Government Control of the Media

Scott Gehlbach and Konstantin Sonin[*]

September 2008

Abstract

We present a formal model of government control of the media to illuminate variation in media freedom across countries and over time, with particular application to less democratic states. The extent of media freedom depends critically on two variables: the mobilizing character of the government and the size of the advertising market. Media bias is greater and state ownership of the media more likely when the need for social mobilization is large; however, the distinction between state and private media is smaller. Large advertising markets reduce media bias in both state and private media, but increase the incentive for the government to nationalize private media. We illustrate these arguments with a case study of media freedom in postcommunist Russia, where media bias has responded to the mobilizing needs of the Kremlin and government control over the media has grown in tandem with the size of the advertising market.

---

[*]Gehlbach: University of Wisconsin–Madison and CEFIR, gehlbach@polisci.wisc.edu. Sonin: New Economic School, CEFIR, and CEPR, ksonin@gmail.com.

1   Introduction

A substantial literature ties media freedom to good governance.[1] Less is known about the determinants of media freedom itself. Although correlated with the presence of democratic institutions, political institutions alone do not determine media freedom. As Figure 1 illustrates, many nondemocracies have higher levels of media freedom than many democracies, and among the least democratic countries there is little obvious relationship between political institutions and media freedom.[2] Moreover, media freedom often fluctuates within countries even as political institutions remain unchanged.

What accounts for variation in media freedom across space and time? In this paper, we provide a formal framework to explore this question. We focus especially on less democratic states where the government uses the media to mobilize citizens in support of actions that may not be in their individual best interest, though some of our arguments may also apply to democracies. We emphasize variation along two dimensions of media freedom: *media ownership*, by which we generally mean whether the media are state-owned or private, and *media bias*, which we define as the extent to which the media misreport the news in favor of government interests. As we show, media ownership typically influences media bias, but media ownership itself is endogenous to the anticipated bias under state and private ownership.

Our theoretical framework stresses a fundamental constraint facing any government seeking to influence media content: bias in reporting reduces the informational content of the news, thus lowering the likelihood that individuals who need that information to make decisions will read, watch, or listen to it. This constraint operates in two ways. First, excessive media bias works against the government's desire for social mobilization, as citizens who ignore the news cannot be influenced by it. Second, media bias reduces advertising revenue, as media consumption is less when pro-government bias is large. In general, this reduction in advertising revenue is costly to the government, regardless of whether the media are state owned (to the extent that profits and losses of state-owned companies are internalized) or private (because the government must subsidize private owners to compensate for lost revenue).

We highlight two variables that influence the operation of this constraint. First, the *mobilizing character of the government* determines the value the government places on the mobilization of citizens to take actions that are not necessarily in their individual best interest, such as voting and demonstrating in favor of the incumbent regime (Magaloni, 2006; Simpser, 2007) or exposing the corruption of local bureaucrats (Lorentzen, 2006). When the need for social mobilization is large, the government is more willing to pay the cost (foregone advertising revenue or subsidies) of media bias. Media bias may therefore be greater in autocratic states whose leaders aim to transform society, or under populist governments that retain power through mass public participation, than in "kleptocracies" or "sultanistic" regimes.[3] Moreover, holding regime type constant, media bias will be greater in periods

---

[1]Much recent work on the topic is in the political economy literature. Representative papers include Besley and Burgess (2002); Adserà, Boix, and Payne (2003); Brunetti and Weder (2003); Reinikka and Svensson (2005); Besley and Prat (2006); Prat and Strömberg (2006); and Treisman (2007).

[2]Obviously, causality cannot be inferred from the simple bivariate relationship depicted in Figure 1.

[3]This argument has parallels in Wintrobe's (1990) suggestion that repression will be greater under "total-
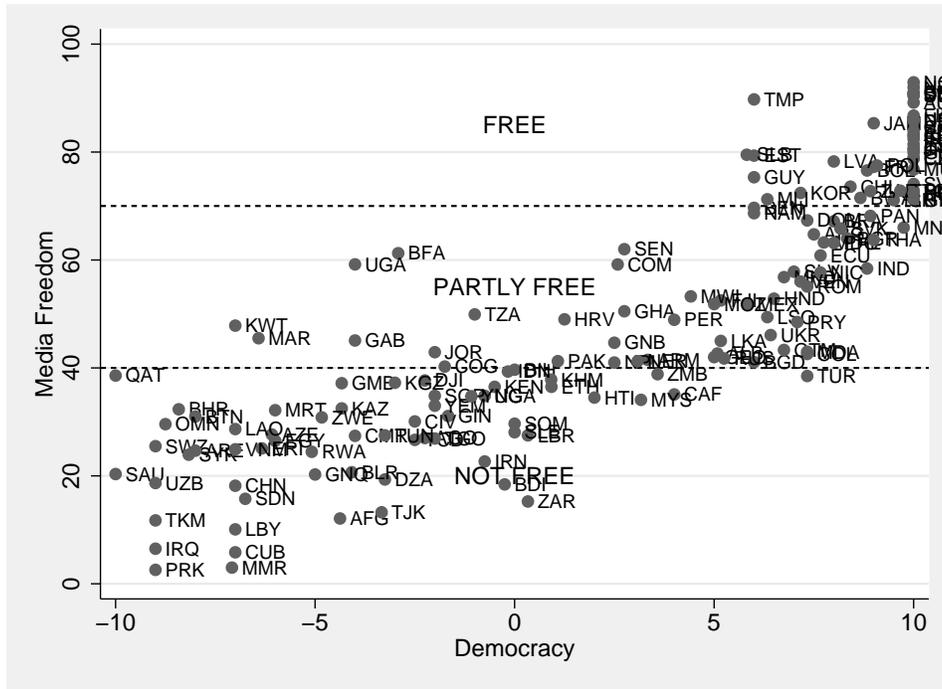
Figure 1: Media freedom and democracy. Media freedom is Freedom House Press Freedom Score, reordered so that higher values correspond to greater media freedom. Freedom House classifies countries as "Free," "Partly Free," and "Not Free," as indicated. Democracy is `polity2` variable from Policy IV dataset. Values plotted are averages for 1993–2004.

when mobilization is especially important, as during an election campaign. Consistent with cross-country evidence (Djankov, McLeish, Nenova, and Shleifer, 2003), bias is generally greater in state-owned media, though as mobilization increases in importance, bias in state and private media converge. Despite this convergence, the government may be more inclined to seize ownership of private media when mobilization is important, as it can save the cost of subsidization by controlling the media directly.

Second, the *size of the advertising market*, which may be influenced by such factors as media technology and economic regulation, determines the opportunity cost of lost consumers due to bias in reporting. In the words of a Mexican journalist working in the 1990s at the independent *La Jornada*, "telling the truth is good business" (Lawson, 2002, p. 89), though the extent to which that is the case depends on the responsiveness of advertisers to circulation, viewership, or listenership. Consistent with the findings of an emerging empirical and theoretical literature,[4] we show that private media are generally less biased when the advertising market is large, as purchasing influence through subsidization or outright bribery

itarian" than "tinpot" dictatorships. The distinction between mobilizing and non-mobilizing dictatorships has its roots in Friedrich and Brzezinski (1965). Przeworski et al. (2000) define mobilizing dictatorships as those with at least one political party. In the case study below we discuss the shift toward a more mobilizing government in Russia as the United Russia party and related organizations developed under Vladimir Putin.

[4]Petrova (2008b) provides evidence based on the statistical analysis of data from the nineteenth-century U.S. Historical accounts include Baldasty (1992) and Starr (2004). For theoretical analysis, see Besley and Prat (2006) and Petrova (2008a).

is relatively expensive for the government. We advance on this understanding with two new results. First, we show that growth in the advertising market can also reduce media bias under state ownership, though because the government need not bargain to achieve bias when it directly controls the media, this effect will be comparatively small. Second, and more important, we demonstrate that the government may seize ownership of the media for itself when the advertising market is large. Not only can the government implement a higher level of bias when it owns the media—an advantage that grows with the size of the advertising market—but it can economize on subsidies and acquire advertising revenue for itself. A surprising implication of this analysis is that the relationship between media freedom and the size of the advertising market may be nonmonotonic. Holding ownership constant, growth in the advertising market reduces media bias, regardless of whether the media are private or state-owned. However, the same growth may prompt the government to seize direct control of the media, which leads to a discontinuous jump in media bias.

We illustrate our theoretical model with a case study of government control of the media in postcommunist Russia. Largely created from scratch after the collapse of communism, Russia's advertising market has grown dramatically in recent years, a development that would seem to bode well for media freedom. Yet by most accounts, Russia has seen an equally dramatic decline in media independence, as the Kremlin has seized direct control of large segments of the Russian media market. Our model suggests two complementary explanations for this phenomenon. First, Russian president Vladimir Putin seemed more predisposed to use the media to mobilize society in support of his rule than his predecessor Boris Yeltsin. Second, the Kremlin may have been motivated to prevent private media, newly flush with advertising revenue, from asserting their independence. Our model also provides a theoretical framework for understanding other developments in the relationship between media and the state in postcommunist Russia, such as the convergence in bias among private and state-owned media prior to the 1996 presidential election and the behavior of more and less commercial stations controlled by the government in the run-up to the 2007 parliamentary election.

Our theory builds on two modeling traditions in the political economy literature. First, we follow the approach pioneered by Shleifer and Vishny (1994) in modeling a bargaining relationship between a politician and a firm, which in our case corresponds to a media outlet. As in Shleifer and Vishny, we emphasize the allocation of control rights, which in our setting is the ability to decide what to report. Under state ownership, the government possesses this right. We refer to this environment as "direct government control" of the media, to emphasize that the government chooses media bias directly. In contrast, under private ownership, a private owner possesses the right to choose what to report. We term this situation "indirect government control," as the government may still induce media bias but must pay for it by providing subsidies to the private owner.

Second, we build on a growing body of work that attempts to explain the origins of media bias. Existing work stresses the inherent biases of media owners (Gabszewicz et al., 2001) or journalists (Baron, 2006; Puglisi, 2006); the market response to consumer demand for bias, which arises either for exogenous reasons (Mullainathan and Shleifer, 2005) or because firms skew their reporting toward consumer priors to build a reputation for quality (Gentzkow

and Shapiro, 2006);[5] the interaction of market forces and the internal structure of the media (Bovitz, Druckman, and Lupia, 2002); and the purchase of journalists by special interests (Petrova, 2008a). A useful distinction sometimes made in this literature is between "demand-side" and "supply-side" explanations of media bias. Our paper falls into the latter category: citizens in our model always prefer less pro-government bias to more.

Relative to most of this literature, the key distinction of our approach is that we model the government as a strategic actor. Besley and Prat (2006) do consider government influence over the media, but their emphasis is the impact of media freedom on government accountability in democracies. Our approach is complementary: we analyze the relationship between government and the media in an environment that may best characterize weak democracies and autocracies. Other models of media manipulation in dictatorships include Egorov, Guriev, and Sonin (2006), Debs (2007), Edmond (2008), and Lorentzen (2008). Our contribution differs from these in that we explicitly compare media bias under private and state ownership and that we endogenize media ownership, showing in each case how the actions of the government depend on its mobilizing character and the size of the advertising market.

Within the literature on media bias, our theoretical framework is most closely related to Gentzkow and Shapiro (2006). As in their work, we model Bayesian citizens who may use information reported by the media when making a costly decision whose outcome depends on the state of the world. The questions we explore in this framework, however, are very different from those that Gentzkow and Shapiro pose. Our approach is also similar in some respects to Petrova (2008a), who like us examines the tradeoff between advertising revenue and bias. In our case, however, we treat the government as the relevant special interest, an important distinction since the government may acquire control of the media by force. As we show, the government may be more motivated to seize private media when the advertising market is large, implying a relationship between advertising revenue and media freedom counter to that predicted by Petrova but observed in the Russian case that we discuss.

Our adoption of a Bayesian framework captures in a tractable way the assumption that individuals' beliefs can be affected by what they see, read, and hear in the media. Numerous studies have examined and generally affirmed this proposition in the American context; Kinder (1998) and Goldstein and Ridout (2004) provide reviews of the literature. Studies in immature democracies have found media effects that, if anything, are stronger than those typically identified in the U.S. These include White, Oates, and McAllister (2005) and Enikolopov, Petrova, and Zhuravskaya (2007) on Russia; Lawson and McCann (2007) on Mexico; and Gentzkow and Shapiro (2004) on the Mideast.

The paper proceeds as follows. In Section 2, we examine media bias under direct government control, i.e., when the media are state-owned. In Section 3, we analyze the case of indirect government control, i.e., state subsidization of privately owned media. We endogenize government control in Section 4, asking when the government would choose to take over privately owned media. Section 5 extends the model to multiple media outlets. Although general results are difficult to derive, we show that our key arguments hold for two important special cases: when each media outlet possesses complete market power, and when stations

---

[5]The latter paper builds on the insight that rational individuals may have a preference for biased information; see Calvert (1985).

4

are perfect substitutes for each other. We illustrate our model with a case study of media freedom in postcommunist Russia in Section 6. Section 7 concludes.

2 Direct Government Control of the Media

2.1 Environment

Consider a model with two sets of players: a continuum of citizens of mass one, indexed by i, and a government that directly controls a news outlet (i.e., the news outlet is "state-owned"). As we discuss below, various features of the model lend themselves best to broadcast media. For concreteness, we therefore say that citizens "watch" the news, as when the news outlet is a television station.

At a cost normalized to one, each citizen i may "invest" in a single project, $\pi_i \in \{0, 1\}$. The private return from investment depends on the state of the world $S \in \{L, H\}$, where L denotes a "low" state and H a "high" state. The government prefers more investment to less regardless of the state, and so may have an incentive to mobilize citizens to take actions that are not in their individual best interest. (We use the term "investment" in the general sense of a costly action that provides a random return, and we employ the terms "investment" and "mobilization" interchangeably throughout the text.) As we discuss above, this conflict of interest may best characterize autocracies and weak democracies, though there are circumstances in mature democracies to which the model may also apply. A "political" example of such investment is participation in a state-sponsored rally, where turnout provides legitimacy to the government but citizens prefer to participate only if the government is capable of sanctioning nonparticipation. An "economic" example (one that may apply to any regime type) is as follows: the government prefers that economic actors behave as if the central banker is conservative, whether he is or not, but economic actors prefer to forego price increases only if he is.

In particular, when $S = H$ the project yields a private return $r > 1$, whereas when $S = L$ the private return is equal to zero. Citizens do not know the state but have a common prior belief that the state is high with probability $\theta \in (0, 1)$. We assume that $\theta r < 1$, which implies that in the absence of any additional information citizens do not invest.

Citizens may update their belief about the state of the world by watching the news. A news broadcast contains one of two messages, $\hat{S} \in \left\{\hat{H}, \hat{L}\right\}$. Rather than choosing the message directly, we assume that the government structures the news operation to attain the desired level of bias, with the message determined probabilistically by the structure after the state of the world has been realized. This implicitly captures the need to delegate responsibility for the news to the reporters, anchors, and editors who make daily decisions about what to cover and how to cover it. At one Kremlin-controlled radio station, for example, journalists were told that 50 percent of their stories about Russia should be "positive"; the stories were not chosen by the Kremlin itself.[6] Importantly, we assume that this choice is

---

[6] "50% Good News Is the Bad News in Russian Radio," *New York Times*, April 22, 2007. Remington (1989) describes the Soviet media in similar terms, noting that the delegation of authority made it difficult for Gorbachev to quickly liberalize the media. For a few exceptional stories, however, including the Chernobyl disaster, the Kremlin directly chose the message to be reported. Our model may be less applicable to such

observable by all citizens. This assumption seems especially compelling for broadcast media, the primary news source for citizens in most countries. For example, CNN programs hosted by Lou Dobbs and Anderson Cooper are easily distinguishable, and the replacement of conservative commentator Tucker Carlson on MSNBC was viewed by many (including Carlson himself) as a shift in editorial line.[7]

In particular, at the beginning of the game, prior to realization of the state of the world, the government publicly chooses an *editorial policy* $\beta(S) \in [0, 1] \times [0, 1]$, where $\beta(S)$ is the probability that the media outlet reports the message $\hat{H}$ when the state is $S \in \{L, H\}$. We abuse notation slightly to denote any citizen's posterior belief about the state of the world, conditional on having received the message $\hat{S}$, by $\theta\left(\hat{S}\right)$.[8] Thus, conditional on having watched the news and received the message $\hat{S}$, any citizen prefers to invest if $\theta\left(\hat{S}\right) r > 1$.

Watching the news may therefore be profitable to citizens if the government's editorial policy $\beta(S)$ is such that the news is sufficiently informative. Potentially offsetting this benefit, each citizen i has an exogenous idiosyncratic opportunity cost of watching the news μ_i, where μ_i is distributed uniformly on $[0, m]$. We assume for simplicity that $m > r - 1$, which implies that for all θ the proportion of individuals who watch the news in equilibrium is strictly less than one. We use the indicator variable $\omega_i \in \{0, 1\}$ to denote the decision to watch the news.

Our assumption that this opportunity cost is exogenous applies most clearly to broadcast media, where there is no purchasing decision to be made so long as a citizen already possesses a television or radio. In this context, the opportunity cost of watching the news may reflect a citizen's work schedule, family obligations, and similar considerations. For print media, the opportunity cost would also reflect the purchase price, which would be a choice variable of the media owner. We choose to leave that extension to future research.

Summarizing, the timing of events is:

1. The government chooses an editorial policy $\beta(S) \in [0, 1] \times [0, 1]$, which is observed by all citizens.
2. Each citizen decides whether to watch the news, $\omega_i \in \{0, 1\}$.
3. The state of the world $S \in \{L, H\}$ is realized, with the message $\hat{S} \in \left\{\hat{H}, \hat{L}\right\}$ determined probabilistically according to $\beta(S)$. Only citizens who watch the news receive the message $\hat{S}$.
4. Each citizen decides whether to invest in the project, $\pi_i \in \{0, 1\}$.

In general, we assume that the government may value viewership as well as the mobilization of citizens to "invest," to the extent that viewership increases advertising revenue at (and thus may reduce the cost of running) the state-owned news outlet. We model this concern in a reduced-form way, assuming that total advertising revenue is proportional to viewership. Let γ denote the size of the market. Further, assume that the government's preferences over investment and advertising revenue are separable, such that those preferences

cases.

[7]See, for example, "At MSNBC, 'Tucker' Is Out, and David Gregory Is In," *New York Times*, March 11, 2008.

[8]For those who do not watch the news, the posterior belief is equal to the prior belief.

can be represented by the following utility function:

$$U_G = \psi \int_0^m \omega_i\left(\mu_i\right) E\left[\pi_i\left(\hat{S}\left(S\right)\right)\right] d\mu_i + \gamma \int_0^m \omega_i\left(\mu_i\right) d\mu_i. \tag{1}$$

The first term is proportional to expected investment (recall that, by assumption, citizens choose to invest only if they watch the news, i.e., only if $\omega_i = 1$), with expectations over S, and the second term is advertising revenue. The parameter ψ denotes the mobilizing character of the government, i.e., the weight that the government puts on investment relative to advertising revenue.[9] To establish intuition for the behavior of citizens and the government, we begin by deriving equilibrium media bias as $\frac{\psi}{\gamma} \to \infty$, i.e., when the government values only mobilization. We then examine the general case where the government values both mobilization and advertising revenue.

2.2 Equilibrium When Government Values Only Mobilization

We solve for a perfect Bayesian equilibrium of this dynamic game of incomplete information, focusing in this section on the special case where the government values only the mobilization of citizens to "invest," i.e., to take costly actions that are not necessarily in their individual best interest. To begin, note that the government wants citizens to believe that $S = H$, as it is profitable for citizens to invest only when the state is H. Therefore, in equilibrium, it must be the case that $\beta\left(H\right) = 1$.[10] However, it cannot be the case in equilibrium that the media outlet always reports that the state is H, i.e., that it also chooses $\beta\left(L\right) = 1$, as then the news would be uninformative. Regardless of the message $\hat{S}$, any citizen who watched the news would choose not to invest; given the opportunity cost of watching the news, all citizens would therefore choose not to watch. Thus, in equilibrium the media must truthfully report the state with some positive probability when the state is L, i.e., the government must choose $\beta\left(L\right) < 1$.

To solve for the equilibrium bias $\beta^*\left(L\right)$, we begin by considering the beliefs and investment behavior of those who watch the news. Using the equilibrium condition that citizens update beliefs on the equilibrium path according to Bayes' rule, we can derive the posterior probability that the state is H, conditional on having received the message $\hat{H}$, as

$$\theta\left(\hat{H}\right) = \frac{\theta\beta\left(H\right)}{\theta\beta\left(H\right) + \left(1 - \theta\right)\beta\left(L\right)} = \frac{\theta}{\theta + \left(1 - \theta\right)\beta\left(L\right)}, \tag{2}$$

where the second equality follows from $\beta\left(H\right) = 1$. The higher is media bias $\beta\left(L\right)$, the less likely citizens are to believe that the state is H when they receive the message $\hat{H}$. Similarly, we can derive $\theta\left(\hat{L}\right) = 0$, which follows trivially from $\beta\left(H\right) = 1$. Thus, citizens would never invest after receiving the report $\hat{L}$, but might invest after receiving the message $\hat{H}$ if $\beta\left(L\right)$ is sufficiently small such that $\theta\left(\hat{H}\right) r > 1$. Intuitively, citizens invest after receiving the

---

[9]Although mathematically superfluous in this setting, the use of two parameters aids interpretation. In Sections 3–5, both parameters are necessary.

[10]This assumes that messages have the "natural" meaning. Otherwise, the equilibria that we describe could be relabeled such that the message $\hat{H}$ is associated with the state L, and vice versa.

message $\hat{H}$ only if the government is sufficiently likely to tell the truth when the state is in fact L. In the analysis to follow, we assume preliminarily that this is the case and then show that this condition holds in equilibrium.

Given the preliminary assumption that $\theta\left(\hat{H}\right) r > 1$, which implies that citizens invest if (and only if) they receive the message $\hat{H}$, the expected benefit from watching the news is

$$[\theta + (1 - \theta) \beta (L)] \cdot \left[\theta\left(\hat{H}\right) r - 1\right].$$

The term on the left is the probability that a citizen receives the message $\hat{H}$, conditional on watching the news, whereas the term on the right is the expected payoff from investing, having received the message $\hat{H}$. This expression is decreasing in $\beta (L)$: demand for the news is greatest when bias is least.

With the opportunity cost of watching the news μ_i distributed uniformly on $[0, m]$, the mass of all individuals who watch the news is given by

$$\int_0^m \omega_i (\mu_i) \, d\mu_i = \frac{1}{m} [\theta + (1 - \theta) \beta (L)] \cdot \left[\theta\left(\hat{H}\right) r - 1\right]. \tag{3}$$

Because citizens invest if and only if they receive the message $\hat{H}$, the probability that any citizen invests, conditional on having watched the news, is equal to the probability that the government reports $\hat{H}$, $\theta + (1 - \theta) \beta (L)$, which is increasing in media bias $\beta (L)$. Expected investment is then equal to the product of this probability and the mass of citizens who invest:

$$\int_0^m \omega_i (\mu_i) E\left[\pi_i\left(\hat{S}(S)\right)\right] d\mu_i = \frac{1}{m} [\theta + (1 - \theta) \beta (L)]^2 \cdot \left[\theta\left(\hat{H}\right) r - 1\right]. \tag{4}$$

The government chooses $\beta (L)$ to maximize Expression 4, given the posterior belief $\theta\left(\hat{H}\right)$ (Equation 2):

$$\max_{\beta(L)} \frac{1}{m} [\theta + (1 - \theta) \beta (L)]^2 \cdot \left[\frac{\theta}{\theta + (1 - \theta) \beta (L)} r - 1\right].$$

This is a concave problem, the solution to which is

$$\beta^* (L) = \max\left[0, \frac{\theta (r - 2)}{2 (1 - \theta)}\right] \tag{5}$$

Equation 5 says that when $\beta^* (L) > 0$, media bias is greater, i.e., $\beta^* (L)$ is larger, the larger is the payoff from investment r. Intuitively, when the payoff from making the right investment decision is relatively large, citizens watch the news even when news content is noisy. In addition, media bias is (weakly) increasing in θ, which measures the prior belief that the state is high. As Equation 2 shows, media bias plays a smaller role in determination of the posterior belief that the state is high when θ is large, implying that bias must be greater to have the same marginal impact on investment.

In deriving Equation 5, we assumed preliminarily that $\theta\left(\hat{H}\right) r > 1$. We may verify this by substituting $\beta^*\left(L\right)$ into $\theta\left(\hat{H}\right)$ (Equation 2). In particular, $\theta\left(\hat{H}\right) = 1$ when $\beta^*\left(L\right) = 0$—the message $\hat{H}$ is sent if and only if $S = H$—so that $\theta\left(\hat{H}\right) r > 1$ holds trivially given $r > 1$, which is an assumption of the model. For $\beta^*\left(L\right) > 0$, $\theta\left(\hat{H}\right) r > 1$ is equivalent to

$$\frac{\theta}{\theta + (1-\theta)\left[\frac{\theta(r-2)}{2(1-\theta)}\right]} r > 1,$$

i.e.,

$$\theta r > \theta + \frac{\theta\left(r-2\right)}{2} \Leftrightarrow 2\theta\left(r-1\right) > \theta\left(r-2\right).$$

Similarly, we may show that $\beta^*\left(L\right)$ is strictly less than 1:

$$\theta\left(r-2\right) < 2\left(1-\theta\right) \Leftrightarrow \theta r < 2,$$

which always holds given the assumption that $\theta r < 1$.

2.3 Equilibrium When Government Values Mobilization and Advertising Revenue

In Section 2.2, we analyze the special case of the model where the government values only "investment" by citizens. This case illustrates the tradeoff between raising bias to increase investment by those who watch the news and lowering bias to increase the proportion of citizens who watch the news and thus receive the government's message. In addition to these concerns, however, governments may be motivated to a greater or lesser degree to increase advertising revenue for media under their control. In Russia, for example, Channel One and Rossiya, the two most purely state-owned national television networks, run advertisements during their prime-time news broadcasts. Nonetheless, these advertisements generally appear at the "corners" of the broadcasts where viewership is less. In contrast, NTV, the somewhat more commercial network controlled by majority-state-owned Gazprom, typically runs advertisements in the middle of its main evening news broadcast, suggesting a greater emphasis on advertising revenue.[11]

How does a concern for advertising revenue modify the results above? To answer this question, we examine the general case of the model, where the government chooses media bias $\beta\left(L\right)$ to maximize utility as in Equation 1. Using Equations 3 and 4, we may write this problem as

$$\max_{\beta(L)} \frac{\psi}{m}\left[\theta + (1-\theta)\beta\left(L\right)\right]^2 \cdot \left[\theta\left(\hat{H}\right) r - 1\right] + \frac{\gamma}{m}\left[\theta + (1-\theta)\beta\left(L\right)\right] \cdot \left[\theta\left(\hat{H}\right) r - 1\right],$$

where as before we assume preliminarily that $\theta\left(\hat{H}\right) r > 1$. This is a concave problem, the solution to which we provide in the following proposition, where for future reference we use the subscript G to denote direct government control.

---

[11]The absolute value of advertising revenue is greater on Channel One, but this reflects its broader national distribution.

Proposition 1. *Under direct government control of the media (i.e., state ownership), the equilibrium level of bias is*

$$\beta_G^*(L) = \max\left[0, \frac{\psi\theta(r-2) - \gamma}{2\psi(1-\theta)}\right]. \tag{6}$$

For $\beta_G^*(L) > 0$, media bias is greater when the government has a particular interest in mobilizing citizens to "invest" (i.e., when ψ is large), as during an election campaign when state-owned media are used to increase support for government-backed parties and candidates. More subtly, Equation 6 suggests that the impact on $\beta_G^*(L)$ of a marginal increase in ψ is greater when the government values advertising revenue more to begin with (i.e., when ψ is low).[12] As we discuss below, this may explain the particularly noticeable increase in bias on Gazprom-owned NTV in the run-up to the 2007 Russian parliamentary election.

In addition, Equation 6 shows that media bias is less, the greater is γ, i.e., the larger is the advertising market.[13] This result supports the argument that the media may be less biased when the advertising market is large. As we discuss above, however, this argument is typically made in the context of private ownership of the media, a case that we examine below. Our model shows that the same relationship may hold when the media are state-owned, so long as the government values advertising revenue from media that it owns. Intuitively, the equilibrium level of bias depends on the degree to which the government internalizes the negative effect of bias on viewership. That effect is greater when the advertising market is large, so long as the government places some value on advertising revenue.

3   Indirect Government Control of the Media

In the previous section, we assume that the government has direct control over the news outlet. Even if the owner of the outlet is private, however, the government may be able to indirectly control news content, providing various inducements to encourage the private owner to bias coverage away from the commercial optimal editorial policy. Lawson (2002) reports, for example, that at the height of its control, Mexico's Institutional Revolutionary Party provided various benefits to private media in return for favorable coverage, including tax privileges, subsidized newsprint, and cash payments to journalists. As a consequence, "a plethora of pro-government newspapers could operate without serious regard to circulation, commercial advertising, or other normal requisites of financial viability" (Lawson, 2002, p. 32). Similarly, McMillan and Zoido (2004) document the regular provision of cash payments and directed government advertising to the media by Peruvian secret-police chief Vladimiro Montesinos Torres. Notably, no such payments were necessary to the one state-owned television channel, as "Montesinos had control over its content" (McMillan and Zoido, 2004, p. 79).

---

[12]To see this, note that for $\beta_G^*(L) > 0$, $\frac{\partial \beta_G^*(L)}{\partial \psi} = \frac{\gamma}{2\psi^2(1-\theta)}$, so that $\frac{\partial^2 \beta_G^*(L)}{\partial \psi^2} = -\frac{\gamma}{\psi^3(1-\theta)} < 0$.

[13]Note that because equilibrium bias is less when the government values advertising revenue, $\hat{\theta}\left(\hat{H}\right)$ is larger than in the special case examined in the previous section. Thus, the preliminary assumption $\hat{\theta}\left(\hat{H}\right)r > 1$ must hold here, given that it does there.

Conceptually, the relationship between government and private owner is analogous to a lobbying problem, though here the government plays the role of lobby and private owner the role of policy maker. As is standard in the political-economy literature, we model the lobbying process process as a menu auction à la Grossman and Helpman (1994, 2001), where the lobby (here, government) provides a "contribution schedule" that promises a particular contribution (subsidy) for every policy (bias) that the policy maker (private owner) could choose.

Formally, assume that the government has preferences over citizen investment and contributions represented by the utility function

$$U_G = \psi \int_0^m \omega_i(\mu_i) E\left[\pi_i\left(\hat{S}(S)\right)\right] d\mu_i - C, \tag{7}$$

where the first term is proportional to expected investment and C is a contribution, defined below, from the government to the private owner. In this context, the parameter ψ measures the degree to which the government values investment (mobilization) relative to subsidies. Implicitly, we assume that subsidies and advertising revenue are denominated in the same units, so that ψ has the same meaning in Equations 1 and 7. Note that the government does not directly value advertising revenue received by the private owner.

The private owner, in contrast, has preferences over advertising revenue and contributions represented by the utility function

$$U_P = \gamma \int_0^m \omega_i(\mu_i) d\mu_i + C, \tag{8}$$

where the first term is advertising revenue and C is the subsidy from the government to the private owner. Analogous to the government's preferences, the private owner does not directly value citizen investment.

At the beginning of the game, the government names a contribution schedule $C(\beta(S))$ that promises a particular subsidy $C \geq 0$ for all $\beta(S) \in [0,1] \times [0,1]$, i.e., for any editorial policy that could be chosen by the private owner. As in Grossman and Helpman (1994, 2001), we assume that this promise is binding. This can easily be motivated either on reputational grounds or because lobbying is a spot-market transaction with few dynamic considerations, similar to the exchange of money for goods in a retail environment. The private owner then chooses $\beta(S)$ to maximize Expression 8. The remainder of the game is identical to that in Section 2.1. Thus, the timing of events is:

1. The government names a contribution schedule $C(\beta(S))$.
2. The private owner chooses an editorial policy $\beta(S) \in [0,1] \times [0,1]$, which is observed by the government and all citizens, and the government pays $C(\beta(S))$.
3. Each citizen decides whether to watch the news, $\omega_i \in \{0,1\}$.
4. The state of the world $S \in \{L, H\}$ is realized, with the message $\hat{S} \in \left\{\hat{H}, \hat{L}\right\}$ determined probabilistically according to $\beta(S)$. Only citizens who watch the news receive the message $\hat{S}$.
5. Each citizen decides whether to invest in the project, $\pi_i \in \{0,1\}$.

11

Given that subsidies enter linearly into both the government's and private owner's utility functions (i.e., because utility is freely transferable between the two actors), the equilibrium outcome is jointly efficient between the government and private owner, i.e., maximizes

$$\psi \int_0^m \omega_i (\mu_i) E \left[\pi_i \left(\hat{S} (S) \right) \right] d\mu_i + \gamma \int_0^m \omega_i (\mu_i) d\mu_i.$$

This is precisely the government's maximization problem under direct control of the media, implying that the equilibrium level of bias is the same as in Proposition 1. Intuitively, in making its offer $C (\beta (S))$ to the private owner, the government fully internalizes the impact of bias on advertising revenue, as it must compensate the private owner for any advertising revenue lost due to bias in reporting.

The sharp prediction that media bias is the same under government and private ownership—a consequence of the Coase theorem—follows from the assumption that the government can costlessly transfer utility to the private owner. That assumption may fail for various reasons. For example, because of political considerations the government may subsidize the private owner through non-monetary transfers, as when the government provides transmission frequencies to favored enterprises.[14] The opportunity cost to the treasury of providing those transfers may be greater than the benefit to the private owner. Alternatively, as discussed above, "subsidies" may actually be outright bribes to journalists and media officials. In the latter case, the effort to keep bribes secret might impose transaction costs.

We follow Besley and Prat (2006) in modeling these considerations in a reduced-form way, assuming that the private owner receives proportion $\frac{1}{\alpha}$ of any subsidy paid by the government, where the parameter $\alpha \geq 1$.[15] Thus, the private owner's utility (Equation 8 above) now takes the form

$$U_P = \gamma \int_0^m \omega_i (\mu_i) d\mu_i + \frac{C}{\alpha},$$

which is equivalent to

$$\alpha\gamma \int_0^m \omega_i (\mu_i) d\mu_i + C.$$

In inducing $\beta (L)$, the government therefore puts greater weight on advertising revenue than in the case of direct government control. The following proposition provides the optimum $\beta (L)$ under indirect government control of the media, where the subscript P denotes private ownership.

Proposition 2. *Under indirect government control of the media (i.e., private ownership and state subsidies), the equilibrium level of bias is*

$$\beta_P^* (L) = \max \left[0, \frac{\psi\theta (r - 2) - \alpha\gamma}{2\psi (1 - \theta)} \right]. \tag{9}$$

---

[14]In Russia, the allocation of spectrum was instrumental in the creation of the NTV television network during the 1990s, as well as in the consolidation of Kremlin control of the media during the Putin era.

[15]Shleifer and Vishny (1994) also assume that subsidization is inefficient in their canonical model of bargaining between a politician and a firm.

The equilibrium level of bias in Proposition 2 differs from that in Proposition 1 in the multiplier α on γ. Thus, to the extent that transaction costs prevent efficient bargaining between the government and the private owner, bias will be less under private than state ownership of the media.

Propositions 1 and 2 show that a marginal change in ψ (the value the government attaches to mobilization) affects media bias more for private media than for state-owned media, so long as $\alpha > 1$. Intuitively, the tradeoff between citizen investment and advertising revenue is starker for private media, such that an increase in the value attached to investment is magnified relative to the case of state ownership. As we discuss below, this may help explain the convergence in media bias on private and state-owned media in the run-up to the 1996 Russian presidential election. More generally, the model predicts that private and state-owned media will be similarly biased in favor of the government in states that attach great value to citizen mobilization. As we show below, however, this does not imply a tolerance of private media in mobilizing states. Rather, the high cost of subsidization encourages governments to seize control of private media for themselves.

With respect to the second parameter on which we focus, the difference between direct and indirect government control of the media is greater, the larger is the advertising market (measured by γ). To see this clearly, focus on the case where $\psi\theta\,(r-2) > \alpha\gamma$, so that media bias is strictly positive even under private ownership. Then the additional bias under state ownership is

$$\frac{\psi\theta\,(r-2)-\gamma}{2\psi\,(1-\theta)} - \frac{\psi\theta\,(r-2)-\alpha\gamma}{2\psi\,(1-\theta)} = \frac{\gamma\,(\alpha-1)}{2\psi\,(1-\theta)},$$

which is increasing in γ. This has an important consequence for media freedom: the opportunity cost to the government of allowing private ownership of the media, in terms of foregone citizen investment, is greater when the advertising market is large. As we show in the following section, in such environments, the government may therefore be motivated to acquire direct control of the media.

We may use Equation 9 to derive the subsidy the government pays the private owner to represent its point of view. To do so, first note that were the private owner to reject the government's offer, it would choose the level of media bias that maximizes viewership, which is clearly $\beta\,(L) = 0$. Because the posterior belief $\theta\left(\hat{H}\right) = 1$ when $\beta\,(L) = 0$, this implies advertising revenue of

$$\frac{\gamma}{m}\,[\theta + (1-\theta)\,\beta\,(L)] \cdot \left[\theta\left(\hat{H}\right) r - 1\right] = \frac{\gamma\theta\,(r-1)}{m}. \tag{10}$$

In contrast, advertising revenue in equilibrium is

$$\frac{\gamma}{m}\,[\theta + (1-\theta)\,\beta_P^*\,(L)] \cdot \left[\theta\left(\hat{H}\right) r - 1\right] = \frac{\gamma\theta\,(r-1)}{m} - \frac{\gamma\,(1-\theta)\,\beta_P^*\,(L)}{m}, \tag{11}$$

where the equality uses the expression for the posterior belief $\theta\left(\hat{H}\right)$ given by Equation 2. Thus, the government must reimburse the private owner for lost advertising revenue, which is proportional to the equilibrium level of bias $\beta_P^*\,(L)$. Using Equation 9 and the assumption that the private owner receives proportion $\frac{1}{\alpha}$ of any subsidy paid by the government, we can

write this as

$$C^* \left(\beta_P^* (L) \right) = \alpha \left(\frac{\gamma (1 - \theta) \beta_P^* (L)}{m} \right) = \max \left[0, \alpha \gamma \left(\frac{\psi \theta (r - 2) - \alpha \gamma}{2 \psi m} \right) \right]. \qquad (12)$$

The government subsidy is strictly increasing in the value the government places on citizen investment (measured by ψ) for all $\beta_P^* (L) > 0$. The greater the mobilizing character of the government, the greater the incentive to subsidize the private owner in return for favorable coverage. In contrast, the relationship between government subsides and the size of the advertising market (measured by γ) is nonmonotonic. To see this, note that an increase in the size of the advertising market has two effects. First, as the advertising market increases in size, the government must provide a larger subsidy for a given level of bias to compensate the private owner for lost revenue. Second, the government responds to the higher cost of bias by inducing a smaller $\beta (L)$. The second effect dominates the first when advertising revenue is especially important. Indeed, for γ sufficiently large there is no bias, and thus no subsidy, in equilibrium.

4   Endogenous Control of the Media

The discussion above treats control of the media as exogenous. What does the model say about the determinants of media control?

To answer this question, first recall that equilibrium media bias is the same under state and private ownership when the government may costlessly subsidize the private owner. In this case, if we assume that the government must purchase a news outlet to acquire control, our model offers no prediction about who owns the media. In principle, acquiring direct control provides two benefits to the government: it saves the cost of subsidization and acquires advertising revenue for itself. However, the private owner would accept nothing less than the value of government subsidies and advertising revenue in return for relinquishing control, thus eliminating the incentive for the government to pay for it.

As we discuss above, however, various transaction costs may prevent the government from costlessly subsidizing the private owner. In addition, the government differs from market actors in a crucial respect: it can acquire direct control of the media through force. Although this may come at some cost in political capital and international reputation, that cost is arguably unrelated to the market value of the news outlet.

Formally, assume that the media outlet is initially privately owned, but that at the beginning of the game the government may transfer the media outlet to state ownership at some fixed cost $\kappa > 0$. (Alternatively, we might think of κ as the cost of maintaining government control, in which case the government decides whether or not to privatize the media outlet.) The game then proceeds as in Section 2 or Section 3, depending on whether the government has exercised this option.

The government acquires direct control if κ is small relative to the benefit of taking over the media outlet. To analyze this tradeoff, consider first the payoff to the government from direct control:

$$\frac{\psi}{m} \left[\theta + (1 - \theta) \beta_G^* (L) \right]^2 \cdot \left[\theta_G \left(\hat{H} \right) r - 1 \right] + \left[\frac{\gamma \theta (r - 1)}{m} - \frac{\gamma (1 - \theta) \beta_G^* (L)}{m} \right]. \qquad (13)$$

The first term is proportional to total expected investment, given that the government chooses bias directly, whereas the second is equilibrium advertising revenue (Equation 11 above). We adopt the notation $\theta_G\left(\hat{H}\right)$ to denote the posterior belief $\theta\left(\hat{H}\right)$ when $\beta\left(L\right) = \beta_G^*\left(L\right)$. In contrast, the payoff to the government from indirect control is

$$\frac{\psi}{m}\left[\theta + (1-\theta)\beta_P^*\left(L\right)\right]^2 \cdot \left[\theta_P\left(\hat{H}\right)r - 1\right] - \frac{\alpha\gamma\left(1-\theta\right)\beta_P^*\left(L\right)}{m}. \tag{14}$$

The first term is proportional to total expected investment, given that the government must subsidize the private owner to induce bias, whereas the second is the cost of the subsidy to the government (Equation 12 above). Analogously, we adopt the notation $\theta_P\left(\hat{H}\right)$ to denote the posterior belief $\theta\left(\hat{H}\right)$ when $\beta\left(L\right) = \beta_P^*\left(L\right)$.

The additional benefit to the government from acquiring direct control is the difference between Equations 13 and 14. To fix ideas, focus on the case where $\psi\theta\left(r-2\right) > \alpha\gamma$, which implies that both $\beta_G^*\left(L\right)$ and $\beta_P^*\left(L\right)$ are strictly greater than zero. Then the additional benefit to the government of direct control is

$$\left(\alpha^2 - 1\right)\frac{\gamma^2}{4\psi m} + \frac{\gamma\theta\left(r-1\right)}{m} + \left[\alpha\gamma\frac{\psi\theta\left(r-2\right) - \alpha\gamma}{2\psi m} - \gamma\frac{\psi\theta\left(r-2\right) - \gamma}{2\psi m}\right].^{[16]} \tag{15}$$

The first term in this expression is the additional investment under state ownership, which results from the higher level of bias when the government chooses bias directly. The second term is total advertising revenue when the news is reported without bias. In equilibrium under private ownership, some portion of this advertising revenue is replaced with a government subsidy. Acquiring the news outlet saves the government that subsidy while providing the share of advertising revenue that remains. The third term reflects the elimination under state ownership of transaction costs associated with compensating the private owner for lost advertising revenue.

The government chooses to take direct control of the media outlet when Expression 15 is large relative to κ. We are interested especially in how the incentive to nationalize the media depends on the mobilizing character of the government (measured by ψ) and the size of the advertising market (measured by γ). Consider first the impact of a marginal increase in ψ. As we discuss in the previous section, the additional bias under state ownership diminishes as the government values investment more. Thus, the advantage to the government of direct control for the sake of investment (the first term in Expression 15) is smaller when ψ is large. However, the government also values direct control for the subsidy it saves in implementing its desired level of bias, and this benefit is larger when ψ is large. The following proposition establishes that the second effect outweighs the first, and more generally establishes that the incentive for the government to seize direct control of the media is increasing in ψ, so long as the government optimally chooses bias greater than zero when the media are state-owned.

---

[16]To see this, note that total investment under state ownership is $\frac{(\psi\theta r)^2 - \gamma^2}{4\psi m}$, whereas total investment under private ownership is $\frac{(\psi\theta r)^2 - (\alpha\gamma)^2}{4\psi m}$; that advertising revenue under state ownership is $\frac{\gamma\theta(r-1)}{m} - \gamma\frac{\psi\theta(r-2) - \gamma}{2\psi m}$; and that the subsidy under private ownership is $\alpha\gamma\frac{\psi\theta(r-2) - \alpha\gamma}{2\psi m}$.

15

Proposition 3. *If $\beta_G^*(L) > 0$, a marginal increase in ψ, which measures the mobilizing character of the government, (generically) increases the incentive for the government to acquire direct control of the media. If $\beta_G^*(L) = 0$, a marginal increase in ψ (generically) has no impact on the incentive for the government to acquire direct control of the media.*

Proof. Consider the following three mutually exclusive and exhaustive cases:

1. $\beta_G^*(L) > 0$ and $\beta_P^*(L) > 0$: The derivative of Expression 15 with respect to ψ is

$$- \left(\alpha^2 - 1\right) \frac{\gamma^2}{4\psi^2 m} + \left(\alpha^2 - 1\right) \frac{\gamma^2}{2\psi^2 m},$$

   which is greater than zero for $\alpha > 1$.

2. $\beta_G^*(L) > 0$ and $\beta_P^*(L) = 0$: Evaluating Equation 13 at $\beta_G^* = \frac{\psi\theta(r-2)-\gamma}{2\psi(1-\theta)}$ gives

$$\frac{(\psi\theta r)^2 - \gamma^2}{4\psi m} + \frac{\gamma\theta(r-1)}{m} - \gamma\frac{\psi\theta(r-2)-\gamma}{2\psi m}.$$

   Similarly, evaluating Expression 14 at $\beta_P^*(L) = 0$ gives $\frac{\psi\theta^2}{m}(r-1)$. The additional benefit from direct control is therefore

$$\frac{(\psi\theta r)^2 - \gamma^2}{4\psi m} + \frac{\gamma\theta(r-1)}{m} - \gamma\frac{\psi\theta(r-2)-\gamma}{2\psi m} - \frac{\psi\theta^2}{m}(r-1).$$

   The derivative of this expression with respect to ψ is

$$\frac{(\theta r)^2}{4m} + \frac{\gamma^2}{4\psi^2 m} - \frac{\gamma^2}{2\psi^2 m} - \frac{\theta^2}{m}(r-1),$$

   which is greater than zero if $\psi\theta(r-2) > \gamma$, which is a premise of the proposition $\left(\beta_G^*(L) = \frac{\psi\theta(r-2)-\gamma}{2\psi(1-\theta)} > 0\right)$.

3. $\beta_G^*(L) = \beta_P^*(L) = 0$: The additional benefit of direct control is equal to total advertising revenue, $\frac{\gamma\theta(r-1)}{m}$, which is constant in ψ.

$\square$

Now consider the effect of an increase in γ on the government incentive to acquire control. If $\alpha = 1$, so that there are no transaction costs associated with subsidization, then the incentive for the government to acquire control is unambiguously greater when γ is large. Although bias is identical to that under private ownership, the government can save the cost of subsidization and acquire advertising revenue for itself. More generally, for all $\alpha \geq 1$, Expression 15 is increasing in γ. Indeed, as the following proposition establishes, the incentive for the government to acquire direct control of the media is increasing in the size of the advertising market, even when there is no media bias under private and/or state ownership.

Proposition 4. *The incentive for the government to acquire direct control of the media is increasing in the size of the advertising market (measured by γ).*

Proof. Consider the following three mutually exclusive and exhaustive cases:

1. $\beta_G^* (L) > 0$ and $\beta_P^* (L) > 0$: The derivative of Expression 15 with respect to γ is

$$\gamma\frac{\alpha^2 - 1}{2\psi m} + \frac{\theta (r - 1)}{m} + \frac{\alpha\psi\theta (r - 2) - 2\alpha^2\gamma}{2\psi m} - \frac{\psi\theta (r - 2) - 2\gamma}{2\psi m}$$

   For $\alpha = 1$, this expression is clearly greater than zero. For $\alpha > 1$, this expression greater than zero for all $\gamma \in \left(0, \frac{1}{\alpha^2 - 1}\left[2\psi\theta (r - 1) + (\alpha - 1)\psi\theta (r - 2)\right]\right)$ and therefore for all $\gamma \in \left(0, \frac{\psi\theta(r-2)}{\alpha}\right)$, i.e., for all γ such that $\beta_G^* (L) > 0$ and $\beta_P^* (L) > 0$.

2. $\beta_G^* (L) > 0$ and $\beta_P^* (L) = 0$: The payoff to the government from indirect control is constant in γ, so the derivative of the additional benefit of direct control with respect to γ is equal to the derivative of Expression 13 with respect to γ. Evaluating Expression 13 at $\beta_G^* = \frac{\psi\theta(r-2)-\gamma}{2\psi(1-\theta)}$ gives

$$\frac{(\psi\theta r)^2 - \gamma^2}{4\psi m} + \frac{\gamma\theta (r - 1)}{m} - \gamma\frac{\psi\theta (r - 2) - \gamma}{2\psi m}.$$

   The derivative of this expression with respect to γ is

$$-\frac{\gamma}{2\psi m} + \frac{\theta (r - 1)}{m} - \frac{\psi\theta (r - 2) - 2\gamma}{2\psi m},$$

   which is greater than zero.

3. $\beta_G^* (L) = \beta_P^* (L) = 0$: The additional benefit of direct control is equal to total advertising revenue, $\frac{\gamma\theta(r-1)}{m}$, which is increasing in γ.

$\square$

The surprising implication of this analysis is that the relationship between the size of the advertising market and media freedom may be nonmonotonic. Holding ownership constant, growth in the advertising market reduces media bias, regardless of whether the news outlet is owned by the state (so long as the government places any value on advertising revenue) or a private entity. However, the same growth may prompt the state to seize direct control of the media, which leads to a discontinuous jump in media bias. As we discuss below, such as effect may have played a role in encouraging Vladimir Putin's Kremlin to seize control of Russian media just as the advertising market was beginning to provide independent media with a measure of financial security.

5 Multiple Media Outlets

The analysis above considers the case of one media outlet. To what extent do our results hold when there are multiple media outlets? To explore these issues, we may assume that there are J media outlets indexed by j, which for concreteness we refer to as "stations." The

J stations simultaneously and publicly choose an editorial policy $\beta_j(L) \in [0, 1]$; assume for simplicity that $\beta_j(H) = 1$ for all j. The process by which these policies are chosen depends on ownership of the station, as in Sections 2 and 3. Following choice of editorial policy, each citizen i decides whether to watch each station j, $\omega_{ji} \in \{0, 1\}$. Each citizen i is associated with a vector $(\mu_{1i}, \mu_{2i}, \ldots, \mu_{Ji})$, where $\mu_{ji} \in [0, m]$ is citizen i's opportunity cost of watching station j. The rest of the game proceeds as before.

Although it is difficult to derive general results for this extended model, two special (and polar) cases are particularly informative. First, assume that each station has *complete market power*, with the market segmented among the J stations. Intuitively, we may think of broadcast media whose transmission networks do not overlap. Formally, this corresponds to the case where the population of citizens is partitioned into J sets, where citizen i in group j has opportunity cost $\mu_{ki} = m$ for all $k \neq j$; we assume that μ_{ji} is distributed uniformly on $[0, m]$ for citizens in group j. Clearly, viewership for any one station is unaffected by that for the others, so this case is analogous to the baseline model: the equilibrium level of bias is the same as that in Propositions 1 and 2, and the incentives for the government to nationalize private media are precisely those in Section 4.

Second, assume that from any citizen's perspective, stations are *perfect substitutes* for each other, and that each citizen may watch no more than one station. Intuitively, this corresponds to an environment with national broadcast media that broadcast the news at the same time of the day. Formally, we assume that the vector of opportunity costs is distributed uniformly along the main diagonal of a J-dimensional cube, and we impose the additional constraint that each citizen may watch only one station. In addition, we assume that citizens choose a station at random if indifferent among stations that provide the most information, and that each station is characterized by the same transaction cost α (if private) and size of advertising market γ.

If there is at least one private station, it must be the case that there is a common equilibrium bias $\beta^*(L)$ for all stations: given that stations are perfect substitutes for each other, any station that implemented a $\beta(L)$ higher than some other station would have no viewers, implying that the owner of that station could profitably deviate to the lowest $\beta(L)$ chosen by the others.[17] Moreover, if $\beta^*(L) > 0$, then the government must guarantee any private owner total potential advertising revenue ($\frac{\gamma\theta(r-1)}{m}$, given by Equation 10), as any private owner could choose some $\beta(L) < \beta^*(L)$ and capture the entire advertising market for itself. As Besley and Prat (2006) show, the fact that the government must provide *each* private owner with *total* potential advertising revenue in return for media bias implies that the government may instead choose to induce no bias.

To see this formally, assume that all stations are private and that there are no transaction

---

[17]In principle, the government could induce a private station to choose an editorial policy that resulted in no viewers by reimbursing it for lost advertising revenue. However, it would have no incentive to do so, as it could save the cost of that subsidy and leave investment unaffected by allowing the station to match the lowest level of bias chosen by the other stations. Note that if all stations are state-owned, then it need not be the case that stations choose the same $\beta(L)$ in equilibrium. Even though stations that choose a higher $\beta(L)$ have zero viewership, these viewers watch some other state-owned station, and by assumption the government is indifferent to the allocation of viewers across state-owned stations.

costs from bargaining (i.e., $\alpha = 1$). Then the government solves

$$\max_{\beta(L)} \frac{\psi}{m} \left[\theta + (1 - \theta)\beta(L)\right]^2 \cdot \left[\theta\left(\hat{H}\right)r - 1\right] - \sum_j C_j$$

$$\text{s.t. } \frac{\gamma}{Jm}\left[\theta + (1-\theta)\beta(L)\right] \cdot \left[\theta\left(\hat{H}\right)r - 1\right] + C_j \geq \frac{\gamma\theta(r-1)}{m}, \forall j.$$

The government chooses a common editorial policy to maximize investment less the cost of subsidies, given the constraint that each private owner be left with at least total potential advertising revenue. (Because each station chooses the same editorial policy, advertising revenue is divided equally among the J stations.) But for the fact that there are J constraints, this is precisely the government's problem in the baseline model: the impact of a marginal increase in bias on advertising revenue is the same as before. Thus, *if* the government chooses to induce a positive level of bias, it will be identical to that when there is only one station. However, the government may instead choose $\beta(L) = 0$, given the cost of inducing stations to maintain a positive level of bias. In particular, if $\beta^*(L) > 0$, then each private owner must be provided with a subsidy

$$C_j^*(\beta^*(L)) = \frac{\gamma\theta(r-1)}{m} - \frac{\gamma}{Jm}\left[\theta + (1-\theta)\beta^*(L)\right] \cdot \left[\theta\left(\hat{H}\right)r - 1\right],$$

where $\theta\left(\hat{H}\right)$ is the posterior belief when $\beta(L) = \beta^*(L)$. This implies total subsidies of

$$\sum_j C_j^*(\beta^*(L)) = J\left(\frac{\gamma\theta(r-1)}{m}\right) - \frac{\gamma}{m}\left[\theta + (1-\theta)\beta^*(L)\right] \cdot \left[\theta\left(\hat{H}\right)r - 1\right].$$

Clearly, for J arbitrarily large, the cost of subsidizing private stations outweighs any benefit to the government from media bias, implying that the government prefers to implement $\beta(L) = 0$ and pay no subsidies. Importantly, this effect is greater, the larger is γ. Thus, as in the baseline model, the cost to the government of allowing private ownership is greater, the larger is the advertising market.

In summary, the key arguments of this paper hold when there are multiple media outlets, at least for the important special cases where media outlets have complete market power and (conversely) are perfect substitutes for each other.

6   Illustration: Media Freedom in Postcommunist Russia

In this section, we briefly discuss the evolution of media freedom in postcommunist Russia. Our aim is not to provide a full history of the role of the media in Russian politics, a task that others have admirably undertaken.[18] Rather, it is to show how our model can help to illuminate an important case, and so to illustrate the contribution of our theoretical framework. As we demonstrate, Russia is a particularly useful case to analyze, as media

---

[18]See especially Mickiewicz (1999) and Oates (2006).

freedom, the mobilizing character of the government, and the size of the advertising market have all changed substantially over the postcommunist period.

We focus here especially on television, which has been at the center of political conflict in Russia since the collapse of the Soviet Union in 1991. From the failed putsch that triggered the collapse (Bonnell and Freidin, 1993), through the pivotal 1996 presidential campaign (e.g., McFaul, 1997; Mickiewicz, 1999; Oates and Roselle, 2000), and into the Putin era (e.g., Oates, 2003, 2006), what is reported on national television news has been a primary concern of political actors. True or not, there is a widespread perception that control of the airwaves is the *sine qua non* in the struggle for power in Russia.

The belief that television has the power to influence politics is based in part on the overwhelming reliance of the Russian public on television as an information source. Despite Russia's vast size, by 1990 television coverage extended to nearly 100 percent of the Russian population (White and McAllister, 2006). In contrast, national newspapers are much less widely circulated—the collapse of Soviet-era subscription systems led to a decline in circulation of national newspapers of approximately 95 percent during the 1990s (Koikkalainen, 2007)—and are expensive relative to other goods (Fish, 2005; Lipman, 2006). National television is particularly important, far surpassing local television in viewership (White, McAllister, and Oates, 2002).

Consistent with our general modeling approach, Russian viewers often seem to recognize the bias in news broadcasts and to filter reports through that understanding. Summarizing the results of focus-group studies, Ellen Mickiewicz writes, "Viewers *expect* commercial and governmental involvement in shaping the news. They believe it is the viewer's responsibility to extract significance and correct for bias" (Mickiewicz, 2006, p. 191, emphasis in original; see also Mickiewicz, 2008).

Nonetheless, as we emphasize, bias can be effective in shaping the beliefs of viewers, so long as there is some informational content in the news. This bias comes at a cost, however, as viewers turn away from broadcasts that are perceived to be insufficiently informative. The degree to which this reduces bias depends in part on whether a media outlet is private or state-owned, and thus on the extent to which the opportunity cost of lost advertising revenue is internalized. In Russia, these considerations were evident in the independent editorial line pursued by the television network NTV, a commercial entity launched in 1993. NTV aggressively reported on the war in Chechnya, drawing viewers and advertising revenue away from state-owned channels. The same was true at the smaller TV6, to which Eduard Sagalaev, a veteran of *perestroika*-era battles over television content, migrated after becoming convinced that the old system of censorship remained intact in the state-owned media (Benn, 1996).

Sagalaev later returned to run state television during the 1996 presidential election campaign, a period when the Kremlin sought to mobilize the public to prevent a Communist victory and the broadcast media—state and private—swung overwhelmingly behind incumbent president Boris Yeltsin. Oates and Roselle (2000) examine election coverage during this campaign on NTV and state-controlled ORT, finding little difference between the two and concluding that "[a]lthough NTV was not under the direct control of the government, it still 'promoted' Yeltsin in its coverage" (p. 46). The emergence of pro-Kremlin bias at NTV is consistent with the prediction of our model that an increase in ψ, the value the government attaches to citizen "investment" (here, voting for Yeltsin), should disproportionately affect

private media. At the same time, it is likely that the owners of commercial media shared the Kremlin's preference that Yeltsin win, given the fear that a victory by Communist Party candidate Gennady Zyuganov would spell the end of independent media. In terms of our model, private owners also directly valued citizen "investment," which increased bias relative to the case where private owners only value advertising revenue.[19]

Throughout the 1990s, the broadcast media remained heavily reliant on the state for financial support. The advertising market was essentially non-existent under communism, and could not develop quickly in the turbulent conditions that followed that system's collapse. The reliance on state subsidies provided considerable leverage to state officials. This financial dependence situation was, and is, especially severe at the regional level: "As much local media funding comes from the local government (and its very existence often depends on the goodwill of local leaders), the media are quite vulnerable to local legislation" (Oates, 2007, p. 1287).

By the turn of the century, however, the advertising market was growing quickly. Figure 2 shows that between 1999 and 2007, advertising revenue for television, radio, and newspapers sextupled in size in real terms, a growth rate roughly three times larger than that for GDP over the same period. With 80 percent of all advertising revenue centered in Moscow (Azhgikhina, 2007), and with the proportion of all advertising revenue earned by television networks increasing over time, this development promised greater independence for the national broadcast media. In the words of one Russian analyst, "You can make anyone's life difficult if you are financially independent."[20] Yet media freedom declined sharply over the same period, counter to what would be the case if there were a simple relationship between advertising revenue and government influence over media content. Figure 2 provides a rough measure of this decline, plotting the evolution of the Freedom House Press Freedom Score for Russia over the postcommunist period.

Earlier declines in press freedom in Russia, such as that which accompanied the 1996 presidential election campaign, can largely be attributed to changing incentives within a given media structure. The strengthening of government control of the media under Russian president Vladimir Putin was different, with the Kremlin taking over and closing down previously independent media outlets. In terms of our model, this may have occurred for either of two reasons, and in practice some combination of the two may have been at work. First, relative to his predecessor, Russian president Vladimir Putin seemed more inclined to mobilize the public in support of his rule. The Kremlin-backed United Russia party

---

[19]Formally, assume that the private owner has preferences represented by

$$U_P = \lambda \int_0^m \omega_i \left(\mu_i\right) E\left[\pi_i\left(\hat{S}\left(S\right)\right)\right] d\mu_i + \gamma \int_0^m \omega_i\left(\mu_i\right) d\mu_i + \frac{C}{\alpha},$$

where $\lambda \geq 0$. Then equilibrium bias is equal to $\max\left[0, \frac{(\psi+\alpha\lambda)\theta(r-2)-\alpha\gamma}{2(\psi+\alpha\lambda)(1-\theta)}\right]$, which is (weakly) increasing in λ.

[20]Valerii Fyodorov, director of the Russian Public Opinion Research Center, discussing media freedom on the radio network Russian News Service, June 18, 2008; see `http://engforum.pravda.ru/showthread.php?t=219094`. Television's share of television, radio, and newspaper advertising revenue increased from roughly 60 percent in 1999 to approximately 80 percent in 2007. Data on advertising revenue are from Video International, Russia's largest advertising marketer, and the Association of Communication Agencies of Russia. Revenue from advertising-only circulars (i.e., "shoppers") are not included in newspaper advertising revenue.
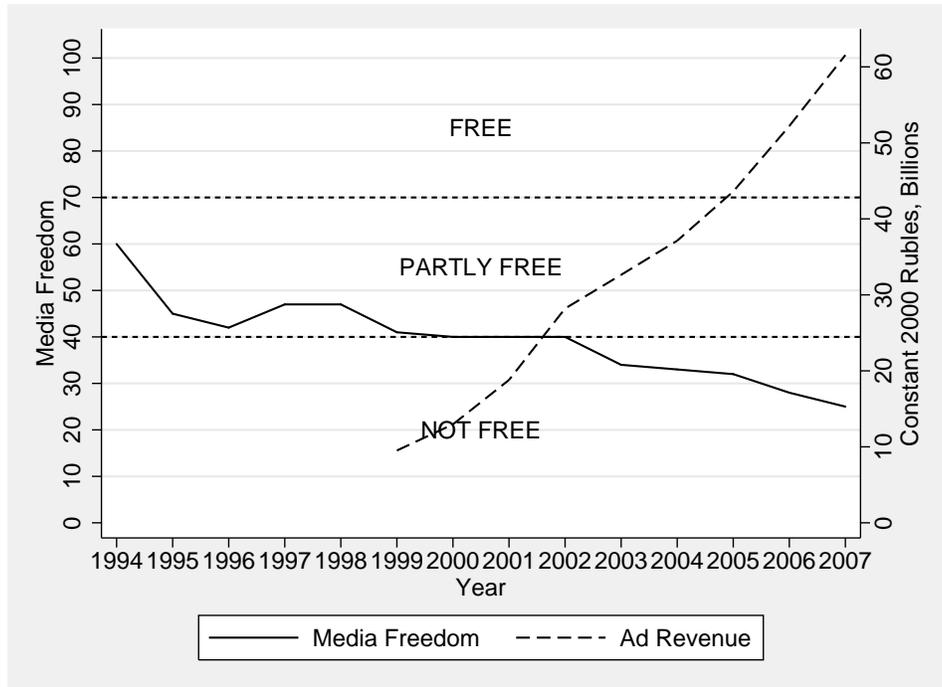
Figure 2: Media freedom and advertising revenue in Russia. Media freedom is Freedom House Press Freedom Score, reordered so that higher values correspond to greater media freedom. Freedom House classifies countries as "Free," "Partly Free," and "Not Free," as indicated. Advertising revenue is for television, radio, and newspapers.

encouraged mass organization to a degree that the various "parties of power" during the 1990s never attempted, and various pro-Putin youth groups emerged with Kremlin support. Control of the media facilitated this strategy. Second, the timing of the Kremlin assault coincided with the growth in advertising revenue that could have reduced state influence over private media. The sometimes assertive independence of the remaining private media suggests the threat that a financially secure and predominately private media could have posed to the Kremlin.

The particular methods used to establish direct government control of the media are also consistent with our theoretical perspective.[21] After taking over ownership of previously independent NTV (through state-controlled Gazprom), the Kremlin replaced the existing management. The new management in turn forced the removal of the station's best-known journalists, replacing them with individuals presumably comfortable with the new owner's preferences. Much of the NTV news operation subsequently migrated to TV6, which in turn attracted the Kremlin's attention. At first it seemed as though a compromise might be reached, whereby ownership of TV6 would be transferred from Russian billionaire and Putin opponent Boris Berezovsky to a collective of establishment figures. In the end, however, TV6 was simply shut down, its frequency transferred to a 24-hour sports channel. NTV remained on the air, but with a dramatically reduced audience, falling from 17.9 percent of all viewers

---

[21]For a detailed chronology of these events, see Lipman and McFaul (2005).

in 2000 to 12.6 percent in 2001.[22]

Although the number of television channels in Russia has exploded in recent years, news broadcasts are today largely the preserve of three national networks under direct government control: NTV, Channel One, and Rossiya. As our theoretical model demonstrates, however, media bias has an opportunity cost even on state-owned stations, to the extent that the government values advertising revenue. We should therefore expect media bias on these networks to be largest when mobilization of the public is especially important. For example, we might expect media bias to increase in the run-up to a national election, as the government sacrifices any pretense of impartiality for the sake of a large turnout in support of government-backed parties. At the same time, our model suggests that such effects may be larger on state-owned stations with a more commercial orientation, i.e., those that face a larger opportunity cost from media bias. Gazprom-controlled NTV meets this description. As discussed above, advertisements on this station generally appear in the middle of the main evening news broadcast, a position favored by advertisers as likely to draw more viewers. In contrast, on less commercial Channel One and Rossiya, advertisements are typically relegated to the unattractive "corners" of the broadcasts.[23]

We may examine these propositions directly, using data on television coverage collected by NewsLab Russia, a media monitoring project based at the University of Wisconsin. Through this project, the main evening news broadcast (Moscow time) on each of the three national networks is digitally captured and archived. Native-speaking Russian students watch each broadcast, applying tags to each news segment ("clip") to describe its content. Each student has access to a standardized clipping sheet that defines the allowable tags. Student workers are rotated randomly across the three stations to further reduce the risk that differences in clipping style might be confused with differences in content.

Figure 3 presents data for the period of the 2007 Russian parliamentary election campaign, which officially began September 5, 2007.[24] As a proxy for media bias, we measure the time advantage given to United Russia, the Kremlin-backed party that received an overwhelming majority of all votes cast in the election.[25] During the campaign, Russian president Vladimir Putin announced that he would head the party list for United Russia, further signaling the Kremlin's support for that party. Although a full econometric analysis is beyond the scope of this paper, the data are suggestive. On all three stations, the time advantage given to United Russia was substantial, with the Kremlin favorite receiving approximately half of all time devoted to any of the eleven parties participating in the campaign. Moreover, as suggested by our theoretical model, two of the three stations exhibited a statistically significant increase in bias increased as the election date approached. However, the increase was most pronounced on NTV.[26] With a greater premium placed on advertising revenue,

---

[22]Data from Video International; see `http://www.acvi.ru/acvi.exe/viewdoc?id=264`.

[23]Our interpretation that NTV places greater value on advertising revenue was corroborated in a personal interview by the former editor of one of these evening news programs.

[24]Technical problems prevented one broadcast on Channel One from being archived over this time period.

[25]We include in the analysis only broadcasts in which at least one party was mentioned. When more than one party is mentioned in a particular segment, we allocate that time equally among all parties mentioned.

[26]The slopes for the linear projections depicted in the figures are as follows: for Channel One, -1.119 (p-value = 0.581); for Rossiya, 2.461 (p-value = 0.087); for NTV, 3.378 (p-value = 0.004). In a regression of the *proportion* of time received by United Russia on day of campaign, the estimated effect of day of campaign is positive and statistically significant for NTV but not significantly different from zero for the other two
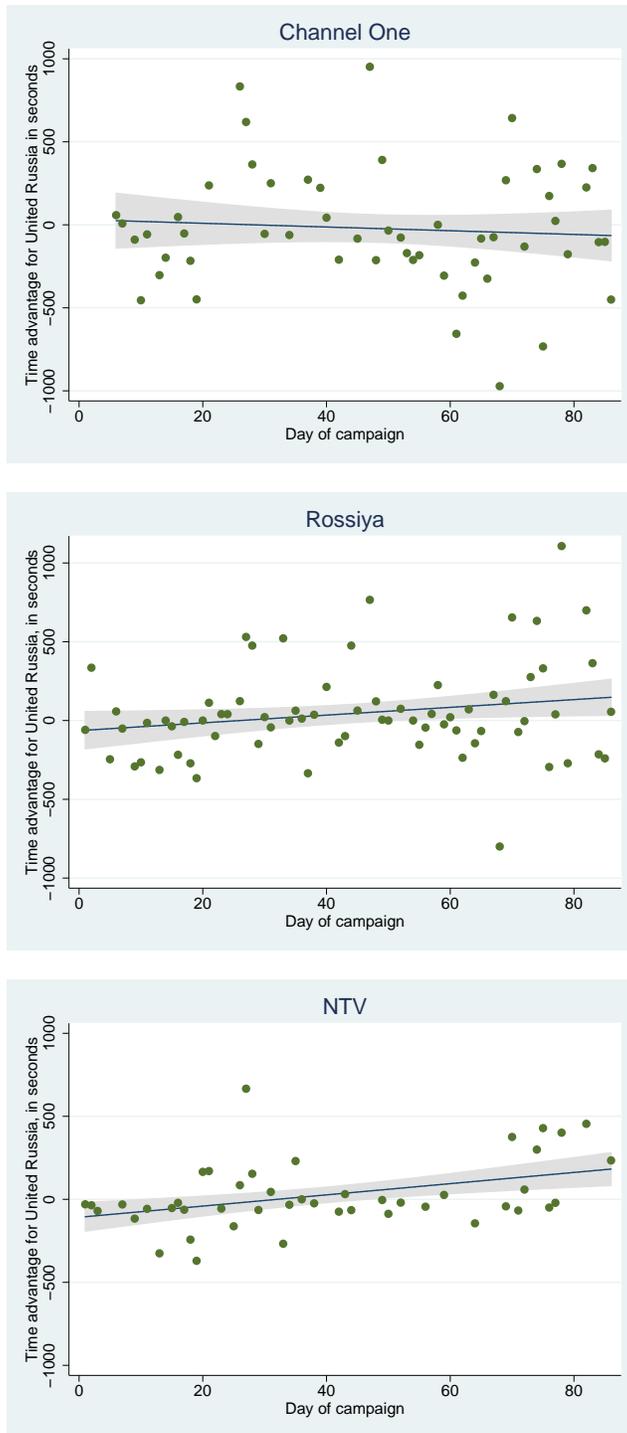
Figure 3: Media bias in 2007 Russian parliamentary election. Time advantage for United Russia is defined as number of seconds in evening news broadcast devoted to United Russia minus number of seconds devoted to all other parties combined. Day of campaign is defined as days from September 5, the official start of the campaign. Day 27 (October 1) marks Putin's announcement that he would head the United Russia list. Only broadcasts where at least one party is mentioned are included. Each plot depicts, for a single station, observed values together with fitted values and 90-percent confidence intervals from a linear prediction.

NTV appears to ration its bias for when it most matters.

7 Conclusion

In this paper, we provide a theoretical framework to analyze government control of the media. We focus especially on less democratic states where the government uses the media to mobilize citizens to take actions that may not be in their individual best interest. Our model emphasizes a fundamental constraint facing any government that hopes to control media content: bias in reporting reduces the informational content of the news, thus decreasing viewership among those who value that information. The extent of media bias and incentive for the government to seize direct control of the media depend on the degree to which the government internalizes this effect.

We emphasize two variables that influence the operation of this constraint. First, governments that place a greater value on social mobilization induce a higher level of media bias. The distinction between state and private media is small under such governments, but governments may nationalize private media to save the cost of inducing bias. Second, both state and private media exhibit less bias when the advertising market is large. However, the impact on private media is greater, implying that the government may seize control of private media in response to a growing advertising market. Because state media are generally more biased than private media, the relationship between media freedom and the size of the advertising market is thus potentially nonmonotonic.

Our case study of media freedom in postcommunist Russia illustrates these results. Under both Boris Yeltsin and Vladimir Putin, media bias fluctuated in response to the mobilizing needs of the government, with the magnitude of the fluctuation depending on the ownership and commercialization of the media outlet. Under Putin, government control has been facilitated by the seizure of previously private media. Our theoretical framework suggests two complementary explanations for this latter development: a greater emphasis on use of the media to support presidential rule, and a dramatic increase in the size of the advertising market. In each case, the cost to the Kremlin of allowing private media was greater than before.

Future work might use our framework to explore other elements of government control of the media. In many countries, for example, the media are owned by individuals close to the government rather than by the state directly. An interesting question is why governments rely on this intermediate form of control of the media. One possibility suggested by our model is that such individuals may have preferences over mobilization aligned with—or at least not opposed to—those of the government, thus lowering the cost of inducing positive coverage while allowing the government to deny that it exercises direct control of the media. In addition, media differ greatly within and across countries in the extent to which they provide "infotainment" rather than information. In terms of our model, the broadcast of human-interest stories rather than hard news might encourage viewership at the expense of time available to influence those who do watch the news. The attractiveness of this strategy may depend both on the mobilizing character of the government and the size of the advertising market.

---

stations.

References

Adserà, Alícia, Carles Boix, and Mark Payne. 2003. "Are You Being Served? Political Accountability and Quality of Government." *Journal of Law, Economics, and Organization.* 19(2):445–490.

Azhgikhina, Nadezhda. 2007. "The Struggle for Press Freedom in Russia: Reflections of a Russian Journalist." *Europe-Asia Studies.* 59(8):1245–1262.

Baldasty, Gerald J. 1992. *The Commercialization of News in the Nineteenth Century.* Madison: University of Wisconsin Press.

Baron, David. 2006. "Persistent Media Bias." *Journal of Public Economics.* 90(1–2):1–36.

Benn, David Wedgwood. 1996. "The Russian Media in Post-Soviet Conditions." *Europe-Asia Studies.* 48(3):471–479.

Besley, Timothy, and Robin Burgess. 2002. "The Political Economy of Government Responsiveness: Theory and Evidence from India." *Quarterly Journal of Economics.* 117(4):1415–1452.

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

Bonnell, Victoria E. and Gregory Freidin. 1993. "Televorot: The Role of Television Coverage in Russia's August 1991 Coup." *Slavic Review.* 52(4):810–838.

Bovitz, Gregory L., James N. Druckman, and Arthur Lupia. 2002. "When Can a News Organization Lead Public Opinion? Ideology versus Market Forces in Decisions to Make News." *Public Choice.* 113(1–2):127–155.

Brunetti, Aymo, and Beatrice Weder. 2003. "A Free Press is Bad News for Corruption." *Journal of Public Economics.* 87(7–8):1801–1824.

Calvert, Randall. 1985. "The Value of Biased Information: A Rational Choice Model of Political Advice." *Journal of Politics.* 47:530–555.

Debs, Alexandre. 2007. "Divide-and-Rule and the Media." Unpublished manuscript.

Dixit, Avinash, and Mancur Olson. 2000. "Does Voluntary Participation Undermine the Coase Theorem?" *Journal of Public Economics.* 76(3):309–335.

Djankov, Simeon, Caralee McLeish, Tatiana Nenova, and Andrei Shleifer. 2003. "Who Owns the Media?" *Journal of Law and Economics.* 46(2):341–381.

Edmond, Chris. 2008. "Information Revolutions and the Overthrow of Autocratic Regimes." Unpublished manuscript.

Egorov, Georgy, Sergei Guriev, and Konstantin Sonin. 2006. "Media Freedom, Bureaucratic Incentives, and the Resource Curse." Unpublished manuscript.

Enikolopov, Ruben, Maria Petrova, and Ekaterina Zhuravskaya. 2007. "Television and Political Persuasion in Young Democracies: Evidence from Russia." Mimeo, New Economic School.

Fish, M. Steven. 2005. *Democracy Derailed in Russia: The Failure of Open Politics*. Cambridge: Cambridge University Press.

Friedrich, Carl, and Zbigniew Brzezinski. 1965. *Totalitarian Dictatorship and Autocracy*. Cambridge: Cambridge University Press.

Gabszewicz, Jean, Didier Laussel, and Nathalie Sonnac. 2001. "Press Advertising and the Accent of the Pensée Unique." *European Economic Review*. 45(4–6):641–651.

Gentzkow, Matthew, and Jesse M. Shapiro. 2004. "Media, Education, and Anti-Americanism in the Muslim World." *Journal of Economic Perspectives*. 18(3):117–133.

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

Gentzkow, Matthew, and Jesse M. Shapiro. 2008. "Competition and Truth in the Market for News." *Journal of Economic Perspectives*. Forthcoming.

Goldstein, Kenneth, and Travis N. Ridout. 2004. "Measuring the Effects of Televised Political Advertising in the Unitied States." *Annual Review of Political Science*. 7:205–226.

Grossman, Gene M., and Elhanan Helpman. 1994. "Protection for Sale." *American Economic Review* 84(4):833–850.

Grossman, Gene M., and Elhanan Helpman. 2001. *Special Interest Politics*. Cambridge, MA: MIT Press.

Kinder, Donald R. 1998. "Communication and Opinion." *Annual Review of Political Science*. 1:167–197.

Koikkalainen, Katja. 2007. "The Local and the International in Russian Business Journalism: Structures and Practices." *Europe-Asia Studies*. 59(8):1315–1329.

Lawson, Chappell. 2002. *Building the Fourth Estate: Democratization and the Rise of a Free Press in Mexico*. Berkeley: University of California Press.

Lawson, Chappell, and James A. McCann. 2007. "Television News, Mexicos 2000 Elections, and Media Effects in Emerging Democracies." *British Journal of Political Science*. Forthcoming.

Lipman, Masha. 2006. "Svoboda Pressy v Usloviiakh Upravliaemoi Demokratii." *Carnegie Moscow Center Briefing*. 8(2).

Lipman, Masha and Michael A. McFaul. 2005. Putin and the Media. In *Putin's Russia: Past Imperfect, Future Uncertain*, ed. Dale R. Herspring. Lanham, MD: Rowman and Littlefield.

Lorentzen, Peter. 2006. "Regularized Rioting: The Strategic Toleration of Public Protest in China." Mimeo, UC Berkeley.

Lorentzen, Peter. 2008. "The Value of Incomplete Censorship for an Authoritarian State." Unpublished manuscript.

Magaloni, Beatriz. 2006. *Voting for Autocracy: The Politics of Party Hegemony and its Demise.* New York: Cambridge University Press.

McCann, James A., and Chappell Lawson. 2007. "An Electorate Adrift? Public Opinion and the Quality of Democracy in Mexico." *Latin American Research Review.* 38(3):60–81.

McFaul, Michael. 1997. *Russia's 1996 Presidential Election: The End of Polarized Politics.* Stanford: Hoover Institutions Press.

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

Mickiewicz, Ellen. 1999. *Changing Channels: Television and the Struggle for Power in Russia.* Durham, NC: Duke University Press.

Mickiewicz, Ellen. 2006. Does "Trust" Mean Attention, Comprehension and Acceptance? Paradoxes of Russian Viewers' News Processing. In *Mass Media and Political Communication in New Democracies*, ed. Katrin Voltmer. London: Routledge.

Mickiewicz, Ellen. 2008. *Television, Power, and the Public in Russia.* Cambridge: Cambridge University Press.

Mullainathan, Sendhil, and Andrei Shleifer. 2005. "The Market for News." *American Economic Review.* 95(4):1031–1053.

Oates, Sarah. 2003. Television, Voters, and the Development of the "Broadcast Party." In *The 1999–2000 Elections in Russia: Their Impact and Legacy*, ed. Vicki L. Hesli and William M. Reisinger. Cambridge: Cambridge University Press.

Oates, Sarah. 2006. *Television, Democracy and Elections in Russia.* New York: Routledge.

Oates, Sarah. 2007. "The Neo-Soviet Model of the Media." *Europe-Asia Studies.* 59(8):1279–1297.

Oates, Sarah, and Laura Roselle. 2000. "Russian Elections and TV News: Comparison of Campaign News on State-Controlled and Commercial Television Stations." *Harvard International Journal of Press/Politics.* 5(2):30-51.

Petrova, Maria. 2008a. "Mass Media and Special Interest Groups." Mimeo, New Economic School.

Petrova, Maria. 2008b. "Newspapers and Parties: How Advertising Revenues Created an Independent Press." Mimeo, New Economic School.

Prat, Andrea, and David Strömberg. 2006. "Commercial Television and Voter Information." Mimeo, London School of Economics.

Przeworski, Adam, Michael Alvarez, Jose-Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development: Political Institutions and Material Well-Being in the World, 1950-1990.* Cambridge: Cambridge University Press.

Puglisi, Riccardo. 2006. "Being the *New York Times*: The Political Behavior of a Newspaper." Mimeo, Massachusetts Institute of Technology.

Reinikka, Ritva, and Jakob Svensoon. 2005. "Fighting Corruption to Improve Schooling: Evidence from a Newspaper Campaign in Uganda." *Journal of the European Economic Association.* 3(2–3):259–267.

Remington, Thomas F. 1989. *The Truth of Authority: Ideology and Communication in the Soviet Union.* Pittsburgh, PA: University of Pittsburgh Press.

Shleifer, Andrei, and Robert W. Vishny. 1994. "Politicians and Firms." *Quarterly Journal of Economics.* 109(4):995–1025.

Simpser, Alberto. 2007. "A Theory of Corrupt Elections." Mimeo, University of Chicago.

Starr, Paul. 2004. *The Creation of the Media: Political Origins of Modern Communications.* New York: Basic Books.

Treisman, Daniel. 2007. "What Have We Learned About the Causes of Corruption from Ten Years of Cross-National Empirical Research?" *Annual Review of Political Science.* 10:211–244.

White, Stephen, and Ian McAllister. 2006. Politics and the Media in Post-Communist Russia. In *Mass Media and Political Communication in New Democracies*, ed. Katrin Voltmer. New York: Routledge.

White, Stephen, Ian McAllister, and Sarah Oates. 2002. "Was it Russian Public Television That Won It?" *Harvard International Journal of Press/Politics.* 7(2):17–33.

White, Stephen, Sarah Oates, and Ian McAllister. 2005. "Media Effects and Russian Elections, 1999-2000." *British Journal of Political Science.* 35(2):191–208.

Wintrobe, Ronald. 1990. "The Tinpot and the Totalitarian: An Economic Theory of Dictatorship." *American Political Science Review.* 84(3):849–872.