK MINUTES

Dependent variable:	Share spending on Berlusconi's TV			Share seconds on Berlusconi's TV		
	All times (1)	Peak hours (2)	Off-peak (3)	All times (4)	Peak hours (5)	Off-peak (6)
<i>Panel A. Time series specification: Spending and seconds</i>						
Berlusconi in power	0.015*** (0.004)	0.016*** (0.005)	0.012** (0.005)	0.003 (0.003)	0.007 (0.004)	0.000 (0.003)
Observations	1,496	1,495	1,495	1,496	1,495	1,495
R ²	0.80	0.73	0.78	0.84	0.76	0.80
Mean of dep. var.	0.705	0.674	0.751	0.807	0.717	0.856
Dependent variable:	Share spending on Berlusconi's TV			Share seconds on Berlusconi's TV		
	All times (1)	Peak hours (2)	Off-peak (3)	All times (4)	Peak hours (5)	Off-peak (6)
<i>Panel B. Difference-in-differences with respect to regulation (survey-based measure): Spending and seconds</i>						
Berlusconi in power × Regulation score	0.008*** (0.002)	0.010*** (0.002)	0.004 (0.003)	0.003 (0.002)	0.007*** (0.002)	0.002 (0.002)
Observations	1,496	1,495	1,495	1,496	1,495	1,495
R ²	0.82	0.76	0.81	0.85	0.77	0.81
Dependent variable:	Average price per second		Difference in price per second (Mediaset-RAI)			
	Berlusconi's TV	Public TV (RAI)	All times	Peak hours	Off-peak	
<i>Panel C. Time series specification: Price</i>						
Berlusconi in power	8.955*** (2.288)	-6.015 (3.511)	14.973*** (3.879)	13.984*** (4.267)	9.010*** (2.749)	
Observations	1,496	1,490	1,490	1,479	1,480	
R ²	0.88	0.74	0.57	0.52	0.42	
Mean of dep. var.	182.9	341.9	-159.9	-97.4	-115.5	
Dependent variable:	Average price per second in euros		Difference in price per second (Mediaset-RAI)			
	Berlusconi's TV	Public TV (RAI)	All times	Peak hours	Off-peak	
<i>Panel D. Difference-in-differences with respect to regulation (survey-based measure): Price</i>						
Berlusconi in power × Regulation score	3.014** (1.393)	-4.210* (2.174)	7.203*** (2.150)	7.454*** (2.518)	2.472 (1.778)	
Observations	1,496	1,490	1,490	1,479	1,480	
R ²	0.92	0.83	0.68	0.64	0.54	

Notes: Each observation is a sector × quarter-year. The sample includes 22 sectors over the years 1993–2009. Weighted least squares estimates, using as weight ad spending on Berlusconi × public TV. All regressions include sector and calendar quarter fixed effects, a control for the Mediaset audience share, as well as sector-specific linear trends. The specifications in panels B and D also include quarter-year fixed effects (which absorb the indicator for Berlusconi in power and the audience control). Standard errors clustered by sector in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

of the results that we do not model formally: peak and off-peak advertising. As is well-known, advertising in peak hours has a higher price since the audience is larger.

We first examine the time-series results with the full controls. As shown in panel A, considering first the result on expenditure shares (column 1 of panel A),

the increase in expenditure when Berlusconi is in power is present both for peak hours (column 2 of panel A) and for off-peak hours (column 3 of panel A), though it is larger during peak hours. Turning to quantities, there is no shift in the share of seconds of advertising when Berlusconi comes to power, whether one considers the peak or off-peak hours (columns 4–6 of panel A). This result is consistent with a fixed supply of the number of seconds, as assumed in the model. This pattern is also visible in Figure 6, panel B: the number of seconds of advertising (in thousands) in the private and public network is flat over time.

As shown in panel C, there is instead a sizeable effect on prices. When Berlusconi comes to power, prices on Berlusconi's televisions increases (column 1 of panel C), while the price on the public network decreases, though the latter result is not statistically significant (column 2 of panel C).²⁵ The same result is visible in Figure 6, panel A. These results, thus, are consistent with Proposition 1. In the final three columns, we consider this price result separately for peak and off-peak hours using as a summary measure the difference in prices per second on Mediaset versus the price on RAI. The prices increase for both peak hours and off-peak hours (columns 4 and 5 of panel C).

In panels B and D, we investigate this decomposition into prices and quantities according to the survey-based regulation measure. Interestingly, the difference-in-differences results on expenditure shares are largely driven by shifts in peak hours (column 2 of panel B), and the results for off-peak hours are smaller and not statistically significant (column 3 of panel B). We then test Proposition 2, which predicted that the shift to Berlusconi's network for regulated sectors should take place along the seconds margins. We find some support for this prediction. In the aggregate, we find qualitative evidence of such shift in seconds toward the more regulated sectors (columns 4 of panel B), but the shift is not statistically significant.²⁶ The shift is statistically significant when considering just peak hours (column 5 of panel B). Interestingly, the peak seconds are much more expensive and, hence, are responsible for a large share of the profits.

Turning to prices, when Berlusconi is in power the price of advertising increases more for more regulated companies (column 1 of panel D).²⁷ At first, this result may appear puzzling since, as noted above, our price measure is unlikely to include sector- or firm-specific discounts. The patterns on seconds, however, suggests an explanation. Similar to the observed shift of seconds for regulated firms toward peak hours (column 5 of panel B), there is likely a further shift *within* peak hours (and within off peak hours) toward more valuable programming times.

In sum, the time series patterns for price and quantities are largely as predicted by the model. In the cross section, we observe evidence of reallocation of seconds as predicted, significantly so for peak hours. Furthermore, there is evidence of a further shift of regulated industries toward pricier advertisements, leading to higher average prices for these firms.

²⁵ In levels, the average price per second is higher on RAI than on Mediaset due to the binding ceiling on the number of seconds in public channels.

²⁶ See also online Appendix Figure 7.

²⁷ See also online Appendix Figure 8.

TABLE 6—IMPLIED POLITICAL RETURNS AND PROFITS FROM QUID-PRO-QUO

<i>Panel A. Implied political returns from regulation for firms</i>				
	Berlusconi's TV	Public TV	Difference	
Row 1	Change in price in euros per second when Berlusconi is in power (Table 5, panel C, columns 1–3)	8.955 (2.288)***	−6.015 (3.511)	14.973 (3.879)***
Row 2	Fraction of advertisements placed by regulated firms (r) when Berlusconi is not in power			0.3663 (0.008)
Row 3	Implied political benefit in euros per second b : Row 1 divided by row 2			40.876 (10.630)***
Row 4	Implied benefit (b): Row 3 times 5.2m seconds of advertising in a year by regulated industries			Per year: €212m (55m)***
Row 5	Implied annual benefit by industry (b): Row 3 times seconds of advertising in a year for the sector			Over 9 yrs: €1.9bn (497m)***
	Telecommunications: €37m			Tourism/travel: €5m
	Pharmaceutical/health: €20m			Retail: €37m
	Manufacturing/construction: €3m			Electronics: €3m
	Media/publishing: €47m			Motorcycles/vehicles: €1m
	Finance/insurance: €12m			Home appliances: €12m
	Automobiles: €34m			
<i>Panel B. Mediaset profits due to indirect lobbying channel</i>				
	Berlusconi's TV	Public TV	Difference	
Row 6	Total annual number of seconds of advertisements	13.7 million seconds	3.6 million seconds	
Row 7	Implied annual revenue (and profit) change with Berlusconi in power (row 6 times row 1)	€123m (31m)***	−€22m (13m)	€144m
Row 8	Cumulative revenue (and profit) change from Berlusconi in power over 9 years of Berlusconi governments	€1.1 billion (282m)***	−€194m (113m)	€1.3 billion
Row 9	Implied percent change in profits with Berlusconi in power (assuming 20 percent margin)	+25 percent	−9 percent	
Row 10	Implied percent of market capitalization of Mediaset in 1997 (€5.3 billion)	21 percent		

Notes: Table reports implied annual benefit of regulation and revenue shifts due to the indirect lobbying channel. In parentheses are standard errors for the estimates, obtained using the Delta method where appropriate.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Implications.—As noted in the model, the price on Mediaset, relative to the price on RAI, should rise by approximately the product of the political benefits (b) and the fraction of regulated firms (r) when Berlusconi comes to power. Using the actual price changes and an estimate of r , we can thus infer a value for the political returns from market-based lobbying, b .

As noted in the rightmost column of Table 6, the price of an advertisement on Mediaset, relative to RAI, rises by €15 per second. Further, we estimate r as the fraction of advertisements placed by regulated firms when the Left is in power: $\hat{r} = 0.3663$. Thus, the estimated political benefit associated with a second of advertising on Mediaset is €40.8 per second (row 3 of Table 6). Given that the average price of an advertisement is €182 per second, we infer that over 22 percent of expenditures by regulated firms on Mediaset when Berlusconi is in power reflects perceived political benefits. With 5.2 million seconds of advertisements on Mediaset annually by regulated firms, the estimated political benefits equal €212 million

annually, and €1.9 billion over the roughly 9 years that Berlusconi has been in office over the past 2 decades (row 4). This is heavily concentrated in five industries: automobiles, retail, pharmaceuticals, media/publishing, and telecommunications.²⁸

We note here two limitations of this calculation. First, this is based upon the assumption of a perfectly inelastic supply curve. While we believe that this assumption is realistic in our setting, as documented in Figure 6B, note that an elastic supply curve would lead to smaller price changes. In this case, our estimate of the political returns would be understated by the price change.²⁹ Second, this approximation is based upon small values of b , which is at odds with our finding that this benefit is large in practice. While the sign of any bias associated with this approximation is unclear, we do note that Proposition 1 predicts that the political benefits of advertising are at least as large as the price change.³⁰ Thus, we can interpret the price increase of €15 per second as a lower bound on political benefits associated with advertising on Mediaset.

Despite these limitations, these implied estimates of the returns to lobbying are unique in the literature and are enabled by the simple supply-demand structure of the industry under the assumption that the price of advertisements is determined by market clearing. In contrast, the literature on campaign contributions typically has a hard time pinning down a value of the benefits to the firms contributing. The large magnitudes implied in the above calculations stress the potential for large policy distortions.³¹

We also calculate the implications for the profits of Mediaset and RAI. Given the fixed supply of seconds, the change in revenues is proportional to the change in prices. Averaging across the years in our data, 13.7 million seconds of advertisements were aired on Mediaset and 3.6 million seconds were aired on RAI (row 6 of Table 6). Given the estimated impact on prices (row 1), we compute that annual revenues on Mediaset increased by €123 million and annual revenues on RAI fell by €22 million due to the conflict of interest. Over nine years with Berlusconi in office, the cumulative increase of revenues for Mediaset due to the indirect lobbying channel is €1.1 billion, and the decline of revenues for RAI is €194 million. If we assume a profit margin of 20 percent, this translates into a profit increase of 25 percent on Mediaset and a profit decline of 9 percent on RAI. An alternative benchmark is with respect to the market capitalization of Mediaset (€5.3 billion in 1997), implying that the (undiscounted) indirect lobbying profits are 21 percent of the value of Mediaset.

Robustness Checks.—Returning to the main specifications on advertising shares, we examine the robustness in Table 7. Column 1 reproduces our benchmark estimates. Starting from the time series analysis (panel A), the results are unaffected by either the addition of quadratic, as opposed to linear, time trends (column 2), or by clustering the standard errors by year, which allows for cross-industry correlation

²⁸The sector-level computation is based on variation in the annual number of seconds of advertisements, assuming a constant per-second value of the benefits b .

²⁹That is, with an elastic supply curve, $p_B^*(b) - p_B^*(0) < br$, and thus $b > [p_B^*(b) - p_B^*(0)]/r$.

³⁰That is, $b > \Delta^*(b) - \Delta^*(0)$.

³¹As in most of the lobbying literature, we do not have systematic evidence on the returns to lobbying to cross-check our estimates.

TABLE 7—ROBUSTNESS CHECKS

Dependent variable: Share spent on Berlusconi's TV over spending on Berlusconi + public TV								
Robustness check:	Benchmark specification	Quadratic sector-specific trend	S.e.s clustered by year	Dep. var. includes spending in La7 TV in denominator	Unweighted regressions	Unweighted regressions (excludes bottom 20% of spending)	Forward-looking measure of Berlusconi in power	Both measures of Berlusconi in power
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A. Time-series specification</i>								
Indicator for Berlusconi in power	0.015*** (0.004)	0.015*** (0.004)	0.015*** (0.004)	0.018*** (0.004)	0.011** (0.005)	0.010* (0.005)		0.023** (0.009)
Expected probability of Berlusconi in power							0.015*** (0.004)	-0.014 (0.010)
Observations	1,496	1,496	1,496	1,496	1,496	1,196	1,496	1,496
R ²	0.80	0.81	0.80	0.79	0.59	0.76	0.80	0.80
<i>Panel B. Difference-in-differences with respect to regulation (survey-based measure)</i>								
Berlusconi in power × Reg. score	0.008*** (0.002)	0.007*** (0.002)	0.008** (0.003)	0.008*** (0.002)	0.005 (0.004)	0.008** (0.003)		0.015*** (0.004)
Exp. prob. Berl. in power × Reg. score							0.006** (0.002)	-0.013*** (0.004)
Observations	1,496	1,496	1,496	1,496	1,496	1,196	1,496	1,496
R ²	0.82	0.83	0.82	0.82	0.61	0.78	0.82	0.82

Notes: Each observation is a sector × quarter-year. The sample includes 22 sectors over the years 1993–2009. Weighted least squares estimates, using as weight ad spending on Berlusconi + public TV for all specifications except for columns 5 and 6, which are unweighted. All regressions include sector and calendar quarter fixed effects, a control for the Mediaset audience share, as well as sector-specific linear trends. The specifications in panel B also include quarter-year fixed effects. Standard errors in parentheses clustered by sector except in column 4.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

(column 3). The results are also very similar if we include spending in the other (smaller) private network, La7 (column 4). The estimates are somewhat smaller when the regression is unweighted, implying that the advertising response is larger in the high-spending sectors (columns 5 and 6).

Columns 7 and 8 present a more substantive variation. While all the specifications so far have considered the impact of the contemporaneous presence of Berlusconi in power, the expected duration in power in the near future could be important too. Consider, for example, that in 2005 Berlusconi, while in power, was quite unpopular. In anticipation of him likely losing the 2006 election, firms may have engaged less in market-based lobbying given the reduced expected future returns to spending. We thus re-estimate the results with the forward-looking measure of the expected discounted probability that Berlusconi is in power, plotted in Figure 3 and described in Section II. The results in column 7 are similar to our benchmark estimates. When using both the contemporaneous and the forward-looking measure together (column 8), however, the results load on the contemporaneous one. This result is

consistent with a relatively myopic behavior of advertisers, and with uncertainty in the ability to establish medium-term returns of future favors in exchange for current advertising.

In panel B, we consider the robustness checks for the regulation difference-in-differences specification. The benchmark results are essentially unaffected by the sector-specific quadratic control for trends (column 2), the clustering of standard errors by year (column 3), and the inclusion of La7 in the denominator of spending (column 4). The results are smaller and not significant when using the unweighted specification (column 5), though they hold in an unweighted specification when excluding the bottom 20 percent spenders (column 6). Finally, we find an effect of the forward-looking measure (column 7) when considered alone, but it is the contemporaneous measure which loads positively when both are included (column 8).

Firm-Level Analysis.—While the analysis so far used the sector-level data, we have also analyzed firm-level advertising data, and the full details of this analysis are available in the online Appendix. There are three important results from this firm-level analysis. First, these data allow us to test for a possible interpretation of the results. In particular, the sector-level could be due to a compositional shift within a sector to firms that advertise more on Mediaset, as opposed to a shift occurring *within* a firm. Using the firm-level data, we find results that are nearly identical to the ones in the benchmark specifications, indicating that the results are not due to a compositional shift. Second, we use these data to investigate the extensive margin, whether or not to advertise on Berlusconi's network. We find only limited evidence in favor of the extensive margin, and, overall, it appears that the observed shifts in revenue are for firms that are already advertising on both networks, and are shifting the share. Third, we use the firm-level data to investigate heterogeneity along several dimensions, including overall advertising spending, firm size, profitability, and domestic firms. While we find some evidence in favor of the shift being concentrated among firms with large advertising budgets, we do not find statistically significant differences for the other firm characteristics.

IV. Conclusion

A vast literature has investigated the lobbying process by third parties, and especially firms. A separate literature has emphasized the distortions associated with the confluence of business interests and political powers, as in the case of businessmen-politicians.

This paper documents an important link between the two literatures. In the presence of businessmen-politicians, the lobbying process can take an indirect, market-based route: Firms hoping for regulatory favors may lobby the politician through business purchases towards the firm controlled by the politician, who benefits from the additional revenue. We provide evidence consistent with this channel in Italy, where we exploit the detailed advertising data, the frequent switches in power, and variation in propensity for regulation. We show that the magnitudes of this effect are very sizeable, in the order of billions of euros. Our results suggest a further rationale for rules dictating a separation between business and political interests.

While the paper has focused on a specific setting—advertising markets in Italy—we stress that the channel at hand applies to all cases in which there is a confluence between business and political decision-making. In the classical Suharto paper by Fisman (2001), for example, the returns to firms close to the dictator surely reflect the traditional favoritism channel, but likely also capture the indirect lobbying channel highlighted in this paper. To start with, our findings are relevant in other advertising markets in countries where media outlets are owned by powerful families, which, as Djankov et al. (2003) document, is a common situation. We hope that future research will investigate more such settings.

APPENDIX

TABLE A1—SUMMARY STATISTICS

	Full sample Number of sectors = 22		High regulation Number of sectors = 11		Low regulation Number of sectors = 11	
	Mean	SD	Mean	SD	Mean	SD
<i>Any spending on:</i>						
Berlusconi's TV and press	1	0	1	0	1	0
Berlusconi's TV	1	0	1	0	1	0
<i>Share spent on:</i>						
Berlusconi's TV over Berlusconi + public TV spending	0.676	0.096	0.662	0.108	0.685	0.085
Berlusconi's TV and press over total ad spending	0.441	0.137	0.379	0.123	0.493	0.126
Berlusconi's TV over total TV spending	0.646	0.089	0.631	0.098	0.657	0.081
Audience share Mediaset	0.484	0.015	0.484	0.014	0.483	0.015
Regulation score	5.012	1.392	6.399	0.787	3.872	0.371
High regulation	0.451	0.498	1	0	0	0
Berlusconi in power	0.487	0.500	0.500	0.500	0.476	0.500

Notes: Results weighted using total ad spending, except for the following variables for which total ad spending on Berlusconi + public TV is used: "Berlusconi TV over total TV spending, Berlusconi TV over Berlusconi + public TV spending." The number of observations is as follows: 1,496 for the full sample, 748 for the high regulation subsample, and 748 for the low regulation one.

REFERENCES

- Ansolabehere, Stephen, John M. de Figueiredo, and James M. Snyder, Jr.** 2003. "Why is There so Little Money in U.S. Politics?" *Journal of Economic Perspectives* 17 (1): 105–30.
- Barone, Guglielmo, Francesco D'Acunto, and Gaia Narciso.** 2015. "Telecracy: Testing for Channels of Persuasion." *American Economic Journal: Economic Policy* 7 (2): 30–60.
- Bertrand, Marianne, Matilde Bombardini, and Francesco Trebbi.** 2014. "Is It Whom You Know or What You Know? An Empirical Assessment of the Lobbying Process." *American Economic Review* 104 (12): 3885–3920.
- Blanes i Vidal, Jordi, Mirko Draca, and Christian Fons-Rosen.** 2012. "Revolving Door Lobbyists." *American Economic Review* 102 (7): 3731–48.
- Chiang, Chun-Fang, and Brian Knight.** 2011. "Media Bias and Influence: Evidence from Newspaper Endorsements." *Review of Economic Studies* 78 (3): 795–820.
- Cingano, Federico, and Paolo Pinotti.** 2013. "Politicians at Work: The Private Returns and Social Costs of Political Connections." *Journal of the European Economic Association* 11 (2): 433–65.
- Coulomb, Renaud, and Marc Sangnier.** 2012. "Impacts of Political Majorities on French Firms: Electoral Promises or Friendship Connections?" Paris School of Economics Working Paper 2012-08.

- DellaVigna, Stefano, Ruben Durante, Brian Knight, and Eliana La Ferrara.** 2016. Market-Based Lobbying: Evidence from Advertising Spending in Italy: Dataset." *American Economic Journal: Applied Economics*. <http://dx.doi.org/10.1257/app.20150042>.
- DellaVigna, Stefano, and Ethan Kaplan.** 2007. "The Fox News Effect: Media Bias and Voting." *Quarterly Journal of Economics* 122 (3): 1187–1234.
- Di Tella, Rafael, and Ignacio Franceschelli.** 2011. "Government Advertising and Media Coverage of Corruption Scandals." *American Economic Journal: Applied Economics* 3 (4): 119–51.
- Djankov, Simeon, Caralee McIesh, Tatiana Nenova, and Andrei Shleifer.** 2003. "Who Owns the Media?" *Journal of Law and Economics* 46 (2): 341–83.
- Durante, Ruben, and Brian Knight.** 2012. "Partisan Control, Media Bias, and Viewer Responses: Evidence from Berlusconi's Italy." *Journal of the European Economic Association* 10 (3): 451–81.
- Enikolopov, Ruben, Maria Petrova, and Ekaterina V. Zhuravskaya.** 2011. "Media and Political Persuasion: Evidence from Russia." *American Economic Review* 101 (7): 3253–85.
- Faccio, Mara.** 2006. "Politically Connected Firms." *American Economic Review* 96 (1): 369–86.
- Fisman, David, Raymond Fisman, Julia Galef, Rakesh Khurana, and Yongxiang Wang.** 2012. "Estimating the Value of Connections to Vice-President Cheney." *B. E. Journal of Economic Analysis and Policy* 13 (3): 1–20.
- Fisman, Raymond.** 2001. "Estimating the Value of Political Connections." *American Economic Review* 91 (4): 1095–1102.
- Gentzkow, Matthew, and Jesse Shapiro.** 2010. "What Drives Media Slant? Evidence from U.S. Daily Newspapers." *Econometrica* 78 (1): 35–71.
- George, Lisa, and Joel Waldfogel.** 2006. "The *New York Times* and the Market for Local Newspapers." *American Economic Review* 96 (1): 435–47.
- Groseclose, Tim, and Jeffrey Milyo.** 2005. "A Measure of Media Bias." *Quarterly Journal of Economics* 120 (4): 1191–1237.
- Grossman, Gene M., and Elhanan Helpman.** 2001. *Special Interest Politics*. Cambridge: MIT Press.
- Khwaja, Asim Ijaz, and Atif Mian.** 2005. "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market." *Quarterly Journal of Economics* 120 (4): 1371–1411.
- Knight, Brian.** 2007. "Are Policy Platforms Capitalized into Equity Prices? Evidence from the Bush/Gore 2000 Presidential Election." *Journal of Public Economics* 90 (4–5): 751–73.
- Larcinese, Valentino, Ricardo Puglisi, and James M. Snyder, Jr.** 2011. "Partisan Bias in Economic News: Evidence on the Agenda-Setting Behavior of U.S. Newspapers." *Journal of Public Economics* 95 (9–10): 1178–89.
- Luechinger, Simon, and Christoph Moser.** 2012. "The Value of the Revolving Door: Political Appointees and the Stock Market." Konjunkturforschungsstelle Working Paper 12-310.
- Querubin, Pablo, and James Snyder, Jr.** 2013. "The Control of Politicians in Normal Times and Times of Crisis: Wealth Accumulation by U.S. Congressmen, 1850–1880." *Quarterly Journal of Political Science* 8 (4): 409–50.
- Reuter, Jonathan, and Eric Zitzewitz.** 2006. "Do Ads Influence Editors? Advertising and Bias in the Financial Media." *Quarterly Journal of Economics* 121 (1): 197–227.
- Saiz, Albert, and Uri Simonsohn.** 2013. "Proxying for Unobservable Variables with Internet Document-Frequency." *Journal of the European Economic Association* 11 (1): 137–65.
- Shleifer, Andrei, and Robert Vishny.** 1998. *The Grabbing Hand*. Cambridge: Harvard University Press.
- Strömberg, David.** 2004. "Radio's Impact on Public Spending." *Quarterly Journal of Economics* 119 (1): 189–221.

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