Media and Politics

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Keywords

Abstract

This article provides a review of recent literature in economics on the effect of mass media on politics. The focus is on the welfare effects of mass media. I also discuss the likely implications of existing behavioral theories of media effects, developed outside of economics.

1. INTRODUCTION: MEDIA AND WELFARE

There are two quite different views on the role of media in the democratic process. In one view, media matters because it provides information to predominately rational voters. I call this the rational learning model of media effects. In this model, information from the media makes votes more responsive to the quality of policy outcomes. This improves political selection and incentives and, eventually, the quality of policy and welfare. The media may introduce some systematic biases, sometimes forcing politicians to work on the wrong issues and perhaps inducing pandering to voters' incorrect beliefs, but the role is predominately positive through improved political accountability. This is the view taken by most economists researching the effects of mass media, including that on media bias.

In another view, media matters through propaganda and by exploiting cognitive mistakes that voters make. Key theories are those of media agenda setting, priming, and framing, explained below. The fears are that the media can manipulate voters to act against their own interest. For example, describing media framing, Entman (1993, p. 55) writes, "How can even sincere democratic representatives respond correctly to public opinion when empirical evidence of it appears to be so malleable, so vulnerable to framing effects?" Krosnick & Kinder (1990, p. 508) characterize priming effects in the media as people being "swept away by [an] avalanche of stories and pictures," and Iyengar & Kinder (1987) describe individuals who fall prey to priming by the media as "victims." This is the predominant paradigm of media effects in the communications literature.

Part of the difference depends on the point of reference chosen. Those who emphasize the positive role of the media typically use the reference point of no media. Those who emphasize the negative role do not claim that media cannot play a positive role, just that it is not living up to its full potential. In the words of Zaller (1992, p. 313), media makes voters "hold opinions that they would not hold if aware of the best available information and analysis." Given this reference point, media is considered to be influential only if it distorts people's choices, for example, by being biased.

There are obvious possibilities of cross-fertilization between these literatures. To understand the negative effects of biased media, it helps us to first understand the positive benchmark effects that the bias is destroying. However, the behavioral components of agenda setting, priming, and framing models have a large potential to enrich the rational learning model. I outline how these models can be integrated into the rational learning model using the memory-based model of Mullainathan (2002).

Key to understanding the role of media is to investigate what variables it seems to influence. I discuss how media affects voters, in particular their information levels and vote choice. I also discuss evidence of media effects on the selection and incentives of politicians and on government policy.

Section 2 provides a short background of the study of media effects. The following sections deal with effects from media coverage, bias, and capture. In each section, I start by discussing the logic and evidence of the rational learning model of media effects on voters, politicians, and policy. I then discuss how incorporating key features from the models in the communications literature would alter the welfare implications of the media. Section 3 examines media effects driven by the volume of political coverage, in total and across issues. Here, I also discuss agenda setting and priming effects because the volume of coverage across issues also drives these. Section 4 covers effects of ideological bias in media. Here, I also discuss framing effects as most framing effects are driven by selective inclusion or omission of facts, closely related to how economists model ideological bias. Section 5 analyzes why some forms of media are captured by the government or other interests and the consequences of this. Here I also discuss theories of elite capture from the framing

literature. Section 6 discusses the government use of media in nondemocratic countries. Section 7 explores some key insights, and Section 8 concludes.

2. BACKGROUND

Modern empirical research on mass media effects began in the 1930s, partly motivated by Hitler's and Mussolini's seemingly effective use of media in their propaganda and the simultaneous rapid increase in radio use. Early research assumed that media could simply inject messages into people and brainwash them with propaganda. If this model of media effects were true, then media power would have a huge negative potential.

However, this so-called hypodermic needle theory did not survive the first wave of serious empirical studies. The first large-scale studies found that the mass media of radio and print had relatively minor direct effects on people's voting intentions (Lazarsfeld et al. 1944, Berelson et al. 1954). In these studies, researchers interviewed panels of respondents monthly during the electoral campaigns of 1940 and 1948. A main finding was that the media seemed mainly to reinforce voters' prior dispositions and not change their voting intentions. This was partly because few respondents changed their voting intentions at all and partly because people exposed themselves to media that shared their prior views. Similarly, experimental studies showed that although propaganda movies did make people learn facts, they did not often significantly change attitudes (Hovland et al. 1949). After carefully sorting out the available evidence in 1960, Klapper (1960, p. 15) concluded that "mass communication far more frequently acted as an agent of reinforcement than as an agent of change." To the disappointment of many media researchers, minimal effects of media on voting became the conventional wisdom. In response to these findings, researchers developed new theories of media influence that do not rely on people receiving information that conflicts with their prior beliefs: agenda setting, priming, and framing.

But what did these studies actually find, and why is it disappointing? More in detail, Berelson et al. (1954) found that media exposure during the campaign increased the amount of correct information that voters had about where the candidates stood on the issues. They found that media exposure always makes a difference in political information, no matter what other variables are controlled for. Media exposure also increased the interest in politics, the strength of political preference, and voter turnout (controlling for the level of interest in the election). The negative reaction resulted from highlighting that the campaign did not lead to any massive changes in voting intentions.

Although this may be bad news for those who think that media can massively influence voters by carrying party propaganda, it is relatively good news for people who care about the media's role in creating accountability. It seems that voters are learning the facts and positions of the candidates; they are increasing their interest and participation in politics.

In fact, most, if not all, of the findings make perfect sense if media matters because it carries information to reasonably sophisticated and rational voters. The effects of an electoral campaign are likely to be small because of the limited weight of new information received during a typical campaign, relative to pre-existing information. Long-run changes in media exposure, such as the introduction of a new media that permanently and radically changes media exposure among voters, are more likely to produce measurable effects. Larger effects are also likely to be found in campaigns that reveal important and unexpected information (as in Ferraz & Finan 2008 and Chiang & Knight 2011, discussed below). Finally, models with rational voters and informative media invariably conclude that ideological media reinforces prior beliefs and polarizes the electorate, while having small systematic effects on average partisan voting (Bernhardt et al. 2008, Chan & Suen 2008). This results from rational partisan news selection and information filtering.

Let us return to the discussion of the dominant behavioral models of media influence in the communications literature. Agenda setting theory refers to the idea that media coverage of an issue makes people believe that this issue is important (McCombs & Shaw 1972). Priming is the idea that people evaluate politicians based on the issues covered in the media (Iyengar & Kinder 1987). Both imply that the volume of coverage of a particular issue brings voter attention to that issue. They are memory-based models, assuming that people form attitudes based on the considerations that are most accessible, and media coverage of an issue improves the access to information on that issue. Importantly, it is not information about the issue that has an effect; it is merely that the issue has received a certain amount of coverage (Scheufele & Tewksbury 2007). Consequently, I discuss these theories in Section 3.

Framing theory is instead based on the assumption that how an issue is characterized in news reports can have an influence on how it is understood by audiences. Whereas agenda setting and priming influence what people think about, framing influences how they think about it. Media studies of framing often refer to Goffman (1974) and Kahneman & Tversky (1984), but the connections are rather loose. A large part of framing involves the selective inclusion or omission of exactly the type of facts that would be valuable for political accountability. This type of selective inclusion and omission of facts has been extensively analyzed by economists under the label media bias (Mullainathan & Shleifer 2005, Baron 2006, Gentzkow & Shapiro 2006). Consequently, I discuss this in Section 4.

3. COVERAGE

This section focuses on the volume of media coverage of politics, in total and across issues. Content is assumed informative and without partisan bias (although constant bias that is trivial to filter out could be included). In Sections 4 and 5, coverage may systematically favor one party.

3.1. Theory

I start by describing a class of models in which voters are rational and media matters because it transmits information. In the standard model of informative media effects on political accountability, there are three classes of actors: voters, politicians, and the media. Voters try to elect politicians who will give them the most utility, politicians try to get re-elected and perhaps enjoy political rents, and the mass media selects political coverage to maximize profits. The model contains two building blocks: The first analyzes the role of information in politics, and the second analyzes the media's news selection. This setup was first used by Strömberg (1999) and has subsequently been used in a number of papers focusing on the effects of media access, coverage, bias, and capture.

I use the model of Prat & Strömberg (2013) as an example. In that model, media effects are driven by the total amount of coverage devoted to politics and the distribution of this coverage across issues. An issue is defined as a policy domain, such as unemployment or minority questions. The important point is that politicians can devote resources and attention to the issue. Coverage may vary with both the number of news reports and the facts selected within each report. For example, a news program can run a story on unemployment benefits or a story on a new housing project. When covering the housing project, the story might include facts about how the project will affect employment or housing prices.

The model has two periods, and the voters choose whether to re-elect an incumbent. There are I policy issues, indexed by i, that the voter may care about. I write down the condition for the

individual's vote choice because it is useful later when discussing the central models of media effects used in the communications literature. A voter j prefers the incumbent if

$$\sum_{i=1}^{I} w_i E[\Delta u_i] \geq \tilde{\beta}_j, \tag{1}$$

where w_i is the weight of issue i for individual j. This equals 1 for people who are affected by a policy issue and 0 for the others. The term $E[\Delta u_i]$ captures the expected utility difference on issue i if the incumbent wins relative to the challenger. This expectation depends on whether individual j is informed or not. Media matters because it increases the voters' responsiveness to the actual policy differences between the incumbent and the challenger, Δu_i. Finally, $\tilde{\beta}_j$ is an exogenous preference parameter.

The specific type of information, affecting $E[\Delta u_i]$, provided by media varies. To cast the right vote, citizens need to know who proposes, or is responsible for, what policies and to what effect. Media matters because it transmits information to voters about any of these facts. In the model of Prat & Strömberg (2013), this is information about the quality of government services used to infer the expected competence of the incumbent on issue i. In Strömberg (2004a), this is instead information about who proposes what policy.

Because it provides information to rational voters, media improves welfare in this model. To be informed by the media, a voter needs to use the media and find the information. Let r_i be the share of media users in group i and q_i be the amount of coverage of issue i. The probability $\rho(q_i)$ that a media user finds information on issue i is assumed to be increasing in the coverage of this issue, q_i. Hence, the share of informed voters is

$$s_i = r_i \rho(q_i). \tag{2}$$

The share of informed voters drives the positive effects in this model. For example, effort and selection are increasing functions of s_i. The model produces a set of testable implications. I restate proposition 3 from Prat & Strömberg (2013) as follows.

> **Proposition 1:** An increase in (a) the share of media users, r_i, or (b) the amount of media coverage of that issue, q_i, causes an increase in the following: (i) the share of informed voters in group i; (ii) the responsiveness of votes to perceived competence differences on issue i; (iii) the effort (spending) and expected competence of politicians toward voters in group i; and (iv) the incumbent's vote share on average, and more so if his or her competence on issue i is higher than that for an average politician.

The proposition explains how the media improves political accountability on an issue. The letters a and b distinguish the type of media variation and the numbers i–iv the affected outcomes. The proposition states that (a) who gets the news and (b) what issues are covered matter for voter information. Informed voters are more responsive to competence differences across politicians. This improves political incentives, selection, and, eventually, the quality of policy.

In this model, a positive externality from news consumption creates a market failure. An informed electorate improves the policy-making process, which is good for all voters. Individuals can sit back and free ride off the efforts of others to think about policies and learn about candidates. Because of this externality, the market provision of news will deliver too little news coverage and news consumption. Strömberg (2015) models this externality explicitly and shows that the socially optimal solution can be achieved by a subsidy to the media outlet that is increasing in the amount of political coverage and the audience of that coverage, or through public service media.

The direction of media coverage may also not be the most socially desirable. Political information will be a by-product of demand for entertainment or information used to guide private actions. In the model of Prat & Strömberg (2013), a private action motive drives demand. The members of a group differ in a number of characteristics, which drive media coverage. Their proposition 4 describes their model's predictions for the news-making process and its political implications.

> **Proposition 2:** Media coverage of issues that concern group i, and consequently political effort and competence, is greater if (a) group i is larger, (b) it has a larger advertising potential, or (c) the issue is more journalistically newsworthy, and (d) it is inexpensive to distribute news to that group.

The above proposition characterizes what issues will receive too much attention and resources, relative to the welfare-maximizing benchmark. For example, media coverage may induce too much political action on journalistically newsworthy issues, such as volcanic eruptions, at the expense of drought relief in the sense that the same resources could have produced higher welfare if spent differently. Strömberg (1999, 2004a) discusses in more detail the welfare losses induced by this type of bias.

There is empirical evidence supporting most of the statements in the above propositions. This is examined in Prat & Strömberg (2013). I now discuss some of this evidence with an emphasis on its role for the welfare effects and its connection to the literature outside of economics.

3.2. Media and Voters

That audience size affects the amount of media coverage (Proposition 2a) has been empirically documented by Snyder & Strömberg (2010). They use plausibly exogenous variation in group size to identify media effects. In their case, a group is the constituency of a congressional district. **Figure 1b** plots the number of articles against the share of the newspaper's readership that lives in this district. They define the congruence between a newspaper and a congressional district as the average share of a newspaper's readership that lives in a given district. In terms of magnitude, they estimate that an increase in congruence from 0 to 1 is associated with 170 more articles written about the congressperson. The audience shares of ethnic groups have also been related to media coverage (Siegelman & Waldfogel 2001, George & Waldfogel 2003, Oberholzer-Gee & Waldfogel 2009).

That media induces sizeable learning is central to positive media effects. It seems a priori likely that media would do this. Knowing who is responsible for what policy to what effect is quite remote from the experience of most people. Hence, citizens in large societies are dependent on others for most of their political information, such as political campaigns and the mass media. Of these possible sources, survey respondents regularly cite mass media as their main source of political information. Still, some theories of learning suggest information crowd out. It could be that media focuses on trivia and crowds out relevant political information from people's minds.

Evidence on learning from newspapers (Proposition 1i) consistently shows significant effects. In their classical study, Berelson et al. (1954) find that voters with high media exposure learned more during the electoral campaigns of 1940 and 1948 than did other voters. Naturally, it could be that voters who used media more were more interested in politics and learned more directly from the campaign and from personal interactions. Therefore, the effect of newspapers may be hard to identify separately. These selection issues are avoided in laboratory studies (e.g., Neuman et al. 1992, Norris & Sanders 2003) that find that people learn from watching news in a laboratory.
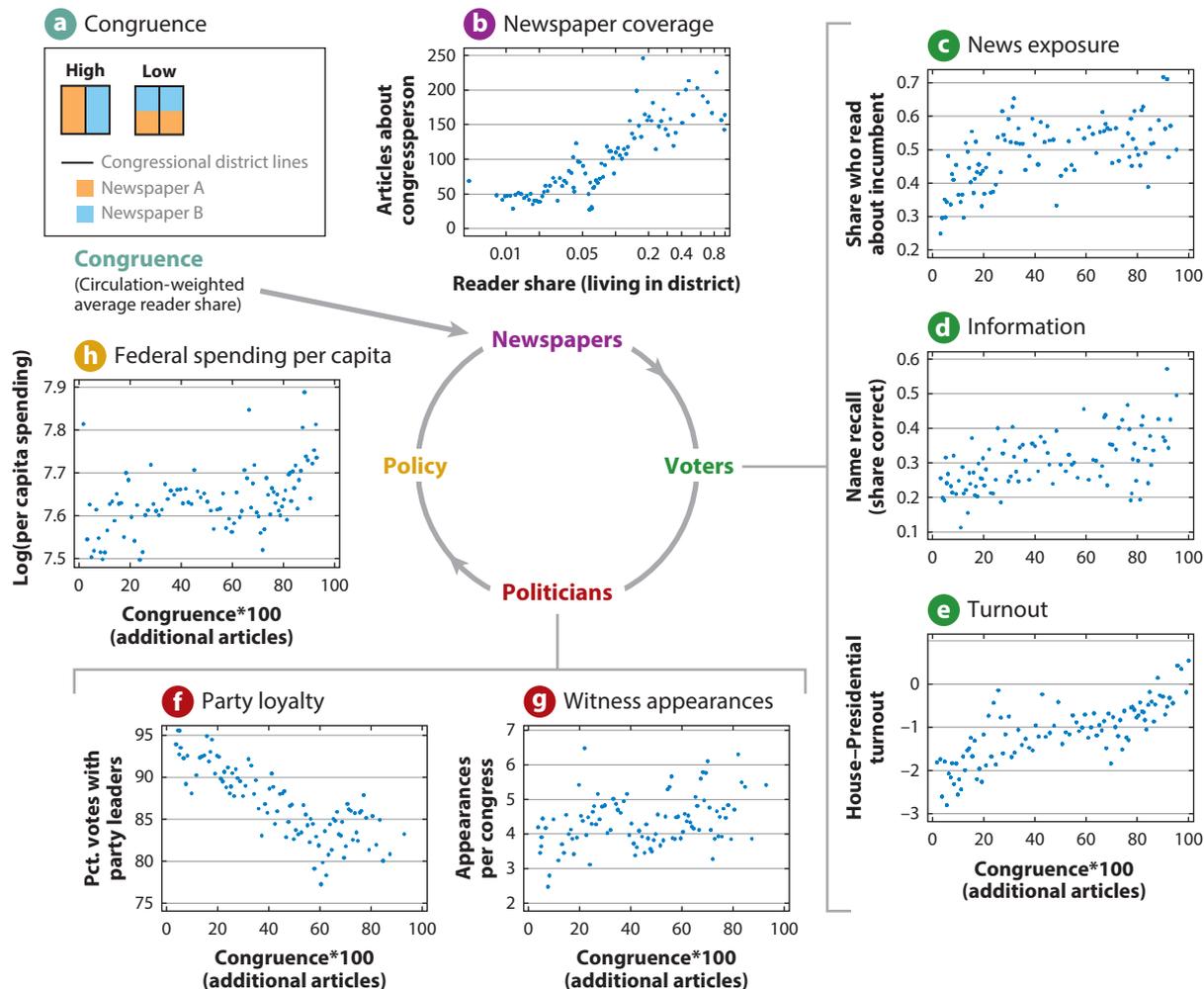
Figure 1

Structure of empirical investigation of Snyder & Strömberg (2010). Figure reproduced with permission from Snyder & Strömberg (2010).

However, it is hard to generalize these results to the effects of years of daily media exposure on voters' knowledge or choices on election day. Mondak (1995) exploits a quasi-experiment, a newspaper strike in Pittsburgh in 1992 that closed the city's two major newspapers for 8 months. Unfortunately, he has only a self-reported measure of respondents' knowledge of local politics.

Snyder & Strömberg (2010) find that local newspapers are key providers of political information. To identify the causal effect of coverage, they use the exogenous variation in audience size discussed above and analyze survey responses from the American National Election Studies in 1984–2004. Their estimates suggest that the share that can name its representative would drop from 31% to 15% without newspaper coverage. Voters in areas where the newspapers, for exogenous reasons, cover the House representatives more are better able to correctly name at least one of the candidates in the House election. **Figure 1d** plots the bivariate version of this relationship. They are also more willing to place their representative ideologically, rate their feelings toward the representative, and mention things that they like or dislike about their representative.

The key role of political information in the above model is to increase the voters' responsiveness (Proposition 1*ii*): Information enables voters to identify and punish politicians who are bad for them and reward good politicians and policies. This creates good incentives and selection.

The early voting studies did not find much evidence that media increased responsiveness. This might not be surprising, as little new information that would systematically favor one party was revealed during the studied campaigns.

However, media effects on responsiveness have been found in studies involving new, surprising information. For example, Ferraz & Finan (2008) find that radio increased voter responsiveness to information about corruption among Brazilian mayors. Voters in places with a local radio station punished more mayors who were more corrupt than average and rewarded more mayors who were less corrupt than average.

Larreguy et al. (2014) study the effect of media on Mexican voters' responsiveness to municipal audit reports. Similar to Ferraz & Finan, they compare mayors who engage in malfeasant behavior that is revealed in audit reports published in the year before an election to similar mayors whose audit reports are not published until after the election. They use within-municipality variation in the electoral precincts that are covered by radio and television stations located within the municipality and that consequently cover the relevant audit reports more. They find that voters punish the party of malfeasant mayors, but only in electoral precincts covered by local media stations. Banerjee et al. (2011) find similar results in India. In the run-up to elections, residents in a random sample of slums in a large Indian city received newspapers containing report cards with information on the performance of the incumbent legislator and the qualifications of the incumbent and two main challengers. Relative to the control slums, treatment slums saw a higher turnout, reduced vote buying, and a higher vote share for better-performing incumbents and relatively more qualified incumbents.

The media coverage of a particular issue can also increase the voter responsiveness on that issue. This is a prediction of the rational learning model above (Proposition 1*bii*) and also a key prediction of the agenda setting and priming theories of media influence. A very extensive literature tests the agenda setting and priming hypotheses. I discuss this below.

3.3. Politicians and Policy

Media seems to increase voters' responsiveness. The next question is whether this increased responsiveness is sufficient to significantly affect the selection and actions of politicians (Proposition 1*iii*).

A couple of studies find this to be the case. Ferraz & Finan (2008) find that municipalities with a radio station were less likely to re-elect highly corrupt mayors. This has a direct effect on the selection of re-elected mayors.

Snyder & Strömberg (2010) find that a higher volume of media coverage of politics improves both the selection and the incentives of politicians. The authors analyze data on roll-call voting, committee assignments, and witness appearances for US congresspersons in 1982–2004. They find that US congresspersons from districts where the media coverage is high, for exogenous reasons, are less ideologically extreme, vote more frequently against the party leaders, and are more likely to stand witness before congressional hearings. Additionally, they might be more likely to serve on constituency-oriented committees and less likely to serve on broad policy-oriented committees. **Figure 1***f,g* shows the bivariate relationship between congruence and these outcomes.[1]

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[1]Congresspersons may work for their constituency, for example, by considering constituency (rather than party) interests in voting and by appearing as a witness before congressional hearings.

In terms of magnitudes, Snyder & Strömberg's estimates imply that an exogenous increase of approximately 110 newspaper articles about the House representative is associated with one additional witness appearance, and there is one additional vote against the party leadership per every four exogenous additional newspaper articles about the House representative.

The evidence presented above suggests that mass media informs voters and that this information increases both voter turnout and voter responsiveness. This in turn improves political incentives and selection. I now finally present evidence that this affects policies. Three types of media variation are examined: variation in the access to media, the volume of political coverage, and the coverage of particular events.

First, a couple of papers have found that media access improves policy outcomes. Strömberg (1999, 2004b) finds that counties where radio penetration was higher, because of good local reception conditions, received significantly more spending from New Deal programs. The spread of radio particularly improved the situation of rural areas. Radio also increased voter turnout, particularly in rural areas. The results are robust to instrumenting radio ownership with exogenous factors that affect the quality of reception: ground conductivity and the share of woodland. Besley & Burgess (2002) study the effects of newspaper circulation on public food distribution and calamity relief in a panel of Indian states (1958–1992). Their main finding is that the interaction term between newspaper circulation and measures of need for relief is positive. This means that spending correlates more with need in states where many have access to newspapers, in other words, that spending is more responsive to need in states with a high newspaper circulation.

Second, holding media access constant, the total volume of politically relevant coverage seems to matter. Snyder & Strömberg (2010) find that more federal funds per capita were allocated to areas where the media covered their political representative more. The estimated effects are substantial. A one–standard deviation increase in congruence (which is associated with approximately 50 additional articles per congressional session) increases per capita federal spending by 3%. Similarly, Lim et al. (2015) study the effect of newspaper coverage of US state trial court judges, using the congruence between judicial districts and newspaper markets to identify effects. They find that press coverage significantly increases sentence length.

Third, there is evidence that the coverage of particular events or issues affects policies. This is the main hypothesis investigated in the agenda setting research on policy effects. This research typically performs case studies or studies the comovement over time in the coverage of an issue in the media, the importance that the public attaches to the issue, and some policy outcome (see Dearing & Rogers 1996). However, convincing evidence of media effects is hard to establish from these types of correlations. More severe issues are likely to both be in the news and receive policy attention, and it is very hard to convincingly control for severity. In addition, political agendas might drive both media coverage and policy, thus creating a reverse causality problem.

In an attempt to address this problem, Eisensee & Strömberg (2007) analyze the effect of issues being covered because there is not much other news around. They study natural disasters. The idea is that some marginally newsworthy disasters will not be covered in the news because they occur when many competing news stories are available. They find that the Olympic Games crowd out the news coverage of natural disasters and that this decreases the probability of US government relief. They find similar effects using a more general measure of the amount of other available news (the time spent on the top three news stories). The conclusion is that news coverage has a causal effect on relief.

3.4. Agenda Setting and Priming

I now discuss how the rational learning theory differs from two leading theories in the communications literature. Agenda setting theory refers to the idea that media coverage of an issue makes

people believe that this issue is important (McCombs & Shaw 1972). Priming is the closely related idea that media coverage affects what issues politicians are evaluated on (Iyengar & Kinder 1987). These models are similar in some dimensions to the rational learning model presented above: The volume of coverage across issues drives voter responsiveness. However, mechanisms may be different.

A common view is that agenda setting and priming effects are best explained by bounded rationality models, in which the coverage of a particular issue brings voter attention to that issue. These are memory-based models, assuming that people form attitudes based on the considerations that are most accessible, and the media coverage of an issue improves access to information on that issue. The memory processes underlying these theories are supported by research on memory by biologists and psychologists (e.g., Schacter 1996). Iyengar & Kinder (1987, p. 4) explain that

> priming assumes that when evaluating complex political objects—the performance of an incumbent president, or the promises of a presidential contender—citizens do not take into account all that they know. They cannot, even if they were motivated to do so. What they do consider is what comes to mind, those bits and pieces of political memory that are accessible. And television news, we argue, is a most powerful force determining what springs to the citizen's mind and what does not. By priming certain aspects of national life while ignoring others, television sets the terms by which political judgments are rendered and political choices made.

Importantly, it is not information about the issue that has an effect; it is that the issue has received a certain amount of processing time and attention (Scheufele & Tewksbury 2007).

The archetypical example of this type of effect is from the 1948 US presidential campaign. Berelson et al. (1954) argue that Truman won the election, to the surprise of many, because the nation's focus shifted from international issues back to New Deal issues, in which he and the Democratic Party had an advantage. Voters already knew the relative difference in the competency of Truman and Dewey in these dimensions. However, media coverage set the agenda by making New Deal issues salient in their minds.

An extensive literature tests the agenda setting and priming hypotheses. A typical agenda setting study correlates the share of survey respondents who answered that a particular issue is "the most important question facing the nation" with the media agenda measured by the number of news stories covering each issue and argues that the media agenda drives the public agenda (see Dearing & Rogers 1996 for a survey).

Iyengar & Kinder (1987) present a leading priming study. In one laboratory experiment, they recruited 63 residents of greater New Haven. Participants viewed one 30-min newscast every day in the course of one week. They were randomly assigned to different altered newscasts focusing on defense, inflation, or unemployment. On the final day of the experiment, respondents were asked to rate President Reagan's performance on these issues, as well as to evaluate his overall performance. The study then regressed the overall evaluation of the president on how they rated his performance on defense, inflation, and unemployment, interacted with the treatment group dummies. The study found that the coefficient on defense evaluation was significantly larger for the group that had been primed with news about defense, with similar findings for the other issues.[2] Similar results have been found in the field, for example, by exploiting changes in campaign and

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[2]Agenda setting and priming studies typically do not report simple media treatment effects (e.g., whether people exposed to foreign policy news vote more Republican). The focus is instead on the interaction term between media treatment and candidate evaluations by issue.

media attention to issues between waves of panel surveys, in the midst of rolling cross sections, or between regions.

3.4.1. Rational agenda setting and priming.

Naturally, there are plausible explanations for these effects, other than selective recall of memories. The news coverage may inform voters of the president's performance on an issue and enable them to respond to it. This is the rational learning model of Section 3.1. Proposition 1*aii* states that an increase in the amount of media coverage of an issue increases the responsiveness of votes to perceived competence on that issue, which is what the agenda setting studies test. The effects could also arise because media coverage makes beliefs more firm. Even if evaluations do not change on average, information increases the precision in people's evaluations on a particular topic and hence its weight in the election decision (as modeled in section 5 of Strömberg 2001). The news coverage could also include evidence that the issue is important. Even if it does not, people may rationally conclude that an issue is important because the media covered it. Importance is a key newsworthiness criterion, and people observe whether an issue is covered but not why. In the above three cases, agenda setting and priming effects arise through pure rational learning.

Finally, media coverage of an issue may inform individuals about parties' positions on that issue. Once informed, these individuals may adopt their preferred party's position as their own (see Lenz 2009). In this case, total voter evaluations will not change, only the correlation between these and issue positions. Lenz (2009) analyzes the data in four leading studies of priming. In all cases, he finds that the priming results are driven by individuals changing their positions to make them aligned with their preferred party's position. Conversely, Hart & Middleton (2014) find that people who are randomly assigned to reading a news article about an issue (greenhouse gases or student test scores in the United States and abroad) increase the weight given to their prior assessment of the president on this issue in their evaluation of the president. They find no evidence that the assessments of the president on these issues are affected.

Is it likely that agenda setting and priming effects would make the media welfare reducing? To explore this question, we need to embed these effects in a model of policy making. Because they are based on information processing, the agenda setting and priming models are, in principle, possible to integrate into our information-driven theoretical framework described above. We keep other parts constant and assume that voters process information as in the agenda setting and priming models when updating their beliefs about the politicians' competence. We could also change the model of the policy process, for example, by assuming that politicians are constrained by the same memory limitations. However, bounded rationality seems a priori like a much better approximation for disinterested voters than for career politicians. Thus, we keep the policy-making process constant.

3.4.2. Behavioral agenda setting and priming.

Agenda setting and priming are theories based on information retrieval but not complete models of information gathering and processing. For example, it is not clear how the information gets into people's heads in the first place. An analytical framework, closely related to priming, that spells out these factors is the memory-based model of Mullainathan (2002). In this model, information is transmitted through a sequence of events. Events include an informative, x_t, and an uninformative, n_t, component. For example, an event may be a natural disaster, such as a hurricane hitting New Orleans. The number of people killed and the government's response are informative (x_t). The time in the news broadcast that the event is reported or which reporter was involved is not informative (n_t). People may forget past information. Recall of information can be triggered by events closely associated with it. The association between events t and k is parameterized by the closeness of x_t to x_k and n_t to n_k.

In Mullainathan's (2002) model, even noninformative news causes people to update their beliefs because it makes informative memories accessible. Associations generate an overreaction (on average) to information as each event draws forth similar, supporting memories. Mullainathan's framework also incorporates memory decay. Remembering an event makes it more likely that one will remember it again, but this effect decays over time. This implies that information recalled by priming decays at the same rate as information from directly experienced events. Mullainathan's model does not allow for information crowd out, and people do not adjust their forecasts to correct for memory distortions.

In Prat & Strömberg's (2013) model, voters update their beliefs about the politicians' competence. To apply Mullainathan's model to this setting, suppose that voters observe a sequence of events e_t in period 1, containing information about a permanent shock to the incumbent's competence, x_t, and an uninformative component, n_t. To capture media priming effects, the events would have to be associated by issue. Informative (x_t) and noninformative (n_t) aspects of media coverage of, for example, foreign policy events are likely to be similar, causing people to remember other foreign policy events after watching news covering foreign policy.

Although the details need to be worked out, a few conjectures might be drawn. First, in this hybrid model, media is likely to retain a predominantly positive role. Media coverage of events would increase the information available to voters, both because of information transmitted and because of increased recall of past information. Apart from their memory constraints, voters are rational, and more information is unlikely to make them worse off.

Second, the electoral effects of media coverage during the election campaign are likely to be larger. For example, essentially uninformative coverage of foreign policy during the election campaign may induce large shifts in voter support as voters recall past information on competence differences on this issue. This is consistent with the large shifts in support in the 1948 US presidential election.

Third, the hybrid model is likely to make the multitasking problem more acute, as the recall of all information on covered issues increases differences in information levels across issues. Given that we keep our model of the news-making process, the priming-hybrid model would also generate the same type of biases—audience size, advertising target group, newsworthiness, etc.—but the effects would be larger.

Modeling priming forces us to make explicit a number of assumptions. One ad hoc assumption is that the n_t's are close within issues, for example, that the n_t's for all events covering foreign policy would be close to each other. To evaluate this assumption, we need to know more about the memory process (this is discussed in Section 4.7). Presumably, priming effects also exist among other dimensions than policy issues. Another assumption is that people do not understand how their memory works. Presumably, the effects would be quite different if they did. A third assumption is that recall of facts induced by priming decays at the same rate as direct information. A more reasonable assumption is perhaps that directly experienced information decays more slowly than information recalled from memory by priming (as discussed in Gerber et al. 2011).

Finally, the model assumes that there is no information crowd out. The media's welfare effects might be negative if recalling one fact causes the forgetting of other facts. This crowd-out assumption is explicitly stated in some work on agenda setting. "All these constraints on the agendas of public issues within a society at any moment are summed up in the idea of the agenda setting process as a zero-sum game, a perspective that underscores the intense competition among issues for attention" (McCombs 2004, p. 38). In this case, media could potentially play a negative role by crowding out relevant political information gained from personal experience with trivia. However, the empirical results on positive learning from media (in, e.g., Snyder & Strömberg 2010) seem to suggest that information crowd out does not dominate.

This way of modeling priming also makes explicit how difficult it is to separate priming effects from informational effects empirically. The priming effect is the effect of accessing additional information from memory, x_k, after observing some other event, e_t. But in the empirical examples of priming, this latter event invariably contains new information, x_t. To isolate the priming effect, one would need to study the effect of completely uninformative events.

Two related models in economics are the rational inattention model of Sims (1998, 2003) and the bounded memory model of Wilson (2014). These are different from priming and framing models in two respects. First, whereas priming involves imperfect retrieval from long-term memory, Wilson models a restriction on long-term memory and Sims a restriction in the coding of external information. Second, Sims and Wilson assume that people understand these constraints and are otherwise rational Bayesian updaters. In contrast, in priming models, people just act on the available information without taking into account the partial recall process.

Sims's model is related to the model in Section 3, as both include an information channel with capacity constraints. In the rational inattention model, information is assumed available, and voters choose what information to pay attention to given their cognitive constraints. In contrast, in our model, the media chooses what information is most profitable to make available to voters, while voters have no cognitive constraints. Adding voter rational inattention to our model may reduce information levels and differences in coverage across issues.

To conclude, the agenda setting and priming hypotheses are based on relevant and well-documented departures from the full-information model. However, incorporating these is unlikely to dramatically change the predictions of the rational learning model. The main difference is that they open up the possibility of nonminimal effects from news stories with relatively weak informational content and that they exacerbate multitasking problems.

3.5. Multitasking

I now discuss in detail evidence that media creates multitasking issues in politics. The agenda setting and priming effects are likely to exacerbate these. Hence, it is useful to have a good understanding of multitasking problems to evaluate the welfare implications of agenda setting and priming.

In a world where politicians are charged with a variety of tasks that compete for their attention, information may also create perverse incentives. The tasks on which voters are informed (e.g., by the media) are not necessarily the most important. There is a strong externality in news consumption, and demand is driven by, for example, entertainment value. Thus, electing politicians based on information from the media would risk diverting attention from the most socially valuable allocation of time and resources. This is the familiar multitasking problem analyzed in Holmström & Milgrom (1991). Proposition 2 identifies biases generated by the news-making process, related to group size, newsworthiness, advertiser target group, and media access. I now discuss empirical evidence of these.

3.5.1. Newsworthiness bias. There is some evidence that journalistically newsworthy issues receive disproportionate policy attention. Eisensee & Strömberg (2007) estimate that 46 times as many people must be killed in a disaster in Africa to achieve the same probability of being covered by the television network news as an otherwise similar disaster in Eastern Europe. Similarly, a drought must have 2,395 times as many casualties as a volcano to have the same estimated probability of coverage. Because they find that news coverage triggers relief, they conclude that this biases US relief against drought victims and African disaster victims.

What types of issues would systematically benefit from newsworthiness bias? Drèze & Sen (1989) argue that media will induce democracies to deal more effectively with famines than with endemic hunger. The reason is that endemic hunger is not news, whereas famines are. More generally, Strömberg (2004a) endogenizes newsworthiness and predicts that it is higher for policy issues for which the need for spending is more variable.

If politicians realize that unexpected events are more newsworthy, then they have incentives to distort policy to manage publicity. The model of Strömberg (2004a) predicts that, for this reason, politicians would focus increases in spending on a few projects that attract the media's attention. They would finance this by making many small cutbacks, each of which is not newsworthy.

3.5.2. Audience share bias.
Media tends to focus its coverage on issues that concern a large share of its audience (which is not perfectly collinear with group size). Politically, this may hurt small groups, such as minorities and special interests, and favor large groups, such as majority ethnic groups and dispersed consumer interests. That media coverage benefits groups that are large, measured as audience shares, is clearly supported by empirical evidence.

A difficulty in empirically identifying the effects of group size is that many factors vary with group size (other than media coverage). An area with many Hispanics is more likely to have a Spanish-language local television news show. But it is also likely to be different in many other respects, for example, having a strong local Hispanic community and connected organizations.

Is it possible to vary the audience size of a group, while holding the total population of the group fixed? Consider the setting in Snyder & Strömberg (2010). House districts have approximately the same population but can differ in size measured by audience. This is because audience size depends on what papers people buy. Suppose that people in one area of a House district read newspapers that mainly sell outside of their district. Because they are a small share of the audience of these newspapers, their representative will receive little coverage. We know from the previous analysis that people in these types of areas are less well informed, vote less, and receive less public spending. This is direct evidence of an audience size bias in policy.

There is also evidence that in areas where ethnic groups are small, there will be no targeted media, and the general media will pay only scant attention to the issues they care about. Siegelman & Waldfogel (2001) find that black-targeted radio stations are available only in markets with many black citizens, and George & Waldfogel (2003) find that blacks are more likely to read newspapers in cities with a larger black share of the population because these newspapers report more frequently about issues of interest to blacks. Similarly, Oberholzer-Gee & Waldfogel (2009) find that Spanish-language local television news entry is more likely in media markets with more Hispanics and that the introduction of Spanish-language local television increases turnout among Hispanics in a metropolitan area by 5–10 percentage points.

The model of Strömberg (2004a) shows that this type of audience size effect creates an undesired variation in policy, assuming that there is no pre-existing policy bias. However, this assumption is likely to be violated in the case of special interest groups because of the informational free-rider problem (Downs 1957). For example, without mass media, it may be politically difficult to advocate a reduction in trade barriers. Very few consumers have strong enough individual incentives to keep themselves informed of the politicians' positions on this issue. In contrast, special interests will certainly keep themselves informed (Olson 1965, Lohmann 1998). Mass media may counter this bias, as it provides politicians with a megaphone that reaches the large, dispersed consumer groups. Therefore, the expanding use of mass media may have had an impact, thus lowering the level of trade barriers.

Dyck et al. (2008) investigate whether media promotes proconsumer interests against special interest. More precisely, they study the effect of media on all US domestic regulatory legislation in

1902–1917. One of the most prominent muckraking magazines of that era was *McClure's*. They identify 23 of 40 House votes that were subject to discussion in the muckraking magazines. For example, some articles focused attention on producers of medicine and meat packers. The authors find that the more *McClure's* sold in a House representative's district, the more proconsumer was the representative's voting on legislation that was muckraked in *McClure's*. A potential concern is that the areas where the demand for *McClure's* was high are different in other respects as well.

3.5.3. Target group bias. It seems likely that advertising biases increase the coverage of interest to groups valuable to advertisers and that, consequently, this biases policy in favor of these groups. However, there is less supporting evidence. The literature is still struggling to uncover the first stage of this effect: that media coverage is shaped to target the interest of this group. For example, Hamilton (2005) correlates the number of news stories about 20 issues on each of the networks with the share of different demographic groups that consider that the issue should be the president's top priority. He finds that the news selection correlates most with the interests of young viewers. He notes that this might be because advertisers target marginal consumers, for example, the young with less stable purchasing behavior. Although plausible, there is little convincing evidence that groups that are valuable to advertisers benefit politically from media coverage.

3.5.4. Media access bias. There is also relatively strong evidence that people with access to media receive better policies (Strömberg 1999, 2004b; Besley & Burgess 2002). The other side of the coin is that voters without access to media risk being neglected by politicians. This may be of particular concern to poor voters in developing countries, whose lack of access to media could hinder their access to public services (Keefer & Khemani 2005). The most direct evidence of this is perhaps provided by Reinikka & Svensson (2005), who find that schools to which it was cheaper to deliver newspapers, because they were closer to a newspaper outlet, received more government funds. Newspaper provision of news may, in this way, produce a political bias disfavoring remote and rural areas. As discussed above, radio and television may reduce this pro-urban bias.

3.6. Total Coverage

Given that the amount of political coverage seems to be very important for political accountability, it is crucial to understand why this coverage varies. The factors described in Proposition 2 also drive the total coverage of politics (Strömberg 2015). Because of the increasing returns to scale, large political jurisdictions have more total coverage of politics. Large countries and larger political jurisdictions within countries have more political coverage, and hence better political selection and incentives. The total amount of resources devoted to political coverage is also increasing in the total value of the advertising market and decreasing in delivery costs.

Competition may increase political coverage because of increased demand elasticity or may lower it because of increasing returns. Cage (2014) argues that competing newspapers may differentiate in quality to avoid price competition. Zaller (1999) argues that competition may lower political coverage because it increases demand elasticity and consumers care less about political news than journalists do.

Evidence suggests that competition reduces the volume of political coverage in newspapers. The most convincing evidence is perhaps that provided by Cage (2014). She studies a county-level panel data set of local newspapers in France from 1945 to 2012. She finds that newspaper competition is associated with fewer journalists and news articles in counties with homogeneous populations, with little impact on counties with heterogeneous populations. In a cross-sectional study of coverage of US congresspersons, Arnold (2004) finds that newspapers with at least one

competing daily paper published fewer articles about their local representative than did a monopoly newspaper, controlling for newspaper circulation and the number of representatives in a newspaper's core circulation area.

4. PARTISAN BIAS

Agenda setting, priming, and framing are unlikely to generate negative media effects because, in these models, media increases the available information, and voters are rational except for the constraint on their memories. It seems that we need more voter irrationality than bounded memory to generate negative effects. A natural candidate is that voters naively believe in media reports, as in the hypodermic needle theory of the 1930s. As discussed above, the early studies rejected this theory. However, much of the recent work by economists on media bias addresses this question using stronger empirical designs.

I now return to the rational learning model of media effects developed by economists. I discuss models allowing for partisan media bias, in which media coverage systematically favors one party. I also discuss one of the most common charges leveled against the US media: that it is ideologically biased and that this skews electoral competition and ultimately produces negative policy outcomes.

4.1. Does Partisan Bias Produce Negative Policy Outcomes?

There is no direct empirical evidence of the effect of media bias on policy. We might expect bias to reduce accountability if it makes media less informative. Unfortunately, there is also no empirical evidence on whether people learn more or less relevant political facts from biased media.

From a theoretical perspective, how will bias change the media's effect on political accountability, described by Proposition 1? In the models of media bias presented below, media provides information to rational voters, and the basic effect of media is positive. However, these positive effects may be reduced by media bias. Perhaps surprisingly, biased news may also improve political accountability. The reason is that not all forms of bias destroy information. A media outlet can express a bias by being selective in what issues it covers (issue bias), what facts of the issues it includes or excludes (facts bias), and how it comments on them (ideological stand bias). Distortion of facts reduces information. Conversely, the ideological stands of a right-wing newspaper may be more informative to a right-wing reader than those of a centrist newspaper. Similarly, information about issues that feature prominently in left-wing newspapers may be more relevant and valuable to left-wing consumers. I now discuss papers investigating the effects of these different forms of bias.

Bernhardt et al. (2008) model the political effects of facts bias, expressed as the suppression of information. They assume that partisan readers get disutility from negative news about their preferred candidate. Consequently, left-wing media does not publish negative facts about left-wing politicians, and vice versa for right-wing media. This may lead information aggregation to fail and to the election of inferior candidates. Hence, media bias is bad for political accountability. Because readers understand what coverage is missing, a biased media does not systematically benefit the preferred candidate. Rather, media bias polarizes the electorate.

Chan & Suen (2008) study the effects of newspapers' ideological stands, such as endorsements and policy recommendations. In their model, profit-maximizing newspapers first select ideological positions. Then, policy-motivated politicians choose political platforms. Voters decide which newspaper to buy, read editorial recommendations (a binary message), and vote. The party that wins the election implements its platform.

In this setting, a more biased (less centrist) media is not less informative to all consumers. A partisan reader gets more decision-relevant information from a newspaper with the same partisan bias. For example, suppose that there are two types of voters of ideology, L and R, and two perfectly informed newspapers endorsing politicians. If the two papers have ideology L and R and are being read by people of the same ideology, no voter following the endorsement would ever make a mistake when voting. If both newspapers were centrist, voters would make mistakes because they could not always trust the newspaper endorsements. This explains the finding that readers choose media outlets with a similar ideological position. This effect can lead to a polarization of opinion and the emergence of self-serving beliefs (Suen 2004).

Similarly, issue bias may also enhance accountability. Suppose that right-wing viewers care only about national security and left-wing voters care only about social security. Two newspapers have a fixed total volume of coverage that we normalize to 1 to devote to these issues. The best outcome in this case is extreme ideological issue bias and sorting: One newspaper covers only national security and is read by right-wing voters, and the other covers only social security and is read by left-wing voters. This minimizes the mistakes made by voters and creates good incentives and selection on both issues, following the logic of the model in Section 3.

Duggan & Martinelli (2011) study issue bias and find that pro-incumbent media should cover issues when there is less uncertainty, whereas a media favoring the challenger should cover issues when there is much uncertainty to gamble for resurrection. Balanced media, giving each issue equal coverage, may be worse for voters than would partisan media.

4.2. How Naive Are Voters?

If people naively believe media reports, as in the hypodermic needle theory, then large negative media effects are possible. In contrast, a potential bulwark against these negative effects is that people are rational Bayesian updaters, or at least behave sufficiently like ones. This means that they should filter the news, react to relevant information, and largely ignore uninformative propaganda, bias, or framing. If people are Bayesian updaters and media provides information, then media is unlikely to make people worse off.

A couple of papers examine the filtering of ideological bias. Chiang & Knight (2011) study whether newspaper endorsements have an influence on voting intentions. They combine data on the endorsements of presidential candidates of a large set of US newspapers with survey responses from the National Annenberg Election Surveys 2000 and 2004. The authors know the exact date of the endorsements and relate endorsements to changes in voting intentions among the newspaper's readers. The main finding is that only unexpected endorsements change voting intentions. When a newspaper repeatedly endorses the same party, its endorsements have no significant effect. These results suggest that voters are sophisticated and do filter out expected ideological biases in endorsements.

Endorsements are a very transparent form of political positioning that may be particularly easy to filter out. A paper that studies the filtering of a more broadly defined bias is by Bergan et al. (2009). In a field experiment, they analyze the effect of randomly receiving an offer of a free subscription to the conservative newspaper the *Washington Times*, the liberal newspaper the *Washington Post*, or no newspaper at all. Despite apparent differences in the way the newspapers framed their stories, the researchers found that those who received either newspaper voted more for the Democrats. One explanation is that the time period of the experiment carried news that was challenging for the Republicans: war casualties, the Plame investigation, and the widely criticized Miers Supreme Court nomination. It seems that the basic information contained in the news was more important than how it was framed by the papers. A caveat is in place. The sample size in this

study is small, and consequently, the standard errors are large. Only the combined effect of a *Washington Post* subscription as compared to no subscription (informative signal plus left-wing bias) is statistically significant at conventional levels. So the results and interpretations should be taken with a grain of salt.

Another restraint on propaganda effects is the partisan selection of news sources. It does not matter how persuasive a partisan newscast is if the entire audience already supports the favored party. Durante & Knight (2012) analyze whether a media owner can influence voter exposure to ideological news by changing a media's ideological bias. They find that after Berlusconi's center-right coalition came into power for the second time in Italy in 2001, the news content on state television moved to the right. However, viewers responded by moving to more left-wing channels. Left-wing viewers moved to a more leftist channel. Moderately right-wing viewers were attracted to state television channels from channels that were even more conservative. The net effect on ideological exposure is unclear. This shows that sorting puts real and substantial constraints on the effectiveness of manipulating media's ideological bias for electoral motives in a competitive media environment.

4.3. Does Partisan Bias Skew Electoral Competition?

The effects of US media on voting intentions are probably the most researched of all media effects. They were the main focus of the early studies by Lazarsfeld et al. (1944) and Berelson et al. (1954), who found that media reinforced pre-existing beliefs while having a minimal effect on voting intentions. As mentioned above, the extensive literature of priming and agenda setting also explores this question, without finding conclusive evidence of effects on voting intentions or evaluations (Lenz 2009). More recent studies using field experiments find little evidence for ideological media bias affecting voting intentions (Gerber et al. 2009) and only short-lived effects of televised campaign ads (Gerber et al. 2011). Similarly, Gentzkow et al. (2011) rule out even moderate effects of entry and exit of partisan newspapers on party vote shares in the United States from 1869 to 2004. An important exception to these nonfindings is provided by Della Vigna & Kaplan (2007), who exploit the gradual introduction of Fox News in cable markets to estimate its impact on the vote share in presidential elections between 1996 and 2000. They find that Republicans gained 0.4–0.7 percentage points in towns that started to broadcast Fox News before 2000.

With a variety of techniques over half a century, the evidence of the effects of ideological media bias on voting intentions in the United States is mixed at best. Note that this conclusion applies to the very specific US setting, with a highly competitive media market and very low government involvement. This conclusion is consistent with the above models of media bias that suggest that persistent media bias is likely to polarize the electorate while having small effects favoring the desired party.

4.4. Effects on Elections and Accountability

How can the effects of media on accountability be large (as in Snyder & Strömberg 2010) given these elusive effects on voting in the United States? The minimal effects have been found in studies of campaign propaganda and persistent ideological bias. This is very different from media content improving accountability. Accountability effects are driven by increased voter responsiveness to underlying important news about politics, for example, that a mayor in Brazil or President Fujimori of Peru is more corrupt than what voters anticipated, that a Democratic newspaper unexpectedly endorses a Republican candidate, or that Russian voters suddenly learn about the oppositional parties' platforms. In these examples, media reveals information that helps voters make the right choice. In contrast, we would be suspicious if a persistent media bias, such as

constant endorsements of one party, and campaign propaganda had large effects on voting. This would indicate that voters are highly irrational and malleable to manipulations.

Similarly, one cannot conclude that media bias is harmless if a persistent bias does not affect voting. Bias can still lower the informativeness of media and destroy its positive welfare effects. Models such as that by Bernhardt et al. (2008) show that biased media can be bad for accountability, while having little average effects on voting.

We now relate the empirical findings of accountability effects in Section 3 to media bias. The share of informed voters drives accountability effects in that model. Suppose that bias affects the informativeness of political news coverage. To capture this, let us make an ad hoc adjustment to Equation 2 determining the share of informed voters, so that

$$s_i = r_i \rho(q_i) \sigma(b). \qquad (3)$$

The last added part, $\sigma(b)$, is the probability that the news report contains the relevant information, depending on bias b. The share of informed voters is now increasing in the share of media users, r_i, the amount of political coverage, q_i, and the informativeness of this coverage, $\sigma(b)$. This would add a new part (c) to Proposition 1, in which an increase in the informativeness of news, $\sigma(b)$, would affect the listed outcomes i–v. The effects in studies such as Snyder & Strömberg (2010) can be interpreted in this framework. Suppose that the variation in coverage, q_i, for example, driven by congruence, is independent of the bias, b. Then effects will be measured at the average level of informativeness, $\overline{\sigma}(b)$. Similarly, studies such as Besley & Burgess (2002) and Strömberg (2004b) analyze effects from variation in media access, r_i, presumably at average levels of coverage and bias.

The bottom line is that bias may moderate the positive accountability effects found in the literature. Section 3 documents that political incentives, selection, and policy respond substantially to variations in voter information levels caused by changes in media coverage and media access. Reduced informativeness in media caused by media bias is likely to have similar effects. The form of these effects depends on the shape of $\sigma(b)$, determining how bias affects the information content of political coverage. How large the effects are depends on this and on how biased the media is.

4.5. How Biased Is US Media?

Despite the common charge that US media is biased, evidence indicates that most large US media outlets are centrist. Groseclose & Milyo (2005) proxy the political positions of US media outlets by the average ideology of the think tanks they quote. In 1999, only 3 out of 100 senators had ideological (Americans for Democratic Action) scores between 33 and 67 on a 0–100 scale. Yet the authors find that 16 of 20 media outlets fall within this range. They also find that 18 of 20 outlets have ideological positions between those of Joe Lieberman and Susan Collins, who are among the most moderate senators. On average, newspapers are left of the center. The two most right-leaning media outlets by this measure, Fox News *Special Report* and the *Washington Times*, are still more moderate than most congressmen.

Ho & Quinn (2008) focus on editorial content. They collect and classify more than 1,500 editorials adopted by major US newspapers on Supreme Court cases to compare the ideology of newspapers and justices on the same scale. A main finding is that most newspapers take relatively centrist political positions. During the Rehnquist court, about half of all newspapers were located between Justices Kennedy and Breyer (the justices on either side of the median justice).

Puglisi & Snyder (2015) study newspapers' positions on ballot propositions. They look at 305 US newspapers between 1996 and 2010. They find that, on average, these newspapers are located almost exactly at the median voter in their states and tend to be centrist relative to interest groups.

Key to the effect of bias on accountability is how much negative news media carries about its preferred party. Puglisi & Snyder (2008) find a moderate partisan bias in the reporting of political scandals. In a scandal involving a Democrat during which the average paper publishes four stories, a clearly Democratic paper (85th percent most Democratic) would write three stories, and a clearly Republican paper would write five stories. In terms of the above notation, this is a direct measure of $\sigma(b)$. The estimate suggests that even clearly biased media transmits much information (in the United States).

4.6. Why Is the Media Biased?

Another important question is why the media takes extreme political positions or distorts valuable facts. If the media is biased because consumers demand it, then bias is likely to reinforce existing beliefs and create polarization and status quo bias. If the media is biased because owners have political agendas, then bias effects may be more unidirectional.

Several theoretical contributions investigate this question. Media bias may be introduced by owners' interests (Anderson & McLaren 2012) or journalists' interests (Baron 2006) to increase product differentiation and avoid price competition (Mullainathan & Shleifer 2005) or to cater to the audience's prior beliefs (Gentzkow & Shapiro 2006). In these models, competition may decrease but also increase bias. Empirically, Gentzkow & Shapiro (2010) find that the bias of US newspapers is significantly correlated with the ideology of their readers. In contrast, two newspapers belonging to the same chain are not ideologically closer than two randomly chosen newspapers, once geographical factors are taken into account. This indicates that the bias of US newspapers is driven more by consumer demand than by owners' interests.

Note that if demand drives media bias, as in Gentzkow & Shapiro (2006), then the direction of this bias in the group dimension is likely to be as in Proposition 2. Because attracting these groups is more profitable, the media will bias its fact selection toward the prior beliefs of groups that are large, valuable to advertisers, and with low distribution costs.

4.7. Framing

I now discuss framing theory because it is similar to the media bias analyzed by economists. Framing is a broad concept that includes the many ways in which news stories can be presented (for recent surveys of framing, see Scheufele 1999, Scheufele & Tewksbury 2007, Chong & Druckman 2007). Framing effects occur when differences in the presentation of an issue or event change people's responses. Minimally, framing could cause people to choose differently among the same choices given the same information, as in Kahneman & Tversky (1984). However, the framing examples in the media literature typically involve larger differences, including changing the information provided or the choice alternatives.

Framing also contains a theory of elite capture of the news-making process. This is discussed in Section 5.

4.7.1. Rational framing. Most current media frame analyses take Entman (1993) as a starting point. Entman (1993, p. 52) states that

> frames, then, define problems—determine what a causal agent is doing with what costs and benefits, usually measured in terms of common cultural values; diagnose causes—identify the forces creating the problem; make moral judgments—evaluate causal agents and their effects; and suggest remedies—offer and justify treatments for the problems and predict their likely effects.

A considerable part of framing involves the selective inclusion or omission of facts that would be valuable for political accountability. To make the right vote choice, people need to know who proposes or is responsible for what policies and to what effect. This is the type of facts bias that has been integrated into models and analyzed by, for example, Bernhardt et al. (2008). Moreover, evaluating agents and making moral judgments are ideological stands, similar to those analyzed by Chan & Suen (2008).

Others define framing more narrowly as connecting issues with different considerations (e.g., Nelson et al. 1997, Scheufele & Tewksbury 2007). Leading examples of media framing include whether AIDS is framed as a health or civil rights issue (Sniderman et al. 1991), whether a Ku Klux Klan meeting is framed as a freedom of speech or civil liberties issue (Nelson et al. 1997), or whether considerations about unemployment are applicable to questions about taxes (Scheufele & Tewksbury 2007).

Nelson et al. (1997) represent this version of framing analytically. Let A represent the summary attitude in a simple equation of the form

$$A = \sum_i w_i v_i,$$

where v_i represents the value of an attribute i (broadly speaking, the individual's belief about the attitude object), and w_i represents the subjective weight of that belief. Chong & Druckman (2007, p. 105) explain,

> For example, one's overall attitude, A, toward a new housing development might consist of a combination of negative and positive evaluations, v_i, of the project on different dimensions i. An individual may believe that the project will favor the economy ($i = 1$) but harm the environment ($i = 2$). Assuming that this individual places a positive value on both the economy and the environment, then v_1 is positive and v_2 is negative, and his attitude toward the project will depend on the relative magnitudes of v_1 and v_2 discounted by the relative weights (w_1 and w_2) assigned to each attribute (Nelson & Oxley 1999).

Media framing affects attitudes by increasing the perceived importance w_i of a consideration.

Framing effects of this form are possible to integrate into the standard model accountability framework. Equation 1 for the individual's vote choice is

$$\sum_i w_i E[\Delta u_i] \geq \tilde{\beta}_j,$$

where $E[\Delta u_i]$ represents the individual's belief about the utility difference on issue i if the incumbent or the challenger wins the election. This is of the same form as the equation for A above. Framing involves the selective presentation of facts useful for holding politicians accountable, typically the consequences of different policies. This is a pure information story of framing, with no behavioral component. Learning about these consequences will likely make rational voters better off.

4.7.2. Behavioral framing. Framing could also be understood as a behavioral model based on memory limitations (see, e.g., Chong & Druckman 2007). In this view, framing affects what considerations are available and accessible to individuals when evaluating a politician. In the simplest form, this effect is similar to priming: The media coverage of a politician and an issue connects the politician to that issue in the sense that, when evaluating the candidate, information about that issue becomes accessible.

We can use the model of Mullainathan (2002) to attempt to clarify the distinction between priming and this version of framing. In this model, events consist of one informative and one uninformative component, $e_t = (x_t, n_t)$. The coverage of an event e_t brings up the memory of another event e_k, either because x_t is close to x_k or n_t is close to n_k. In priming, coverage of any foreign policy event e_t makes other memories of foreign policy events e_k accessible, because n_t and n_k are assumed to be close. Politicians are evaluated on this accessible information.

Framing can be considered as affecting the associative structures in people's minds. In Mullainathan's (2002) model, the n_t's affecting these associations are exogenous, but the n_t's may be endogenously affected by media coverage. The framing effect can be viewed as decreasing the associative distance (in the n_t's) between different facts covered in the same news story. A simple way of implementing this would be to have the n_t's represent the time at which the facts entered into memory. Suppose that a piece of news mentions a politician in connection with an issue, such as foreign policy. In the future, when people think about the politician, they automatically remember facts about foreign policy. This way, the frames, or connections made in the media, affect the frames or connections in people's minds.

Analyzing the implications of this type of framing is well beyond the scope of this article. However, as above, the role of the media is to make more information accessible to voters, in this case both by adding and by increasing the associations between facts. This is unlikely to make them worse off if they are otherwise rational Bayesian updaters.

This framework also makes explicit a similar set of assumptions as that for priming. Are people sophisticated and therefore understand how their memory works? For example, after recalling 10 negative facts when thinking about a politician, does an individual realize that the reason is that he or she has been watching Fox News that systematically connects this politician with bad things? Do associations decay over time? Is there information crowd out?

This way of modeling framing also makes explicit one empirical difficulty in separating framing effects from learning effects. The framing effect is the effect of changing associations between facts, through changes in the n_t's. The empirical examples of framing effects invariably contain new information.

5. CAPTURE

The most important factor limiting media coverage relevant to political accountability is the lack of press freedom. Looking across the globe, press freedom varies hugely, ranging from effective censorship (e.g., North Korea and Iran), to formally free but with substantial government influence (e.g., Peru, Russia, and Italy), to mostly independent media (e.g., United States, United Kingdom, and Sweden). In all these countries, the degree of media freedom is a political choice. Apparently, the costs and benefits of press freedom are weighted differently in the different countries.

The media's welfare effects depend crucially on how costly it is to silence. If this can be done cheaply, then we would expect the media to be captured by all sorts of interests: national and local politicians, businessmen, and advertisers. Consequently, the media effects would be small. However, some crucial features make it very expensive to silence the media.

Besley & Prat (2006) model an incumbent politician's costs and benefits of silencing the media. They study an incumbent politician who is deciding whether it is worth silencing the media to not cover a scandal. The media knows about the scandal and can credibly cover it, in which case the incumbent is not re-elected. Covering the scandal brings in additional media sales and revenues. If the politician is to bribe the media to keep silent, then he or she has to compensate it for these foregone profits.

What makes this very expensive is that the incumbent must silence all media outlets, and do so as if it were the only media outlet covering the story. If one major media outlet covers the scandal, then the news is out and the incumbent loses the election. In equilibrium, all the other media outlets have accepted the bribe, and the one that refuses and prints the story will get the full credit for doing so.

There is some direct evidence that silencing the media is expensive. McMillan & Zoido (2004) analyze an extraordinary data set of bribes paid under Alberto Fujimori's presidency of Peru from 1990 to 2000. Fujimori's security chief, Vladimiro Montesinos, kept a detailed record—both on paper and on video—of payments made to various agents. These records later came to light and were used in the trial against Montesinos. A main finding is that bribing the media was 10 times more expensive than bribing legislators and judges. McMillan & Zoido (2004, p. 87) remark,

> Given that the supply of corruptible politicians and judges exceeded Montesinos's limited demand, then, the politicians and judges had little bargaining power, so their price, as the data show, was relatively low. With television, by contrast, Montesinos had to bribe all of the widely watched channels. If he had succeeded in bribing all bar one, that renegade channel, by broadcasting unfavorable stories, could harm him unilaterally.... Each television channel had holdup power, regardless of how many of them he had bought already.

Another obvious reason why it is costly to silence the media is that the media is in the business of selling news, in contrast to legislators and judges. Of course, how much the media benefits from publicizing the news depends on its revenues, part of which is from advertising. Consequently, the size of the advertising market may be important in determining media independence (modeled in, e.g., Besley & Prat 2006 and Gentzkow et al. 2006). Empirically, Petrova (2011) analyzes nineteenth-century US newspapers. She shows that places with higher advertising revenues were more likely to have newspapers that were independent of political parties. Similar results hold when local advertising rates are instrumented by regulations on outdoor advertising and newspaper distribution.

The bribe in the model of Besley & Prat (2006) could take a number of forms: cash, government advertising, or regulation that directly or indirectly favors the owner of the media company. The government can also pressure the media by offering preferential news access to friendly outlets. Besley & Prat show that the logic of their argument also holds in this case. This logic is perhaps less likely to hold if the bribe involves the avoidance of punishment, in which case the incumbent does not actually have to punish anyone in the silenced equilibrium.

There is also evidence that advertising is used to capture media. For each of the four major newspapers in Argentina in the period 1998–2007, Di Tella & Franceschelli (2009) construct an index of how much first-page coverage is devoted to corruption scandals. They also measure how much money each newspaper receives from government-related advertising. They find a negative correlation between these two measures. A one–standard deviation increase in government advertisement is associated with a reduction in corruption coverage by almost half of a front page per month, or 37% of a standard deviation.

Besley & Prat's (2006) model produces a number of testable implications. The media is more likely to be silenced the more outlets there are, the more valuable the advertising market, the more media outlets that are controlled by the incumbent, and the fewer media outlets that are foreign owned.

5.1. Elite Capture

The literature on media framing also discusses the news-making process, notably, that elites manipulate news media. That both the *New York Times* and *Washington Post* ran front-page

apologies to their readers concerning the coverage of the Bush administration's claims regarding Iraq is seen as symptomatic of this point. The simple version of the argument is that journalists depend on elite sources for information. For example, journalists have increasingly been denied access to war zones and have become completely dependent on official accounts. This information is filtered and framed to such an extent that it is impossible for them to serve as watchdogs (see, e.g., Bennett et al. 2008). A more refined version of this argument is that the government can restrict the access to, for example, exclusive interviews to media outlets that have run critical news stories. However, this argument is increasingly difficult to make when there are many media outlets. With low media concentration, being one of the many outlets with a so-called exclusive interview is less attractive than being the only one to report an important piece of negative news (Besley & Prat 2006).

Qian & Yanagizawa (2009) study whether the US government can systematically influence news coverage of the commercial press. When a country that is a US ally gets a seat on the UN Security Council, then the strategic value of this country increases. Qian & Yanagizawa (2009) find that this leads the US Department of State to report fewer human rights offenses (both in absolute terms and in relation to abuses reported by Amnesty International). Interestingly, the same pattern is found in six independently owned national US newspapers: the *New York Times*, *Washington Post*, *Wall Street Journal*, *Chicago Tribune*, *Christian Science Monitor*, and *Los Angeles Times*. This pattern disappears after the end of the cold war.

Interestingly, Qian & Yanagizawa (2009) find these effects in a highly competitive media market. Their study, as well as many of the examples of elite capture in the framing literature, is about international events affecting foreign policy. Most US voters are not directly affected by these events and cannot easily verify the information presented by the media. Hence, elite capture may more easily affect coverage of these events than, for example, news about the US economy.

Other papers have investigated media capture by other interests. For example, Corneo (2006) studies capture by interest groups and finds that this is more likely the more concentrated is the media ownership. Additionally, Petrova (2008) examines media capture by the rich and finds that this is more likely the more skewed is the income distribution.

5.2. Effects of Capture

In a cross section of 125 countries, Brunetti & Weder (2003) find a significant correlation between the Freedom House index of press freedom in 1997 and the average of the International Country Risk Guide (ICRG) corruption index in 1994–1998. The Freedom House index is based on experts' opinions, findings of international human rights groups and press organizations, the analysis of publications and news services, and reports of governments on related subjects. The ICRG index is based on the annual rating of corruption levels using surveys among country experts. The regression controls for indices of quality of the bureaucracy and rule of law, also produced by ICRG. The correlation is robust to the inclusion of other country characteristics. It continues to hold in a short panel with three separate measures of press freedom by Humana, 1982–1995, albeit less strongly.

As acknowledged by Brunetti & Weder (2003), the issue of causality is not fully resolved. Press freedom is measured at the country level. Countries that have one good institution, such as a free press, often have other good institutions, and it is difficult to convincingly control for all possible confounders. In addition, the Freedom House index of press freedom may capture other institutions. The index is very broad, currently based on 132 indicators, including those specific to media (e.g., covering the ownership structure of media and arrests, murders, and suspensions of journalists) but also many other factors (e.g., whether libel is a criminal or civil offense and whether

members of the judiciary are subject to excessive pressure from the executive branch). A related concern is that the ICRG corruption index is similarly imprecise (see the discussion in Svensson 2005).

Djankov et al. (2003) document media ownership patterns across the world and investigate how ownership correlates with policy outcomes. They find that countries with a greater state ownership of the media have less free press, fewer political rights for citizens, inferior governance, less developed capital markets, and inferior health outcomes.

This suggestive evidence is consistent with the rational learning model of positive media effects. It is also consistent with the within-country evidence of the consequences of low political coverage in a democratic setting by Snyder & Strömberg (2010). Silencing the media, either by capture or by a poor match between the media market and political jurisdictions, reduces political account-ability. The selection and incentives of politicians deteriorate, and policy is worse for the voters. This is also consistent with the findings of Besley & Burgess (2002) and Strömberg (2004b), who look at policy responses to media access. In all these settings, media effects are significant and sizeable.

5.3. Effects on Voting in Captured Environments

Media effects on voting are likely to constitute large settings in which an independent media outlet enters a market with a captured state-controlled media. Enikolopov et al. (2009) study one such setting, namely the effect of the first private Russian television channel, NTV, on voting in the Russian national election in 1999 for the State Duma. In 1996, NTV was given access to a national set of transmitters previously used by an educational channel. By the 1999 election, around two-thirds of the Russian population could watch NTV. The owner of NTV supported the opposition, whereas the two pre-existing government-run channels supported the government. The in-dependence of NTV was short. In the next election, 2003, NTV had been taken over by the state monopoly Gazprom. The main finding is that areas with NTV reception voted more for the opposition and less for the government. These effects are of an order of magnitude larger than the estimated effects of Fox News in the United States. The likely reason is that NTV entered a captured media environment.

Miner (2012) studies the role of the Internet on voting in Malaysia. The party Barisan Nasional (BN) held power from 1969 to 2008. Although Malaysia held regular democratic elections, BN controlled the judiciary, the police, and the mass media. As a way of attracting foreign investment, Malaysia invested aggressively in Internet expansion after 1996 and pledged not to censor it. Several independent bloggers and news sites appeared. Miner (2012) instruments Internet access with the shortest distance from each electoral district to the backbones of Malaysia's main Internet service providers. He finds that the Internet can explain about one-third of the 11% drop in support for the BN from the 2004 to the 2008 election. The results suggest that the incumbent coalition lost its 40-year monopoly on power in 2008 because of the Internet.

Is there no evidence of bad media effects? Let us return to the original reason to look for negative effects. The role of the radio in the rise of fascism in Germany is studied by Adena et al. (2013). In the late 1920s in Germany, the monopoly radio was government controlled. It had a mild anti-Nazi slant and denied the Nazis (and the Communists) airtime, unlike other political parties. In January 1933, Hitler was named chancellor of Germany and gained control over the radio. Its content shifted to heavy pro-Nazi propaganda. In March 1933, the last competitive parliamentary election of the Weimar Republic was held.

The main outcome is the vote share of the Nazis in approximately 950 electoral districts in four parliamentary elections. Adena et al. (2013) use variation in the predicted radio reception quality,

based on the location and strength of radio antennas, to identify effects. They find a significant negative effect on the Nazi electoral support between 1929 and 1932, when political news was slanted against the Nazi party. This effect was reversed in just five weeks following Hitler's appointment as chancellor and the transfer of control of the radio to the Nazis.

6. THE USE OF MEDIA IN NONDEMOCRACIES

So far, we have asked whether the media is good because it creates political accountability in democracies or bad because elected leaders can use the media to manipulate their principals (the voters). In nondemocracies, leaders control the media to further their goals, typically regime stability and policy implementation. I now discuss the media's role in implementing bad policies and the tensions between the goals of regime stability and policy implementation.

6.1. Pogroms and Genocides

Adena et al. (2013) also look at radio effects after the last competitive elections in Germany. Radio exposure was also associated with higher numbers of anti-Jewish letters to *Der Stürmer*, one of the leading Nazi newspapers, written by ordinary Germans between 1935 and 1938, and the number of Jews deported to concentration camps. Nazi radio was most effective in places where anti-Semitism was historically high and had a negative effect on the support for anti-Semitic policies in places with historically low anti-Semitism. People were not uniformly manipulated by propaganda to commit pogroms. This suggests the troubling conclusion that radio may have been of importance by providing persuasive information, which could have both a positive and a negative effect, depending on the prior attitude of listeners toward the broadcasted message.

These anti-Semitic actions are different than voting in that the benefit of doing them depends on the number of other people who do them. If the Nazi party becomes the dominant political force, then it is beneficial to be part of that political force. If it does not, it may be costly. This is different from voting under secret ballot. This type of strategic complementarity can result in games with multiple equilibria or global games. Because the media provides information that is public, it may play a particularly large role in these situations. After hearing a speech on the radio, not only does an individual know, for example, that the government will not punish him or her for participating in a pogrom, he or she also knows that others know this.

This is the setting of perhaps the worst case of documented media influence. Yanagizawa-Drott (2012) studies the role of radio in the 1994 Rwandan Genocide. The genocide resulted in 500,000–1,000,000 civilian deaths and reduced the country's Tutsi population by approximately 75%.

Yanagizawa-Drott (2012) uses a unique nationwide village-level data set to estimate the impact of radio broadcasts that called for the extermination of the Tutsi minority. To measure the access to the broadcasts, it uses information on the location of radio transmitters. The empirical strategy exploits the arguably exogenous variation generated by Rwanda's highly varying topography. Specifically, it uses local variation in radio reception arising from hills in the line of sight between radio transmitters and villages.

The results show that the broadcasts increased participation in the killings. They indicate that approximately 10%, or an estimated 51,000 perpetrators, of the participants in the violence during the Rwandan Genocide can be attributed to the effects of the radio. Violence that inherently requires more coordination, such as militia and army violence, was also more affected by the broadcasts. Together with a set of results presented in the paper, the evidence indicates that mass media can in part affect conflict by functioning as a coordination device.

Once more, this horrendous outcome is delivered in a situation in which media matters through information provision to rational agents acting in their own interests. Although the role of the radio is extremely negative from a social welfare perspective, it is not obviously negative from the perspective of the potential perpetrators.

6.2. Regime Stability

The media's information provision and coordinating role may also pose a threat to nondemocratic rulers. The color revolutions in Serbia, Georgia, Ukraine, and Kyrgyzstan showed that even partly independent media might be crucial in replacing nondemocratic rulers (McFaul 2005). The Arab Spring of uprisings against regimes in Tunisia, Egypt, Libya, and elsewhere has led to widespread discussions of the role of modern social media such as Facebook, Twitter, Skype, and YouTube in facilitating a regime change. A similar discussion followed the use of such technologies during the demonstrations against the Iranian regime in June 2009.

In these cases, the media provided key information. Perhaps even more important, the media helped coordinate protests and uprisings. The benefit of protesting obviously depends on the number of other people who protest. This is another case in which media is of importance because of its important role in situations with strategic complementarities.

A key question is how this role is affected by the new information technologies. Edmond (2013) develops a model of information manipulation and political regime change. There is a regime that can be overthrown but only if enough citizens participate in an uprising. Citizens are imperfectly informed about the regime's ability to resist an uprising, and the regime can engage in propaganda that, taken at face value, makes the regime seem stronger than it truly is. A key insight of the model is that a new information technology may increase or decrease the regime stability, depending on the degree of scale economies in controlling the new media. If the technology is more decentralized, so that there are diseconomies of scale in information control, then the model predicts that the regime will become easier to overthrow as the number of sources of information increases. This feature is related to that of Besley & Prat (2006), who focus on the number of news sources, holding technology fixed.

Perhaps traditional media outlets are easier to control and censor by a central government because there are fewer news sources. Alternatively, the new social media relies on an easily controllable cable infrastructure for delivery of electronic messages that are all in searchable text. Censorship based on, for example, keywords and patterns in communication flows is relatively cheap to implement and exhibits strong scale economies.

A couple of studies look at the censorship of social media in China, notably Sina Weibo, the Chinese version of Twitter. Zhu et al. (2013) find that the censorship of Sina Weibo in China is fast. Of the total deletions, 30% happen in the first half hour and 90% within 24 hours. King et al. (2013) find that censoring of Sina Weibo in China allows for criticism of leaders but not content aimed at collective action. Starting in 2012, Sina Weibo required real-name registration of its users. The finding of Fu et al. (2013) suggests that this may have limited microbloggers writing about social and political subjects.

6.3. Monitoring

Despite the apparent risks, many dictatorships have partially free media. There are even some dictatorial regimes in which media freedom is at the level of new European Union members (Egorov et al. 2009). This could be because it is too costly to silence the media (Besley & Prat 2006).

However, this could also be because nondemocratic rulers face a trade-off between regime stability and policy implementation. Lorentzen (2014) analyzes a model in which an authoritarian government trades off the benefits of improved governance resulting from more corruption coverage against the risk of coordinated uprisings triggered by widespread discontent. He finds that a regime should optimally permit investigative reporting on lower-level officialdom, adjusting how much reporting is allowed depending on the level of underlying social tensions. This strategy yields many of the benefits of free media without the risk of being overthrown.

Similarly, Egorov et al. (2009) argue that free media allows dictators to provide incentives to bureaucrats and therefore to improve the quality of government. The importance of this benefit varies with the natural resource endowment. In resource-rich countries, bureaucratic incentives are less important for the dictator; hence, media freedom is less likely to emerge. Using panel data, they show that controlling for country-fixed effects, media is less free in oil-rich economies, with the effect being especially pronounced in nondemocratic regimes.

Qin et al. (2014) find evidence that government control of media in China is being used to fight lower-level corruption. They use a digital newspaper archive to analyze the content of 110 general interest newspapers in 1998–2011. They find that the most strictly controlled newspapers cover corruption more than do commercially oriented newspapers. The most likely explanation is that government control of the media is being used to overprovide corruption coverage, relative to profit-maximizing levels.

Reinikka & Svensson (2005) study a newspaper campaign in Uganda aimed at reducing the capture of public funds by providing schools (parents) with information to monitor local officials' handling of a large education grant program. They find that the campaign was highly successful and had a positive effect on enrollment and student learning.

Qin et al. (2014) also analyze the effect of the growing advertising market value on media bias in China. China has experienced phenomenal growth in advertising revenues since 1980. The costs of media bias in China should be increasing at the same rate. Still, China consistently ranks extremely poorly in terms of media freedom. For example, in 2013, Reporters Without Borders ranked China 175 of 180 countries in terms of press freedom (and news of this ranking was censored in China). Qin et al. find that the growing advertising market has increased the share of less biased newspapers driven by commercial goals. The growing advertising market has also led to the introduction of highly biased Party daily newspapers. The political value of having these biased media outlets is lower than the entry cost, but the combined value of political influence and advertising revenue is higher. Hence, advertising revenue is used to subsidize propaganda. This indicates that higher advertising does not necessarily reduce media bias, once entry is being considered.

7. DISCUSSION

The surveyed material has implications for media policies, such as competition policy. In our framework, a sufficient statistic for the media's effect on political accountability involves the amount and distribution of voter information, $s_i = r_i \rho(q_i) \sigma(b)$ (see Equation 3). Media regulation (e.g., whether to allow a merger) is likely to affect all relevant media features: who gets the news, r_i; the amount and distribution of political coverage, $\rho(q_i)$; and how the informativeness of this content is affected by media bias, $\sigma(b)$.

There is empirical evidence that changes in media access and coverage significantly affect political accountability. There is also a clear understanding of how these variables are related to some key factors, in particular group size and the match between media markets and political jurisdictions. Based on estimates such as those in Snyder & Strömberg (2010), it should be possible

to evaluate how, for example, media mergers would affect voter information levels across relevant political jurisdictions and groups.

There is little evidence of how media bias affects voter information and political accountability, or how media bias is related to competition. This seems like a first-order concern, and further research is warranted. Although the evidence is mixed regarding the effects of biased media, we may want to limit the potential influence of individual media owners. Prat (2014) derives an upper bound to media power over a range of assumptions on the beliefs and attention patterns of voters that could be useful in guiding media regulation policy.

There are a couple of general lessons from the documented negative media effects in non-democracies. First, policy implementation seems to be most effective when there is a common interest between the ruler and part of the population. This was the case of the pogroms in Nazi Germany, the Rwandan Genocide, and the monitoring of lower-level officials. This indicates that these effects are driven by informative persuasion. Second, media effects are largest when there are strategic complementarities. This characterized the pogroms and genocide effects, as well as the uprisings during the Arab Spring.

Media also affects welfare through policy implementation in democracies. This is in fact part of the standard models (e.g., Strömberg 2004a) in which voters adapt to policies, after being informed by media. In democracies, improving policy implementation is likely to be good, also if there are strategic complementarities, following the logic of Morris & Shin (2002). However, it is not obvious that this logic holds in a setting with heterogeneous preferences (as in the negative examples of pogroms and genocides above). Situations with strategic complementarities may worsen, for example, the bias created by media against minorities, discussed in Section 3. Further analysis is warranted.

8. CONCLUSIONS

The existing evidence on media effects surveyed in this article seems to support—with some caveats—four general statements about the political effects of mass media. First, media scrutiny increases political accountability, which appears to improve policy, with a caveat regarding multitasking and settings with strategic complementarities. Several studies discussed above find that an increase in media activity is associated with better policy outcomes, and some of these studies use methods that reasonably convincingly identify causal media effects. There is some evidence that these media effects occur because the media transmits information to voters, which improves both the incentives and the selection of politicians. The behavioral effects studied in the communications literature—agenda setting, priming, and framing—are not likely to change this general conclusion. The reason is that media coverage in these models triggers a recall of past memories, thus increasing overall access to information.

Second, one negative effect that is identified empirically is multitasking: The media forces politicians to attend to issues that are not the most important. Potential agenda setting and priming effects are likely to aggravate these problems. These types of policy biases systematically hurt voters without access to media and voters whose issues are less covered, in particular minorities, groups caring for journalistically less newsworthy issues, and those for whom it is costly to deliver news. It is also likely that these biases will disfavor voters who are not valuable to advertisers.

Third, media effects are likely to be particularly strong in situations with strategic complementarities. A strong negative media effect may arise, in particular when there are conflicts of interest among different groups in society. Studies have found that the Rwandan Genocide, and pogroms in Nazi Germany, were aided by the effective use of mass media. Situations with strategic

complementarities also have the potential of creating large positive media effects, for example, by playing a coordinating role in uprisings against nondemocratic leaders (as in the Arab Spring).

Finally, media policy should consider the points above. To increase the total media coverage of politics, it is important for media competition policy to consider the match between the media markets and the political jurisdictions covered by the media. It is important to be aware of the audience share bias introduced by media and to ensure that the interests of minority groups are covered. Finally, it is important to guard against the governments exploiting strategic externalities to achieve welfare-reducing policy effects. Given the examples found in the literature, the barring of hate speeches over media is an example of a policy to this effect.

DISCLOSURE STATEMENT

ACKNOWLEDGMENTS

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