COLLATERAL CENSORSHIP: THEORY AND EVIDENCE FROM VENEZUELA*

DOROTHY KRONICK† JOHN MARSHALL‡

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We develop a model of when governments censor private media outlets. Beyond restricting access to truthful news, vote-maximizing incumbents trade off the electoral cost of taking away popular content against the benefit of inducing favorable news coverage among the censored outlet's competitors. We apply the model to Venezuela, where Hugo Chávez chose not to renew market-leading RCTV's broadcast license. Difference-in-differences estimates reveal that, among voters without cable—who lost access to RCTV—electoral punishment outweighs the persuasive benefits of less exposure to critical news. But newscasts, classified by large language models, show that remaining television stations became more pro-Chávez, likely offsetting voter sanctioning.

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†Goldman School of Public Policy, University of California, Berkeley. Email: kronick@berkeley.edu.

‡Department of Political Science, Columbia University. Email: jm4401@columbia.edu.

1 Introduction

Selective censorship is the new normal in electoral autocracies and backsliding democracies. Rather than invest resources or risk reputation pursuing comprehensive media control (or violent repression) in the style of traditional dictatorships, today's "spin dictators" are deliberately partial (Guriev and Treisman 2022). Vladimir Putin, for example, infamously took over Russia's popular NTV television station but, for a time, left other stations in private hands. Viktor Orban has acquired indirect control of some, but not all, private media outlets in Hungary. A billionaire ally of Narendra Modi, Gautam Adani, recently purchased NDTV, one of India's most prominent anti-government TV channels. Kais Saied shut down the highly rated television station Nessma in Tunisia. Others achieve selective censorship through targeted regulation (e.g. Djankov et al. 2003), channeling lucrative advertising revenues (Di Tella and Franceschelli 2011; Szeidl and Szucs 2021), or bribery (McMillan and Zoido 2004).

These elected autocrats exercise a form of partial control that promotes favorable coverage, but still permits enough truthful reporting to maintain the credible communication and engagement required to sustain support and citizen compliance (e.g. Gehlbach and Sonin 2014; Guriev and Treisman 2020; Knight and Tribin 2019; Shadmehr and Bernhardt 2015). There are thus strong incentives for incumbents seeking to maintain power in weakly institutionalized democracies to engage in this hallmark of contemporary democratic backsliding (Levitsky and Ziblatt 2019). And yet, government control over the media varies considerably, both across and within non-established democracies over time.[1] As our empirical application from Venezuela illustrates, Hugo Chávez tolerated significant criticism of his government—and even support for a coup against him—by mainstream media for seven years.

We develop a theory to illuminate the trade-offs shaping when elected incumbents censor specific private media outlets. Our starting point is a political agency model in which voters seek to retain high-quality incumbents. We further assume that voters also care about the consumption value they receive from entertainment programming and obtaining accurate information to guide their private decision-making. Both entertainment and news about the incumbent's type come from two media outlets that compete for audience share. One outlet is neutral, valuing only its audience share; the other is partisan, in that it also values retaining the incumbent—whether because of ideological affinity or political capture (Szeidl and Szucs 2021). Both outlets commit to a reporting strategy before they learn the incumbent's type (Gehlbach and Sonin 2014; Kamenica

[1]Even at a given level of electoral democracy, the Varieties of Democracy Project (Coppedge et al. 2023) shows that there is substantial cross-sectional heterogeneity in government censorship efforts. These differences are especially stark in Africa and Asia's electoral authoritarian regimes.

and Gentzkow 2011). The neutral outlet maximizes its audience share by reporting accurately. The partisan outlet instead commits to report with a known bias, balancing the benefits of misreporting the incumbent's quality—thereby persuading Bayesian voters to vote for the government more often—against the costs of losing audience share.[2]

Anticipating these responses, the incumbent maximizes his vote share by first deciding whether to revoke the neutral media outlet's broadcast license.[3] On one side of the tradeoff, revoking the broadcast license of the neutral outlet helps him at the polls not only by limiting voters' access to unbiased news—the most obvious and direct benefit of censorship (Besley and Prat 2006; Gehlbach and Sonin 2014)—but also by relaxing the competition for audience which limits the partisan outlet's capacity to slant its reporting in favor of the incumbent. On the other hand, revoking the broadcast license of the neutral outlet hurts the incumbent at the polls because voters punish him for taking away prized entertainment programming and informative news.

Neither of these competing considerations—the electoral benefit of inducing favorable changes in the coverage of not-censored media and the electoral cost of censoring entertainment—are emphasized in previous literature, which we discuss below. We argue that these collateral effects of censorship help to understand the causes and consequences of censorship in electoral regimes. Our model implies that the structure of the media market—in particular, the existence of diverse objectives across competing media moguls and the relative popularity of entertainment and news content—may explain cross-country and over-time variation in the use of censorship. The presence of an allied media outlet makes censorship more attractive for the incumbent, while valued entertainment programming from neutral outlets deters him.

We empirically substantiate these insights in a canonical case of selective censorship: Venezuela under Hugo Chávez. In late 2006, in the eighth year of his presidency and at the outset of his third term in office, Chávez chose not to renew the public broadcast license of Radio Caracas Televisión (RCTV), which was then the country's most watched television station. RCTV was primarily an entertainment channel, airing Venezuela's favorite soap operas and game shows and a longstanding sketch comedy program. But its news and opinion programs were critical of the government and also drew high ratings. RCTV's principal competitor, Venevisión, had become far less critical of the government after the "media coup" in 2004. When RCTV's broadcast license expired at midnight on May 27, 2007, households with television but without cable—more than 60% of the population—lost access overnight.

Using original data, we find evidence of all three considerations highlighted by our model.

[2]While some citizens are surely credulous (Little 2017; Zaller 1992), we consider the tougher case where strategic persuasion is required to convince Bayesian voters (e.g. Gehlbach and Sonin 2014).

[3]We use a male pronoun because our analysis is motivated by a case in which the incumbent is male.

On one hand, voters without cable punished Chávez at the polls for taking away valued television programming. On the other, consuming more favorable news coverage increased support for Chávez; moreover, following RCTV's exit from the airwaves, remaining television stations curbed their negative reporting and criticism of the government. Together, these results help explain why not renewing RCTV's public broadcast license—which led to mass protests and the only electoral loss of Chávez's political career—could still have been a savvy political move, ultimately helping Chávez establish what he called "communicational hegemony."

To establish that voters who lost access to RCTV punished Chávez at the polls, we use a difference-in-differences design. Combining cable penetration in each census tract with geocoded electoral precincts from five large states and the federal district, we compare changes in vote share in precincts where many voters lost access to RCTV (because their TVs they lacked cable, where RCTV quickly reappeared) to changes in precincts where few voters lost access to RCTV (because they had cable).[4] Before 2007, trends in vote shares across these two groups were parallel. Afterwards, they diverged: precincts where the majority of households lost access to RCTV voted an extra 2 percentage points *against* Chávez, relative to precincts where a minority of households lost RCTV, across four subsequent elections. Our estimates of the average causal response suggest that Chávez's vote share declined by 3–4 percentage points among voters who lost RCTV relative to those who did not. These results hold when we exploit only local variation within parish-years (an administrative unit within municipalities), allow trends to vary by socio-economic covariates, and use more aggregated data covering the entire country.

Through the lens of our model, we interpret these estimates as evidence that voters who lost access to RCTV punished Chávez at the polls for taking away prized programming—and that this punishment outweighed the pro-Chávez consequences of forcing those same voters to switch to less-critical news content from the remaining television stations. Three additional findings support this interpretation. First, consistent with voter sanctioning for lost programming, electoral punishment is concentrated in precincts where citizens were most likely to consume RCTV when it was on the air. Second, electoral punishment was weaker in municipalities that lacked access to an alternative opposition broadcast station, Globovisión. This suggests that mainstream pro-Chávez news content was persuasive, consistent with Knight and Tribin (2022), but not sufficiently persuasive to counteract electoral punishment for the loss of popular content. Third, survey data show that voters in municipalities where more people lost access to RCTV developed more negative attitudes toward Chávez, but not more negative views of Venezuela's economic or democratic performance.

[4]Less than 5% of households had no television at all in 2007; we exclude electoral precincts where less than 95% of households had TVs from our analysis.

This suggests that voters who lost access to RCTV *differentially* punished Chávez because he took away valued programs, not because the loss of RCTV especially dimmed these voters' views of government performance overall.

Thus far, the net negative effect on Chávez's vote share might seem to suggest that not renewing RCTV's broadcast license was a mistake. But our differences-in-differences estimates do not fully capture the electoral consequences of the third key consideration in our model: the equilibrium effect of RCTV's exit on the news coverage of remaining television stations. Any such changes in content affect both voters who lost access to RCTV *and* cable viewers who chose not to consume RCTV.

To evaluate whether news coverage changed after RCTV went off the air, we obtained approximately 4,000 hours of newscasts from a private archive. The videos span four major Venezuelan television stations between 2006 and 2009, and we use large language models to classify the topic and sentiment of segments within each newscast. We find that, relative to the critical news network Globovisión, RCTV's main competitors— Venevisión and Televen—shifted the sentiment of their news reporting in favor of the government after RCTV went off the air. News coverage also moved away from crime and domestic policies, areas where government performance was declining, toward international news. Conducting similar analyses with several print media outlets, we observe no comparable shift in the slant of pro- relative to anti-government newspapers after RCTV went off the air. This suggests that reduced competition in television markets, rather than a general chilling effect on all critical media, drove the changes in Venevisión and Televen's content during this period.

We make four main contributions. First, unlike studies demonstrating the persuasive effects of replacing content criticizing the government (Adena et al. 2015; Enikolopov, Petrova and Zhuravskaya 2011), we further document significant electoral costs of censoring popular independent media. Prior studies regard the primary costs of censorship as weakening the government's capacity to persuade or reach their audience (e.g. Gehlbach and Sonin 2014; Knight and Tribin 2019, 2022; Rosenfeld 2018; Shadmehr and Bernhardt 2015; Yao 2023) and acquiring information about government officials or public sentiments (e.g. Egorov, Guriev and Sonin 2009; Huang, Boranbay-Akan and Huang 2019; Lorentzen 2014; Qin, Strömberg and Wu 2017). We instead highlight how removing valued entertainment or news programming can reduce citizens' utility enough to cost incumbents votes. This result chimes with studies finding that access to West German television content increased satisfaction with the Soviet regime in East Germany (Kern and Hainmueller 2009) but also generated disapproval toward state censorship (Gläßel and Paula 2020), as well as evidence that social media taxes and internet restrictions have sparked protests (Boxell and

Steinert-Threlkeld 2022; Hassanpour 2014).[5] Our demonstration of the electoral cost of removing popular content may help explain why, in line with the calculus Guriev and Treisman (2022) attribute to spin dictators and the logic Svolik (2020) attributes to leaders dismantling democratic institutions, incumbents often refrain from censoring opposition media.

Second, we show that censoring a major media outlet induces responses from its competitors, thereby reshaping the news market equilibrium to benefit the incumbent. One implication of this finding—which is also implied by models suggesting that weaker competition makes bribes or subsidies cheaper (Besley and Prat 2006; Gehlbach and Sonin 2014) or decreases the reputational risk of biased reporting (Gentzkow and Shapiro 2006)—is that studies comparing voters with and without access to a newly censored or captured media outlet (e.g. Adena et al. 2015; Enikolopov, Petrova and Zhuravskaya 2011; DellaVigna and Kaplan 2007) may understate the political consequences. Another implication is that the competitive dynamics in Qin, Strömberg and Wu (2018) generalize beyond public local government-run newspapers in the authoritarian context of China. They find that reduced competition enabled propaganda newspapers to increase their bias and commercial newspapers to decrease it; we find similar patterns in a private media market in a backsliding democracy. Our results are also consistent with media market competition reducing media bias in the late 19th and early 20th centuries in the United States (Galvis, Snyder and Song 2016). We build on these studies by developing a theory of national media regulation based on Bayesian persuasion, establishing electoral consequences of a change in competition induced by selective censorship, and using recent developments in machine learning to classify changes in newscasts.

Third, we add to the body of evidence establishing that the editorial lines of major broadcast and print media outlets affect political behavior in both democratic contexts (Adena et al. 2015; Broockman and Kalla forthcoming; Chiang and Knight 2011; DellaVigna et al. 2014; DellaVigna and Kaplan 2007; Gentzkow, Shapiro and Sinkinson 2011; Grossman, Margalit and Mitts 2022; Ladd and Lenz 2009; Martin and Yurukoglu 2017; Peisakhin and Rozenas 2018) and authoritarian regimes (Adena et al. 2015; Enikolopov, Petrova and Zhuravskaya 2011; Yanagizawa-Drott 2014). Our evidence that Venezuelan television content persuades voters is closest to Knight and Tribin (2022), who find that access to Globovisión—an opposition news television station broad-

[5]More broadly, our evidence of electoral punishment for the *removal* of valued goods supports canonical models of electoral accountability (e.g. Fearon 1999; Ferejohn 1986) and is consistent with evidence of retrospective voting (e.g. Duch and Stevenson 2008; Ferraz and Finan 2008) and rewarding incumbents for introducing popular policies (e.g. de Janvry, Gonzalez-Navarro and Sadoulet 2014; De La O 2015; Manacorda, Miguel and Vigorito 2011). Indeed, government repression beyond the media can spark citizen backlash (Francisco 2005).

cast in two of Venezuela's major cities—tempered the political benefits to Chávez of not renewing RCTV's broadcast license. We reinforce this finding using more fine-grained polling station level data. But our distinct contribution is to theorize and empirically substantiate two indirect consequences of RCTV going off the air: voters punishing Chávez for taking away valued content, so much so that lost votes exceed the votes gained through persuasion among voters who lost access to RCTV; and the strategic responses of other outlets to cover the government more favorably.

Finally, we note that Chávez's decision to take RCTV off the air might otherwise appear puzzling in light of previous literature. Guriev and Treisman's 2019 model of informational autocrats suggests that a shrinking elite could explain Venezuela's slide from democracy to informational autocracy. But Chávez's decision to censor RCTV came at the height of one of the biggest economic booms in Venezuelan history, not a moment of economic decline. Nor is there an obvious reason to believe that Chávez's decision stemmed from a sudden shift in his need to maintain credibility and/or engagement (Gehlbach and Sonin 2014; Shadmehr and Bernhardt 2015). Rather, during the early years of Chávez's presidency, RCTV's popularity and the anti-government stance of *both* major television stations may have meant that the costs of revoking a broadcast license outweighed the benefits. Consistent with our model's emphasis on anticipating the new media market equilibrium, only after Venevisión moderated its editorial line did the balance appear to shift in favor of censoring RCTV. This account contributes to literature on the rise and persistence of Chavismo (Corrales 2005, 2015, 2018; Corrales and Penfold 2015; Handlin 2017; Svolik 2020) and on the logic of competitive authoritarianism more generally (Gratton and Lee 2024; Levitsky and Way 2010).

2 A theory of media censorship in electoral autocracies

We develop a stylized model to characterize the censorship trade-off faced by incumbents facing competitive elections. Integrating models of electoral selection (by voters) and Bayesian persuasion (by heterogeneous media outlets that vary in their partisanship), we consider a prominent instrument of censorship: the incumbent can revoke the public broadcast license of any media outlet. One benefit of wielding this weapon is that revoking the license of neutral media outlets increases voters' exposure to pro-government media outlets, which persuade Bayesian voters to support the incumbent more often than they otherwise would. A second and less direct benefit stems from equilibrium effects on not-censored partisan (or captured) outlets: in the absence of competition from the neutral outlet, such outlets can shift their coverage in favor of the government. But revoking a broadcast license also entails a cost: support for the incumbent declines among voters who

lose access to shows that they enjoy. Our model generates predictions that guide our empirical analyses.

2.1 Setup

We consider a two-period adverse selection game in which voters use news from a television station—either a neutral outlet or a partisan one—to decide whether to re-elect the incumbent for a second period. Before media outlets commit to their reporting strategies, the incumbent politician I can reshape the media market by deciding whether to revoke the public broadcasting license of the neutral media outlet, thereby preventing access for consumers without cable. We denote this irreversible decision by $R \in \{0,1\}$.[6] While this instrument of partial censorship limits consumption to individuals with cable TVs, the logic of segmenting consumers within media markets might similarly apply to restricting access to VPNs in China or taxing social media use in Uganda.

Politicians. Politicians—incumbent I and challenger C—are defined by their type $t \in \{H,L\}$, where H denotes high-quality politicians and L denotes low-quality politicians. This valence characteristic could capture a politician's competence, honesty, or preference alignment with voters. The probability that a politician is of type L is $\theta \in (0, \frac{1}{2}]$. We assume that politicians' types are unknown—to politicians and to media outlets—until after the incumbent has decided whether to revoke the neutral media outlet's broadcast license. Politicians' types are never revealed to voters; the common prior belief that a politician is low quality is θ. This assumption drives career concerns (e.g. Ashworth 2005) and Bayesian persuasion models (e.g. Gehlbach and Sonin 2014; Kamenica and Gentzkow 2011). Qualitatively, politicians may be uncertain about their ability to address novel problems or resist the temptation to engage in corruption once in office. We assume that politicians maximize their expected vote shares.[7]

Media market. Media outlets $m \in \{N,P\}$ (neutral, partisan) report information about the incumbent's type. We extend the Bayesian persuasion approach in Gehlbach and Sonin (2014) and Gentzkow, Shapiro and Stone (2015) to competition between media outlets with distinct objectives. Each outlet commits to a reporting strategy $r_{mR}(t)$, the probability that outlet m reports $\hat{t}_m = L$ upon learning the incumbent's type t. This commitment is a fixed editorial policy that forms the basis for the outlet's reputation for neutrality (or partisanship). The subscript R allows reporting strategies to depend on the incumbent's decision to revoke N's broadcast license.

[6] In our model, no incumbent would benefit from revoking the broadcast license of the pro-incumbent media outlet because it seeks to increase the incumbent's vote share.

[7] The margin of victory often matters for politicians seeking to demonstrate their strength and discourage challengers in competitive authoritarian regimes (Simpser 2013), but the same logic applies to politicians maximizing the probability of being re-elected.

The neutral outlet N cares only about its audience share A_{NR}, perhaps to maximize its advertising revenues (Strömberg 2004). Since voters value truthful reporting (see below), outlet N will always report the incumbent's true type, such that $r_{NR}(H) = 0$ and $r_{NR}(L) = 1$ in either state R.

In contrast, the "partisan" outlet P also seeks to support the incumbent. Specifically, P maximizes $\gamma A_{PR} + \mathbb{E}[V_R]$, where A_{PR} is P's audience share, $\mathbb{E}[V_R]$ is the incumbent's vote share, and $\gamma \geq 0$ is the weight attached to audience share (relative to electoral considerations). This partisan preference could stem from economic capture in terms of bribes or preferential government advertising contracts (Besley and Prat 2006; Di Tella and Franceschelli 2011; McMillan and Zoido 2004), greater ideological support, or tolerance, for the incumbent (Galvis, Snyder and Song 2016; Gentzkow, Glaeser and Goldin 2006; Puglisi and Snyder 2011), or both (Szeidl and Szucs 2021). Given these preferences, outlet P would never report that the incumbent is of low quality if he were actually high quality; therefore, $r_{PR}(H) = 0$. In contrast, P may seek to persuade consumers that the incumbent is high quality when he is low quality. Accordingly, outlet P chooses a level of bias $b_R \in [0,1]$ in the event that $t = L$, such that $r_{PR}(L) = 1 - b_R$.[8]

Voters. A unit continuum of voters decide which media outlet to consume and, based on the information they receive, then decide whether to vote for the incumbent. Each voter is defined by a two-dimensional type (u_{iN}, w_i), where $u_{iN} \in \mathbb{R}$ captures the entertainment utility i derives from consuming the programming of outlet N and $w_i \in \{c,n\}$ indicates whether i is among the share $\eta \in [0,1)$ of voters who have cable TV (c) or in the share $1-\eta$ of voters who have TV without cable (n). For simplicity, we assume that u_{iN} and w_i are independent, with u_{iN} distributed according to cumulative distribution function F over support $[\underline{u}, \overline{u}]$.[9] We normalize the entertainment utility obtained from consuming the programming of outlet P to $u_{iP} = 0$.

Voters value both entertainment and news content when choosing between media outlets N and P. Accurate news content is important because voters select an action $a_{iR} \in \{H,L\}$ in their private lives, generating payoff $\delta > 0$ when a_{iR} matches the incumbent's type (as in Alonso and Padró i Miquel 2022; Anderson and McLaren 2012; Duggan and Martinelli 2011; Gentzkow and Shapiro 2006; Qin, Strömberg and Wu 2018; Strömberg 2004). Financial and labor-market decisions, for example, might depend on the quality of the incumbent. Voter i consumes outlet N when the sum of the entertainment utility and expected informational benefits of consuming N exceed those of consuming P:

$$u_{iN} + \delta \mathbb{E}[a_{iR} = t | r_{NR}(t)] \geq \delta \mathbb{E}[a_{iR} = t | r_{PR}(t)] \implies u_{iN} + \delta \geq \delta(1 - \theta b_R), \tag{1}$$

[8] We assume that P has established a means of committing to $r_{PR}(L)$. Reputational consequences, for example, could keep P from always reporting $\hat{t} = H$ when $t = L$.

[9] Similar results obtain if voters for whom $u_{iN} > 0$ are not exclusively cable TV subscribers.

where the implication follows from outlet N always reporting the truth and outlet P reporting H with (endogenously chosen) probability $1-b_R$ when $t=L$.[10] Voters' preference for truthful information thus constrains the bias that P chooses to engage in. When only outlet P is available, voters without cable always consume outlet P; this implies that the least entertaining and most biased content is preferable to consuming no TV at all.[11] We denote the media consumption decision as $c_{iR} \in \{N,P\}$.

The decision to consume either N or P, but not both, is an unrealistic but useful simplification. Other studies impose similar stylized assumptions, on the basis of significant switching or information-processing costs (Duggan and Martinelli 2011; Gehlbach and Sonin 2014). As long as some of P's consumers stick with its less informative news programming out of habit (e.g. Durante, Pinotti and Tesei 2019) or because the appealing features of entertainment programming extend to news programming, similar insights would emerge if we allowed voters' posterior beliefs to reflect a time-weighted average of consumption of multiple outlets.

After making their consumption choice and observing news report $\hat{t}_m$ from their chosen outlet, vote choices reflect a common and a private value component. First, all voters seek to retain high-quality politicians, as is often assumed (e.g. Fearon 1999). Second, each voter i possesses a partisan bias toward the incumbent given by:

$$\tilde{\beta}(u_{iN}, w_i) := \beta + \sum_{m \in \{N,P\}} \mathbb{1}[c_{iR} = m] \left(u_{im} + \delta \mathbb{E}[a_{iR} = t | r_{mR}(t)]\right), \tag{2}$$

where $\mathbb{1}[\cdot]$ is the indicator function. The first term, $\beta \in \mathbb{R}$, is a (positive or negative) appraisal of the incumbent that is common across all voters; this captures the incumbent's general popularity, independent of competence. The second term reflects the utility an individual receives from consuming their preferred media, and thus captures voters' preference for politicians who allow access to a voter's favored news or entertainment content. It could also be interpreted more broadly as citizens' posterior beliefs about the government's distributive intent toward people with a given consumption preference.[12] This utility is endogenous to the incumbent's decision (to revoke or not revoke a broadcast license) and media outlets' decisions (reporting strategies).

[10] Since $\theta \leq \frac{1}{2}$, $a_{iR} = H$ is chosen when $\hat{t}_P = H$ is reported because $\Pr(t = H | \hat{t}_P = H) > \frac{1}{2}$; more generally, this occurs whenever $b_R < \frac{1-\theta}{\theta}$. Where $\theta > \frac{1}{1+\bar{b}}$, the degree of P's bias may not affect a voter's preference between outlets P and N.

[11] Including consumers who would refuse to consume P would weaken P's incentives to bias its content, regardless of the competitive environment.

[12] The model could be extended to have citizens update about a common value component (quality) from the news and also update about a private value component (alignment with voters with different preferences) from the costly signal of removing goods that certain types of citizens benefit from.

Letting selection and partisan-bias motives be additive, i votes for the incumbent ($v_{iR} = I$) over a randomly selected challenger ($v_{iR} = C$) when:

$$\tilde{\beta}(u_{iN}, w_i) - \hat{\theta}(\hat{t}_m) \geq -\theta, \tag{3}$$

where $\hat{\theta}(\hat{t}_m)$ denotes a voter's posterior belief about the incumbent's type after observing media report $\hat{t}_m$. This belief is computed using Bayes' rule, based on voters' prior belief θ and the likelihood function $r_{mR}(t)$. The incumbent's expected vote share, $\mathbb{E}[V_R]$, is the population-weighted sum of expected vote shares among voters who consume N and voters who consume P. Because the incumbent and partisan media outlets act before the incumbent's type is realized, this expectation is computed with respect to the distribution of media reports by N and P.

Timing. The timing of the game is as follows:

1. At the beginning of the first period, the incumbent chooses $R \in \{0,1\}$, i.e. whether to revoke the public broadcast license of the neutral media outlet N;

2. Media outlets $m \in \{N,P\}$ publicly announce their news reporting strategies $r_{mR}(t)$;

3. After observing R and $r_{mR}(t)$, each voter i decides which outlet to consume: $c_{iR} \in \{N,P\}$;

4. Nature reveals the incumbent's type $t \in \{L,H\}$ to both media outlets, which then report $\hat{t}_m$ according to $r_{mR}(t)$;

5. Voters observe the signal $\hat{t}_m$ reported by their chosen media outlet, form posterior belief $\hat{\theta}(\hat{t}_m)$ about the incumbent's type, and then take action $a_{iR} \in \{H,L\}$ and make vote choice $v_{iR} \in \{I,C\}$;

6. The incumbent is re-elected if his vote share exceeds that of the challenger;

7. At the end of the first period, voters realize utility based on the concordance (or lack thereof) between action a_{iR} and the incumbent's type;

8. At the beginning of the second period, nature reveals the new incumbent's type $t \in \{H,L\}$ to both media outlets (if the challenger was elected);

9. At the end of the second period, voters realize utility based on the incumbent's type.

By focusing on a two-period model where the incumbent's decision whether to revoke N's license is irreversible and there are no further elections, we abstract from behaviors in the second period.

2.2 Analysis

We solve for the unique subgame perfect Nash equilibrium defined by actors sequentially choosing the actions in the vector $(R^*, r^*_{mR}(t), c^*_{iR}, a^*_{iR}(\hat{t}_m), v^*_{iR}(\hat{t}_m))$. To characterize the equilibrium, we work backwards from voters' decisions.

Upon observing a given media report, each voter forms the following posterior beliefs about the incumbent's type:

$$\hat{\theta}(\hat{t}_N) = \begin{cases} 0 & \text{if } \hat{t}_N = H, \text{with probability } 1-\theta \\ 1 & \text{if } \hat{t}_N = L, \text{with probability } \theta \end{cases} \tag{4}$$

$$\hat{\theta}(\hat{t}_P) = \begin{cases} \frac{\theta b_R}{1-\theta(1-b_R)} & \text{if } \hat{t}_P = H, \text{with probability } 1-\theta(1-b_R) \\ 1 & \text{if } \hat{t}_P = L, \text{with probability } \theta(1-b_R) \end{cases} \tag{5}$$

where N's truthful reporting leads its audience to be certain about the incumbent's type. In contrast, consumers of P are only certain of the incumbent's type when P reports that the incumbent is low quality; a signal of H is treated with skepticism, because voters recognize P's commitment to misreport. The following result establishes the point at which P becomes too biased to persuade its consumers to vote for I:

Lemma 1. *When $b_R > \overline{b} := \frac{(1-\theta)(\beta+\theta+\delta)}{\theta(1-\beta-\theta)}$, P's consumers do not vote for the incumbent when $\hat{t}_P = H$ is reported.*

Proof: all proofs are in Appendix A.1. ■

To make the problem interesting, we impose the following assumption:

Assumption 1. $\beta + \theta + \delta \in \left(\max\left\{ \delta\theta\overline{b}, 1-\overline{u} \right\}, 1 \right)$.

The upper bound ensures that the incumbent is not so popular that voters always vote for I, regardless of the media report. The lower bound ensures that the incumbent is sufficiently popular that consumers of N always vote for I when high quality is revealed. This parameter restriction thus excludes uninteresting cases in which I's vote share is maximized when P reports truthfully. Substantively, this assumption implies that incentives to censor arise only for incumbents with moderate levels of popularity.

After observing media outlets' reporting strategies, voters make their consumption decisions according to equation (1). The audience share of outlet P is then given by:

$$A_{PR} = 1 - x_R[1 - F(-\delta\theta b_R)], \tag{6}$$

where $x_R := \begin{cases} 1 & \text{if } R = 0 \\ \eta & \text{if } R = 1 \end{cases}$ captures the maximum audience that neutral outlet N can reach. P's audience share is decreasing in the probability that it misreports, θb_R, as well as the extent to which voters value information relative to entertainment, δ. When $R = 1$, outlet P gains the audience of all voters without cable (type n), competing only for the share η of voters with cable (type c). Outlet N's audience share is given by $A_{NR} = x_R[1 - F(-\delta\theta b_R)]$.

Voters' media consumption choices and posterior beliefs allow us to derive the incumbent's expected vote share before his type t is realized:

Lemma 2. *Under Assumption 1, the incumbent's expected vote share is given by:*

$$\mathbb{E}[V_R] = \begin{cases} 1 - \theta + \theta\Big(x_R[1 - F(1 - \beta - \theta - \delta)] + A_{PR} b_R\Big) & \text{if } b_R \in [0, \overline{b}], \\ 1 - \theta + \theta x_R[1 - F(1 - \beta - \theta - \delta)] & \text{if } b_R \in (\overline{b}, 1]. \end{cases}$$

The first term in each vote-share expression reflects the fact that every voter, regardless of her media consumption choice, votes for I when $t = H$. The second term captures support for I when $t = L$; in particular, consumers of N vote for I in spite of I's low quality when they sufficiently value the entertainment and informational content that they receive from N, while consumers of P can be persuaded to vote for I when P falsely reports $\hat{t}_P = H$, as long as P does not bias its reporting too much (i.e. $b_R \in [0, \overline{b}]$).

The partisan media outlet anticipates the incumbent's vote share, given the incumbent's revocation decision R. Accordingly, P chooses b_R to maximize $\gamma A_{PR} + \mathbb{E}[V_R]$, subject to the persuasion constraint $b_R \in [0, \overline{b}]$. The following first-order condition clarifies P's incentives:

$$\underbrace{\gamma \frac{\partial A_{PR}}{\partial b_R}}_{\substack{\text{marginal cost} \\ \text{of audience loss}}} + \underbrace{A_{PR}\theta}_{\substack{\text{marginal gain in} \\ \text{vote share among} \\ P\text{'s audience}}} + \underbrace{\frac{\partial A_{PR}}{\partial b_R}\theta b_R}_{\substack{\text{marginal loss in} \\ \text{vote share due} \\ \text{to audience loss}}} \leq 0, \tag{7}$$

where $\frac{\partial A_{PR}}{\partial b_R} < 0$ because, all else equal, voters prefer more informative media outlets. Increasing the bias b_R enables P to persuade more of its audience to vote for the incumbent. But more bias also reduces P's audience share, which decreases the number of voters P can persuade as well as the non-political benefits of a large audience. The partisan outlet chooses b_R in light of these competing incentives, and we can establish that:

Proposition 1. *Under Assumption 1, the equilibrium in the media market subgame depends on the choice R as follows:*

1. *P engages in at least as much bias under $R = 1$ than $R = 0$: $b_1^* \geq b_0^*$.*

2. *P's audience is strictly larger under $R = 1$ than $R = 0$ when $\eta < \frac{1-F(-\delta\theta b_0^*)}{1-F(-\delta\theta b_1^*)}$.*

By revoking N's public broadcast license, this result demonstrates that weakening P's competition frees P to engage in greater bias that increases the incumbent's vote share; the inequality is strict for interior optima, where $b_R^* \in (0, \overline{b})$. Furthermore, outlet P's audience share intuitively increases when the captive market is sufficiently large (i.e. η is small), and thus greater reporting bias results in limited audience loss.

Finally, we examine the incumbent's incentives to revoke N's public broadcast license. Anticipating media outlets' reporting strategies and voters' consumption and voting decisions, I expects to benefit from revoking N's license when $\Delta := \mathbb{E}[V_1] - \mathbb{E}[V_0] > 0$. The following proposition establishes when the incumbent does so:

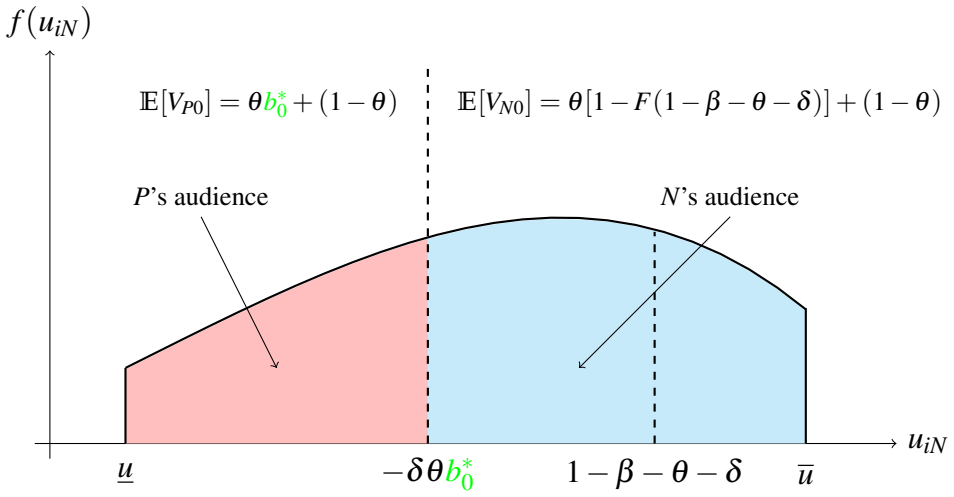
Proposition 2. *Under Assumption 1, the incumbent chooses $R^* = 1$ when:*

$$\underbrace{[A_{P1}(b_1^*) - A_{P0}(b_0^*)]\theta b_0^*}_{\text{effect of voters switching to } P} + \underbrace{A_{P1}(b_1^*)\theta(b_1^* - b_0^*)}_{\text{effect of additional bias by } P} - \underbrace{(1-\eta)\theta[1 - F(1-\beta-\theta-\delta)]}_{\text{voter sanctioning for losing } N\text{'s programming}} > 0.$$

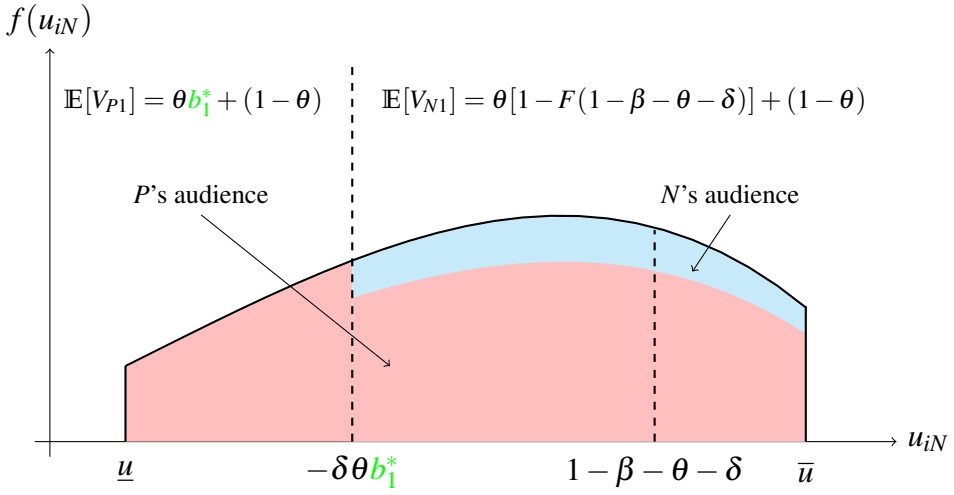
This result, which we depict graphically in Figure 1, clarifies the incumbent's censorship dilemma. As noted in previous literature, censoring the neutral outlet N—in this case, by revoking its broadcast license—forces voters to switch to the partisan outlet P, reducing voters' exposure to news content that reveals an incumbent's low quality. In the figure, the incumbent's vote share increases because P's audience (shaded in light red) increases. The second two terms in Proposition 2 formalize collateral censorship. On one hand, taking N off the air frees P to persuade more voters more often. Figure 1b shows that this reduces P's audience among cable viewers, but increases the likelihood that non-cable viewers vote for the incumbent. On the other, restricting access to valued entertainment or news programming entails an electoral cost: voters without cable sanction the incumbent for taking away their favorite TV programs, especially when F and δ (respectively) ensure that entertainment and informational content is valuable. The incumbent loses votes among these voters with $u_{iN} \in [1-\beta-\theta-\delta, \overline{u}]$ who would have enjoyed N's content enough to vote for the incumbent when they are revealed to be of low quality. Which effects dominate depends on parameter values, as we discuss below.

Figure 1: Graphical intuition for the model

(a) When N's public broadcast license is not revoked



(b) When N's public broadcast license is revoked



Notes: V_{mR} denotes the incumbent's vote share among the audience of outlet $m \in \{N,P\}$, given the incumbent's revocation decision $R \in \{0,1\}$. The incumbent's total vote share is $\mathbb{E}[V_R] = A_{NR}(b_R)\mathbb{E}[V_{NR}] + A_{PR}(b_R)\mathbb{E}[V_{PR}]$.

2.3 Empirical implications

The preceding analysis has shown that revoking the broadcast license of the neutral outlet N produces different effects on voters with and without cable (c and n types, respectively). Only voters without cable lose access to N. Non-cable voters who preferred to consume N are forced to switch to the partisan outlet P, and thus experience more persuasive content as well as a loss of media con-

sumption utility; non-cable voters who already consumed P receive more biased news coverage. Among voters with cable, some switch to N when P increases its bias.

Combining these shifts in audience, a difference-in-differences analysis can compare the *expected* vote shares across c and n voters (prior to the incumbent's type being realized) before and after the license revocation. The following result demonstrates that this captures some—but critically, not all—of the competing incentives in Proposition 2:

Corollary 1. *Under Assumption 1, the expected difference-in-differences estimand derived from the theoretical model is given by:*

$$\begin{aligned}\mathbb{E}[\tau_{DiD}] &:= (\mathbb{E}[V_{n1}] - \mathbb{E}[V_{n0}]) - (\mathbb{E}[V_{c1}] - \mathbb{E}[V_{c0}]) \\ &= \theta\left[\frac{A_{N1}(b_1^*)}{\eta} b_0^* + \frac{A_{N1}(b_1^*)}{\eta}(b_1^* - b_0^*) - [1 - F(1-\beta-\theta-\delta)]\right].\end{aligned}$$

If $\mathbb{E}[\tau_{DiD}] > 0$, meaning that voters without cable are expected to become relatively more favorable toward the incumbent, then the pro-incumbent effects of cable-less voters that previously consumed N switching to the partisan outlet P (the first term within the brackets) *and* potentially greater bias in P's reporting (the second term) dominate the anti-incumbent effect of cable-less voters that previously consumed N sanctioning the incumbent for the loss of their favored programming (the final term). If $\mathbb{E}[\tau_{DiD}] < 0$, the reverse holds: voter sanctioning for lost programming is expected to outweigh any pro-incumbent benefits of persuasion among voters who lost access to N. Importantly, differences in posterior beliefs about incumbent quality are all driven by realizations of a low-quality incumbent, which occurs with probability θ; when the incumbent is high-quality, he remains equally popular among all voters in our model.

Where $\mathbb{E}[\tau_{DiD}] < 0$, the following result shows that it would only be rational for the incumbent to revoke N's license (i.e. $\Delta > 0$) if P will increase its pro-incumbent bias:

Corollary 2. *Assume Assumption 1 holds. If* $\mathbb{E}[\tau_{DiD}] < 0$ *and* $\Delta > 0$*, then* $b_1^* > b_0^*$ *and* $\frac{b_1^*}{b_0^*} > \frac{F(-\delta\theta b_0^*)}{F(-\delta\theta b_1^*)}$.

Because changes in the partisan outlet's editorial line affect voters without cable *and* some cable voters who choose to consume P, the difference-in-differences comparison does not fully capture the electoral consequences of a shift in b. Indeed, even when $\mathbb{E}[\tau_{DiD}] < 0$, it remains possible that $\Delta > 0$ because revoking the neutral outlet's broadcast license could improve the incumbent's electoral performance by increasing the incumbent's vote share among all consumers of P, either with or without cable. The second implication in the proposition, that $\frac{b_1^*}{b_0^*} > \frac{F(-\delta\theta b_0^*)}{F(-\delta\theta b_1^*)}$, indicates that $\Delta > 0$ is only possible when consumption choices are not too sensitive to media bias. This ensures

that enough consumers with cable continue to choose P, in spite of its greater bias, and thus get persuaded by P's reporting. In sum, even when sanctioning for lost media content outweighs the benefits of persuasion among voters forced to switch to more pro-incumbent channels, revoking N's public broadcast could still be electorally advantageous if the outlets still available to all voters start producing content more favorable toward the incumbent.

2.4 Robustness to alternative modelling assumptions

Like all models, our framework stylizes a complex reality in weakly institutionalized democracies. Nevertheless, the core mechanisms driving our predictions are robust to varying several key assumptions.

First, and most simply, the results of the model are qualitatively unaffected by removing the cable television market that the neutral outlet can still serve. If $\eta = 0$, the same three forces govern the incumbent's decision to remove access to the neutral outlet entirely. Nevertheless, the existence of voters with cable TVs consuming the neutral outlet is empirically helpful. In addition to accurately characterizing the Venezuelan case that motivates our theory and the desire of other modern autocrats to more subtly apply regulatory and financial pressure rather than total bans (Guriev and Treisman 2019; Paskhalis, Rosenfeld and Tertytchnaya 2022), a cable market that permits access to the neutral outlet's content informs our empirical strategy for quantifying the electoral costs and benefits to an incumbent of revoking a neutral outlet's public broadcast license.

Second, an important ingredient of the model is Bayesian persuasion, which enables voters to recognize and account for biases in the partisan media outlet's reporting strategy. Preventing voters with a preference for accurate news from being fooled by persuasive content causes biased outlets to lose audience, and thus drives changes in bias due to media market competition. While this strong assumption represents a hard case for successful persuasion, fully rational voters are not necessary to generate the model's insights. Indeed, consumers who value accuracy need only be partially aware of media outlets' biases; this allows for an array of behavioral updating rules.

Third, the model generates similar predictions if the incumbent is aware of their own type before deciding whether to revoke the neutral outlet's public broadcast license. For media reports to remain informative about the incumbent's type in this case, we assume that license revocation can sometimes occur against the incumbent's will due to factors that are not observable to media outlets or voters. This could reflect power struggles within a regime, and—critically—results in voters updating unfavorably about the incumbent's type purely from the decision to revoke without reaching certainty about their type. As Appendix A.2 demonstrates, the same three forces continue to shape the incumbent's intention to revoke the neutral outlet's broadcast license in such

a signaling model. These incentives are weakened because the additional unfavorable updating induced by a revocation decision limits the maximum bias (Lemma 1) and reduces the interval of prior partisan favorability toward the incumbent that can support an equilibrium where the partisan outlet persuades its consumers to support a low-quality incumbent (Assumption 1).

Fourth, we assume that voter choices between media outlets reflect preferences for entertainment and accurate information. These are surely important factors, but media consumption patterns are often politically slanted too (e.g. Martin and Yurukoglu 2017). At the cost of greater complexity, Appendix A.3 shows that the three forces driving our model continue to hold when a consumer's utility from the neutral outlet's entertainment is negatively correlated with their partisan bias toward the incumbent. This means that the individuals who most prefer the partisan outlet are more likely to support the incumbent. As with permitting asymmetric information about the incumbent's type, allowing entertainment and political preferences to be correlated weakens the incentive to revoke the neutral outlet's license because negative revelations are less damaging when voters are more divided.

Fifth, the results do not require a politically neutral outlet. If the neutral outlet were instead motivated to reduce the incumbent's vote share, Appendix A.4 shows that the same three factors shape the incumbent's decision to censor the anti-incumbent outlet. But their relative importance would change. On the other hand, censorship becomes more appealing because the anti-incumbent outlet more frequently persuades (some of) its consumers to vote against the incumbent by reporting that the incumbent is of low quality. On the other hand, weakening initial competition with the pro-government outlet lowers the benefits of censorship by reducing the anti-government outlet's audience, allowing the pro-government outlet to get closer to optimal persuasion in the absence of censorship, and increasing the share of voters who support the incumbent when low quality is reported (because the anti-government outlet's biased reporting is now less persuasive). For a sufficiently biased outlet with niche entertainment appeal, governments may opt to tolerate anti-incumbent outlets—as Guriev and Treisman (2022) note that they often do.

3 Context: Chávez forces the NBC of Venezuela off the air

Our model highlights three categories of consequences of an incumbent's decision to not renew the broadcast license of a major media outlet: (i) the incumbent may benefit from restricting access to anti-government news content; (ii) the incumbent may benefit from remaining media outlets then shifting their editorial lines in favor of the government; and (iii) the incumbent may suffer if voters punish her for taking away valued entertainment programming. In this section, we explain why

each consequence is plausible in the Venezuelan case.

3.1 Why restricting access to anti-government news might benefit Chávez

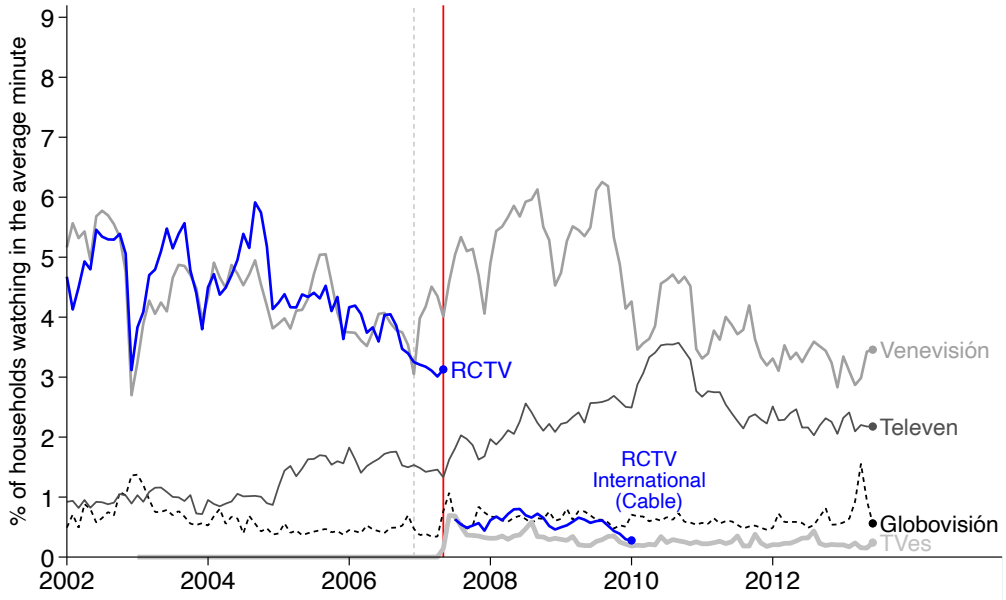
In 2006, the seventh year of Hugo Chávez's presidency, the Venezuelan economy was booming. Government spending and consumer spending had reached historic highs, fueled by the largest oil-price windfall in Venezuelan history, and Chávez's approval ratings surpassed 70%. Yet there were many stories that, if covered widely in the press, might turn voters against the government. Homicide rates were soaring (Kronick 2020); early in 2006, the kidnapping and eventual murder of three brothers (ages 12, 13, and 17) and their chauffeur (a 30-year-old father of two) drew national attention and prompted student protests. Inflation had already begun to tick up, and price controls created incipient goods shortages—signs that the consumption boom might be unsustainable, as the coming years proved it to be. On what came to be known as *Red Monday*, in January of 2007, Chávez announced a series of major nationalizations (of telecommunications and electricity, among others) that sent the stock market tumbling.[13] Even Chávez's lauded social programs—the *misiones*—had become a target of criticism, with analysts suggesting that the *misiones* had failed to build human capital, contrary to the government's triumphant claims (Rodríguez 2008). By 2006, at least 20% of Venezuelans identified as *ni-ni*, meaning neither Chavista nor opposition.[14] This is all to say that, even in an economic environment that was favorable for Chávez as the incumbent, critical press coverage could prove politically costly.

3.2 The Venezuelan media landscape

For 53 years prior to 2007, Radio Caracas Televisión (RCTV) was one of Venezuela's most-watched television stations. RCTV was home to *Radio Rochela*, a late-night sketch comedy program that premiered in 1960 and became the country's longest-running show; in the 1990s, RCTV aired *Por Estas Calles*, one of the most popular soap operas in Latin American history and also a scathing critique of Venezuelan democracy; and, in 2000, RCTV imported the chart-topping *Who Wants to be a Millionaire?* Entertainment made up the bulk of RCTV's programming, but the station also aired news and commentary: the thrice-daily news program *El Observador* had high ratings, as did a weekly late-night political interview show called *Primer Plano* (hosted by company president Marcel Granier). Between 2002 and 2006, RCTV's monthly audience share—the share among viewers with televisions turned on—ranged from 22% to 34%.

[13] Andy Webb-Vidal, "Chávez lleva inversionistas a un paseo en la montaña rusa," *Hoy*, January 19, 2007.
[14] Consultores 21, "Perfil 21 (survey)," 2006.

Figure 2: Trends in TV station audiences before and after RCTV went off air



Notes: The red vertical line marks May 28, 2007, the day after RCTV went off the air; the gray line marks December 28, 2006, when Chávez announced his decision. These figures use data purchased from Nielsen.

RCTV's principal competitor was Venevisión. Like RCTV, Venevisión was primarily an entertainment channel, with its own slate of successful soap operas, exclusive rights to the must-see Miss Venezuela beauty contest, and also an exclusive contract with Venezuelan professional baseball (the country's most popular sport). Venevisión, too, developed a daily news program—*El Informador*—and its own talk shows.

RCTV and Venevisión were owned by rival business conglomerates. For at least a decade prior to the election of Chávez in 1998, these conglomerates had crossed swords in a series of battles for control of major banks and other valuable assets (Gates 2010; de Krivoy 2000; Zapata 1995). During the presidential administration of Carlos Andrés Pérez (1989–1993), the government allowed investors close to Venevisión to purchase part of a then-nascent third television station, Televen, a move that posed a major threat to RCTV. This rivalry likely motivated the stations to take different positions in the 1998 presidential election, with Venevisión favoring Chávez and RCTV hewing closer to the other major candidate, Henrique Salas Römer—with major political consequences (Gates 2010; Kronick, Plunkett and Rodriguez 2023; Zapata 2000). A fourth station, Globovisión, emerged in the early 1990s as Venezuela's first and only 24-hour news network.

Despite their longstanding and far-reaching rivalry, and despite their opposing positions in the 1998 presidential elections, RCTV and Venevisión briefly converged, politically, in the early

years of the Chávez administration. Between 2001 and 2004, both stations fervently opposed Chávez. They both embraced and celebrated the short-lived coup d'etat that removed Chávez from power for two days in April, 2002.[15] Both stations also endorsed the opposition-led general strike that unsuccessfully sought Chávez's resignation in late 2002 and early 2003. And both stations supported the opposition's effort to oust Chávez in a recall referendum in 2004 (McCoy and Diez 2011).

But Venevisión and RCTV again diverged in the wake of Chávez's landslide victory in the 2004 recall referendum. Venevisión moderated its editorial line, while RCTV remained stridently anti-Chávez. In an interview with *The New York Times*, Venevisión chief Gustavo Cisneros explained (and the *Times* verified) that a 2004 meeting with Chávez—brokered by Cisneros's friend Jimmy Carter—had convinced Cisneros to change course, fearing for the station's survival.[16] While prominent members of the opposition criticized Cisneros, he defended his decision by pointing out that "If you go off the air, democracy loses ... We decided that we needed to pull through." By 2005, Venevisión had canceled some of its most adversarial programming. As a result, Cisneros became persona non grata in certain sectors of the Venezuelan opposition.[17]

3.3 The non-renewal of RCTV's broadcast license

In December of 2006, Chávez announced that the government would not renew RCTV's broadcasting license, which was set to expire on May 27, 2007. Chávez explained that the decision was motivated by RCTV's support for the 2002 coup: "They should pack their bags, because there will be no more broadcasting license for that coup-mongering TV station."[18] RCTV appealed the government's decision not to renew its broadcasting license, but the Supreme Court—which the Chávez administration had expanded from twenty to thirty-two justices—ruled in favor of the government. While RCTV's role in the 2002 coup did lend some credibility to Chávez's ostensible rationale for the non-renewal decision, the simultaneous renewal of Venevisión's broadcasting license suggested a different motivation: after the coup, Venevisión and Televen had bent their editorial lines toward Chávez; RCTV had not.

RCTV soon returned as a cable and satellite channel, earning high ratings for an outlet not on

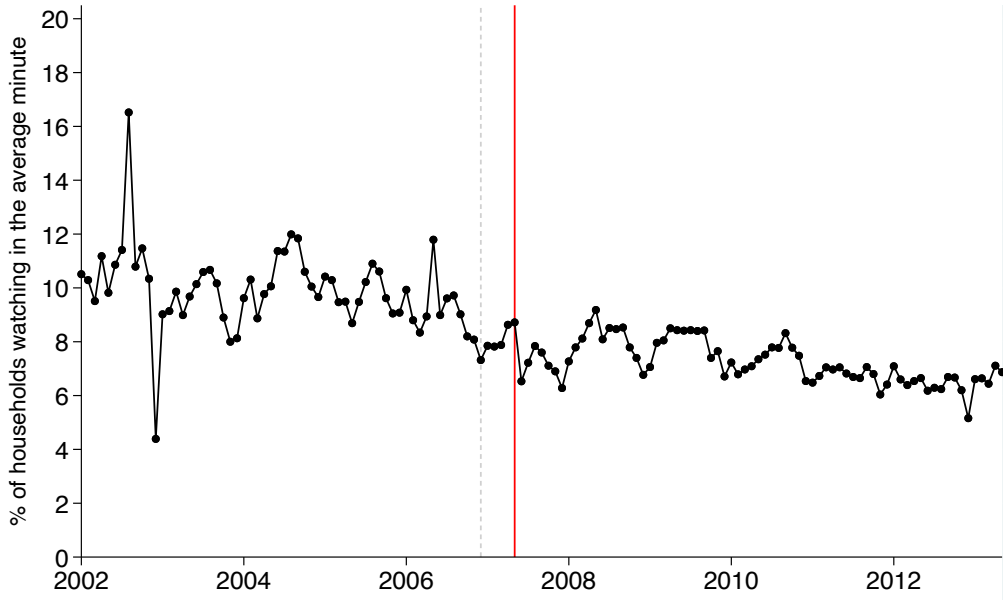
[15] Some scholars maintain that this episode was not a coup d'etat, either because Chávez resigned or because the inaccurate public announcement that Chávez had resigned created a "vacuum of power" that constitutionally justified regime change (Brewer-Carías and Brewer-Carías 2008).

[16] Símon Romero, "Media Mogul Learns to Live with Chávez," *The New York Times*, July 5, 2007.

[17] Clodovaldo Hernández, "Cisneros en el infierno escuálido," *El Universal*, June 2, 2007.

[18] Hugo Chávez, "Salutación de fin de año del Comandante Presidente Hugo Chávez a los integrantes de la Fuerza Armada Nacional Bolivariana," *Discursos y Alocuciones*, December 28, 2006.

Figure 3: Prime-time TV news audience does not drop when RCTV goes off the air



Notes: The red vertical line marks May 28, 2007, the day after RCTV went off the air; the gray line marks December 28, 2006, when Chávez announced his decision. Source: Nielsen.

the air (Figure 2). But because only around a quarter of households had a cable or satellite subscription in 2007, millions of Venezuelans were forced to switch to other broadcast channels and/or reduce their viewing hours. Indeed, in the months after RCTV went off public air on May 27, 2007, the combined audience share of Venevisión and Televen increased by 12 percentage points.[19] In line with censorship serving as a significant source of friction (Roberts 2020), households without cable or satellite had little access to opposition television news. Globovisión, the 24-hour news network, maintained critical coverage and stayed on the air, but it was a bit player, available only in two cities (Caracas and Valencia) and earning just 3.6% market share in 2006 (compared to 28% for RCTV, 27% for Venevisión, and 12% for Televen). The largely unaffected downward trend in television viewership in Figure 3 suggests that viewers mostly shifted to watch other TV channels instead of discontinuously turning away from television.

Chávez used the fate of RCTV to threaten other stations. At a rally on the Saturday after RCTV went off the air, he said "This time we were patient, and we tolerated the station for a while, waiting until the license expired. But no one should think it will always be like that. A license can end even ahead of the established time. A license can end, according to the law, for violations to the

[19]The new government-run TV station, TVes, was given RCTV's equipment and channel position, but quickly failed to capture a significant audience.

Constitution, for media terrorism … If the Venezuelan bourgeoisie keeps broadcasting against the Bolivarian people, it will keep losing its outlets, one by one."[20]

In 2010, the Venezuelan communications commission (CONATEL) deemed RCTV ineligible even for cable transmission. After refusing to air government *cadenas*, CONATEL determined that RCTV had violated Venezuela's Law of Social Responsibility in Radio and Television. Again, RCTV appealed; again, the Supreme Court ruled in favor of the government, and cable providers stopped offering RCTV.

The government's RCTV decision sparked outrage at home and abroad.[21] One poll revealed that more than 80% of the population disagreed with the government's decision not to renew RCTV's license.[22] Student protests against the decision coalesced into an influential movement that drew international media attention[23] and launched major political careers. From Washington, Nancy Pelosi warned that the decision threatened democracy.[24] RCTV's tearful farewell broadcast, on May 27, 2007, drew more than three-quarters of the television audience; the following week, a beloved comedy celebrity got down on one knee on national television to beg the government to restore RCTV's license.[25]

Venezuelans criticized the decision not only on the grounds that it threatened media freedom, but also because they lost access to valued entertainment. "I always voted for Chávez, but I also watched RCTV," one Caracas resident told a reporter, mentioning the sketch-comedy show *Radio Rochela* and also *Who Wants to be a Millionaire?*, "I don't like Chávez's decision."[26] Other interviewees echoed this sentiment: "I've watched RCTV since I was two years old, and I miss it;" "In my *barrio*, there have been many complaints, because RCTV was beloved." Luis Vicente León, head of Venezuela's premier polling firm, concluded at the time that Chávez would pay for taking away people's favorite shows.[27]

[20]Dorothy Kronick, "Hugo Chávez's Television Crisis," *The American Prospect*, June 5, 2007.

[21]Rory Carroll, "Chávez silences critical TV station - and robs the people of their soaps," *The Guardian*, May 23, 2007.

[22]María Dariela Espinoza, "83% est á en desacuerdo con la salida de RCTV," *El Universal*, 2007.

[23]Símon Romero, "Media Mogul Learns to Live with Chávez," *The New York Times*, July 5, 2007.

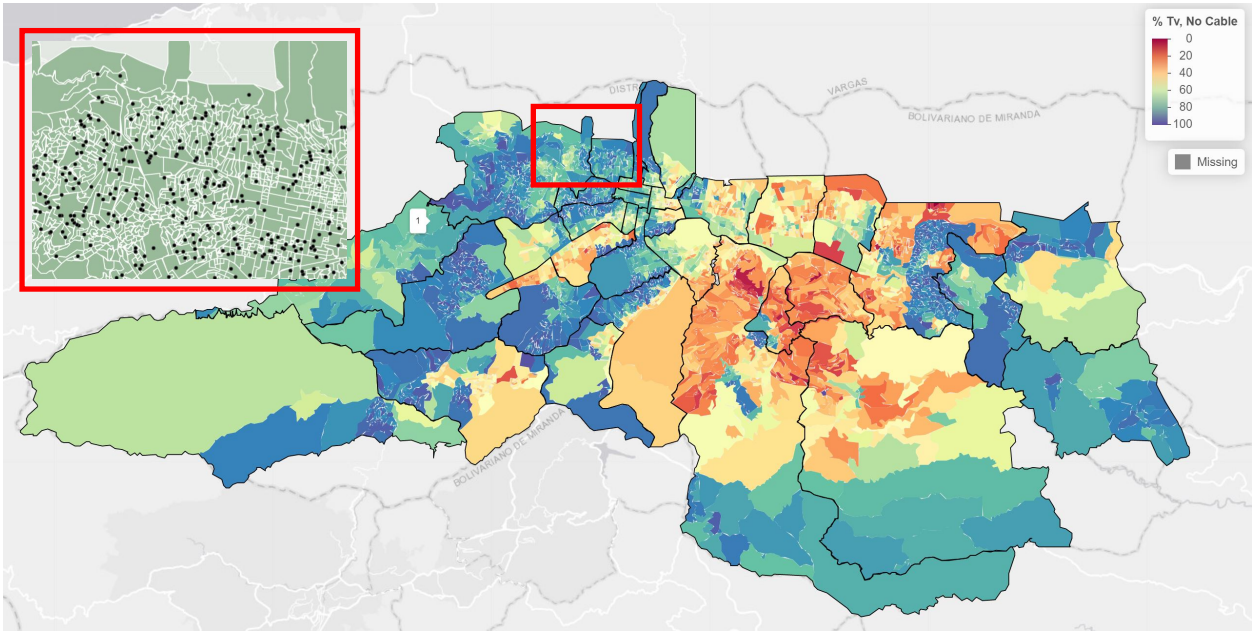
[24]"Pelosi advierte que caso RCTV debilita la democracia," *El Universal*, May 31, 2007.

[25]Simón Villamizar, "Me arrodillé para pedirle que devolviera RCTV," *El Universal*, 2007.

[26]"Los venezolanos pobres perdieron su fábrica de sueños," *Agence France Presse*, 2007.

[27]"Los venezolanos pobres perdieron su fábrica de sueños," *Agence France Presse*, 2007.

Figure 4: Variation in *Lost RCTV* (% with TVs but no cable) within Caracas



Notes: Census tracts in Caracas, with parish (*parroquia*) boundaries shown in black. Colors denote the proportion of households in each census tract that have televisions but no cable (nearly all households in Caracas have televisions); these are the households that lost access to RCTV. The inset shows electoral precincts overlaid on census tracts.

4 Electoral consequences of not renewing RCTV's license

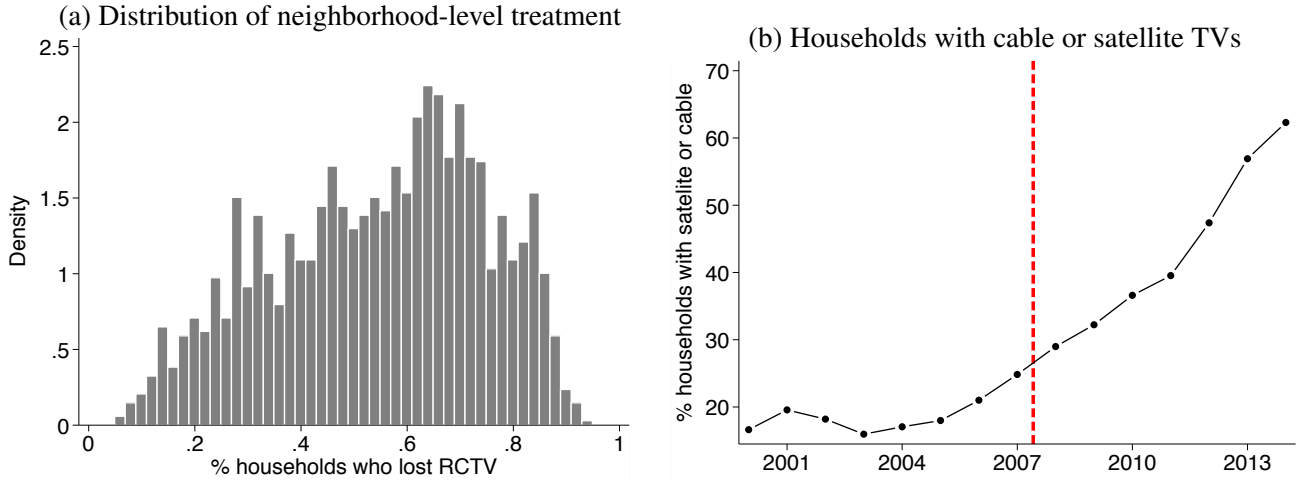
We first use a differences-in-differences design to estimate τ_{DiD}, the differential electoral effect of RCTV going off the air among voters with non-cable TVs (who lost access to RCTV), relative to voters with cable (who retained access). By the time that RCTV went off the air, the state of the world turned out be one where biased coverage could benefit Chávez.

4.1 Data

Lost access to RCTV. To estimate the proportion of citizens in an electoral precinct who had televisions but no cable, we begin with census-tract-level data from Venezuela's 2001 census.[28] Figure 4 maps this proportion across tracts in Caracas, the Venezuelan capital. We then link elec-

[28]The Venezuelan census was conducted in 2001 and again in 2011, but RCTV ceased public broadcasting in 2007. Because the number of cable and satellite subscriptions grew over this decade, particularly toward the end of the period (see Figure 5b), the 2001 census over-counts and the 2011 census under-counts the number of households who lost access to RCTV. Our principal specification uses the 2001 measure, which was not affected by RCTV going off the air; as a robustness check, we interpolate the 2001 and 2011 values.

Figure 5: Density and evolution of households with TV but without cable



Notes: Figure (a) plots the distribution (across electoral precincts) of the proportion of households who had television but no cable in 2007. Figure (b) plots how the proportion of households *with* satellite or cable (i.e. not in our treatment group) changes over time, using data from CONATEL.

toral precincts to census tracts via a spatial merge (see Figure 4, inset). To each electoral precinct, we assign the *television-without-cable* proportion of the population in the census tract in which the precinct is located. Figure 5a plots the distribution of this treatment intensity variable across electoral precincts, with precincts containing 2,405 registered voters on average. In the mean precinct, 4% of households did not have TVs and 28% had cable TVs; the remaining 68% of households with non-cable TVs lost access to RCTV.

Our census-tract-level data allows us to compute treatment intensity—the proportion of households that lost access to RCTV (*Lost RCTV*)—for each electoral precinct in the five large states (Aragua, Carabobo, Lara, Miranda, Vargas) and the federal district (Libertador) for which we could obtain census-tract maps. These areas contain 35% of Venezuela's registered voters. To complement this analysis, we also estimate the proportion of voters who lost access to RCTV at the parish (*parroquia*) level across the whole country. Venezuela's 1,106 parishes are administrative units within municipalities, containing 12,000 households and 16,900 registered voters on average. In the mean parish, 62% of households lost access to RCTV.

This measure of *Lost RCTV* is limited by the 2001 census being conducted six years before RCTV went off air and not recording whether households had satellite TVs. As Figure 5b shows, however, cable and satellite penetration was below 30% in Venezuela in 2007—only slightly higher than the level in 2001—and satellites made up only one-fourth of that number.[29] This suggests that

[29]The purchase of cable and/or satellite as a response to the loss of RCTV is endogenous to the shock,

our measure of *lost RCTV*, based on TV and cable penetration in the 2001 census, is a good proxy for continued access to RCTV in 2007.

Electoral support for Chávez. Our analysis uses a balanced panel of electoral returns from 1,695 precincts across seven elections, including the four presidential elections and three national referenda between 2000 and 2013.[30] Presidential elections were held in 2000, 2006, 2012, and 2013; a presidential recall referendum was held in 2004, and national referenda on proposed constitutional amendments were held in 2007 and 2009.[31] Chávez campaigned vigorously in favor of the proposed constitutional amendments in 2007 and 2009, so much so that observers note that, "invariably, elections are cast as plebiscites on the president's policies" (Salas 2015: 202). Indeed, the proposed amendments would have directly empowered Chávez: both votes considered the abolition of presidential term limits, and the first included, among other changes, the curtailment of central bank autonomy. Figure 6 plots the pro-Chávez vote share in each election in our sample. The 2007 referendum—the first poll after RCTV went off the air—was the only electoral contest that Chávez definitively lost.

In each election, our outcome of interest is the pro-Chávez vote share. In presidential elections, this is simply Chávez's vote share—or, in the 2013 election, the vote share of Chávez's handpicked successor Nicolás Maduro. The 2013 presidential election was held less than six weeks after Chávez's death. For the 2004 recall referendum, we code the pro-Chávez vote as the vote *against* recalling him. For the referenda in 2007 and 2009, we code the pro-Chávez vote as the *yes* vote in favor of each initiative.

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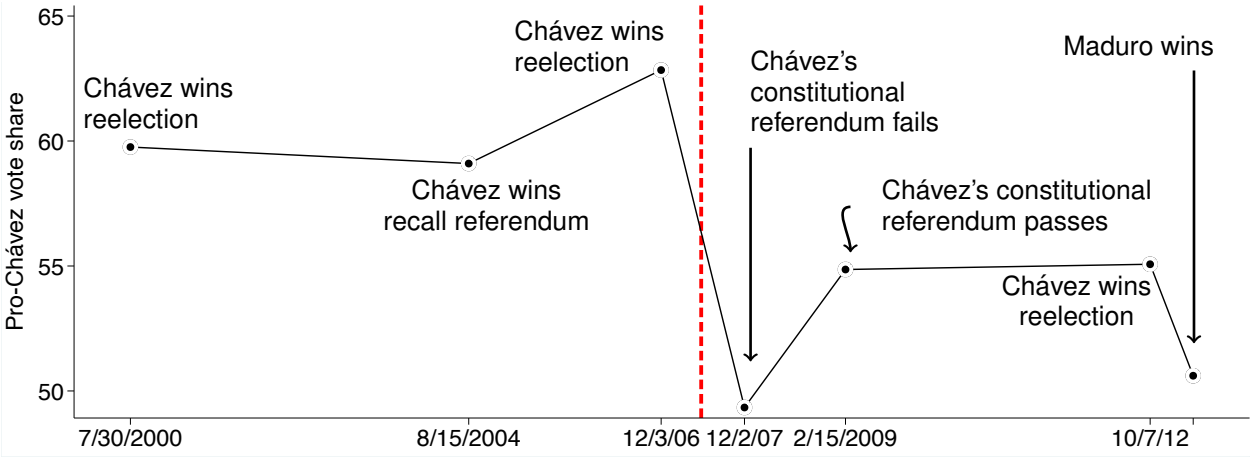
and thus part of any treatment effect. For that reason, we do not seek to adjust for it as part of the design. Figure 5b also indicates that there was no jump in cable and/or satellite subscriptions immediately after RCTV went off the air.

[30] Venezuela's electoral council published this data online at www.cne.gov.ve; other researchers made it publicly available in a more convenient format at www.esdata.info. Given the proliferation of precincts in 2005, we construct a balanced panel by aggregating precinct $\times$ year observations up to the pre-2005 precinct level. For each polling place that did not yet exist in 2004, we locate the (geographically) closest old polling place (that is, polling place that existed in the 2004 election); we then aggregate back up to these pre-2005 units. The correlation in the precinct-level dataset between Chávez's vote share in the 2004 and 2006 elections is 0.98. We drop the few precincts for which data was not available for each election.

[31] We exclude the 1998 presidential election because it was so anomalous (see Kronick, Plunkett and Rodriguez 2023). We exclude the legislative elections (2000, 2005, and 2010) due to varying opposition group strategies, most notably a boycott of the 2005 parliamentary elections; our results are robust to include parliamentary elections where an organized opposition ran. We also focus on national-level elections because it is not clear how to define the "pro-Chávez vote share" in regional elections (2000, 2004, 2008, and 2013); we could study the vote share of his party, but party cohesion—and even the party name—changed dramatically over this period.

Figure 6: Pro-Chávez vote share in our sample of elections



4.2 Identification strategy

Our target estimand is τ_{DiD} from Corollary 1: the net electoral effect of voters without cable (a) losing access to valued RCTV content, for which they might sanction Chávez, and (b) retaining access only to stations with more pro-Chávez content, which might work in his favor. We estimate τ_{DiD} by comparing changes in the pro-Chávez vote share before and after RCTV went off the air in precincts where more voters lost access to RCTV (because they lacked cable) with analogous changes in precincts where fewer voters lost access to RCTV (because of high cable penetration).[32] As our theoretical model highlights, this difference-in-differences design cannot fully capture the consequences of changes in the editorial lines of stations remaining on the air, which affected both viewers with *and* without cable. We examine these changes in content in Section 5 below.

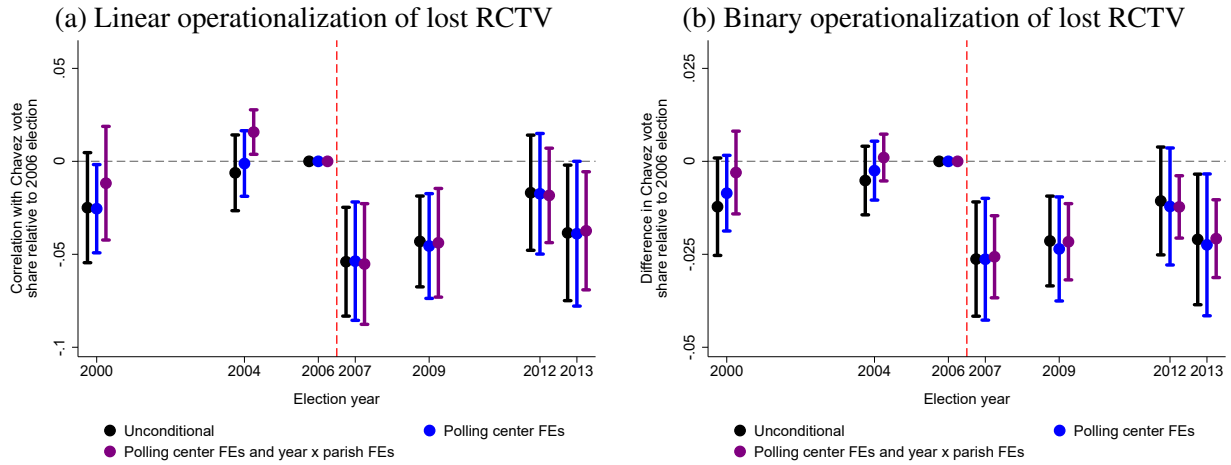
The internal validity of our difference-in-differences analysis rests on whether trends in vote shares across precincts that differed in the extent to which households lost access to RCTV would have been parallel if RCTV had not gone off the air. To evaluate this, we first estimate the following event study regression:

$$Chávez_{it} = \eta_t + \sum_{e \neq 2006} \tau_e \Big(Intensity_i \times \mathbb{1}[t = e] \Big) + \varepsilon_{it}, \tag{8}$$

where $Chávez_{it}$ is Chávez's vote share in precinct i in election t, η_t are fixed effects for each

[32] We remove the precincts where less than 95% of households owned a television in 2001. These precincts collectively contain 22% of voters.

Figure 7: Trends in Chávez vote share across elections



Note: These figures plot estimates of τ from equation (8).

election $t = 2000, \ldots, 2013$, and $Intensity_i$ is either the share of voters who lost access to RCTV in 2007 or an indicator for the 79% of precincts in which more than 50% of households lost RCTV. In the above-50% group, 77% of households in the average precinct lost access to RCTV, compared with 34% in the below-50% group. Observations are weighted by the number of registered voters in each precinct and standard errors are clustered by parish.[33]

Figure 7 reports estimates of each τ_e: the difference in the partial correlation between $Intensity_i$ and $Chávez_{it}$, relative to the last election before the Chávez government chose not to renew RCTV's public broadcast license. The results indicate that pre-trends were indeed similar across more- and less-treated precincts, providing support for the assumption of parallel trends across treatment intensities (de Chaisemartin and D'Haultfœuille 2023). The pre-trends remain parallel when we add precinct fixed effects and parish $\times$ year fixed effects. Leveraging only within-parish variation in the share of voters who lost access to RCTV, the latter adjusts for any parish-level determinants of support for Chávez in any given election. Figure 7 also reveals that, after RCTV went off the air in 2007, trends in vote shares diverged: in the dichotomous operationalization of *Lost RCTV*, for example, treated precincts supported Chávez 2.5 percentage points less than the precincts with higher cable penetration. This change persisted through the 2009 referendum, but had attenuated somewhat by the 2012 and 2013 elections.

[33] Appendix Table A11 reports similar results when precincts are weighted equally, and thus overweight weight voters in smaller precincts.

Given similar pre-trends across treatment intensities, we estimate OLS regressions of the form:

$$Chávez_{it} = \alpha_i + \eta_t + \tau\Big(Intensity_i \times Post\text{-}RCTV\ closure_t\Big) + \varepsilon_{it}, \tag{9}$$

where $Intensity_i$ is a measure (or set of measures) of the share of voters who lost access to RCTV in 2007, $Post\text{-}RCTV\ closure_t$ is an indicator for elections held after RCTV went off the air in 2007, α_i are precinct effects, and η_t are election fixed effects. Callaway, Goodman-Bacon and Sant'Anna (2024) show that, under additional treatment effect homogeneity assumptions, $\hat{\tau}$ captures causal parameters that average across the post-treatment effects shown in Figure 7.[34] In particular, since there are no pure control precincts where all households have cable TVs, the linear intensity measure returns the average causal response—a weighted average of the marginal effects of increasing *Lost RCTV* across the intensities in our sample—when the average causal response at a given intensity does not vary across units that received different intensities. Under the weaker assumption that the effect of less than 50% of voters losing access to RCTV is equal across low and high intensity groups, the binary intensity measure returns the average treatment effect of moving from an average of 34% of households having lost access to RCTV to an average of 77% losing access to RCTV.

Beyond parallel trends and these effect-homogeneity assumptions, interpreting $\hat{\tau}$ as a valid estimate of τ_{DiD}—the net effect of losing access to RCTV on electoral support for Chávez—requires an additional assumption. Namely, we assume that other simultaneous events did not differentially affect precincts with different levels of cable penetration, and that not renewing RCTV's license did not differentially affect voters without cable TVs for reasons other than those outlined above. To mitigate against these possibilities, we estimate additional specifications that also include interactions between election fixed effects and precinct-level covariates that capture socioeconomic status. This allows trends in vote shares to vary by precinct characteristics that could shape voters' responses to other events in 2007 (e.g. Chávez's nationalizations).

[34] Specifically, we assume $\mathbb{E}[Y_{i,t}(d) - Y_{i,0}(0)|D_i = d] = \mathbb{E}[Y_{i,t}(d) - Y_{i,0}(0)|D_i = d']$, where $Y_{i,t}(d)$ is the potential outcome for unit i under any non-zero treatment intensity $d \in \mathscr{D}$ at time t and $t = 0$ is the last period before treatment (Callaway, Goodman-Bacon and Sant'Anna 2024). This effect homogeneity assumption, which applies between any $d, d' \in \mathscr{D}$, is weaker where $\mathscr{D}$ contains fewer intensities. It differs from the standard parallel trends assumption, which assumes similar trends across groups in the absence of treatment. Because treatment is not staggered, our twoway fixed effect estimator averages over—but is not biased by—dynamic treatment effects (see e.g. Roth et al. 2023).

4.3 Results

Consistent with the event study estimates in Figure 7, our estimates of equation (9) in Table 1 show that τ_{DiD} is negative. The linear operationalization of *Lost RCTV* in column (1) of panel A implies that Chávez's vote share was 3.3 percentage points lower in precincts where everyone lost RCTV than in precincts where nobody lost access. When we dichotomize *Lost RCTV* in column (1) of panel B, we find that Chávez's vote share was 1.9 percentage points lower in precincts where at least 50% of households lost access to RCTV than in precincts where fewer than 50% of households lost access. Normalizing by the difference in the share of households that lost access to RCTV suggests that the effect among households who lost RCTV is larger by a factor of around 2.3, i.e. $1/(0.77-0.34)$.[35]

These results indicate that voter punishment of Chávez for restricting access to RCTV dominated the potentially pro-Chávez consequences of forcing those voters to switch to stations with more favorable news content. Indeed, 70% of Venezuelans disagreed with Chávez's decision not to renew RCTV's license, and protests against the decision helped fuel protests against his proposed constitutional amendments.[36]

To explore the shape of the average causal response function, we further divide *Lost RCTV* into three groups.[37] The results in column (1) of panel C show that, relative to precincts in which less than one-third of households lost access to RCTV, Chávez's vote share declined by 2.5 percentage points in precincts where 33%-67% of households lost access and by 2.6 percentage points in precincts where at least two-thirds of households lost access. These diminishing effects of treatment intensity provide some evidence to suggest that voters surrounded by people who lost access became more likely to sanction Chávez, although our robustness checks below suggest the effects increase more linearly with treatment intensity.

In column (5) of each panel in Table 1, we exclude the 2012 and 2013 elections. The increase in the magnitude of the coefficients reveals that the negative effects on the pro-Chávez vote share were largest in the 2007 and 2009 elections immediately following RCTV going off the air. This is consistent with our interpretation that electoral punishment stemmed from voter sanctioning for the loss of valued content; over time, we would expect this effect to be diluted by additional (off-

[35] We treat this normalization with caution because it relies on an exclusion restriction in which the effect operates only among those who themselves lost access to RCTV. In the presence of indirect effects, the normalizing factor would depend on which intensities experience larger indirect effects.

[36] Table A10 shows that losing access to RCTV also mobilized voters in terms of increasing turnout, although these effects materialized over time, rather than immediately.

[37] These results are tentative because the causal response function could differ by dosage (Callaway, Goodman-Bacon and Sant'Anna 2024).

Table 1: Effect of losing RCTV in 2007 on electoral support for Chávez

	Chávez vote share							
	Election period: 2000-2013				Election period: 2000-2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Share with TV without cable								
Lost RCTV × Post-RCTV closure	-0.033*	-0.040**	-0.029**		-0.045***	-0.052***	-0.036**	
	(0.017)	(0.016)	(0.013)		(0.016)	(0.017)	(0.014)	
Predicted lost RCTV × Post-RCTV closure				-0.047**				-0.060***
				(0.020)				(0.020)
Residual lost RCTV × Post-RCTV closure				-0.024***				-0.030***
				(0.009)				(0.010)
(Predicted) Lost RCTV mean	0.63	0.63	0.63	0.62	0.63	0.63	0.63	0.63
Panel B: Greater than 50% had TV without cable								
Lost RCTV >0.5 × Post-RCTV closure	-0.019**	-0.019***	-0.014***		-0.023***	-0.023***	-0.016***	
	(0.008)	(0.005)	(0.004)		(0.008)	(0.006)	(0.004)	
Predicted lost RCTV >0.5 × Post-RCTV closure				-0.028***				-0.035***
				(0.010)				(0.011)
Residual lost RCTV >0.5 × Post-RCTV closure				-0.012***				-0.013***
				(0.004)				(0.004)
(Predicted) Lost RCTV >0.5 mean	0.66	0.66	0.66	0.65	0.66	0.66	0.66	0.66
Panel C: Three categories of TV without cable								
Lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure	-0.025**	-0.013***	-0.010***		-0.026***	-0.016***	-0.012***	
	(0.010)	(0.004)	(0.004)		(0.009)	(0.005)	(0.004)	
Lost RCTV $\in (0.67, 1]$ × Post-RCTV closure	-0.026**	-0.026**	-0.018**		-0.033***	-0.031***	-0.021**	
	(0.012)	(0.010)	(0.007)		(0.011)	(0.011)	(0.008)	
Predicted lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-0.032***				-0.029***
				(0.011)				(0.011)
Residual lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-0.008**				-0.009**
				(0.003)				(0.004)
Predicted lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-0.041***				-0.047***
				(0.013)				(0.013)
Residual lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-0.014**				-0.016***
				(0.005)				(0.006)
(Predicted) Lost RCTV $\in (0.33, 0.67]$ mean	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
(Predicted) Lost RCTV $\in (0.67, 1]$ mean	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Test: equal coefficients across variables (p value)	0.86	0.07	0.13	0.50	0.28	0.02	0.08	0.14
Test: equal coefficients across residualized variables (p value)				0.12				0.06
Observations	8,589	8,589	8,589	8,589	6,135	6,135	6,135	6,135
Unique parishes	109	109	109	109	109	109	109	109
Outcome mean	0.49	0.49	0.49	0.49	0.51	0.51	0.51	0.51
Outcome standard deviation	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Parish × year fixed effects		✓	✓	✓		✓	✓	✓
Year-specific factor covariates			✓				✓	

Notes: Each specification is estimated using OLS and includes precinct and year fixed effects. The interactive factor covariates are the three first dimensions capturing differences in 2001 census characteristics across precincts. The predicted and residual variables come from cross-sectional regressions of the treatment variable(s) on the variables used in the factor analysis. All observations are weighted by the number of registered voters. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

setting or non-compounding) information about Chávez's policies, such as the public spending boom in the lead-up to the 2012 presidential election. The distribution of these benefits undoubtedly affected voters' perceptions of Chávez's priorities, in ways weakly correlated with the RCTV treatment. The difference likely also narrowed because cable viewers also lost access to RCTV in 2010.

Robustness checks. We begin by considering dynamic potential confounds. First, similar

findings emerge when we include parish × year fixed effects, which flexibly capture local shocks in support for Chávez, such as variation in campaigning, distributive policies, or economic shocks that vary across parishes. These estimates are reported in the columns (2) and (6) of Table 1. Second, interacting three factor variables capturing precinct-specific socioeconomic characteristics with election indicators does not substantially change the estimates in columns (3) and (7), suggesting that our results are not driven by differential trends across (for example) poor and non-poor neighborhoods.[38] Third, following Cantoni et al. (2019), we extract the predicted values and residuals from cross-sectional regressions of our measures of *Lost RCTV* on the same 19 covariates used to generate our socioeconomic factor variables. The results in columns (4) and (8) show that, in addition to the part of *Lost RCTV* predicted by these variables, the residuals—which are purged of the correlation with these census variables—also show that Chávez's vote share fell more in areas where many households lost access to RCTV. Together, these specifications address the concern that changes in voting behavior might reflect the changing consequences of correlates of losing access to RCTV, rather than losing access itself.

We next consider alternative definitions of *Lost RCTV*. First, we demonstrate that our estimates in panel B are not driven by the choice of 50% as the threshold used to separate high- and low-intensity precincts. Appendix Figure A4 reports statistically significant negative coefficients for thresholds from 30% to 50% of voters losing access to RCTV.[39] Second, Appendix Table A12 presents similar results using an alternate measure of *Lost RCTV* that interpolates between the 2001 and 2011 censuses. This measure may better capture cable levels in 2007, but it could also reflect post-treatment decisions to purchase cable.

To ensure that our results are not purely driven by the 2007 and 2009 referenda, we next restrict our analysis to the presidential elections in 2000, 2006, 2012, and 2013. Appendix Table A13 shows that we continue to observe significant, if less precise, negative effects. The magnitudes are also somewhat smaller given that presidential elections did not occur for 5 years after RCTV went off the air.

Finally, because the precinct-level panel is available only for five states and the federal district,

[38] Factor analysis identified three latent (rotated) dimensions that differentiate precincts according to 19 census variables that could plausibly interact with political events. We choose the first three factors because their eigenvalues all exceeded 1. (We do not adjust for home internet access because it is structurally tied to cable access.) The factor loadings in Appendix Table A8 suggest that the three factors broadly capture poverty and class, household demographics, and community characteristics. We adjust for $\sum_{j=1}^{3} \eta_t factor\ j_{ip}$.

[39] For lower thresholds, the estimates are noisy because there are so few precincts below the 30% mark (see Figure 5a). For higher thresholds, large fractions of both the higher and lower intensity groups lost access to RCTV.

we use a parish-year panel to estimate an analogous difference-in-differences regression for the whole country:

$$Chávez_{pt} = \alpha_p + \eta_t + \tau\Big(Intensity_p \times Post\text{-}RCTV\ closure_t\Big) + \delta_t Share\ Cement\ Floor_p + \varepsilon_{pt}, \quad (10)$$

where $Chávez_{pt}$ is now Chávez's vote share in parish p in election t, α_p are parish fixed effects, and $Share\ Cement\ Floor_p$ is an estimate of the proportion of households with cement floors, which we also interact with election indicators. This last term allows trends in support for Chávez in densely populated and low-income *barrios* to differ from trends in other parishes. This addition is important because households with televisions but without cable are concentrated in these areas; including trends by floor type helps ensure that our estimates do not simply pick up differential *barrio* trends. Appendix Figure A2 shows that the inclusion of this covariate, together with state $\times$ year fixed effects, removes differential pre-trends in the nationwide sample.

Table 2 reports our estimates from the nationwide parish-year panel. Column (1) of each panel again reports a significant drop in Chávez support in areas that lost access to RCTV. The effects in panel A are somewhat larger than our precinct-level panel, potentially reflecting more limited access to alternative sources of critical content such as Globovisión (Knight and Tribin 2022) or greater initial support for Chávez in the more rural areas for which we lack census-tract maps. Column (2) shows that the estimates increase with the inclusion of state $\times$ year fixed effects. As in the precinct-year panel, columns (3) and (4) show that our difference-in-differences estimates are again larger for the elections immediately following 2007.

4.4 Mechanisms

Having shown that voter sanctioning dominated any gains from persuasion among voters more likely to have lost access to RCTV, we next seek to substantiate the mechanisms driving this effect by exploring three implications of our model. The results across these analyses suggest that, while the former dominates, both the sanctioning and persuasion mechanisms were at play.

Greater sanctioning among voters who consumed RCTV. The degree to which voters sanction politicians for removing media content is likely to depend on whether voters value this content. In Proposition 2 and Corollary 1, the magnitude of electoral sanctioning intuitively increases with voter valuations of the neutral outlet's entertainment content (a more positively skewed distribution F) and the importance of informative news for their personal decisions (δ). If voter sanctioning is driven by reduced consumption utility, lost votes should be concentrated among voters who chose to consume RCTV when it was available them. In contrast, citizens who consumed other outlets

Table 2: Effect of losing RCTV in 2007 on electoral support for Chávez, using nationwide parish-level data

	Chávez vote share			
	Election period: 2000-2013		Election period: 2000-2009	
	(1)	(2)	(3)	(4)
Panel A: Share with TV without cable				
Lost RCTV × Post-RCTV closure	-0.050***	-0.083***	-0.077***	-0.088***
	(0.017)	(0.016)	(0.015)	(0.016)
Intensity mean	0.63	0.63	0.63	0.63
Panel B: Great than 50% had TV without cable				
Lost RCTV $> 0.5 \times$ Post-RCTV closure	-0.020***	-0.024***	-0.027***	-0.027***
	(0.007)	(0.006)	(0.006)	(0.005)
Intensity mean	0.79	0.79	0.79	0.79
Panel C: Three categories of TV without cable				
Lost RCTV $\in (0.33, 0.67] \times$ Post-RCTV closure	-0.017	-0.030***	-0.026*	-0.034***
	(0.015)	(0.011)	(0.014)	(0.011)
Lost RCTV $\in (0.67, 1] \times$ Post-RCTV closure	-0.020	-0.040***	-0.037***	-0.044***
	(0.015)	(0.011)	(0.013)	(0.012)
Intensity mean	0.44	0.44	0.44	0.44
Second intensity mean	0.48	0.48	0.48	0.48
Test: equal coefficient across variables (p value)	0.57	0.06	0.02	0.03
Observations	7,175	7,175	5,125	5,125
Unique parishes	1,025	1,025	1,025	1,025
Outcome mean	0.61	0.61	0.61	0.61
Outcome standard deviation	0.13	0.13	0.13	0.13
State × year fixed effects		✓		✓

Notes: Each specification is estimated using OLS, and includes parish and year fixed effects and a year-specific share with a cement floor covariate. All observations are weighted by the number of registered voters. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

before are unlikely to be affected.

To evaluate the moderating role of content valuations, we predict RCTV consumption levels at the precinct level. Using aggregated Nielsen data, we computed the estimated audience for all RCTV's news programming and the top 25 most popular programs in a given month between January 2002 and when RCTV went off the air in May 2007 across different demographics. We have viewership data across 8 age bands, 9 metropolitan areas, 4 social classes, for cable and non-cable subscribers, and by gender. We used a linear regression to obtain correlations between these demographic characteristics and viewership of RCTV's most popular programs and then predicted

precinct consumption based on the distribution of these variables in the 2001 Census. Because we only observe the marginal distribution of viewership across each demographic dimension, we backed out a prediction for the joint distribution by adjusting for the correlations between covariates in the Census data.[40] Based on these RCTV consumption predictions, we compare effects among precincts that rank above or below the (voter-weighted) median level of pre-license revocation RCTV news consumption in our sample.

The heterogeneous effect estimates in panel A of Table 3 indicate that relative declines in Chávez's vote share were concentrated in the precincts most likely to watch RCTV. The lower-order coefficient suggests that losing access to RCTV had a negative effect on voters who previously consumed RCTV at low levels. However, the large and statistically significant triple interaction terms imply that the effect more than doubled in precincts that previously consumed RCTV at above-median levels. Our estimate in column (3), for example, indicates that Chávez's vote share declined by almost 6 percentage points in precincts where RCTV was initially popular *and* at least 50% of people lost access to RCTV. In line with the proposed sanctioning mechanism, these results suggest that electoral punishment is driven by consumers who lost access to their preferred entertainment or news content on RCTV.

More limited sanctioning among voters with limited access to alternative opposition content. While our model considers a stylized environment with one pro-incumbent and one neutral media outlet, Venezuela's local media market is more complex. Of particular relevance, the 24 hour news TV channel—Globovisión—remained active, and was highly critical of the government in the wake of RCTV's license revocation. Within our theoretical framework, access to Globovisión allows voters to consume critical content and thereby at least partially opt out of the persuasive content of pro-government outlets. Voters without access to a critical news outlet can only consume TV stations with a pro-incumbent slant, and thus experience a more pronounced persuasion effect. Knight and Tribin (2022) show that RCTV's closure increased Globovisión's viewership in the limited urban areas where it was available, but—as we also show in Figure 2—many other consumers shifted to pro-incumbent outlets. To explore whether differences in available content shaped the magnitude of electoral sanctioning, we examine heterogeneity in vote share effects across municipalities with and without access to Globovisión.

The results in panel B of Table 3 suggest that a lack of access to alternative sources of critical content generated a stronger pro-Chávez persuasion effect. Where voters could substitute into Globovisión, and thus avoid pro-government news, the negative triple interaction coefficients are

[40] Appendix A.5 provides technical details about this procedure. We computed separate predicted audiences for news and non-news programming, but the two predictions are too highly correlated ($\rho > 0.98$) to provide meaningful differentiation.

Table 3: Heterogeneity in the effect of losing RCTV in 2007 on electoral support for Chávez

	Chávez vote share			
	(1)	(2)	(3)	(4)
Panel A: Heterogeneity by above-median predicted RCTV news consumption—polling center-level sample				
Lost RCTV × Post-RCTV closure	-0.052**	-0.036**		
	(0.024)	(0.017)		
Lost RCTV × Post-RCTV closure × High RCTV audience	-0.074***	-0.020		
	(0.024)	(0.014)		
Lost RCTV > 0.5 × Post-RCTV closure			-0.028***	-0.017***
			(0.009)	(0.005)
Lost RCTV > 0.5 × Post-RCTV closure × High RCTV audience			-0.038***	-0.012**
			(0.010)	(0.005)
Observations	8,589	8,589	8,589	8,589
Unique parishes	109	109	109	109
Outcome mean	0.49	0.49	0.49	0.49
Outcome standard deviation	0.21	0.21	0.21	0.21
Intensity mean	0.63	0.63	0.67	0.67
Moderator mean	0.54	0.54	0.54	0.54
Parish × year fixed effects		✓		✓
Panel B: Heterogeneity by access to Globovisión—polling center-level sample				
Lost RCTV × Post-RCTV closure	0.009	0.003		
	(0.016)	(0.013)		
Lost RCTV × Post-RCTV closure × Access to Globovisíon	-0.108***	-0.077***		
	(0.022)	(0.021)		
Lost RCTV > 0.5 × Post-RCTV closure			-0.005	-0.011**
			(0.008)	(0.004)
Lost RCTV > 0.5 × Post-RCTV closure × Access to Globovisíon			-0.037***	-0.017*
			(0.013)	(0.009)
Observations	8,589	8,589	8,589	8,589
Unique parishes	109	109	109	109
Outcome mean	0.49	0.49	0.49	0.49
Outcome standard deviation	0.21	0.21	0.21	0.21
Intensity mean	0.63	0.63	0.67	0.67
Moderator mean	0.58	0.58	0.58	0.58
Parish × year fixed effects		✓		✓
Panel C: Heterogeneity by access to Globovisión—nationwide parish-level sample				
Lost RCTV × Post-RCTV closure	-0.050**	-0.057***		
	(0.021)	(0.015)		
Lost RCTV × Post-RCTV closure × Access to Globovisíon	-0.231***	-0.235***		
	(0.032)	(0.026)		
Lost RCTV > 0.5 × Post-RCTV closure			-0.016**	-0.014***
			(0.007)	(0.005)
Lost RCTV > 0.5 × Post-RCTV closure × Access to Globovisíon			-0.069***	-0.082***
			(0.012)	(0.012)
Observations	7,175	7,175	7,175	7,175
Unique parishes	1,025	1,025	1,025	1,025
Outcome mean	0.61	0.61	0.61	0.61
Outcome standard deviation	0.13	0.13	0.13	0.13
Intensity mean	0.63	0.63	0.79	0.79
Moderator mean	0.04	0.04	0.04	0.04
State × year fixed effects		✓		✓

Notes: Each specification is estimated using OLS, and includes precinct and year fixed effects. The construction of the predicted RCTV news consumption variable is described in Appendix A.5. Lower-order terms are omitted. All observations are weighted by the number of registered voters. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

most pronounced. This finding accords with Knight and Tribin (2022), who similarly find that support for Chávez dropped more in municipalities with access to Globovisión than municipalities without such access after RCTV's license was not renewed. Access to opposition content thus appears to have compounded electoral sanctioning of lost content in limiting the effectiveness of state censorship.

The base interaction coefficient captures the effect of losing access to RCTV among citizens without access to Globovisión. Panel B indicates that support for Chávez was not significantly affected among these citizens, suggesting that sanctioning effects were compensated for by greater exposure to content favorable toward the government when Globovisión was not available. In the nationwide parish-level sample, Panel C points to a net sanctioning effect among the broader population without access to Globovisión. This suggests that the relative loss of votes among citizens who lost access to RCTV is not solely driven by these citizens shifting to consume Globovisión.

Changes in citizen beliefs after RCTV went off public air. To further investigate the mechanisms driving voting behavior, we next use survey data to evaluate whether citizen beliefs changed in accordance with our theory. We combine the Latinobarometer's annual cross-sectional survey waves between 2000 and 2011 to produce a sample of up to 13,000 respondents from 167 municipalities across the country (around 1,200 people from between 35 and 49 municipalities per survey wave). Following a similar approach to the electoral aggregates, we estimate difference-in-differences specifications of the following form:

$$Y_{imt} = \alpha_m + \eta_t + \tau\Big(\textit{Lost RCTV}_m \times \textit{Post-RCTV closure}_t\Big) + \varepsilon_{imt}, \tag{11}$$

where Y_{imt} denotes a survey response for individual i in municipality m in survey wave t, and $\textit{Lost RCTV}_m$ captures the share of the respondent's municipality—the most fine-grained geographic identifier for survey respondents—that lost access to RCTV after its license was not renewed. Standard errors are clustered by municipality. Our outcomes focus on questions that were asked in at least seven rounds of the survey and at least twice before and after RCTV's public broadcast license was not renewed.

In line with the dominant sanctioning effect, we expect to find that Chávez became more unpopular with citizens who lost access to RCTV. Column (1) indeed shows that ratings of Chávez on a scale from 1 to 10 significantly declined. Relative to a municipality where 50% of households lost access to RCTV, our estimates indicate that Chávez became more than a point—or about a third of a standard deviation—less popular in municipalities where 75% of households lost access to RCTV. Column (2) shows that citizens' placement on a left-right scale was not affected though, suggesting that reduced support for Chávez did not reflect voters who lost access to RCTV

Table 4: Effect of losing RCTV in 2007 on political beliefs

	Chávez rating (1)	**Left right placement** (2)	**Country's economic situation** (3)	**Improving economic situation** (4)	**Satisfaction with democracy** (5)
Lost RCTV × Post-RCTV closure	-4.330**	-0.208	-0.190	0.293	-0.177
	(1.691)	(1.398)	(0.304)	(0.310)	(0.356)
Observations	7,318	11,343	13,769	11,455	13,641
Number of municipalities	161	239	240	210	240
Outcome mean	6.63	5.34	2.89	2.90	2.57
Outcome standard deviation	3.14	3.12	1.00	1.16	0.99

Notes: Each specification is estimated using OLS, and includes municipality and survey wave fixed effects. Lower-order terms are omitted. Standard errors are clustered by municipality. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

becoming more conservative.

In spite of our prior evidence that voter sanctions were greatest where RCTV was most popular, Chávez's unpopularity need not reflect individuals being upset by losing valued content. Rather, it remains possible that citizens who lost access to RCTV sought out or became exposed to critical information about the government (e.g. by attending protests) or were more likely to regard the revocation of RCTV's license as a significant affront to democracy. This may make voters skeptical of the incumbent's type (Guriev and Treisman 2020) or angry at being deceived (Gläßel and Paula 2020). While not renewing RCTV's license probably increased concern about the governing regime, as the signaling version of model in Appendix A.2 rationalizes, columns (3)-(5) suggest that neither alternative mechanism explains the *differential* change in beliefs and behaviors in areas with more limited access to cable television after RCTV went off the air. In particular, appraisals of the country's current economic situation or whether the economy is improving—both on five-point scales—or satisfaction with democracy in Venezuela did not decline more among respondents in municipalities where more citizens lost access to RCTV. Not renewing RCTV's license could still have negatively impacted everyone's appraisal's of the government; indeed, satisfaction with democracy trended down after 2006. Nevertheless, these findings suggest that lower support for Chávez in areas that lost access to RCTV is unlikely to be driven by changing beliefs about the key issues of the economy or democracy.

No evidence of differential migration. Although mass migration out of Venezuela did not begin until 2015, emigration grew steadily in the mid 2000s. If emigrants were disproportionately

anti-Chávez and concentrated in areas which lost access to RCTV, migration rather than changes in political support could account for our electoral results. Estimating equation (9) with registered voters as the outcome, the results in Appendix Table A14 show no significant difference in voter counts across precincts that differed in lost access to RCTV. This suggests that our findings are unlikely to reflect changes in electorate composition.

5 A change in the slant of competing television stations

The *relative* decline in Chávez's vote share among citizens who lost access to RCTV might seem to suggest that the president's decision backfired—especially for the 2007 constitutional referendum that Chávez lost by less than one percentage point. However, even when $\mathbb{E}[\tau_{DiD}] < 0$, Corollary 2 shows that Chávez's decision could still have increased his *total* vote share. This is possible if the remaining major outlets—which are consumed both by cable viewers of more pro-government outlets and citizens who lost access to RCTV—moderated their editorial lines as competition for audience weakened. While Venevisión CEO Gustavo Cisneros reported abandoning its "Fox news approach,"[41] we examine changes in content more systematically using large language models to classify the slant and topics of newscasts among the televisions channels that retained their public broadcast licenses.

5.1 Newscast data and classification

We draw from a corpus of 1,022 weekday newscasts on Globovisión, RCTV, Televen, and Venevisión between February 2006 and December 2009.[42] Wherever possible, we purchased videos of the main evening news program on each channel for two randomly selected days each week. The archive, which is maintained by a political consultant, did not contain newscasts for RCTV and Venevisión in 2006, or RCTV for some months after it moved to cable. All video files were transcribed using Google's Venezuelan Spanish transcription model. Each file was then manually trimmed to remove content from adjacent programs on air before and after each newscast. We then used machine learning methods to segment newscasts into distinct stories, before classifying the topic of each story and its favorability toward Chávez and his government.

Newscast segmentation. The text segmentation step built and trained a Bidirectional Long-Short Term Memory (BiLSTM) neural network (see Lukasik et al. 2020) to predict boundaries

[41] Símon Romero, "Media Mogul Learns to Live with Chávez," *The New York Times*, July 5, 2007.

[42] For Globovisión, we sometimes have multiple different evening programs, which we aggregate into a single day-level newscast.

between different news stories, headlines, and ads within each newscast.[43] The BiLSTM model captures long-term dependencies in sequential data by moving forwards *and* backwards through the input sequence to predict segment boundaries. Following Li et al. (2020), we precede this architecture with a multilingual Bidirectional Encoder Representations from Transformers (BERT) layer that generates embeddings that incorporate information from the entire document in addition to the tokens immediately around potential segment transitions (Devlin et al. 2018). The model was trained using 1,481 segment boundaries from 43 of our newscasts that were inserted by hand into the transcriptions by three research assistants watching the newscast video.

This step ultimately broke our newscasts into 24,584 segments. Among the 448 segment boundaries held back for validation, the model correctly predicted the hand-coded boundary with an overall accuracy level of 97%.[44] The model thus performed well in the sequence tagging task of segmenting newscasts into distinct stories.

Segment classification. We next used recently-developed large language models to classify each segment. We began by using Open AI's GPT-4-turbo and a fine-tuned Cross-lingual Language Model-Robustly Optimized BERT Pretraining Approach (XLM-RoBERTa) model to predict whether each segment contained domestic news, international news, sport, ads, or other content. Whichever of GPT-4 or GPT-4-turbo most closely matched human coding was then used to classify all segments predicted to be domestic or international news by either GPT-4-turbo or XML-RoBERTa along five dimensions: (i) topic (among 20 domestic and 3 international topics); (ii) the impression the segment conveys of how well the Venezuelan government is performing in office (positive, neutral, or negative); (iii) the sentiment expressed about the Venezuelan government or its performance in office (positive, neutral, or negative); (iv) the sentiment expressed about President Chávez (positive, neutral, or negative); and (v) whether the segment blames the Venezuelan government for events that convey a negative impression of its performance. The prompts submitted to GPT are reported in Appendix A.6.2.[45]

Open AI's GPT-4 is, at the time of writing, the state of the art in multilingual artificial intelligence. Although it out-performs humans on various tasks (Achiam et al. 2023), we validated its performance on 675 news segments from 74 newscasts for our specific application against two human coders. The summary results in Table 5 demonstrate high levels of agreement: treating the

[43] Appendix A.6.1 provides additional information about this model and our preprocessing.

[44] Considering our hand-coded segmentation as correct, this reflects precision and recall scores of 98% and 99% for separations between artificial sentences that did not contain a hand-coded boundary, and precision and recall scores of 70% and 63% within artificial sentences that contained a hand-coded boundary.

[45] The version of GPT and seed of the classifications was retained to ensure the predictions are replicable. XML-RoBERTa consistently performed worse on these tasks, but results using these classifications are shown in Appendix Table A15.

Table 5: Accuracy of newscast segment classifications

Outcome	Number of categories	Classification model	Accuracy	Precision	Recall	F-score
Newscast segment section	5	XML-RoBERTa	0.889	0.896	0.889	0.875
Topic	23	GPT-4-turbo	0.625	0.689	0.625	0.635
Overall sentiment	3	GPT-4-turbo	0.753	0.750	0.753	0.742
Sentiment toward the government	3	GPT-4	0.810	0.818	0.810	0.810
Sentiment toward Chávez	3	GPT-4	0.867	0.884	0.867	0.871
Blame of the government	2	GPT-4-turbo	0.840	0.881	0.840	0.852

Notes: For each outcome, we used the most accurate classifier among: GPT-4, GPT-4-turbo, and XML-RoBERTa. Accuracy is the share of machine classifications that agree with the human coder of a news segment (or randomly selected coder when both coders classified a segment). Precision is the share of machine classifications as a given class that our hand coders classified as that class, averaged across all classes. Recall is the share of hand coded classifications as a given class that our machine classifications classified as that class, averaged across all classes. The F-score is the harmonic mean of precision and recall.

human classifications as the ground truth, our GPT-4 and GPT-4-turbo predictions generally agrees with our human coders' classifications around 80% of the time.[46] Such high levels of agreement are particularly impressive considering that human coders often disagree about how to classify television clips (Widmer, Galletta and Ash 2023).

Finally, we aggregate segments to produce day-level outcomes that capture the topics and slant of each TV channel's newscasts. After excluding segments that both GPT-4-turbo and XLM-RoBERTa classified as ads, we computed the share of words on a given channel-day from segments classified as belonging to a particular topic or expressing a given sentiment. For example, impressions of bad news for the government is the average sentiment across all segments within a given newscast, weighted by the number of words in each segment. This approximates the share of news reported by a TV channel that was unfavorable to the government.

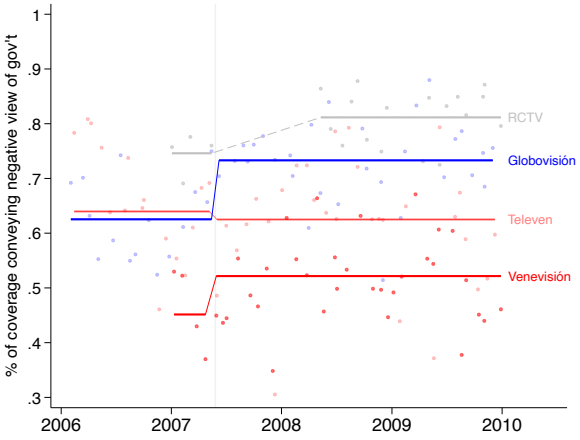
5.2 Results

We begin by graphically examining changes in our broadest news sentiment metric, which classifies whether news segments convey a negative impression of the performance of Chávez and his government. In line with the qualitative record, the monthly averages in Figure 8a show that Televen and especially Venevisión's coverage was notably more favorable than Globovisión and RCTV's coverage before RCTV went off the air in May 2007. Afterwards, as cracks in the government's performance began to show, Globovisión became relatively more critical than Venevisión

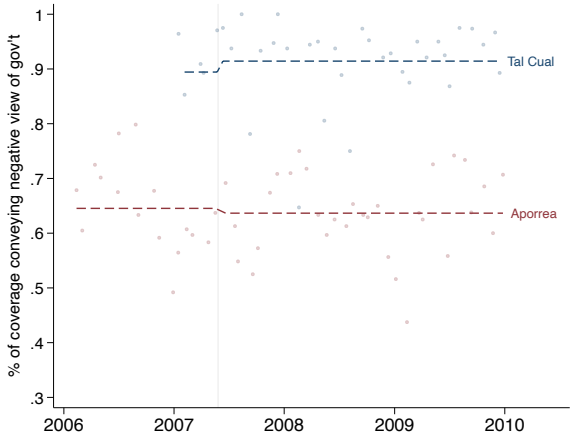
[46] Appendix Tables A1-A6 report full confusion matrices. Lower accuracy is observed for topic, but there are 23 categories; we ultimately merge categories for our analysis.

Figure 9: Remaining channels shift toward Chávez when RCTV goes off the air

(a) Television stations



(b) Print media



Notes: The gray vertical line marks May 27, 2007, when RCTV went off the air. The horizontal lines mark means before and after this date by television station.

and particularly Televen.

To formally examine changes in news coverage after May 2007, we use the following regression specification to compare changes in the content of the more pro-government outlets—Televen and Globovisión—relative to Globovisión:[47]

$$Y_{mt} = \alpha_m + \eta_p + \tau \left(\textit{Pro-government}_m \times \textit{Post-RCTV closure}_t \right) + \varepsilon_{mt}, \tag{12}$$

where Y_{mt} is a measure of media outlet m's news coverage on date t, $\textit{Post-RCTV closure}_t$ indicates the period from May 28, 2007 onwards, $\textit{Pro-government}_m$ is an indicator for Televen and Venevisión, α_m are TV station fixed effects, and η_p are month-year fixed effects. We use month-year fixed effects because there are some days for which coverage is only available from one media outlet, but also include date fixed effects for robustness. Standard errors are clustered by media outlet $\times$ month-year. The coefficient τ then estimates the change in a more pro-government outlet's coverage relative to Globovisión before and after RCTV went off the air.

The results in Table 6 show that the comparatively pro-government outlets became relatively more likely to report favorably toward the government after RCTV went off public air. First considering the topics of newscasts, panel A reports that Televen and Venevisión became around 20% less likely to report on crime, the most frequent news topic, than Globovisión, and 50% less likely to report on domestic policy programs. Both were areas or poor government performance in the

[47] We exclude RCTV from our analyses to focus on the responses of its non-cable competitors.

late 2000s. Coverage of economic issues, where performance was starting to weaken in the late 2000s, also significantly decreased. The reduced focus on these topics in a given newscast is compensated by an increased share for international news, which may distract or deflect from domestic challenges.

In addition to covering unfavorable news topics relatively less frequently, Panel B shows that the sentiment of newscasts on Globovisión also became relatively less favorable toward the government after RCTV went off public air relative to Televen and Venevisión. Using our overall sentiment measure, column (3) shows the share of content creating a negative impression of the government declined by 15% relative to the sample mean from 63% to 54%. Negative sentiments about the government also significantly increased more on Globovisión relative to its more pro-government rivals, although the relative increase in negative sentiment toward Chávez was not statistically significant. Column (9) further shows that the share of content that blames the government for adverse events also increased more on Globovisión. By conditioning on content that creates a bad impression of the government, column (11) shows that the probability of blaming the government in this cases was not affected. This suggests that relatively greater blame largely reflected more frequent coverage of events that could create negative perceptions of the government.

These results are robust across several alternative specifications. First, the even columns in Table 6 report similar but less precise estimates when including date, instead of month-year, fixed effects. Even though this entails dropping the 15% of the sample with only a single newscast available on a given day, the estimates for overall sentiment remain statistically significant. Second, Appendix Table A7 shows that our model's high levels of classification accuracy changed little over time or across television stations. This suggests that our findings are not simply driven by differential changes in the performance of our classification models. Finally, Appendix Table A15 reports similar results using XML-RoBERTa for all classifications instead of GPT-4 and GPT-4-turbo.

In sum, the two main TV stations serving nationwide markets further moderated their coverage of Chávez's government—in terms of both topic and slant—after RCTV's license was not renewed. In line with Corollary 2, this substantiates a media market competition motive for censoring RCTV.

5.3 Changes in the newspaper market

We argue that the smaller increase in unfavorable news coverage among the more pro-government mainstream outlets reflects reduced competition with a more informative media outlet. An alternative interpretation is that Televen and Venevisión instead moderated their coverage under pressure from the government or to avoid a similar fate to RCTV. If such a chilling effect drives differences

Table 6: Changes in news coverage among television stations after RCTV went off public air

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: Topic of news														
	Crime		Economy		Education, health infrastructure, or social programs		Public opinion		Politics		International news		Sports	
Televen and Venevisión × Post-RCTV closure	-0.045**	-0.052*	-0.021*	-0.030*	-0.037***	-0.043***	0.019	0.014	0.020	0.031	0.079***	0.089***	0.007	0.011
	(0.021)	(0.027)	(0.012)	(0.016)	(0.011)	(0.014)	(0.016)	(0.020)	(0.014)	(0.020)	(0.021)	(0.026)	(0.012)	(0.016)
Observations	848	733	848	733	848	733	848	733	848	733	848	733	848	733
R^2	0.18	0.57	0.20	0.57	0.19	0.58	0.37	0.67	0.17	0.57	0.13	0.51	0.26	0.53
Outcome mean	0.22	0.22	0.10	0.11	0.07	0.07	0.09	0.09	0.06	0.07	0.16	0.16	0.05	0.05
Outcome std. dev.	0.16	0.16	0.12	0.12	0.10	0.10	0.14	0.14	0.10	0.10	0.14	0.14	0.08	0.07
Panel B: Negativity of sentiment														
	Impression of government scale (positive to negative)		Bad impression of government		Negative sentiment about government		Negative sentiment about Chávez		Blame government for events		Blame government, given bad events			
Televen and Venevisión × Post-RCTV closure	-0.082***	-0.091**	-0.098***	-0.107***	-0.065**	-0.072*	-0.040	-0.038	-0.103***	-0.116***	-0.017	-0.023		
	(0.029)	(0.042)	(0.026)	(0.037)	(0.029)	(0.039)	(0.028)	(0.038)	(0.027)	(0.041)	(0.031)	(0.044)		
Observations	848	733	848	733	848	733	848	733	848	733	843	727		
R^2	0.28	0.60	0.29	0.59	0.33	0.62	0.35	0.65	0.27	0.56	0.21	0.54		
Outcome mean	1.59	1.59	0.64	0.64	0.43	0.43	0.22	0.23	0.52	0.52	0.69	0.69		
Outcome std. dev.	0.24	0.24	0.20	0.20	0.22	0.22	0.20	0.20	0.21	0.21	0.22	0.22		
Date fixed effects		✓		✓		✓		✓		✓		✓		✓

Notes: Each specification is estimated using OLS, and includes TV station and month-year fixed effects. The reference category is Globovisión. Standard errors are clustered by media outlet × month-year. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

in news coverage, it is likely to cause critical news outlets in other non-TV media markets to moderate their reporting too. In contrast, although there could be some substitution from television to other types of media, our model suggests that the effect should be concentrated in the television markets that were most impacted by RCTV going off public air.

To help distinguish these interpretations, we examine changes in newspaper coverage over the same period. We scraped the available online new article archives of Aporrea, El Nacional, and Tal Cual. While El Nacional was a centrist establishment, Aporrea and Tal Cual were left-leaning news outlets that differed in their favorability toward the Chávez government. Whereas Aporrea was created after the 2002 attempted coup against Chávez to support his regime, Tal Cual was consistently critical of the regime. If the revocation of RCTV's public broadcast license caused El Nacional or Tal Cual to fear being closed, their coverage is likely to become more favorable toward the government relative to Aporrea.

Using the same classification approach we used for television channels, Figure 8b shows that El Nacional and Tal Cual's coverage did not shift toward Aporrea. The fact that critical non-TV news outlets were not significantly affected by RCTV losing its public broadcast license suggests that changes in competition within television markets is a more plausible explanation for changes in news coverage than a generalized fear of closure among outlets that did not parrot the government's messaging.

6 Conclusion

Twenty-first century elected autocrats are thought to "rule by a velvet fist," muffling or silencing critical media outlets to maintain their popularity before resorting to violent repression. In this paper, we identify a new trade-off inherent in selective censorship. Beyond the political benefits of reducing voters' exposure to accurate news (which could be unfavorable to the government), we argue that incumbents can also benefit from reducing competition in the media market, which allows pro-government outlets to report more favorably. Conversely, we also emphasize an important cost: voter sanctioning for the loss of valued entertainment or informational content. This simple point—that voters value media content for its own sake, and may punish politicians who take away their favorite content—is under-recognized in the literature. These collateral effects of selective censorship shape incumbents' if and when to censor critical media outlets.

We demonstrate the empirical salience of each consideration in Venezuela, after Hugo Chávez refused to renew RCTV's public broadcast license in 2007. Using a difference-in-differences design to compare changes in vote share across electoral precincts where many rather than few house-

holds lost access to RCTV after it went off the air (and reappeared only on cable), we find that the electoral cost (to Chávez) of voter sanctioning for losing access to popular content outweighed the electoral benefit of reducing exposure to more critical news. Heterogeneity in access to Globovisión's critical content suggests that restricting access to RCTV did persuade some voters in favor of the government, but those persuasive benefits were smaller than the electoral cost. But the decision to take RCTV off the air could still have worked to the government's advantage overall. In line with our theory, we also document a media-market equilibrium effect. Applying large language models to an original corpus of newscasts reveals that RCTV's competitors began covering Chávez's government more favorably after RCTV lost its broadcast license. This countervailing effect could have increased Chávez's popularity among both cable and non-cable consumers, thus buoying Chávez's effort to create "communicational hegemony" (as he called it).

Our theory of selective censorship pertains to increasingly common partial or complete restrictions on access to critical media outlets.[48] But this is not the only tool of media control available to aspiring spin dictators. In particular, voter sanctioning for the loss of content could be reduced if critical outlets are taken over or bought out while keeping their entertainment content intact, as was the case with NTV in Russia. Subtler tools of this form are not always available to lower-capacity governments or may not be possible, in cases like Venezuela, where independent media resisted takeover.

Finally, our framework suggests two explanations for why Chávez did not renew RCTV's public broadcast license. First, when Venevisión shifted its coverage in favor of Chávez's government in 2004, the media market changed. The greater difference between RCTV and Venevisión—which were previously aligned in their willingness to criticize the government—made restricting access to RCTV and relaxing the need for competitors to attract audiences with accurate news more attractive to Chávez than it would have been prior to 2004. Second, expectations of declining government performance may also have strengthened the incentive for Chávez to restrict media freedom, because he had more to fear from accurate news reporting. Neither potential explanation relies on changes in the composition of the electorate or the government's authoritarian tendencies. These insights suggest that the polarization of news coverage in the United States gives credence to former President Trump's threats to revoke CNN and NBC's broadcast license.[49] Such threats underscore the unfortunate relevance of our theory in the contexts at risk of democratic backsliding.

[48] Heo and Zerbini (2023) endogenize the degree to which access is restricted by allowing an incumbent to set the cost of jumping access firewalls.

[49] Dominick Mastrangelo, "Trump: NBC, CNN should have 'licenses or whatever' pulled for not airing Iowa speech," *The Hill*, January 17, 2024.

References

Achiam, Josh, Steven Adler, Sandhini Agarwal, Lama Ahmad, Ilge Akkaya, Florencia Leoni Aleman, Diogo Almeida, Janko Altenschmidt, Sam Altman, Shyamal Anadkat et al. 2023. "GPT-4 Technical Report." arXiv preprint arXiv:2303.08774.

Adena, Maja, Ruben Enikolopov, Maria Petrova, Veronica Santarosa and Ekaterina Zhuravskaya. 2015. "Radio and the Rise of the Nazis in Prewar Germany." *Quarterly Journal of Economics* 130(4):1885–1939.

Alonso, Ricardo and Gerard Padró i Miquel. 2022. "Competitive Capture of Public Opinion." Working paper.

Anderson, Simon P. and John McLaren. 2012. "Media mergers and media bias with rational consumers." *Journal of the European Economic Association* 10(4):831–859.

Ashworth, Scott. 2005. "Reputational Dynamics and Political Careers." *Journal of Law, Economics, and Organization* 21(2):441–466.

Besley, Timothy and Andrea Prat. 2006. "Handcuffs for the Grabbing Hand? Media Capture and Government Accountability." *American Economic Review* 96(3):720–736.

Boxell, Levi and Zachary Steinert-Threlkeld. 2022. "Taxing dissent: The impact of a social media tax in Uganda." *World Development* 158:105950.

Brewer-Carías, A and R Brewer-Carías. 2008. "Los sucesos de abril de 2002 y las consecuencias de la renuncia del Presidente Hugo Chávez Frías a la Presidencia de la República." *Historia constitucional de Venezuela* pp. 329–370.

Broockman, David and Joshua Kalla. forthcoming. "Consuming cross-cutting media causes learning and moderates attitudes: A field experiment with Fox News viewers." *Journal of Politics* .

Callaway, Brantly, Andrew Goodman-Bacon and Pedro H.C. Sant'Anna. 2024. "Difference-in-Differences with a Continuous Treatment." Working paper.

Cantoni, Davide, David Y. Yang, Noam Yuchtman and Y. Jane Zhang. 2019. "Protests as strategic games: experimental evidence from Hong Kong's antiauthoritarian movement." *Quarterly Journal of Economics* 134(2):1021–1077.

Cañete, José, Gabriel Chaperon, Rodrigo Fuentes, Jou-Hui Ho, Hojin Kang and Jorge Pérez. 2020. Spanish Pre-Trained BERT Model and Evaluation Data. In *PML4DC at ICLR 2020*.

Chiang, Chun-Fang and Brian Knight. 2011. "Media Bias and Influence: Evidence from Newspaper Endorsements." *Review of Economic Studies* 78(3):795–820.

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Michael Bernhard, Agnes Cornell, M. Steven Fish, Lisa Gastaldi, Haakon Gjerløw, Adam Glynn, Ana Good God, Sandra Grahn, Allen Hicken, Katrin Kinzelbach, Joshua Krusell, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Juraj Medzihorsky, Natalia Natsika, Anja Neundorf, Pamela Paxton, Daniel Pemstein, Josefine Pernes, Oskar Ryden, Johannes von Romer, Brigitte Seim, Rachel Sigman, Svend-Erik Skaaning, Jeffrey Staton, Aksel Sundstroöm, Eitan Tzelgov, Yi-ting Wang, Tore Wig, Steven Wilson and Daniel Ziblatt. 2023. "Varieties of Democracy (V-Dem) Project." Dataset v13.

Corrales, Javier. 2005. "In Search of a Theory of Polarization: Lessons from Venezuela, 1999-2005." *Revista Europea de Estudios Latinoamericanos y del Caribe / European Review of Latin American and Caribbean Studies* (79):105–118.

Corrales, Javier. 2015. "The Authoritarian Resurgence: Autocratic Legalism in Venezuela." *Journal of Democracy* 26(2):37–51.

Corrales, Javier. 2018. *Fixing democracy: Why constitutional change often fails to enhance democracy in Latin America*. Oxford University Press.

Corrales, Javier and Michael Penfold. 2015. *Dragon in the Tropics: Venezuela and the Legacy of Hugo Chavez*. Brookings Institution Press.

de Chaisemartin, Clément and Xavier D'Haultfœuille. 2023. "Difference-in-Differences Estimators of Intertemporal Treatment Effects." NBER Working Paper 29873.

de Janvry, Alain, Marco Gonzalez-Navarro and Elisabeth Sadoulet. 2014. "Are Land Reforms Granting Complete Property Rights Politically Risky? Electoral Eutcomes of Mexico's Certification Program." *Journal of Development Economics* 110:216–225.

de Krivoy, Ruth. 2000. *Collapse: the Venezuelan banking crisis of 1994*. Group of Thirty.

De La O, Ana. 2015. *Crafting Policies to End Poverty in Latin America*. Cambridge University Press.

DellaVigna, Stefano and Ethan Kaplan. 2007. "The Fox News Effect: Media Bias and Voting." *Quarterly Journal of Economics* 122(3):1187–1234.

DellaVigna, Stefano, Ruben Enikolopov, Vera Mironova, Maria Petrova and Ekaterina Zhuravskaya. 2014. "Cross-border Media and Nationalism: Evidence from Serbian Radio in Croatia." *American Economic Journal: Applied Economics* 6(3):103–32.

Devlin, Jacob, Ming-Wei Chang, Kenton Lee and Kristina Toutanova. 2018. "BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding." *CoRR* abs/1810.04805.
URL: *http://arxiv.org/abs/1810.04805*

Di Tella, Rafael and Ignacio Franceschelli. 2011. "Government Advertising and Media Coverage of Corruption Scandals." *American Economic Journal: Applied Economics* 3(4):119–151.

Djankov, Simeon, Caralee McLiesh, Tatiana Nenova and Andrei Shleifer. 2003. "Who Owns the Media?" *Journal of Law and Economics* 46(2):341–382.

Duch, Raymond M. and Randolph T. Stevenson. 2008. *The economic vote: How political and economic institutions condition election results*. Cambridge University Press.

Duggan, John and Cesar Martinelli. 2011. "A spatial theory of media slant and voter choice." *Review of Economic Studies* 78(2):640–666.

Durante, Ruben, Paolo Pinotti and Andrea Tesei. 2019. "The political legacy of entertainment TV." *American Economic Review* 109(7):2497–2530.

Egorov, Georgy, Sergei Guriev and Konstantin Sonin. 2009. "Why Resource-poor Dictators Allow Freer Media: A theory and Evidence from Panel Data." *American Political Science Review* 103(4):645–668.

Enikolopov, Ruben, Maria Petrova and Ekaterina Zhuravskaya. 2011. "Media and Political Persuasion: Evidence from Russia." *American Economic Review* 101(7):3253–3285.

Fearon, James D. 1999. Electoral Accountability and the Control of Politicians: Selecting Good Types versus Sanctioning Poor Performance. In *Democracy, Accountability, and Representation*, ed. Adam Przeworski, Susan Stokes and Bernard Manin. Cambridge University Press.

Ferejohn, John. 1986. "Incumbent performance and electoral control." *Public choice* 50(1):5–25.

Ferraz, Claudio and Frederico Finan. 2008. "Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes." *Quarterly Journal of Economics* 123(2):703–745.

Francisco, Ronald A. 2005. The Dictator's Dilemma. In *Repression and mobilization*, ed. Christian Davenport, Hank Johnston and Carol McClurg Mueller. University of Minnesota Press Minneapolis pp. 58–81.

Galvis, Ángela Fonseca, James M. Snyder, Jr. and B.K. Song. 2016. "Newspaper market structure and behavior: Partisan coverage of political scandals in the United States from 1870 to 1910." *Journal of Politics* 78(2):368–381.

Gates, Leslie. 2010. *Electing Chávez: The business of anti-neoliberal politics in Venezuela*. University of Pittsburgh Press.

Gehlbach, Scott and Konstantin Sonin. 2014. "Government Control of the Media." *Journal of Public Economics* 118:163–171.

Gentzkow, Matthew, Edward L. Glaeser and Claudia Goldin. 2006. The rise of the fourth estate. How newspapers became informative and why it mattered. In *Corruption and Reform: Lessons from America's Economic History*. University of Chicago Press pp. 187–230.

Gentzkow, Matthew and Jesse M. Shapiro. 2006. "Media Bias and Reputation." *Journal of Political Economy* 114(2):280–316.

Gentzkow, Matthew, Jesse M. Shapiro and Daniel F. Stone. 2015. Media bias in the marketplace: Theory. In *Handbook of Media Economics*, ed. Simon P. Anderson, David Strömberg and Joel Waldfogel. Vol. 1 Elsevier pp. 623–645.

Gentzkow, Matthew, Jesse M. Shapiro and Michael Sinkinson. 2011. "The Effect of Newspaper Entry and Exit on Electoral Politics." *American Economic Review* 101(7):2980–3018.

Gläßel, Christian and Katrin Paula. 2020. "Sometimes less is more: Censorship, news falsification, and disapproval in 1989 East Germany." *American Journal of Political Science* 64(3):682–698.

Gratton, Gabriele and Barton E. Lee. 2024. "Liberty, security, and accountability: The rise and fall of illiberal democracies." *Review of Economic Studies* 91(1):340–371.

Grossman, Guy, Yotam Margalit and Tamar Mitts. 2022. "How the ultrarich use media ownership as a political investment." *Journal of Politics* 84(4):1913–1931.

Guriev, Sergei and Daniel Treisman. 2019. "Informational Autocrats." *Journal of Economic Perspectives* 33(4):100–127.

Guriev, Sergei and Daniel Treisman. 2020. "A theory of informational autocracy." *Journal of Public Economics* 186:104158.

Guriev, Sergei and Daniel Treisman. 2022. *Spin Dictators: The Changing Face of Tyranny in the 21st Century*. Princeton University Press.

Handlin, Samuel. 2017. *State Crisis in Fragile Democracies: Polarization and Political Regimes in Latin America*. Cambridge University Press.

Hassanpour, Navid. 2014. "Media disruption and revolutionary unrest: Evidence from Mubarak's quasi-experiment." *Political Communication* 31(1):1–24.

Heo, Kun and Antoine Zerbini. 2023. "Segment and Rule: Modern Censorship in Authoritarian Regimes." Working paper.

Huang, Haifeng, Serra Boranbay-Akan and Ling Huang. 2019. "Media, protest diffusion, and authoritarian resilience." *Political Science Research and Methods* 7(1):23–42.

Kamenica, Emir and Matthew Gentzkow. 2011. "Bayesian Persuasion." *American Economic Review* 101(6):2590–2615.

Kern, Holger Lutz and Jens Hainmueller. 2009. "Opium for the Masses: How Foreign Media Can Stabilize Authoritarian Regimes." *Political Analysis* 17:377–399.

Knight, Brian and Ana Tribin. 2019. "The Limits of Propaganda: Evidence from Chavez's Venezuela." *Journal of the European Economic Association* 17:567–605.

Knight, Brian and Ana Tribin. 2022. "Opposition media, state censorship, and political accountability: Evidence from Chavez's Venezuela." *World Bank Economic Review* 36(2):455–487.

Kronick, Dorothy. 2020. "Profits and violence in illegal markets: Evidence from Venezuela." *Journal of Conflict Resolution* 64(7-8):1499–1523.

Kronick, Dorothy, Barry Plunkett and Pedro L. Rodriguez. 2023. "Backsliding by surprise: The rise of Chavismo." *Political Science Research and Methods* 11(4):838–854.

Ladd, Jonathan McDonald and Gabriel S. Lenz. 2009. "Exploiting a rare communication shift to document the persuasive power of the news media." *American Journal of Political Science* 53(2):394–410.

Levitsky, Steven and Daniel Ziblatt. 2019. *How Democracies Die*. Crown.

Levitsky, Steven and Lucan Way. 2010. *Competitive Authoritarianism: Hybrid Regimes after the Cold War*. Cambridge University Press Cambridge.

Li, Jing, Billy Chiu, Shuo Shang and Ling Shao. 2020. "Neural text segmentation and its application to sentiment analysis." *IEEE Transactions on Knowledge and Data Engineering* 34(2):828–842.

Little, Andrew T. 2017. "Propaganda and Credulity." *Games and Economic Behavior* 102:224–232.

Lorentzen, Peter. 2014. "China's Strategic Censorship." *American Journal of Political Science* 58(2):402–414.

Lukasik, Michal, Boris Dadachev, Gonçalo Simoes and Kishore Papineni. 2020. "Text segmentation by cross segment attention." arXiv preprint arXiv:2004.14535.

Manacorda, Marco, Edward Miguel and Andrea Vigorito. 2011. "Government Transfers and Political Support." *American Economic Journal: Applied Economics* 3(3):1–28.

Martin, Gregory J. and Ali Yurukoglu. 2017. "Bias in cable news: Persuasion and polarization." *American Economic Review* 107(9):2565–2599.

McCoy, Jennifer and Francisco Diez. 2011. *International mediation in Venezuela*. US Institute of Peace Press.

McMillan, John and Pablo Zoido. 2004. "How to Subvert Democracy: Montesinos in Peru." *Journal of Economic Perspectives* 18(4):69–92.

Paskhalis, Tom, Bryn Rosenfeld and Katerina Tertytchnaya. 2022. "Independent media under pressure: evidence from Russia." *Post-Soviet Affairs* 38(3):155–174.

Peisakhin, Leonid and Arturas Rozenas. 2018. "Electoral Effects of Biased Media: Russian Television in Ukraine." *American Journal of Political Science* 62(3):535–550.

Puglisi, Riccardo and James M. Snyder. 2011. "Newspaper coverage of political scandals." *Journal of Politics* 73(3):931–950.

Qin, Bei, David Strömberg and Yanhui Wu. 2017. "Why does China allow freer social media? Protests versus surveillance and propaganda." *Journal of Economic Perspectives* 31(1):117–140.

Qin, Bei, David Strömberg and Yanhui Wu. 2018. "Media bias in China." *American Economic Review* 108(9):2442–2476.

Roberts, Margaret E. 2020. *Censored: Distraction and Diversion Inside China's Great Firewall*. Princeton University Press.

Rodríguez, Francisco. 2008. "An Empty Revolution: The Unfulfilled Promises of Hugo Chávez." *Foreign Affairs* 87:49–62.

Rosenfeld, Bryn. 2018. "The popularity costs of economic crisis under electoral authoritarianism: Evidence from Russia." *American Journal of Political Science* 62(2):382–397.

Roth, Jonathan, Pedro H.C. Sant'Anna, Alyssa Bilinski and John Poe. 2023. "What's trending in difference-in-differences? A synthesis of the recent econometrics literature." *Journal of Econometrics* 235(2):2218–2244.

Salas, Miguel Tinker. 2015. *Venezuela: What Everyone Needs to Know?* Oxford University Press.

Shadmehr, Mehdi and Dan Bernhardt. 2015. "State censorship." *American Economic Journal: Microeconomics* 7(2):280–307.

Simpser, Alberto. 2013. *Why Governments and Parties Manipulate Elections: Theory, Practice, and Implications*. Cambridge University Press.

Strömberg, David. 2004. "Mass Media Competition, Political Competition, and Public Policy." *Review of Economic Studies* 71(1):265–284.

Svolik, Milan W. 2020. "When Polarization Trumps Civic Virtue: Partisan Conflict and the Subversion of Democracy by Incumbents." *Quarterly Journal of Political Science* 15(1):3–31.

Szeidl, Adam and Ferenc Szucs. 2021. "Media capture through favor exchange." *Econometrica* 89(1):281–310.

Widmer, Philine, Sergio Galletta and Elliott Ash. 2023. "Media slant is contagious." Working paper.

Yanagizawa-Drott, David. 2014. "Propaganda and Conflict: Evidence from the Rwandan Genocide." *Quarterly Journal of Economics* 129(4):1947–1994.

Yao, Lily. 2023. "Selling Ideology: How China Engages Cultural Elites to Popularize Propaganda Films." Working paper.

Zaller, John. 1992. *The Nature and Origins of Mass Opinion*. Cambridge University Press.

Zapata, Juan Carlos. 1995. *Los Ricos Bobos*. Editorial Alfa.

Zapata, Juan Carlos. 2000. *Plomo más plomo es guerra: proceso a Chávez*. Editorial Alfa.

Appendix
Contents

A.1 Proofs

A.1.1 Proof of Lemma 1

Following $\hat{t}_P = H$, all consumers of P vote for I when:

$$-\hat{\theta}(\hat{t}_P = H) + \beta + \delta \mathbb{E}[a_{iR} = t | \hat{t}_P = H] = -\frac{\theta b_R}{1-\theta(1-b_R)} + \beta + \delta \frac{1-\theta}{1-\theta(1-b_R)} \geq -\theta.$$

Since the left hand side is linearly decreasing in b_R, this is satisfied when $b_R \leq \overline{b}$, where

$$\overline{b} := \frac{(1-\theta)(\beta+\theta+\delta)}{\theta(1-\beta-\theta)}$$

is the value of b_R that sets the inequality equal. ■

A.1.2 Proof of Lemma 2

Working backwards, $v^*_{iR}(\hat{t}_m)$ is uniquely determined by equation (3) by all voter types maximizing their expected utility. Similarly, $a^*_{iR}(\hat{t}_m)$ is uniquely determined, such that i maximizes their expected utility by choosing $a_{iR} = L$ when $\hat{\theta}(\hat{t}_m) \geq \frac{1}{2}$. Moreover, c^*_{iR} is uniquely determined by voters maximizing their expected utility according to equation (1).

Given $(c^*_{iR}, a^*_{iR}(\hat{t}_m), v^*_{iR}(\hat{t}_m))$ for all i, the incumbent's vote share is given by: $\mathbb{E}[V_R] = A_{NR}(b^*_R)\mathbb{E}[V_{NR}] + A_{PR}(b^*_R)\mathbb{E}[V_{PR}]$, where $\mathbb{E}[V_{mR}]$ denotes the expected vote share among consumers of outlet m. Since u_{iN} is independent of w_i, these expectations are given by:

$$\begin{aligned}
\mathbb{E}[V_{NR}] &= 1-\theta+\frac{\theta[1-F(1-\beta-\theta-\delta)]}{A_{NR}(b^*_R)/x_R}, \\
\mathbb{E}[V_{PR}] &= \begin{cases} 1-\theta(1-b^*_R) & \text{if } b_R \in [0,\overline{b}], \\ 1-\theta & \text{if } b_R \in (\overline{b},1]. \end{cases}
\end{aligned}$$

where the first condition follows from $\beta \in [\delta\theta-\theta-\delta, 1-\theta-\delta)$ ensuring that $-\beta-\theta-\delta < -\delta\theta b^*_R$ and $1-\beta-\theta-\delta > -\delta\theta b^*_R$ for any b^*_R and recognizing that the normalizing constant satisfies $1-F(-\delta\theta b^*_R) = A_{NR}(b^*_R)/x_R$, while the second condition follows from consumers of P only voting for I when $b_R \in [0,\overline{b}]$ and, because $\beta \in [\delta\theta-\theta-\delta, 1-\theta-\delta)$, when $\hat{t}_P = H$. Combining this with the audience shares and rearranging yields the result stated in the lemma. The conditionality of $\mathbb{E}[V_{PR}]$ follows from Lemma 1. ■

A.1.3 Proof of Proposition 1

For the first part, rearrange P's first-order condition after decision R to yield:

$$\theta\left(1 - x_R\left[1 - F(-\delta\theta b^*_R) + (\gamma + \theta b^*_R)\delta F'(-\delta\theta b^*_R)\right]\right) \lessgtr 0.$$

Since the term inside the big brackets is positive, it is obvious that the marginal cost of increasing b_R is greater when x_R is greater. Consequently, $b_1^* \geq b_0^*$. At any interior optimum, the inequality is strict. The second-order condition holds when:

$$x_R\theta^2\delta[(\gamma+\theta b_R)F''(-\delta\theta b_R)\delta - 2F'(-\delta\theta b_R)] < 0,$$

which requires $F''(u)$ not to be too large over $u \in [-\delta\theta\bar{b}, 0]$. Equality holds at corner solutions where $b_1^* = b_0^* = \bar{b}$ or $b_1^* = b_0^* = 0$.

For the second part, it is straightforward to rearrange terms from the definition of A_{PR}. ■

A.1.4 Proof of Proposition 2

Using Lemma 2 and then rearranging yields:

$$\begin{aligned}
\mathbb{E}[V_1] &> \mathbb{E}[V_0] \\
(1-\theta)+\theta\Big(\eta[1-F(1-\beta-\theta-\delta)]+A_{P1}(b_1^*)b_1^*\Big) &> (1-\theta)+\theta\Big(1-F(1-\beta-\theta-\delta)+A_{P0}(b_0^*)b_0^*\Big) \\
[A_{P1}(b_1^*)-A_{P0}(b_0^*)]\,\theta b_0^* + A_{P1}(b_1^*)\theta(b_1^*-b_0^*) &> (1-\eta)\theta[1-F(1-\beta-\theta-\delta)].
\end{aligned}$$

Further rearrangement yields the result in the proposition. ■

A.1.5 Proof of Corollary 1

The vote shares by voter types n and c and by R are:

$$\begin{aligned}
\mathbb{E}[V_{n1}] &= 1-\theta(1-b_1^*), \\
\mathbb{E}[V_{n0}] &= 1-\theta[F(1-\beta-\theta-\delta)-F(-\delta\theta b_0^*)b_0^*], \\
\mathbb{E}[V_{cR}] &= 1-\theta[F(1-\beta-\theta-\delta)-F(-\delta\theta b_R^*)b_R^*],
\end{aligned}$$

where each vote share calculates I's expected vote share where $\hat{t}_m = H$ and $\hat{t}_m = L$, given R. Substituting into the definition of $\mathbb{E}[\tau_{DiD}]$ and rearranging then yields the result. ■

A.1.6 Proof of Corollary 2

Starting from the condition $\Delta > 0$, we can show that $\mathbb{E}[\tau_{DiD}] < 0$ implies $b_1^* > b_0^*$:

$$\begin{aligned}
A_{P1}(b_1^*)b_1^* - A_{P0}(b_0^*)b_0^* &> (1-\eta)[1-F(\beta+\theta+\delta)] \\
A_{P1}(b_1^*)b_1^* - A_{P0}(b_0^*)b_0^* &> \frac{1-\eta}{\eta}A_{N1}(b_1^*)b_1^* \\
(1-\eta[1-F(-\delta\theta b_1^*)])b_1^* - F(-\delta\theta b_0^*)b_0^* &> \frac{1-\eta}{\eta}[1-F(-\delta\theta b_1^*)]b_1^* \\
F(-\delta\theta b_1^*)b_1^* &> F(-\delta\theta b_0^*)b_0^*,
\end{aligned}$$

where the second line follows from $\mathbb{E}[\tau_{DiD}] < 0$, the third line applies the audience share definitions, and the final line rearranges terms. The final line shows that $b_1^* = b_0^*$ is not possible. The final line also shows $\Delta > 0$, $\mathbb{E}[\tau_{DiD}] < 0$, and $b_1^* > b_0^*$ can only be satisfied under the following condition requiring that the audience numbers are not too sensitive to equilibrium media reporting strategies:

$$\frac{b_1^*}{b_0^*} > \frac{F(-\delta\theta b_0^*)}{F(-\delta\theta b_1^*)}.$$

To complete the proof, note that Proposition 1 shows that $b_1^* < b_0^*$ will never occur. ■

A.2 Signaling model where incumbents know their own type

An important assumption in the main model is that the incumbent does not know their type at the point of deciding whether revoke the neutral media outlet's public broadcast license. While this is a common assumption in career concerns models, signaling models instead that treat type as private information are also plausible in this context. It is easy to imagine situations where politician talents are persistent across time and tasks. To demonstrate robustness of our core theoretical mechanisms, the following model assumes that the incumbent knows their own type at the start of the game. Consequently, high quality incumbents will be happy for the media to report freely, but low quality incumbents may face stronger incentives to curtail media freedoms that could reveal their low type status.

We incorporate this adjustment to the model by introducing noise in the license revocation process. In particular, we assume that the incumbent observes their type $t \in \{L, H\}$ and then chooses whether to *attempt* to revoke N's public broadcast license by choosing $\hat{R} \in \{0, 1\}$. Furthermore, we assume that $\Pr[R = 0|\hat{R} = 0] = \Pr[R = 1|\hat{R} = 1] = \alpha \in \left(\frac{1}{2}, 1\right)$; the noise is symmetric for simplicity. Accordingly, the incumbent has imperfect control over the policy process; for example, other government decision-makers with different interests may shape the decision-making process or extraneous factors constrain a particular choice. Importantly, the determinants of such noise in the license revocation process are not observable to voters or media outlets, who instead update using Bayes' rule to form the following interim beliefs. If only incumbents of type L will revoke N license (as we will ultimately prove), then voters' interim beliefs about the incumbent's type—after revocation is observed but before news reports are received—are given by:

$$\theta_R = \begin{cases} \frac{(1-\alpha)\theta}{(1-\alpha)\theta+(1-\alpha)(1-\theta)} < \theta & \text{if } R = 0, \\ \frac{\alpha\theta}{\alpha\theta+(1-\alpha)(1-\theta)} > \theta & \text{if } R = 1. \end{cases}$$

While we have previously assumed that $\theta < \frac{1}{2}$, which ensures a posterior belief (i.e. after news reports are observed) of $\hat{\theta}(H) < \frac{1}{2}$, this need no longer be the case for participants with a interim belief of θ_1. Consequently, we will consider cases of posterior beliefs $\hat{\theta}_1(H) \leq \frac{1}{2}$ and $\hat{\theta}_1(H) > \frac{1}{2}$ separately; the latter case would also produce similar results to those in the main model when $\theta > \frac{1}{2}$.

A.2.1 Equilibrium where $\hat{\theta}_1(H) \leq \frac{1}{2}$

Since incumbents about whom the media report positively are viewed as being more likely to be H types than L types, even after N's license is revoked, the choices of voters are largely unaffected relative to the baseline model. Moreover, we modify the following assumption accordingly:

Assumption 2. $\beta + \theta + \delta \in \left(\max\left\{ \delta\theta_1 \overline{b}, 1 - \overline{u} \right\}, 1 \right)$.

Under this slightly stricter assumption (the only difference is that θ is replaced with θ_1 within the maximum operator), it is straightforward to establish that:

- N's audience share is $A_{NR} = x_R[1 - F(-\delta\theta_R b_R)]$, and P's audience share is $A_{PR} = 1 - x_R[1 - F(-\delta\theta_R b_R)]$.
- All consumers of N vote for I when $\hat{t}_N = H$ is reported.
- Some voters for whom $u_{iN} \geq 1 - \beta - \theta - \delta$ vote for I when $\hat{t}_N = L$ is reported.
- No consumers of P vote for I when $\hat{t}_P = L$ is reported.
- All consumers of P vote for I when $\hat{t}_P = H$ is reported, provided that $b_R \leq \overline{b}$, where the maximum amount of persuasion that P can engage in is now given by $\overline{b} = \frac{(1-\theta_R)(\beta+\theta+\delta)}{\theta_R(1-\beta-\theta)}$.

Putting this together yields the following expected vote share for the incumbent, *from the perspective of media outlets and voters* (who do not know the incumbent's type):

$$\mathbb{E}[V_R] = \begin{cases} (1-\theta_R) + \theta_R x_R[1 - F(1-\beta-\theta-\delta)] + \theta_R b_R A_{PR} & \text{if } b_R \leq \overline{b} \\ (1-\theta_R) + \theta_R x_R[1 - F(1-\beta-\theta-\delta)] & \text{if } b_R > \overline{b}. \end{cases}$$

The partisan media outlet then solves its maximization problem, yielding the following first-order condition:

$$\theta_R\Big[1 - x_R[1 - F(-\delta\theta_R b_R)]\Big] - (\gamma + \theta_R b_R)\delta\theta_R x_R F'(-\delta\theta_R b_R) \lesseqgtr 0,$$

where the marginal costs continue to increase in x_R, implying that $b_1^* \geq b_0^*$. We thus obtain an analogous result to Proposition 1.

The incumbent's decision, $\hat{R}$, now differs somewhat from the main model because their type is known only to them. Since the incumbent is supported by every voter (regardless of which outlet they consume and regardless of R) when $t = H$, there is never an incentive for H types to attempt to revoke N's license. Similarly to Proposition 2, an incumbent of type L would instead choose $\hat{R} = 1$ when $\mathbb{E}[V|t = L, \hat{R} = 1] > \mathbb{E}[V|t = L, \hat{R} = 0]$, which implies:

$$(2\alpha - 1)\Big[A_{P1}(b_1^*)b_1^* - A_{P1}(b_0^*)b_0^* - (1-\eta)[1 - F(1-\beta-\theta-\delta)]\Big] > 0.$$

This is a very similar condition to the baseline model, with the exception of a smaller multiplier (since $2\alpha - 1 < 1$) and different values of b_R^*, which are now optimized for the interim belief θ_R. In particular, the difference $b_1^* - b_0^*$ will be weakly larger than in the baseline because media consumption choices are more sensitive to bias when $R = 1$, since $\theta_1 > \theta_0$. If the condition above holds, this permits a perfect Bayesian equilibrium with separation across incumbent types. If not, then an equilibrium where each type of incumbent pools on $\hat{R} = 0$ can be sustained by off-equilibrium path beliefs that prevent defection from L types.

The analog of Corollary 1 operates similarly. Again, we assess this from the perspective of an incumbent who knows their own type, since the model is investigating their incentives to revoke N's license. Nevertheless, the following result establishes that the same logics shape the difference in vote shares across viewer types:

$$\mathbb{E}[\tau_{DiD}|t = L] = (2\alpha - 1)\left(\frac{A_{NR}}{\eta}b_0^* + \frac{A_{NR}}{\eta}(b_1^* - b_0^*) - [1 - F(1 - \beta - \theta - \delta)]\right).$$

The analog of Corollary 2 similarly yields that $\mathbb{E}[V|t = L, \hat{R} = 1] > \mathbb{E}[V|t = L, \hat{R} = 0]$ and $\mathbb{E}[\tau_{DiD}|t = L] < 0$ together imply $b_1^* > b_0^*$ and that this is only feasible when $b_1^* F(-\delta\theta_1 b_1^*) > b_0^* F(-\delta\theta_0 b_0^*)$.

A.2.2 Equilibrium where $\hat{\theta}_1(H) > \frac{1}{2}$

Much of the preceding analysis continues to hold for the case where $\hat{\theta}_1(H) > \frac{1}{2}$, and thus voters believe the incumbent is more likely to be an L type when N's license is revoked, regardless of the signal they receive. We further adjust our assumption on β to:

Assumption 3. $\beta \in \left(\max\left\{\delta\theta_1\overline{b} - \delta, 1 - \delta - \overline{u}, -\delta\theta_1\right\} - \theta, 1 - \theta - \delta\theta_1\right)$.

This weakly contracts the range of levels of incumbent support for which persuasion is viable. Under this assumption, we obtain the same media consumption decisions and conditional vote choices as the case where $\theta_1 < \frac{1}{2}$, with the following exception:

- When $R = 1$, N's audience share becomes $A_{N1} = x_R[1 - F(-\delta(1 - \theta_R)]$, and P's audience share becomes $A_{P1} = 1 - x_R[1 - F(-\delta(1 - \theta_R)]$. Media consumption decisions no longer depend on b_R because consumers of P take the same action regardless of the signal they receive.

- When $R = 1$, all consumers of P vote for I when $\hat{t}_P = H$ is reported, provided that $b_R \leq \overline{b}$, where the maximum amount of persuasion that P can engage in is now given by $\overline{b}_1 = \frac{(1-\theta_1)(\beta+\theta)}{\theta_1(1-\beta-\theta-\delta)}$.

Consequently, when $R = 1$, P's optimization problem simply yields a corner solution where $b_R^* = \overline{b}_1$. All other results continue to hold.

A.3 Allowing media consumption to vary with partisan bias

To allow preferences toward a particular media outlet to be correlated with preferences toward politicians, we adapt the partisan bias term as follows:

$$\tilde{\beta}(u_{iN}, w_i) := \beta - \rho u_{iN} + \sum_{m \in \{N,P\}} \mathbb{1}[c_{iR} = m] \left(u_{im} + \delta \mathbb{E}[a_{iR} = t | r_{mR}(t)]\right),$$

where $\rho \in (0,1)$ captures the degree to which individuals that prefer consuming P over N are also biased toward incumbent party I. The bounds on ρ simplify the model by limiting the correlation between entertainment and partisan preferences.

Paralleling the baseline model, we again assume that consumers of N always vote for I when $\hat{t}_N = H$. This requires that consumer of N with the weakest preference toward the incumbent (i.e. $u_{iN} = -\delta\theta$ at $b_R = 1$, since $\rho < 1$), and is thus the most difficult voter to convince to vote for I, will vote for I upon observing $\hat{t}_N = H$:

$$\beta \geq (1-\rho)\delta\theta - \theta - \delta.$$

When N reports $\hat{t}_N = L$, we assume—again like the baseline model—that some voters still vote for I. At least one voter (namely $u_{iN} = \overline{u}$) votes for I when:

$$\beta \geq 1 - (1-\rho)\overline{u} - \theta - \delta.$$

Furthermore, at least one voter does not vote for I in any equilibrium when type $u_{iN} = 0$ does not vote for I:

$$\beta \leq 1 - \theta - \delta.$$

Because consumers of P now vary in their partisan bias toward I due to $-\rho u_{iN}$, not all consumers of P necessarily vote the same way. To simplify, we assume that all consumers of P who would have preferred to consume N if it were available to them when P is most biased ($b_R = 1$) do not vote for I when $\hat{t}_P = L$. This requires that:

$$\beta \leq 1 - \theta - \delta - \delta\theta,$$

such that type $u_{iN} = -\delta\theta$ always rejects I when $\hat{t}_P = L$. For at least one voter to still support I, we further require:

$$\beta \geq 1 - \theta - \delta + \rho\underline{u}.$$

Combining these five constraints implies:

$$\beta + \theta + \delta \in \left(\max\left\{1 + \rho\underline{u}, 1 - (1-\rho)\overline{u}, (1-\rho)\delta\theta\right\}, 1 - \rho\delta\theta \right)$$

which is feasible when $\delta\theta < 1$.

Finally, consider the case where $\hat{t}_P = H$. The maximum bias that will convince a voter to vote for I in this state varies with u_{iN}, such that i votes for I when:

$$\beta - \rho u_{iN} + \frac{\delta(1-\theta) - \theta b_R}{1-\theta(1-b_R)} \geq -\theta.$$

For a given u_{iN}, the point of equality defines the maximum bias $\overline{b}(u_{iN})$ that would persuade such a voter to vote for I.

Putting this altogether yields the following expected vote shares for I by media outlet:

$$\begin{aligned}
\mathbb{E}[V_{NR}] &= (1-\theta) + \theta \Pr[\beta - \rho u_{iN} + u_{iN} + \delta - 1 \geq -\theta] \\
&= (1-\theta) + \theta \frac{1 - F\left[\frac{1-(\beta+\theta+\delta)}{1-\rho}\right]}{1 - F(-\delta\theta b_R)} \\
\mathbb{E}[V_{PR}] &= [1-\theta(1-b_R)] \Pr\left[\beta - \rho u_{iN} + \frac{\delta(1-\theta) - \theta b_R}{1-\theta(1-b_R)} \geq -\theta\right] \\
&\quad + \theta(1-b_R) \Pr[\beta - \rho u_{iN} + \delta - 1 \geq -\theta] \\
&= \theta(1-b_R) \frac{F\left(-\frac{1-(\beta+\theta+\delta)}{\rho}\right)}{1 - x_R[1 - F(-\delta\theta b_R)]} \\
&\quad + [1-\theta(1-b_R)] \times \begin{cases} F(c_R) & \text{if } -\frac{1-\beta-\theta-\delta}{\rho} < -\delta\theta b_R \\ F(-\delta\theta b_R) + z_R\left[F(c_R) - F(-\delta\theta b_R)\right] & \text{if } -\frac{1-\beta-\theta-\delta}{\rho} \geq -\delta\theta b_R, \end{cases}
\end{aligned}$$

where $z_R := \begin{cases} 1 & \text{if } R = 0 \\ 1-\eta & \text{if } R = 1 \end{cases}$ and $c_R := \frac{\beta + \theta + \frac{\delta(1-\theta) - \theta b_R}{1-\theta(1-b_R)}}{\rho}$.

Weighting each vote share by its audience, I's total vote share is then given by:

$$\begin{aligned}
\mathbb{E}[V_R] &= (1-\theta)A_{NR} + \theta x_R \left[1 - F\left(\frac{1-\beta-\theta-\delta}{1-\rho}\right)\right] + \theta(1-b_R) F\left(-\frac{1-\beta-\theta-\delta}{\rho}\right) \\
&\quad + [1-\theta(1-b_R)] \times \begin{cases} F\left(-\frac{1-\beta-\theta-\delta}{\rho}\right) & \text{if } -\frac{1-\beta-\theta-\delta}{\rho} < -\delta\theta b_R \\ F(-\delta\theta b_R) + z_R\left(F\left(-\frac{1-\beta-\theta-\delta}{\rho}\right) - F(-\delta\theta b_R)\right) & \text{if } -\frac{1-\beta-\theta-\delta}{\rho} \geq -\delta\theta b_R. \end{cases}
\end{aligned}$$

This expression can be compared to the total vote share in the baseline model:

$$\mathbb{E}[V_R | \rho = 0] = (1-\theta)A_{NR} + \theta x_R[1 - F(1-\beta-\theta-\delta)] + [1-\theta(1-b_R)]A_{PR} + \theta(1-b_R)0.$$

The comparison indicates that introducing partisan bias that depends on entertainment utilities reduces incentives for media outlets to engage in bias. In particular, the difference in vote share between the states of $\hat{t}_P = H$ and $\hat{t}_P = L$ is now smaller. Intuitively, this is because vote choices are now less responsive to media reporting.

From here, it is straightforward to demonstrate that similar (but more complex) media reporting strategies continue to reflect the same three forces highlighted in our main model. The consequences for the incumbent's decision are similarly moderated by the more limited benefits of reporting bias.

A.4 When outlet N opposes the incumbent

The model in the main paper assumed outlet N was politically-neutral. We next extend the model to the case where N opposes the government, instead choosing $r_{NR}(H) = 1 - q_R$ to maximize $\gamma A_{NR} - \mathbb{E}[V_R]$, where $q_R \in [0,1]$ is outlet N's bias. N chooses q_R simultaneously to P chb_R.

This generates the following posterior beliefs, outlet audience shares, and incumbent's expected vote share:

$$\begin{aligned}
\hat{\theta}(\hat{t}_N) &= \begin{cases} 0 & \text{if } \hat{t}_N = H, \text{with probability } (1-\theta)(1-q_R) \\ \frac{\theta}{\theta+(1-\theta)q_R} & \text{if } \hat{t}_N = L, \text{with probability } \theta + (1-\theta)q_R \end{cases} \\
\hat{\theta}(\hat{t}_P) &= \begin{cases} \frac{\theta b_R}{1-\theta(1-b_R)} & \text{if } \hat{t}_P = H, \text{with probability } 1-\theta(1-b_R) \\ 1 & \text{if } \hat{t}_P = L, \text{with probability } \theta(1-b_R) \end{cases} \\
A_{PR} &= 1 - x_R[1 - F(\delta[(1-\theta)q_R - \theta b_R])] \\
\mathbb{E}[V_R] &= \begin{cases} 1-\theta+[\theta+(1-\theta)q_R]x_R[1-F(\hat{u}(q_R))] + A_{PR}\theta b_R - A_{NR}(1-\theta)q_R & \text{if } b_R \in [0,\overline{b}], \\ 1-\theta+[\theta+(1-\theta)q_R]x_R[1-F(\hat{u}(q_R))] - A_{NR}(1-\theta)q_R & \text{if } b_R \in (\overline{b},1]. \end{cases}
\end{aligned}$$

where $\hat{u}(q_R) := \frac{\theta(1-\delta)}{\theta+(1-\theta)q_R} - \beta - \theta$ is the level of utility above which consumers of N vote for I when $\hat{t}_N = L$.

From pro-government outlet P's perspective, any equilibrium where $q_R^* > 0$ allows P to weakly increase its own bias in equilibrium relative to the main model where $q_R^* = 0$. This is because $\frac{\partial^2 A_{PR}}{\partial b_R \partial q_R} = -x_R\delta^2\theta(1-\theta)F''(\delta[(1-\theta)q_R - \theta b_R]) \geq 0$, which must hold when P's optimization problem is concave, and thus $\frac{\partial^2 A_{PR}}{\partial b_R \partial q_R} = x_R\delta^2\theta^2F''(\delta[(1-\theta)q_R - \theta b_R]) \leq 0$. P's optimization of b_R is therefore supermodular in q_R, so b_R is increasing in q_R (when fixed) by Topkis' theorem.

From the incumbent's perspective, N seeking to reduce the incumbent's vote share alters the decision to revoke N license in several ways. A greater incentive to revoke emerges because $q_0^* > 0$ means $\hat{t}_N = L$ is reported more frequently, which causes I to lose votes because N consumers will not always vote for I. However, this force is counteracted by three other forces. First, $q_0^* > 0$ will reduce N's audience when P and N compete (holding constant the change in b_0^*), and thus reduces the electoral benefit of revoking N's license just described. Second, as noted in the previous paragraph, $q_0^* > 0$ further reduces the need for P to compete for audience, and thus allows P to increase b_0^* toward the point of optimal persuasion. Third, when $q_0^* > 0$ and thus $\hat{t}_N = L$ occurs more frequently, I gains votes from N consumers who gain substantial utility from consuming N more frequently as well; this can only partially offset the incentive to revoke.

A.5 Computing predicted RCTV viewership

To examine heterogeneity in the effects of RCTV's license not being renewed by prior RCTV consumption levels, we require precinct-level RCTV viewership before RCTV ceased to broadcast publicly. However, the TV consumption behaviors of participants in Nielsen's panel of TV users cannot be geographically disaggregated at the precinct level, although they can be disaggregated by some demographic subgroups.

Instead, we seek to *predict* precinct-level RCTV consumption levels in the Nielsen data based on available demographic variables that Nielsen viewership can be disaggregated by *and* which also exist in the 2001 Venezuelan census. There are different categories of consumer within five demographic dimensions: age, area, gender, social class, and having a cable TV. We thus use aggregate differences by category to impute precinct-level RCTV consumption based on shared precinct-level characteristics. This would ideally involve estimating the following regression using N program-by-audience-category observations:

$$RCTV\ estimated\ audience_{cp} = \alpha_p + \mathbf{X}_c\beta + \varepsilon_{cp}, \tag{A1}$$

where $RCTV\ estimated\ audience_{cp}$ is the estimated audience for program p among demographic type c, α_p is a program-specific intercept, and $\mathbf{X}_c$ is an $(N \times K)$ matrix containing indicators for each of the K consumer categories. Each β_k in the K-vector β captures the average difference in viewership across RCTV programs if all consumers were in category k, relative to a baseline category within each dimension of demographic variables. If this were feasible, we could then combine the regression estimates $\hat{\beta}$ with measures of $\mathbf{X}_i$ in each precinct i to produce the precinct-level predicted audience for the average RCTV program (either prominent news programs or top 25 most popular programs in a given month).

This process is complicated for two reasons. First, it requires that comparable demographic covariates $\mathbf{X}$ exist in the Nielsen data *and* for electoral precincts. While the Nielsen subgroup aggregate pertains only to people of a particular type within Nielsen's TV consumer panel, our Census data—which is spatially merged to electoral precinct—reports the *share* of people of each type. To address this, we consider each demographic variable in $\mathbf{X}$ as a share, which is always 0 or 1 in the Nielsen data.

Second, the Nielsen viewership data reports only the *marginal* distribution by each demographic dimension; for example, we know a program's audience among men and women along the gender dimension, but not among men aged 35-44 and women aged 35-44 (i.e. along the gender and age group dimensions). Because we lack the *joint* distribution, equation (A1) can only be estimated for each dimension separately. We address this challenge by splitting $\mathbf{X}_c$ into J dimensions $\mathbf{X}_c = (\mathbf{X}_{1c}, ..., \mathbf{X}_{Jc})$ and then using the Frisch-Waugh-Lovell Theorem. The key idea is that we will use information about the joint distribution from the Census data to adjust for correlations between categories across dimensions.

To implement this, we first estimate the following "naive" regression for each dimension $j = 1, ..., J$:

$$RCTV\ estimated\ audience_{cp} = \alpha_p + \mathbf{X}_{jc}\theta_j + \varepsilon_{pc}, \tag{A2}$$

where each $\hat{\theta}_j$ captures the correlation between RCTV estimated audience and each category within dimension j in the Nielsen data, but without adjusting for $\mathbf{X}_{-jc}$. Applying the Frisch-Waugh-Lovell Theorem, we can then write our desired estimand in terms of these feasible estimates:

$$\hat{\beta}_j = \hat{\theta}_j - \delta_j \hat{\beta}_{-j}, \tag{A3}$$

where $\delta_j = (\mathbf{X}'_{jc}\mathbf{X}_{jc})^{-1}\mathbf{X}'_{jc}\mathbf{X}_{-jc}$ is the $(K_j \times K_{-j})$ matrix of coefficients from a regression of each variable in $\mathbf{X}_{-jc}$ on $\mathbf{X}_{jc}$. Due to the infeasibility of estimating equation (A1), the $\hat{\beta}_k$'s cannot be estimated. To solve this set of linear equations for $\hat{\beta}$, we must also obtain $\hat{\delta}_j$. To approximate $\hat{\delta}_j$, we use the aggregated precinct-level Census data for which the joint distribution of characteristics exists; specifically, we estimate the following regressions of each of the K_{-j} variables not in dimension j on all K_j variables in dimension j:

$$X_{i-jk} = \alpha + \mathbf{X}_{ij}\delta_{jk} + \varepsilon_i, \tag{A4}$$

and do so separately for each dimension $j = 1,...,J$. We then combine the estimates as $\hat{\delta}_j = (\hat{\delta}_{j1},...,\hat{\delta}_{jK_{-j}})$. We then solve the system of equations given in equation (A3) to yield $\hat{\beta}$.

Finally, we then compute the prediction $\mathbf{X}_i\hat{\beta}$, where—in our particular case—$\mathbf{X}_i$ contains the share of the population in each precinct that comes from each demographic category.

A.6 Segmentation and classification of newscasts

A.6.1 Details of segmentation algorithm

To text separate the newscasts into segments (or stories), we built and and trained a BiLSTM recurrent neural network with 64 neurons and attention mechanism (see Lukasik et al. 2020). We first pre-processed the text by turning into lower case and purging it of punctuation, numbers, and special symbols (which are later re-introduced for segment classification), before then lemmatizing and tokenizing the text using the Python package spaCy for Spanish. Texts were then partitioned into artificial "sentences" each containing five tokens. This allows the neural network to better calculate similarity across nearby artificial sentences and thus helps to identify structural breaks in content that are likely to represent segment transitions. Unlike early text segmentation models like TextTiling or LCSeg, the number of segments is not pre-specified. Following Li et al. (2020), we precede this architecture with a BETO layer (Cañete et al. 2020)—a form of BERT model trained on a large Spanish corpus—to incorporate information from the entire document in addition to the tokens immediately around potential segment transitions.

A.6.2 Details of segment classification

The first step of our classification involved classifying segments as domestic news, international news, sport, ads, or other. We used two approaches for this classification: GPT-4-turbo and XML-RoBERTa. The prompt for GPT-4-turbo was: "The following text, delimited with triple backticks,

is a fragment from a Venezuelan television news broadcast in Spanish. Your task is to identify which section of the broadcast it belongs to. Choose one of the following sections: domestic news, international news, sports, or ads. If the segment does not fit into any of the listed sections, choose 'other'. Only your choice may appear in the output, and the output cannot exceed two words." XML-RoBERTa instead solves a multi-class classification problem where the same set of classes is specified by the researcher. Unlike the GPT models, XML-RoBERTa's pretrained neural network is fine-tuned over 10 epochs for our specific task using our 675 hand-coded segments.

We then proceeded to use GPT-4 or GPT-4-turbo, depending on which yielded greater accuracy vis-a-vis our hand-coded validation set, to classify all segments that either GPT-4-turbo or XML-RoBERTa predicted to be domestic or international news. We list the prompts we sent to GPT below:

- *Topic (for domestic news)*: "The following text, delimited with triple backticks, is a fragment from a Venezuelan television news broadcast in Spanish. Your task is to identify the topic. Choose one of the numbers corresponding to the following topics: (1) political parties, government, congress, or government ministries; (2) economy, business, labor, inflation, shortages, or currency; (3) crime, justice, prisons, police, or military; (4) corruption, corruption by politicians, or corruption by government officials; (5) public opinion, mass political participation, citizen voting, protest, or citizen discontent; (6) education, exams, schools, or universities; (7) health, public health, or healthy living; (8) social programs, misiones, or policies to reduce poverty; (9) infrastructure or utilities; (10) science or technology; (11) media, journalism, or freedom of speech; (12) cars, traffic, transportation, or traffic accidents; (13) environment, extreme weather, natural disasters, or climate change; (14) arts, culture, society, festivals, food, fashion, or lifestyle; (15) entertainment, celebrities, and showbiz; (16) travel or tourism; (17) expropriation or property rights; (18) energy or oil; (19) weather forecast. If the fragment does not fit into any of the preceding topics, choose (20) other. Only output numbers that correspond to the topics listed above (e.g., choose 9 if the topic is 'infrastructure or utilities', 18 if the topic is 'weather forecast', etc.). Only a number between 1 and 20 can appear in the output."

- *Topic (for international news)*: "The following text, delimited with triple backticks, is a fragment from a Venezuelan television news broadcast in Spanish. Your task is to identify the topic. Choose one of the numbers corresponding to the following topics: (1) international relations between Venezuela and foreign countries; (2) international events occurring outside Venezuela. If the fragment does not fit into either of the preceding topics, choose (3) other. Only output numbers that correspond to the topics listed above (e.g., choose 1 if the topic is 'international relations between Venezuela and foreign countries'). Only a number between 1 and 3 can appear in the output."

- *Overall sentiment*: "The following text, delimited with triple backticks, is a fragment from a Venezuelan television news broadcast in Spanish. Your task is to determine whether this video segment conveys a positive, neutral, or negative impression of how well the Venezuelan government is performing in office. Choose 'positive', 'neutral', or 'negative'. Only your choice may appear in the output, which cannot exceed one word."

Table A1: XLM-RoBERTa confusion matrix for newscast segment section

		Predicted class				Correctly
Hand-coded class	Ads	Domestic News	International News	Other	Sports	classified
Ads	54	0	0	0	1	98.18%
Domestic News	5	370	13	0	0	95.36%
International News	1	18	120	0	0	86.33%
Other	7	16	10	10	1	22.73%
Sports	0	2	1	0	46	93.88%
Overall accuracy rate						88.89%

- *Sentiment toward the government*: "The following text, delimited with triple backticks, is a fragment from a Venezuelan television news broadcast in Spanish. Your task is to determine whether this video segment expresses a positive, neutral, or negative sentiment about the government of Venezuela or its performance in office. Choose 'positive', 'neutral', or 'negative'. Only your choice may appear in the output, which cannot exceed one word."
- *Sentiment toward Chávez*: "The following text, delimited with triple backticks, is a fragment from a Venezuelan television news broadcast in Spanish. Your task is to determine whether this video segment expresses a positive, neutral, or negative sentiment about Venezuela's President Hugo Chávez and/or his performance in office. Choose 'positive', 'neutral', or 'negative'. Only your choice may appear in the output, which cannot exceed one word."
- *Blame of the government*: "The following text, delimited with triple backticks, is a fragment from a Venezuelan television news broadcast in Spanish. If this video segment describes events that convey a negative impression of Venezuelan government performance, your task is to determine whether or not the text blames the Venezuelan government for these events; blaming "the government" includes blaming the President, his administration, ministers, ministries, or bureaucrats. Choose 'yes' if it does blame the government; choose 'no' if it does not blame the government, if you cannot determine whether or not the newscast blames the government, or if the newscast does not describe negative events. Only your choice may appear in the output, which cannot exceed one word."

All segments that both algorithms predicted to be ads were dropped from our analyses, while all that were predicted to be sports or other were coded as neutral for the classifications.

Tables A1-A6 show the confusion matrices that validate the outcomes used in the main paper. The codings for two Latin American research assistants are treated as the ground truth for the associated accuracy metrics. In some cases, we asked both human coders to classify the same segment, which yielded reasonably high intercoder reliability rates of at worst 71% and up to 92% depending on the question. For validation against our machine predictions, we randomly select a human coder where coders overlap.

One potential concern is that classification accuracy changes after RCTV went off the air. If this occurred differentially across television channels, differences in prediction quality could account

Table A2: GPT-4-turbo confusion matrix for newscast segment topic

	Predicted class																						Correctly
Hand-coded class	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	classified
1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	62.5%
2	0	8	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	57.14%
3	0	0	8	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	61.54%
4	0	2	1	82	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	93.18%
5	0	1	2	1	29	1	0	0	0	0	2	2	0	0	0	0	1	3	1	0	1	0	0	65.91%
6	0	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	77.78%
7	0	0	0	1	2	0	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	22.22%
8	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	20.0%
9	0	1	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	83.33%
10	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	33.33%
11	0	0	1	0	1	0	0	0	0	0	7	0	0	0	0	2	0	0	1	0	1	0	0	53.85%
12	0	0	0	1	3	0	0	0	2	1	1	11	0	0	0	0	0	1	0	0	2	0	0	50.0%
13	1	2	1	10	5	0	1	0	3	0	1	0	56	16	0	3	14	0	0	0	0	0	0	49.56%
14	0	0	2	3	1	0	1	0	0	0	0	0	1	15	1	0	0	1	1	0	0	0	0	57.69%
15	0	0	2	4	0	1	0	0	0	0	0	1	1	0	12	1	0	1	0	0	0	0	0	52.17%
16	1	0	1	11	3	1	0	2	1	1	1	2	2	0	0	110	7	3	1	0	0	0	0	74.83%
17	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	33.33%
18	0	0	4	7	0	1	0	0	0	0	0	0	0	0	1	0	0	22	8	0	3	0	0	47.83%
19	1	0	2	4	2	2	0	0	0	0	1	2	0	0	3	0	0	10	30	1	1	0	0	50.85%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
21	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	28.57%
22	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	33.33%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Overall accuracy rate																								62.52%

Note: Class labels are: 1 - arts, culture, society, festivals, food, fashion, or lifestyle; 2 - cars, traffic, transportation, or traffic accidents; 3 - corruption, corruption by politicians, or corruption by government officials; 4 - crime, justice, prisons, police, or military; 5 - economy, business, labor, inflation, shortages, or currency; 6 - education, exams, schools, or universities; 7 - energy or oil; 8 - entertainment, celebrities, and showbiz; 9 - environment, extreme weather, natural disasters, or climate change; 10 - expropriation or property rights; 11 - health, public health, or healthy living; 12 - infrastructure or utilities; 13 - international events occurring outside Venezuela; 14 - international relations between Venezuela and foreign countries; 15 - media, journalism, or freedom of speech; 16 - not classified; 17 - other; 18 - political parties, government, congress, or government ministries; 19 - public opinion, mass political participation, citizen voting, protest, or citizen discontent; 20 - science or technology; 21 - social programs, misiones, or policies to reduce poverty; 22 - travel, or tourism; 23 - weather forecast.

Table A3: GPT-4-turbo confusion matrix for overall newscast segment sentiment

	Predicted class			Correctly
Hand-coded class	Negative	Neutral	Positive	classified
Negative	200	20	3	89.69%
Neutral	65	271	17	76.77%
Positive	15	47	37	37.37%
Overall accuracy rate				75.26%

Table A4: GPT-4 confusion matrix for newscast segment sentiment against the government

	Predicted class			Correctly
Hand-coded class	Negative	Neutral	Positive	classified
Negative	139	25	0	84.76%
Neutral	60	380	14	83.7%
Positive	6	23	28	49.12%
Overall accuracy rate				81.04%

Table A5: GPT-4 confusion matrix for newscast segment sentiment against Chavez

	Predicted class			Correctly
Hand-coded class	Negative	Neutral	Positive	classified
Negative	58	20	0	74.36%
Neutral	53	521	5	89.98%
Positive	1	11	6	33.33%
Overall accuracy rate				86.67%

Table A6: GPT-4 confusion matrix for newscast segment blaming the government

	Predicted class		Correctly
Hand-coded class	No	Yes	classified
No	474	77	86.03%
Yes	28	96	77.42%
Overall accuracy rate			84.44%

for our results. However, Table A7 shows that our various measures of classification accuracy change little over time, whether overall or by channel.

A.7 Additional figures and tables

Figure A1: Chávez approval

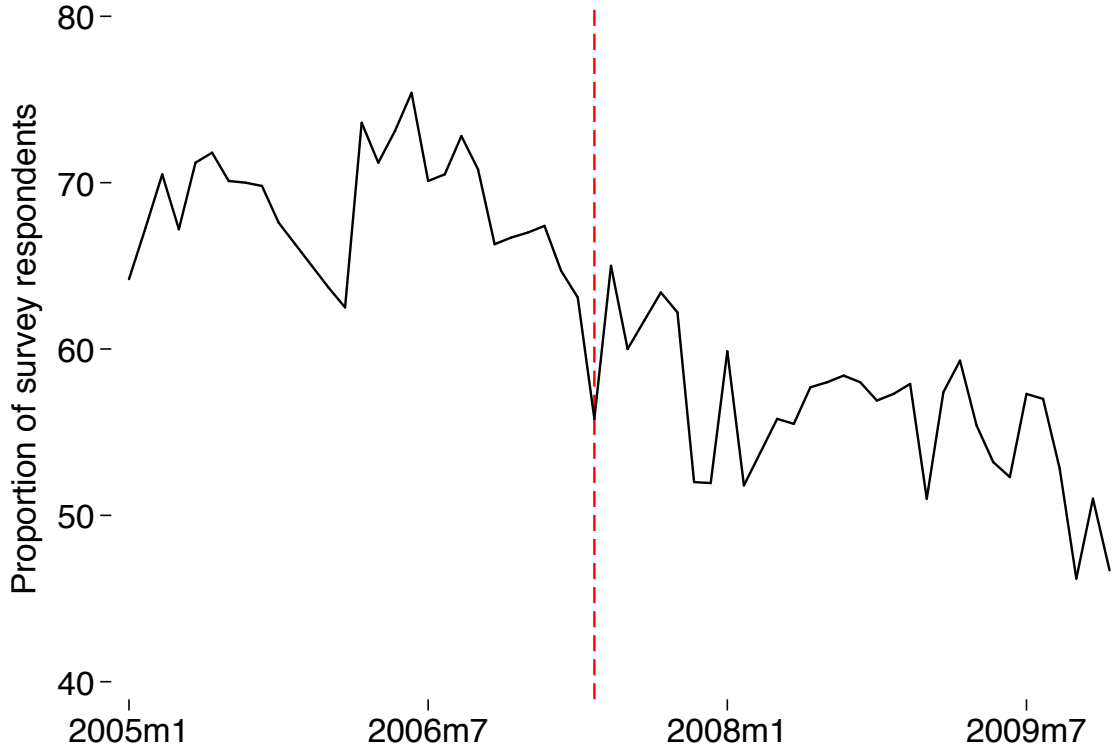


Table A7: Pre-post comparison of model classification performance

Channel	Accuracy		Precision		Recall		F-score	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Panel A: Newscast section (XLM-RoBERTa)								
RCTV	1.000	0.928	1.000	0.930	1.000	0.928	1.000	0.926
Venevision	0.781	0.859	0.864	0.881	0.781	0.859	0.770	0.848
Televen	0.927	0.854	0.916	0.801	0.927	0.854	0.918	0.827
Globovision	0.857	0.824	0.822	0.755	0.857	0.824	0.832	0.785
All channels	0.923	0.875	0.934	0.884	0.923	0.875	0.915	0.860
Panel B: Segment topic (GPT-4-turbo)								
RCTV	0.693	0.634	0.741	0.673	0.693	0.634	0.691	0.634
Venevision	0.563	0.603	0.761	0.661	0.563	0.603	0.612	0.613
Televen	0.683	0.563	0.724	0.692	0.683	0.563	0.673	0.572
Globovision	0.657	0.635	0.83	0.720	0.657	0.635	0.678	0.626
All channels	0.663	0.610	0.733	0.679	0.663	0.610	0.669	0.617
Panel C: Segment sentiment (GPT-4-turbo)								
RCTV	0.750	0.804	0.756	0.820	0.750	0.804	0.731	0.797
Venevision	0.781	0.692	0.898	0.688	0.781	0.692	0.814	0.683
Televen	0.683	0.708	0.699	0.716	0.683	0.708	0.668	0.702
Globovision	0.715	0.878	0.656	0.866	0.714	0.878	0.678	0.872
All channels	0.735	0.760	0.741	0.756	0.735	0.760	0.722	0.751
Panel D: Sentiment towards Chávez (GPT-4)								
RCTV	0.920	0.791	0.921	0.832	0.920	0.791	0.919	0.803
Venevision	0.938	0.872	0.938	0.898	0.938	0.872	0.938	0.881
Televen	0.878	0.917	0.856	0.914	0.878	0.917	0.867	0.913
Globovision	0.943	0.811	0.924	0.847	0.943	0.810	0.931	0.822
All channels	0.918	0.846	0.915	0.874	0.918	0.846	0.915	0.855
Panel E: Sentiment towards government (GPT-4)								
RCTV	0.761	0.817	0.786	0.821	0.761	0.817	0.768	0.810
Venevision	0.843	0.833	0.878	0.833	0.844	0.833	0.856	0.831
Televen	0.732	0.823	0.755	0.847	0.732	0.823	0.735	0.828
Globovision	0.800	0.824	0.842	0.825	0.800	0.825	0.778	0.823
All channels	0.776	0.825	0.798	0.829	0.776	0.825	0.781	0.824
Panel F: Blame government (GPT-4-turbo)								
RCTV	0.795	0.856	0.822	0.875	0.795	0.856	0.805	0.860
Venevision	0.906	0.865	0.893	0.903	0.906	0.865	0.898	0.879
Televen	0.732	0.906	0.800	0.928	0.732	0.906	0.756	0.914
Globovision	0.886	0.770	0.886	0.838	0.886	0.770	0.886	0.788
All channels	0.816	0.856	0.839	0.886	0.816	0.856	0.826	0.865

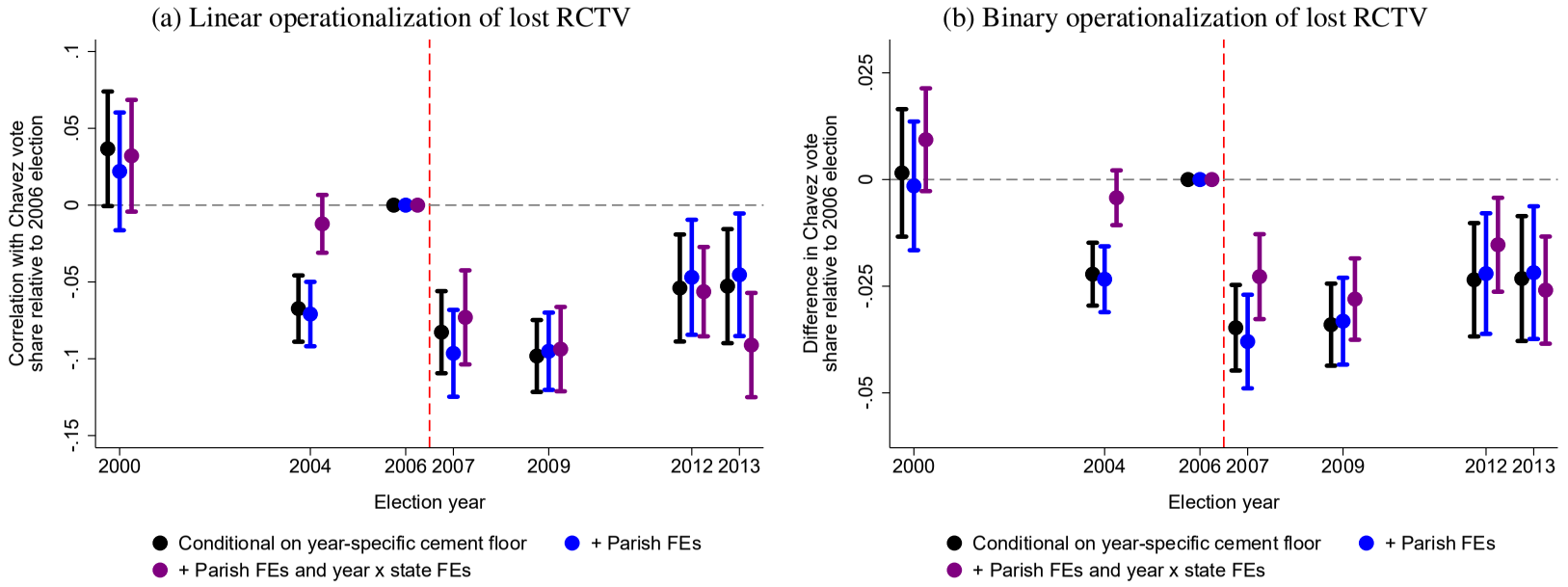


Figure A2: Differential correlation between parishes where households had a television without cable and vote share for Chávez by election year

Table A8: Factor loadings used to construct the factor variables in the precinct analyses

	Factor loadings		
	Factor 1	Factor 2	Factor 3
Share with a land title	0.00562	-0.01785	0.33371
Share of foreigners	0.06214	0.02295	-0.39926
Share of young people	-0.09916	0.02796	0.32555
Number of persons	-0.03374	0.01812	0.01169
Share of married heads of household	0.2474	0.14632	-0.08068
Share of female heads of household	0.03924	-0.35261	0.18877
Share with a partner	0.12485	0.61885	0.03177
Share female	-0.04241	0.05017	-0.07147
Share with a radio	0.07942	-0.02818	0.2744
Share indigenous	-0.0123	-0.01184	-0.03954
Share literate	0.05827	-0.01968	0.03565
Share with a bachelors degree	0.25024	0.04282	0.1642
Share unemployed	-0.00063	-0.01641	0.06072
Share defined as impoverished	-0.17019	0.00634	0.06425
Share with electricity in their household	0.01057	-0.0095	0.01974
Share with running water in their household	0.00685	-0.00425	0.0095
Share without a vehicle	-0.03922	-0.05811	-0.05019
Share with cements floors	-0.12162	0.02171	-0.08448
Share with at least one bathroom	0.03088	-0.04293	0.097

Note: The loadings are from the rotated factors.

Table A9: Factor loadings used to construct the factor variables in the parish-level analyses

	Factor loadings		
	Factor 1	Factor 2	Factor 3
Share with a land title	-0.2774	0.6451	0.0503
Share of foreigners	0.0977	-0.5022	-0.2157
Share of young people	-0.5603	0.6815	0.3024
Number of persons	0.3249	-0.0057	0.3053
Share of married heads of household	0.8467	-0.068	-0.3757
Share of female heads of household	0.6491	-0.6115	0.2252
Share with a partner	-0.1592	0.8417	-0.1139
Share female	-0.8426	0.2604	-0.093
Share with a radio	0.803	-0.1363	0.1921
Share indigenous	-0.2923	-0.1313	-0.1091
Share literate	0.8966	-0.0038	0.3053
Share with a bachelors degree	0.9336	-0.2113	-0.1333
Share unemployed	0.3625	0.2401	0.1926
Share defined as impoverished	-0.8833	0.2842	0.1054
Share with electricity in their household	0.5579	-0.0359	0.3885
Share with running water in their household	0.6408	-0.1699	0.458
Share without a vehicle	-0.232	-0.1141	0.4059
Share with at least one bathroom	-0.0336	0.0355	0.8358

Note: The loadings are from the rotated factors.

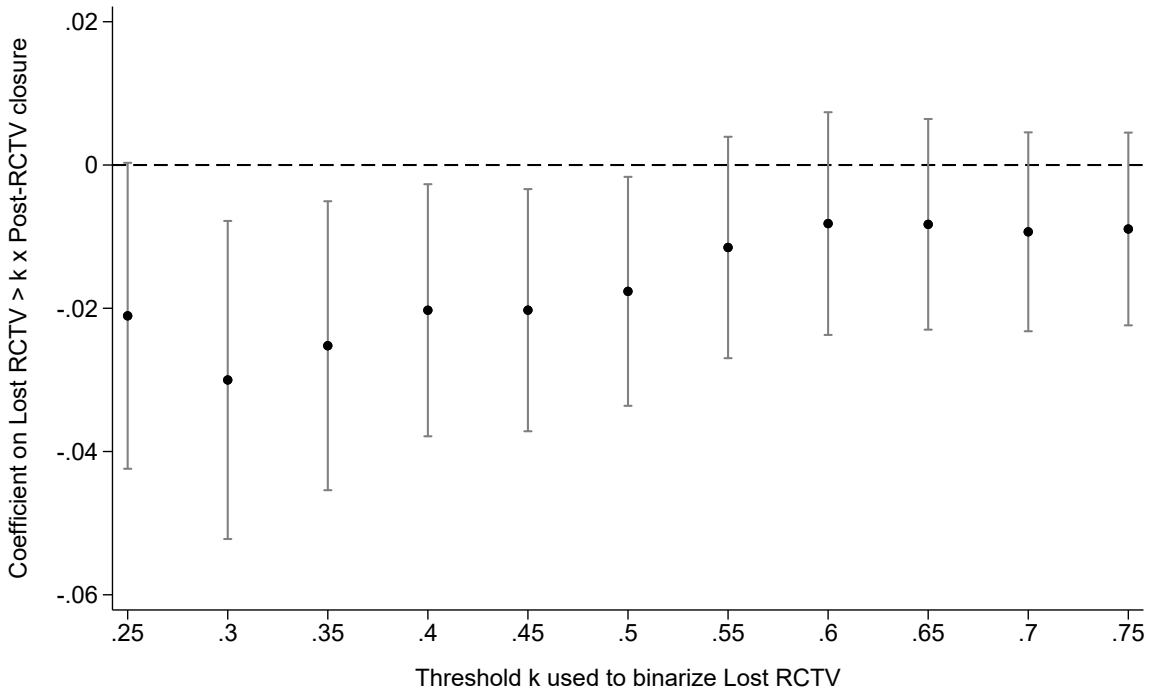


Figure A4: Alternative thresholds using to define precincts with high and low levels of TV without cable

Table A10: Effect of losing RCTV in 2007 on electoral turnout

	Turnout rate							
	Election period: 2000-2013				Election period: 2000-2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Share with TV without cable								
Lost RCTV × Post-RCTV closure	0.040***	0.039***	0.046***		-0.008	-0.008	0.013*	
	(0.010)	(0.012)	(0.011)		(0.006)	(0.007)	(0.008)	
Predicted lost RCTV × Post-RCTV closure				0.038**				-0.016*
				(0.014)				(0.009)
Residual lost RCTV × Post-RCTV closure				0.041***				0.011
				(0.009)				(0.007)
(Predicted) Lost RCTV mean	0.63	0.63	0.63	0.62	0.63	0.63	0.63	0.63
Panel B: Greater than 50% had TV without cable								
Lost RCTV >0.5 × Post-RCTV closure	0.017***	0.015***	0.012***		-0.004	-0.003	0.002	
	(0.005)	(0.005)	(0.003)		(0.003)	(0.003)	(0.003)	
Predicted lost RCTV >0.5 × Post-RCTV closure				0.021**				-0.007
				(0.008)				(0.004)
Residual lost RCTV >0.5 × Post-RCTV closure				0.009***				-0.000
				(0.003)				(0.003)
(Predicted) Lost RCTV >0.5 mean	0.66	0.66	0.66	0.65	0.66	0.66	0.66	0.66
Panel C: Three categories of TV without cable								
Lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure	0.018***	0.014***	0.014***		0.006*	0.004	0.007**	
	(0.006)	(0.005)	(0.004)		(0.003)	(0.003)	(0.003)	
Lost RCTV $\in (0.67, 1]$ × Post-RCTV closure	0.028***	0.026***	0.026***		-0.000	0.001	0.011***	
	(0.007)	(0.008)	(0.006)		(0.004)	(0.004)	(0.004)	
Predicted lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				0.020**				0.033***
				(0.009)				(0.008)
Residual lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				0.012***				0.005
				(0.004)				(0.003)
Predicted lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				0.030***				0.006
				(0.010)				(0.006)
Residual lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				0.023***				0.008**
				(0.005)				(0.004)
(Predicted) Lost RCTV $\in (0.33, 0.67]$ mean	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
(Predicted) Lost RCTV $\in (0.67, 1]$ mean	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Test: equal coefficients across variables (p value)	0.01	0.01	0.00	0.25	0.03	0.22	0.10	0.00
Test: equal coefficients across residualized variables (p value)				0.00				0.33
Observations	8,589	8,589	8,589	8,589	6,135	6,135	6,135	6,135
Unique parishes	109	109	109	109	109	109	109	109
Outcome mean	0.72	0.72	0.72	0.72	0.68	0.68	0.68	0.68
Outcome standard deviation	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09
Parish × year fixed effects		✓	✓	✓		✓	✓	✓
Year-specific factor covariates			✓				✓	

Notes: Each specification is estimated using OLS, and includes precinct and year fixed effects. The interactive factor covariates are the three first dimensions capturing differences in 2001 census characteristics across precincts. The predicted and residual variables come from cross-sectional regressions of the treatment variable(s) on the variables used in the factor analysis. All observations are weighted by the number of registered voters. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

Table A11: Effect of losing RCTV in 2007 on electoral support for Chávez, unweighted

	Chávez vote share							
	Election period: 2000-2013				Election period: 2000-2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Share with TV without cable								
Lost RCTV × Post-RCTV closure	-0.029*	-0.041**	-0.031**		-0.041**	-0.053***	-0.038**	
	(0.018)	(0.016)	(0.015)		(0.016)	(0.017)	(0.016)	
Predicted lost RCTV × Post-RCTV closure				-0.046**				-0.061***
				(0.020)				(0.020)
Residual lost RCTV × Post-RCTV closure				-0.026**				-0.032**
				(0.012)				(0.012)
(Predicted) Lost RCTV mean	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Panel B: Greater than 50% had TV without cable								
Lost RCTV >0.5 × Post-RCTV closure	-0.019**	-0.019***	-0.014***		-0.022***	-0.023***	-0.016***	
	(0.008)	(0.005)	(0.004)		(0.008)	(0.005)	(0.004)	
Predicted lost RCTV >0.5 × Post-RCTV closure				-0.028***				-0.035***
				(0.010)				(0.010)
Residual lost RCTV >0.5 × Post-RCTV closure				-0.012***				-0.013***
				(0.004)				(0.004)
(Predicted) Lost RCTV >0.5 mean	0.67	0.67	0.67	0.66	0.67	0.67	0.67	0.66
Panel C: Three categories of TV without cable								
Lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure	-0.021**	-0.011***	-0.008**		-0.021**	-0.013***	-0.009**	
	(0.009)	(0.004)	(0.004)		(0.008)	(0.004)	(0.004)	
Lost RCTV $\in (0.67, 1]$ × Post-RCTV closure	-0.022*	-0.024**	-0.017**		-0.028**	-0.030***	-0.019**	
	(0.012)	(0.009)	(0.007)		(0.011)	(0.010)	(0.008)	
Predicted lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-0.039***				-0.034***
				(0.012)				(0.011)
Residual lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-0.005				-0.006
				(0.004)				(0.003)
Predicted lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-0.044***				-0.050***
				(0.013)				(0.013)
Residual lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-0.012**				-0.014**
				(0.006)				(0.006)
(Predicted) Lost RCTV $\in (0.33, 0.67]$ mean	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
(Predicted) Lost RCTV $\in (0.67, 1]$ mean	0.49	0.49	0.49	0.47	0.49	0.49	0.49	0.47
Test: equal coefficients across variables (p value)	0.83	0.08	0.14	0.73	0.30	0.03	0.09	0.25
Test: equal coefficients across residualized variables (p value)				0.15				0.10
Observations	8,589	8,589	8,589	8,589	6,135	6,135	6,135	6,135
Unique parishes	109	109	109	109	109	109	109	109
Outcome mean	0.49	0.49	0.49	0.49	0.51	0.51	0.51	0.51
Outcome standard deviation	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Parish × year fixed effects		✓	✓	✓		✓	✓	✓
Year-specific factor covariates			✓				✓	

Notes: Each specification is estimated using OLS, and includes precinct and year fixed effects. The interactive factor covariates are the three first dimensions capturing differences in 2001 census characteristics across precincts. The predicted and residual variables come from cross-sectional regressions of the treatment variable(s) on the variables used in the factor analysis. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

Table A12: Effect of losing RCTV in 2007 on electoral support for Chávez, defining intensity according to an interpolated 2006 census measures of access to television and cable

	Chávez vote share							
	Election period: 2000-2013				Election period: 2000-2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Share with TV without cable								
Lost RCTV (2006) × Post-RCTV closure	-0.042**	-0.052***	-0.042**		-0.059***	-0.068***	-0.057***	
	(0.020)	(0.020)	(0.018)		(0.019)	(0.020)	(0.019)	
Predicted lost RCTV (2006) × Post-RCTV closure				-0.059**				-0.075***
				(0.023)				(0.023)
Residual lost RCTV (2006) × Post-RCTV closure				-0.036***				-0.049***
				(0.012)				(0.013)
(Predicted) Lost RCTV (2006) mean	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Panel B: Greater than 50% had TV without cable								
Lost RCTV (2006) > 0.5 × Post-RCTV closure	-0.014*	-0.014*	-0.006		-0.020***	-0.019**	-0.010*	
	(0.008)	(0.008)	(0.005)		(0.007)	(0.008)	(0.005)	
Predicted lost RCTV (2006) > 0.5 × Post-RCTV closure				-0.025**				-0.033***
				(0.011)				(0.011)
Residual lost RCTV (2006) > 0.5 × Post-RCTV closure				-0.006				-0.009*
				(0.005)				(0.005)
(Predicted) Lost RCTV (2006) > 0.5 mean	0.51	0.51	0.51	0.50	0.51	0.51	0.51	0.50
Panel C: Three categories of TV without cable								
Lost RCTV (2006) $\in (0.33, 0.67]$ × Post-RCTV closure	-0.030***	-0.020***	-0.015***		-0.031***	-0.022***	-0.017***	
	(0.009)	(0.005)	(0.004)		(0.008)	(0.006)	(0.005)	
Lost RCTV (2006) $\in (0.67, 1]$ × Post-RCTV closure	-0.023**	-0.025**	-0.016**		-0.032***	-0.032***	-0.021***	
	(0.011)	(0.010)	(0.007)		(0.010)	(0.011)	(0.008)	
Predicted lost RCTV (2006) $\in (0.33, 0.67]$ × Post-RCTV closure				-0.041***				-0.043***
				(0.009)				(0.009)
Residual lost RCTV (2006) $\in (0.33, 0.67]$ × Post-RCTV closure				-0.012***				-0.013***
				(0.003)				(0.004)
Predicted lost RCTV (2006) $\in (0.67, 1]$ × Post-RCTV closure				-0.036**				-0.045***
				(0.015)				(0.015)
Residual lost RCTV (2006) $\in (0.67, 1]$ × Post-RCTV closure				-0.012**				-0.017***
				(0.005)				(0.006)
(Predicted) Lost RCTV (2006) $\in (0.33, 0.67]$ mean	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
(Predicted) Lost RCTV (2006) $\in (0.67, 1]$ mean	0.26	0.26	0.26	0.25	0.26	0.26	0.26	0.25
Test: equal coefficients across variables (p value)	0.21	0.38	0.85	0.65	0.73	0.10	0.37	0.86
Test: equal coefficients across residualized variables (p value)				0.87				0.28
Observations	8,575	8,575	8,575	8,575	6,125	6,125	6,125	6,125
Unique parishes	109	109	109	109	109	109	109	109
Outcome mean	0.49	0.49	0.49	0.49	0.51	0.51	0.51	0.51
Outcome standard deviation	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Parish × year fixed effects		✓	✓	✓		✓	✓	✓
Year-specific factor covariates			✓				✓	

Notes: Each specification is estimated using OLS, and includes precinct and year fixed effects. The interactive factor covariates are the three first dimensions capturing differences in 2001 census characteristics across precincts. The predicted and residual variables come from cross-sectional regressions of the treatment variable(s) on the variables used in the factor analysis. All observations are weighted by the number of registered voters. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

Table A13: Effect of losing RCTV in 2007 on electoral support for Chávez in presidential elections

	Chávez vote share			
	(1)	(2)	(3)	(4)
Panel A: Share with TV without cable				
Lost RCTV × Post-RCTV closure	-0.019	-0.022	-0.024*	
	(0.020)	(0.017)	(0.014)	
Predicted lost RCTV × Post-RCTV closure				-0.024
				(0.022)
Residual lost RCTV × Post-RCTV closure				-0.019*
				(0.010)
(Predicted) Lost RCTV mean	0.62	0.62	0.62	0.62
Panel B: Greater than 50% had TV without cable				
Lost RCTV > 0.5 × Post-RCTV closure	-0.015	-0.015***	-0.016***	
	(0.009)	(0.005)	(0.004)	
Predicted lost RCTV > 0.5 × Post-RCTV closure				-0.018
				(0.011)
Residual lost RCTV > 0.5 × Post-RCTV closure				-0.013***
				(0.004)
(Predicted) Lost RCTV > 0.5 mean	0.65	0.65	0.65	0.65
Panel C: Three categories of TV without cable				
Lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure	-0.027**	-0.013***	-0.012***	
	(0.011)	(0.005)	(0.004)	
Lost RCTV $\in (0.67, 1]$ × Post-RCTV closure	-0.021	-0.018*	-0.018**	
	(0.013)	(0.010)	(0.008)	
Predicted lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-0.054***
				(0.014)
Residual lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-0.008**
				(0.004)
Predicted lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-0.038**
				(0.015)
Residual lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-0.013**
				(0.006)
(Predicted) Lost RCTV $\in (0.33, 0.67]$ mean	0.37	0.37	0.37	0.37
(Predicted) Lost RCTV $\in (0.67, 1]$ mean	0.47	0.47	0.47	0.47
Test: equal coefficients across variables (p value)	0.44	0.43	0.27	0.29
Test: equal coefficients across residualized variables (p value)				0.39
Observations	4,908	4,908	4,908	4,908
Unique parishes	109	109	109	109
Outcome mean	0.50	0.50	0.50	0.50
Outcome standard deviation	0.21	0.21	0.21	0.21
Parish × year fixed effects		✓	✓	✓
Year-specific factor covariates			✓	

Notes: Each specification is estimated using OLS, and includes precinct and year fixed effects. The interactive factor covariates are the three first dimensions capturing differences in 2001 census characteristics across precincts. The predicted and residual variables come from cross-sectional regressions of the treatment variable(s) on the variables used in the factor analysis. All observations are weighted by the number of registered voters. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

Table A14: Effect of losing RCTV in 2007 on the number of registered voters

	Number of registered voters							
	Election period: 2000-2013				Election period: 2000-2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Share with TV without cable								
Lost RCTV × Post-RCTV closure	-94.634	-72.286	83.071		49.177	-11.930	98.265	
	(153.904)	(184.773)	(215.042)		(140.699)	(155.264)	(200.021)	
Predicted lost RCTV × Post-RCTV closure				-30.909				57.868
				(236.011)				(195.325)
Residual lost RCTV × Post-RCTV closure				-177.040				-188.638
				(221.216)				(201.662)
(Predicted) Lost RCTV mean	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Panel B: Greater than 50% had TV without cable								
Lost RCTV >0.5 × Post-RCTV closure	-96.904	-104.648	-89.787		-28.373	-74.476	-77.629	
	(74.517)	(81.405)	(99.106)		(64.013)	(71.620)	(84.534)	
Predicted lost RCTV >0.5 × Post-RCTV closure				-66.997				-4.384
				(129.714)				(110.367)
Residual lost RCTV >0.5 × Post-RCTV closure				-134.248				-129.579
				(95.722)				(78.899)
(Predicted) Lost RCTV >0.5 mean	0.67	0.67	0.67	0.66	0.67	0.67	0.67	0.66
Panel C: Three categories of TV without cable								
Lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure	-189.013**	-107.818	-61.475		-97.260	-66.008	-38.441	
	(88.543)	(96.751)	(99.679)		(68.224)	(82.051)	(86.191)	
Lost RCTV $\in (0.67, 1]$ × Post-RCTV closure	-166.189	-88.328	-9.212		-44.362	-34.218	17.803	
	(100.454)	(122.532)	(123.972)		(80.667)	(98.951)	(103.686)	
Predicted lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-445.441				-273.454
				(282.010)				(248.508)
Residual lost RCTV $\in (0.33, 0.67]$ × Post-RCTV closure				-97.362				-76.402
				(96.973)				(83.347)
Predicted lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-197.722				-68.421
				(169.247)				(139.210)
Residual lost RCTV $\in (0.67, 1]$ × Post-RCTV closure				-103.773				-85.921
				(118.808)				(98.560)
(Predicted) Lost RCTV $\in (0.33, 0.67]$ mean	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
(Predicted) Lost RCTV $\in (0.67, 1]$ mean	0.49	0.49	0.49	0.47	0.49	0.49	0.49	0.47
Test: equal coefficients across variables (p value)	0.75	0.80	0.48	0.28	0.44	0.64	0.39	0.31
Test: equal coefficients across residualized variables (p value)				0.93				0.89
Observations	8,589	8,589	8,589	8,589	6,135	6,135	6,135	6,135
Unique parishes	109	109	109	109	109	109	109	109
Outcome mean	3403.92	3403.92	3403.92	3403.92	3255.01	3255.01	3255.01	3255.01
Outcome standard deviation	2094.30	2094.30	2094.30	2094.30	2002.63	2002.63	2002.63	2002.63
Parish × year fixed effects		✓	✓	✓		✓	✓	✓
Year-specific factor covariates			✓				✓	

Notes: Each specification is estimated using OLS, and includes precinct and year fixed effects. The interactive factor covariates are the three first dimensions capturing differences in 2001 census characteristics across precincts. The predicted and residual variables come from cross-sectional regressions of the treatment variable(s) on the variables used in the factor analysis. Standard errors are clustered by parish. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.

Table A15: Changes in news sentiment among television stations after RCTV went off public air, all classifications by XML-RoBERTa

	Impression of government scale (positive to negative)		Bad impression of government		Negative sentiment about government		Negative sentiment about Chávez		Blame government for events		Blame government, given bad events	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Televen and Venevisión × Post-RCTV closure	-0.053*	-0.069*	-0.079***	-0.093**	-0.023	-0.028	-0.003	0.004	-0.029**	-0.017	-0.032*	-0.016
	(0.029)	(0.036)	(0.028)	(0.036)	(0.024)	(0.030)	(0.021)	(0.029)	(0.013)	(0.018)	(0.018)	(0.024)
Observations	848	733	848	733	848	733	848	733	848	733	846	729
R^2	0.16	0.54	0.15	0.52	0.18	0.56	0.15	0.52	0.17	0.53	0.16	0.51
Outcome mean	1.62	1.63	0.65	0.66	0.40	0.40	0.19	0.19	0.08	0.09	0.12	0.12
Outcome std. dev.	0.20	0.20	0.18	0.18	0.19	0.19	0.15	0.16	0.11	0.11	0.14	0.15
Date fixed effects		✓		✓		✓		✓		✓		✓

Notes: Each specification is estimated using OLS, and includes TV station and month-year fixed effects. The reference category is Globovisión. Standard errors are clustered by media outlet × month-year. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ from two-sided t tests.