

# The Political Economy of Mass Media\*

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## Abstract

We review the burgeoning political economy literature on the influence of mass media on politics and policy. This survey, which covers both theory and empirics, is organized along four main themes: transparency, capture, informative coverage, and ideological bias. We distill some general lessons and identify some open questions.

## 1 Introduction

Over the last decade, a sizeable number of economists have begun to study the behavior and political effects of mass media. In this survey, we propose a way of organizing this body of research, we attempt to summarize the key insights that have been learnt so far, and we suggest some potentially important open questions.

We have structured the discussion into sections covering background, transparency, capture, informative coverage and ideological bias. We begin in Section 2 with a brief overview of how economics and other disciplines have approached this field and define the scope of this survey. In Section 3, we discuss the benefits and costs of transparency in politics: under what situations do voters benefit from receiving more information?

In Section 4 we will ask under what conditions the government will prevent the media from performing their information provision task. Media capture is a present or latent risk in most developing countries and many developed ones. We will present a theory of endogenous capture and survey the growing empirical literature on the extent and determinants

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of capture. As will be seen, different sources of evidence provide support for the idea that ownership plurality is the most effective defense against capture.

Section 5 discusses a crucial theme in media studies, namely how informative media coverage affects political accountability and government policy. A model of policy choice with endogenous media coverage supplies an array of testable implications, used to organize the existing empirical work. The key questions are: what drives media coverage of politics; how does this coverage influence government policy, the actions and selection of politicians, and the information levels and voting behavior of the public?

Section 6 discusses ideological bias and its effects on elections. We discuss the theories that have been proposed to explain the existence of this bias. We survey methodologies to measure the ideological bias of individual media outlets and we discuss the existing evidence on the origin of bias and its effect on elections. Section 7 attempts to draw some conclusions and suggest possible research questions.

The focus of this survey is on work in political economy on the link between the media industry and political outcomes.<sup>1</sup> This is only part of the research on this topic. Since the 1930s, scholars of politics and media studies have analyzed the relationship between media and politics with a variety of methodologies. As it would be impossible to do justice to their contributions here, we refer our readers to surveys by Dearing and Rogers (1996) and Scheufele (1999). However, we will often refer to literature outside political economy, whenever it is useful for understanding the work under discussion. The next section offers an extremely brief introduction to the history of this field and attempts to identify the key features of the recent work by economists surveyed here.

## 2 Background

To put recent work by economists into perspective, some short background on media research in other fields may be helpful. 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. However, the first large scale

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<sup>1</sup>Our focus on the political economy of the media leaves out an important body of research in industrial organization and public economics that deals with the media industry, mostly without any direct reference to the political system (e.g. Anderson and Coate, 2005). This literature is influential in shaping competition policy for the media industry (Seabright and Von Hagen, 2007).

studies found that the mass media of radio and print had relatively minor direct effects on how people voted (Lazarsfeld, Berelson and Gaudet, 1944). Media seemed mainly to strengthen voters' predispositions, because of pervasive selection and filtering. Similarly, experimental studies showed that propaganda movies failed spectacularly in indoctrinating their viewers (Howland, Lumsdaine and Sheffield, 1949).

In response to the minimal effects findings, researchers developed new theories of media influence that do not rely on people receiving information that conflicts with their prior beliefs. *Agenda setting* theory refers to the idea that media coverage of an issue makes people believe that this issue is important (McCombs and Shaw, 1972). *Priming* is the idea that people evaluate politicians based on the issues covered in the media (Iyengar and Kinder, 1987). Both are memory-based models, assuming that people form attitudes based on the considerations that are most accessible and media coverage improves accessibility. They are summarized by the famous comment by Cohen (1963) that while the media cannot tell the public what to think, they can have a great impact on what the public thinks about. *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. For example, citizens' opinions about a Ku Klux Klan rally may depend on whether it is framed as a free speech issue or a public safety issue. Empirically, most studies focus on media effects on audiences and voters using either survey data or by performing laboratory experiments.

This is a truly interdisciplinary field, and political economy has benefitted enormously from the knowledge acquired in other disciplines. However, at the risk of over-generalizing, the political economy contributions tend to be characterized by a number of elements.

First, in contrast to most previous work, economic models of media influence tend to focus on the informational role of mass media, on the premise that information makes a difference to how people vote and that mass media provide the bulk of the information that people use in elections. A second and related innovation is the focus on economic outcomes. As in most political economy, the final objective of interest is not the behavior of the political system but its outcome in terms of variables, such as public goods provision, that directly enter the citizens' preferences. Third, economists have emphasized the use of formal game theory for modeling interactions within the media industry and between the media and other agents. See, for instance, the subtle interaction among media outlets that compete for audience by presenting information in a biased way, discussed in section 5. The use of formal game-

theoretical modeling has led to an array of testable implications regarding complex strategic phenomena.

Fourth, on the empirical side, there is a strong emphasis on identifying causal media effects using observational data. Often, the effects of rapid changes in media exposure due to the entry of a new mass media or media channel have been used. Finally, our empirical work has a strong international nature. The data comes from a large array of countries, at various stages of development and with different political and media systems.

### 3 Transparency

To set the stage, we first ask whether having more information is beneficial to voters. This is done in a simple and general agency framework. These theoretical insights are useful for interpreting the freedom of information laws that we observe in well-functioning democracies, as well as for understanding the possible impact of information from media on voters.

What types of information are beneficial to the functioning of a democracy? Naturally, some types are intrinsically bad, like personal details of regular citizens or intelligence that could jeopardize national interests. While defining the scope of privacy protection and national security can be difficult in practice, there is general agreement that these exceptions should not prevent the media from reporting freely on government activity, except in very special circumstances. Potentially more important is the possibility that more information about government activities may actually create perverse incentives for politicians which will, in the end, hurt the voters.<sup>2</sup>

Let us begin with a benchmark result. Under complete contracting, Holmström (1979) shows that in any moral hazard problem, the principal is never hurt by observing additional signals about the output of the agent. The economic intuition behind this result is strong. As the principal can design the contract she offers to the agent, any additional information will be useful in reducing the rent the agent derives from the presence of asymmetric information.

The simple intuition from moral hazard can be used to rationalize the principle of open government. This is a legal presumption that anything the government does should be open to the scrutiny of citizens and the media. Open government provisions first appeared in Sweden in the 18th century. Since then, many countries have enshrined the principle of open

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<sup>2</sup>For a survey of the economic literature on transparency, see also Prat (2006). For a general introduction to open government, see Roberts (2006).

government in a specific piece of legislation, such as the US Freedom of Information Act of 1966. Every document should be accessible to the public, unless it falls under the remit of a small set of well-defined exemptions, such as personal privacy and national security. To understand what other exceptions one may want to add, it is useful to move away from a simple moral hazard set-up.

Instead, in a world without complete contracts, there are important sources of dynamic inefficiency. Maskin and Tirole (2004) offer a comprehensive analysis of this potential problem in politics. They ask whether certain governmental tasks should be assigned to an elected official (a politician) or an un-elected one (a judge). In this two-period model, the key difference between the two cases is that voters can kick out a politician at the end of the first period, while they commit to keeping the judge for two periods. The advantage of the first solution is that voters can screen and discipline politicians. The drawback is that elected officials have an incentive to “pander” to the electorate by choosing policies that are in accordance with the voters’ prior information but disregard additional information that the politician may have. Pandering obviously hurts voters.

Is the risk of pandering greater if voters are more informed? Prat (2005) introduces a distinction between information on consequences and information on actions. Knowing more about the consequences of the policy choices made by politicians always benefits voters, because it allows them to screen and discipline officials on the basis of signals that directly relate to ex post utility. The problem begins when voters observe the actions chosen by their elected officials. The officials then have a strong incentive to disregard private signals that they may have received and act according to how an able agent is expected to behave a priori. This is an extremely negative outcome for voters, both in terms of discipline (the current office holder makes a poor decision) and selection (as all politicians behave in the same way, no ex post screening is possible).

The voters would be better off if information about the government’s actions were secret. At least, actions should not be revealed before the consequences of those actions are observed. The risk of pandering is greater when consequences are observed only much later in time. This potential problem is recognized by most freedom of information rules. Frankel (2001) reports that all thirty-plus countries that have adopted an open government code allow for some form of short-term secrecy, while the decision process is still ongoing. For instance, Sweden, the country with the oldest freedom of information act, does not recognize the

right of citizens to obtain information about a public decision until that decision has been implemented. Similarly, it may be desirable to keep some degree of secrecy on the advice that is provided to the government on policy matters. If the advisor has career concerns, his candor is enhanced if the details of his recommendation are kept secret until a policy decision is actually implemented.

In a world where politicians are charged with a variety of tasks which 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. Thus, electing politicians based on information from the media would risk diverting the attention from the most socially valuable allocation of time and resources. This is the familiar multitasking problem analyzed in Holmstrom and Milgrom (1991). It has been applied to political agency problems by Gersbach and Liessem (2001).

It is important to note that if information is concealed for any of the agency reasons discussed above, it should only be for a relatively short period of time, sufficient for the dynamic incentives to be softened. In the medium/long term, all information should be made public.

The general message from theory is that more information is good for voters, except in particular cases. Empirically, this is consistent with existing freedom of information laws, containing strong general open government provisions and well specified exceptions.

As we shall see in the rest of the survey, this prediction is also consistent with most of the evidence available. Among the existing political economy empirical analyses of the effect of media information, we identify a number that shows significant effects and positive effects on policy variables, with only a few well-specified exceptions, mainly related to the multi-tasking issue. We will review this evidence in the next sections and we will return with a summary discussion of this issue in the conclusions.

## 4 Captured media environments

If the media is meant to discipline politicians, we would expect politicians to view it as a threat. If they can, they will find ways to silence their critics and to foster positive coverage. We first present a simple model which yields conditions under which capture is more likely to happen and which describes the effects of capture on political outcomes. Then, we survey

a number of empirical papers which attempt to identify capture in a variety of settings.

## 4.1 Endogenizing Media Capture

Following Besley and Prat (2006), consider a two-period retrospective voting model. In the first period, an incumbent is in power. Her type is  $g$  or  $b$  with  $\Pr(g) = \gamma$ . In this minimalistic model, the incumbent takes no action. The outcome for voters is determined by the incumbent's type: 0 if she is  $b$  and 1 if she is  $g$ . The voters, however, cannot directly observe their payoff, perhaps because it is a long-term project whose quality will only be felt in the distant future. They rely on the media industry to learn the outcome.

There are  $n$  active media outlets. If the incumbent is  $g$ , the media observes no information. If she is  $b$ , they may receive a verifiable signal to this effect. More specifically, with probability  $q \in (0, 1)$ , they all receive hard information that the incumbent is bad – e.g. evidence that the project is not going well.

A number of implicit assumptions have been made. First, news cannot be fabricated. Only material backed by hard evidence can be printed. While it is interesting to study the role of cheap talk in news provision (see Section 6), most of the key points about media capture can be made in a model, like the present one, that avoids the technical difficulties of signaling games. Second, hard information can only be bad. Positive news is always printed, as the incumbent will never have an interest in suppressing it. Third, all media outlets have the same information. If outlets received heterogeneous information, increasing the number of outlets would be a good thing per se. Instead, our stark, egalitarian assumption will isolate the role of media pluralism as a defense against capture.

What are the goals of the media industry? An outlet can make money in two ways: audience-related revenues and bribes from politicians. There is an amount  $a$  of news-related commercial revenues (increase in sales and subscriptions for newspapers; increase in advertising and cable fees for television stations) that are sensitive to the quality of information. It is divided – we assume equally – among the  $m$  outlets that provide interesting news, namely evidence that the politician is bad. The amount  $a$  can also be interpreted as an intrinsic motivation for outlet owners: they get direct utility from “scoops”.

The second source of payoff for a media outlet is the incumbent politician. She can make each outlet  $i$  a non-negative monetary offer of  $t_i$ . If the outlet accepts the offers, it commits to suppress the negative signal (we assume that the politician knows about the existence of

such a signal when she makes the offer).<sup>3</sup>

The bribing process has transaction costs. A transfer of  $t_i$  costs  $t_i$  to the incumbent but yields  $t_i/\tau$  to the outlet, where  $\tau \in (0, \infty)$ .

The transaction cost parameter  $\tau$  represents the inability of the incumbent to use direct instruments to reward compliant outlets. Starting from one extreme, in certain countries the government is able to threaten journalists with prosecution or extra-judicial killings. In that case,  $t_i$  corresponds to a transfer that is valuable for the outlet (freedom, life) but costless to the incumbent. If a media outlet is state-owned or the incumbent is a media tycoon, the transaction cost is also low. The transfer may be literal: cash, for example, given from the incumbent to media outlets, as in the Peruvian case analyzed by McMillan and Zoido (2004), which we will discuss below. The instruments to influence the incumbent may also be more subtle, such as 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.

In general, we expect  $\tau$  to depend on the form of media ownership. We will discuss this topic at length when we report the cross-country evidence.

At the end of the first period, after negotiation with the incumbent, the media outlets make their reports available to voters. Information is a common good. If at least one outlet reports hard information, all voters will concentrate their attention on that outlet and they will become informed. At the beginning of the second period, a challenger appears. His quality is ex ante the same as the incumbent: he is a type  $g$  with probability  $\gamma$ .

The only goal of the incumbent is to be re-elected. She gets  $r - \sum_{i=1}^n t_i$  if she serves a second term and  $-\sum_{i=1}^n t_i$  if she does not.

Voters vote for either the incumbent or the challenger. As customary, we focus the attention on equilibria in undominated pure strategies. Although only verifiable information can be reported, beliefs do play a role. When the media report no signal, this can be because the incumbent is  $g$  or because she bribed the media.

**Proposition 1** *When the number of independent outlets is low ( $n < \frac{r}{\tau a}$ ), the media industry is fully captured and signals are always suppressed. When there is instead sufficient pluralism ( $n > \frac{r}{\tau a}$ ), the media industry is independent and signals are always reported.*

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<sup>3</sup>For concreteness, assume that offers are private: offer  $t_i$  is only observed by outlet  $i$ . The results go through if the offer vector is public.

To understand the result, note that the incumbent will never want to suppress the signals of certain outlets but not those of others. If the signal is negative, what is the cost for the incumbent of silencing the media? Assume that all other outlets have accepted the incumbent's offer; if outlet  $i$  accepts it receives  $t_i/\tau$ ; if it rejects, it gets the whole audience-related revenue:  $a$ . The minimum transfer that the incumbent must offer is  $t_i = \tau a$ . Hence, the minimum total cost of information suppression is  $n\tau a$ .

The expression  $n\tau a$  represents the strength of protection against capture, and offers three lessons. *First, pluralism makes capture harder.* The incumbent must pay each outlet as if it were a monopolist with revenue  $a$ . While this result is particularly stark in our setting, a more general version will hold whenever: (i) reporting news is more profitable when fewer outlets are doing it; and (ii) news is to some extent a public good.

*Second, an arm's length relationship between government and media makes capture harder.* Any institutional or cultural arrangement that makes it unacceptable for the incumbent to reward or punish – directly or indirectly – the media increases her cost of silencing the media.

*Third, the presence of a news-related profit motive makes capture harder.* Outlets are reluctant to pass on a scoop in the presence of a strong commercial demand for information. Besides socioeconomic factors, news-related revenues are affected by technology, especially when it comes to television (pay-per-view, premium channels) and new media.

Capture is only an intermediate phenomenon – and one that it may be difficult to measure directly. We are most interested in the effect of capture on key outcomes of the political process:

**Proposition 2** *The turnover of politicians and voter welfare are nondecreasing in the quality of information  $q$ , the number of outlets  $n$ , audience-related news revenues  $a$ , and the transaction cost  $\tau$ .*

Political outcomes depend on the information of the electorate. If voters learn more about the incumbent's true type, they are more likely to replace bad types with challengers. This increases turnover as well as welfare (because it improves the average quality of government). In turn, voters' information is determined through two channels. The quality of information parameter  $q$  directly affects voters' knowledge. Instead, the three other parameters have an indirect effect: they determine media capture through proposition 1, which then determines voter information.

The basic model can be extended in many directions. Moral hazard as well as adverse selection can be added. The incumbent can appropriate public resources. The probability that the media receive evidence of malfeasance depends on the size of the graft. The probability that a scandal breaks out is an inverse-U shaped function of the media monitoring ability. Scandals are rare either because the monitoring ability is so low that politicians never get caught or because the monitoring ability is so high that they refrain from graft because they know they will be caught.

In the baseline model, agents have a common interest and capture can only come from one side, the government. Corneo (2006) considers a model with a heterogeneous electorate where the media can collude with various interest groups. A monopolist media outlet (secretly) chooses a voter and makes an agreement with him. This model highlights the role of ownership concentration. Media capture is more likely when there are a few large shareholders than when ownership is diffuse.

Petrova (2008) explores the link between economic inequality and media capture. The starting point is a canonical model of taxation and public good investment with rich and poor agents. There is uncertainty about the usefulness of the public good and the media can provide voters with information. However, the rich may offer bribes to the media to understate the value of the public project. Although voters are rational, media capture may arise in equilibrium. The extent of capture is increasing in the degree of inequality.

Gelbach and Sonin (2009) discuss the interaction between media control and “mobilization”. Governments – especially autocratic ones – often need to mobilize their citizens for some collective goal. In their model, citizens make individual investment decisions based on the information they have. By manipulating news provision, the government can affect aggregate investments levels. The authors show that the existence of a mobilization motive increases media bias in equilibrium. The presence of a large private advertising market reduces bias, but may induce the government to nationalize the media altogether.

This simple model and its extensions provide an array of testable implications. In the remainder of this section, we compare these predictions with the available evidence of media capture. Empirical work in this area can be divided into three strands, which we discuss in the next three subsections: direct evidence, cross-country indirect evidence and within-country indirect evidence.

## 4.2 Direct Evidence of Capture

The most convincing evidence of the existence of media capture is provided by McMillan and Zoido (2004), who use an extraordinary dataset to reconstruct the complex system of bribes created during 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.

To keep democratic forces at bay, Montesinos needed to buy acquiescence from three classes of actors: legislators, judges, and media companies. The paper thus offers a unique perspective of the process of subverting democracy. In particular, it asks which of these three classes of actors opposed the strongest resistance to Montesinos.

The first finding is that bribing the media is much more expensive. Through a detailed analysis of payments, McMillan and Zoido conclude that Montesinos paid less than US\$300,000 per month to politicians in order to secure a majority in Congress. The cost of guaranteeing a friendly judiciary is estimated at US\$250,000 per month. The total cost of bribing the television channels was more than US\$3 million per month (the table below details payments made by Montesinos to media outlets). So, the price paid to the media is of an order of magnitude greater than the price paid to both judges and politicians.

Media Outlets	Bribe Estimates
<i>TV channels</i>	
America Television (Channel 4)	At least US\$9,619,000
Frecuencia Latina (Channel 2)	US\$6,073,407
Panamericanan Television (Channel 5)	At least US\$9,350,000
Cable Canal De Noticias CCN	US\$2,000,000
Andina de Television (ATV)	US\$50,000 to fire two journalists
Red Global (Channel 13)	business help and judicial favors
<i>Print media</i>	
Expreso (mainstream newspaper)	US\$3,500,000
El Tio (Chicha/popular press)	US\$500-US\$5,000 per story/headline
La Chuchi (Chicha/popular press)	US\$8,000 weekly,
El Chato	US\$1,000 each issue

Source McMillan and Zoido (2004).

Furthermore, Montesinos did not actually succeed in silencing the media. A cable outlet called *Channel N* consistently refused bribes and continued to criticize Fujimori's government. It was *Channel N* that in the end brought down the regime by broadcasting a video where Montesinos was caught offering a bribe to a politician. There is also evidence that a newspaper owned by the same company, *El Comercio*, refused Montesinos' overtures.

As pointed out by McMillan and Zoido, these patterns are consistent with those of Besley and Prat (2006): "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 but 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."

### 4.3 Cross-Country Evidence

Brunetti and Weder (2003) find evidence of a significant correlation between press freedom indices and corruption indices. The correlation is robust to the choice of measure for both variables and it continues to hold, albeit less strongly, if one uses panel data. While these findings are consistent with Proposition 2, they still do not identify the channel that links press freedom and corruption.

Djankov et al (2003) document media ownership patterns across the world and investigate how ownership correlates with policy outcomes. They first create an important dataset on media ownership in 97 countries. Namely, for each country, they identified the ultimate owners of the five largest television stations, the five largest newspapers and the five largest radio stations.

The data paint a picture of an industry with staggering public involvement: 29% of the press and 60% of television are state-owned. While public ownership plays a smaller role in the Americas, it is dominant in Africa (61% of the press and 84% of television) and in the Middle East (50%; 94%). The number of countries where the state controls 75% or more of the audience is 21 for the press and 43 for television. In contrast, the “modern” mode of capitalistic ownership, a widely held public company, is rare: only 4% of the press and 5% of television. Private media are typically in the hands of powerful local families.

The authors contrast a Pigouvian view of the media, whereby public ownership helps solve a public good problem (increases  $q$  in our model), and a public choice perspective, according to which whoever is in power will use the media to their advantage (because of a low transaction cost  $\tau$  in our model). To compare the two hypotheses, the authors first regress media ownership on a number of country characteristics. The role of the state is greater in countries that are poorer, have greater overall state ownership in the economy, lower levels of school enrollments, and more autocratic regimes. The effect of the last variable is telling: If the Pigouvian view were correct, it would mean that autocrats are particularly good at providing citizens with abundant and unbiased information.

Second, the authors examine the link between media ownership patterns and a number of public outcomes. Countries with 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. These findings are stronger for the press than for television, which can be due to an intrinsic advantage of print as a news medium or to the fact that there is

less variation in television ownership patterns.

In additional work based on these data, Besley and Prat (2006) find a significant link between state ownership and political longevity as well as corruption. This effect is strong: for example, in countries where the state controls at least 30% of the press, the political leader remains in power for an additional 7.21 years. A similar set of findings holds for ownership concentration (the binary concentration index takes the value of 1 when 75% of the newspaper readership can be ascribed to one owner).

#### **4.4 Within-Country Evidence of Capture**

Di Tella and Franceschelli (2009) analyze a form of monetary transfer between politicians and the media, advertising revenues. For each of the four major newspapers in Argentina in the period 1998 to 2007, they construct an index of how much first-page coverage is devoted to corruption scandals and they 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.

There are also useful lessons to be learnt by using historical data to chart the long-term evolution of media independence. Hamilton (2004) studies the development of the US press between 1870, a time when only 13% of the dailies even claimed to be “independent,” to 1900, when the ratio had gone up to 47%. This dramatic increase in newspaper independence can be related to the emergence of the daily as a viable commercial product, especially because of market growth. Gentzkow, Glaeser, and Goldin (2006) show evidence that this shift was due to technological changes in production that increased the optimal scale of newspapers. The market became more competitive and – as predicted by the above model – newspapers focused on realizing their readership-related revenue potential rather than indulging their political patrons. As a result, successful newspapers began to develop a reputation for independent information provision.

Petrova (2009) studies the effect of growth in the printed advertising market in the US in 1880-85. In cities with higher advertising revenues, newspapers were more likely to be independent from political parties. This result continues to hold when instrumental variables, such as regulation on outdoor advertising, are used. The entry of new outlets was also more

likely in advertising-rich markets.

Besley and Prat's (2006) capture model also applies when the agent who engages in capture is not the government – a corporation being the leading example. In a cross-country analysis of the determinants of the private benefits of corporate control, Dyck and Zingales (2004) find that a high level of diffusion of the press is one of two factors (the other being tax compliance) that provide discipline to controlling shareholders. This may be seen as a corporate counterpart to McMillan and Zoido's (2004) finding that the media offer the strongest form of protection against political abuse.

Dyck, Volchkova and Zingales (2008) study the corporate governance role of the media in Russia in 1999-2002. In a setting where legal recourse against corporate abuse is often difficult, the authors examine the effect of an investment fund (the Hermitage) that pursues a policy of “shaming” perpetrators on the international press. Hermitage's lobbying appears to increase the coverage of corporate governance violations in the Anglo-American press which, in turn, increases the probability that a corporate governance violation is reversed.

Gambaro and Puglisi (2009) show evidence of corporate capture through advertising. They collect data on ad spending in the Italian press. Controlling for fixed effects, the newspaper coverage of a given company is positively correlated with the amount of advertising purchased in that newspaper by that company.

In sum, there is strong evidence that media capture exists, in particular, the direct evidence in McMillan and Zoido (2004) is convincing. Regarding the determinants and effects of media capture, evidence is consistent with the predictions that the risk of media capture is falling in the number of media outlets, the size of the advertising market and state ownership, and that media capture will be associated with bad policy outcomes. However, the nature of the evidence does not allow for strong conclusions regarding causal effects. A correlation between, for example, press freedom and corruption could arise for many reasons, e.g. a reverse causality story where more scope for corruption induces politicians to silence the press. Furthermore, countries that do one thing right tend to do many things right. Consequently, there are many factors correlated with press freedom, low government ownership of media and low corruption, and it is hard to convincingly argue that all these factors are controlled for.

## 5 Coverage and Policy Effects

We now investigate how informative media affect political accountability and policy. This section focuses on effects through the amount of political news that the media carry, as this drives the information voters use to monitor politicians. The amount of coverage may differ across political issues, making certain groups better able to hold politicians accountable on certain issues. The informativeness of news coverage may, of course, be affected by capture and ideological bias. We abstract from that issue for now and return to it in the other sections.

### 5.1 Theory

We first develop a model where media effects are driven by the total amount of coverage devoted to politics, and the distribution of this coverage across issues.<sup>4</sup> There are three classes of actors: voters, politicians and the media. Voters try to elect politicians who will give them most utility, politicians try to get re-elected and enjoy political rents, and the mass media select political coverage to maximize profits.

Thus, the model combines two classical building blocks: a voting model to determine how voters and candidates behave given the media coverage and a horizontal competition model to determine how the media cover issues of interest to different groups.

#### 5.1.1 Information and voting

Let us begin by introducing the first building block – the role of information in politics. In section 4, voters were modeled as a unitary block. Since the conflict between groups of voters is a key concern, the model must now incorporate multiple groups of voters. This is a relatively standard voting model, where better informed groups receive better policy outcomes.<sup>5</sup> We then model the mass media as information providers, endogenizing the share of informed voters.

Suppose that there are  $n$  groups of size  $n_i$ :  $i = 1, \dots, n$ , and total population size is 1. A group may be defined based on ethnicity, geographic location, or interest. Key is that politicians can target spending to the group members. Voters' payoffs are additive over two

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<sup>4</sup>The model summarizes elements of Strömberg (1999, 2001 section 5, 2004a) and Prat and Strömberg (2005).

<sup>5</sup>Baron (1994) is a starting point for this modeling framework.

periods and there is no discounting. In period 1, voter  $j$  in group  $i$  receives utility

$$g_i + \beta_j + \eta,$$

where:  $g_i$  is the level of public good provision targeted to group  $i$  (to be discussed shortly);  $\beta_j$  is an idiosyncratic preference shock about the incumbent that affects the utility derived by voter  $j$  from the incumbent. It is independent across voters (and across voter groups) and uniformly distributed on  $[-\frac{1}{2}B, \frac{1}{2}B]$  where  $B > 2$ ;  $\eta$  is a systematic preference shock about the incumbent that affects all voters in the same way. It is uniformly distributed on  $[-\frac{1}{2}, \frac{1}{2}]$ .

Public consumption for voters in group  $i$  is given by

$$g_i = \theta_i + e_i \tag{1}$$

where  $\theta_i$  is the innate ability (type) of the incumbent to provide worthy public goods for group  $i$ . The  $\theta_i$ 's are mutually independent and drawn from a uniform distribution on  $[-\frac{1}{2}\bar{\theta}, \frac{1}{2}\bar{\theta}]$ , where  $\bar{\theta} \leq \frac{1}{2}$ . The variable  $e_i$  is the amount of government resources spent per capita in group  $i$  by the incumbent.<sup>6</sup>

In period 2, voters' payoffs depend on whether the voters have chosen the incumbent or the challenger. Under the incumbent, the payoff of voter  $j$  in group  $i$  is

$$g_{i2} + \beta_j + \eta + T_i I(a_j = g_{i2}).$$

The last term captures the value of news for the incumbent's policies. For now, information is exogenously given. This term will play a role in the next section.

The incumbent has a fixed budget  $B$  in each period. This can be spent on the public goods to increase  $e_i$  at the cost  $\frac{1}{2}n_i e_i^2$ . The incumbent keeps the residual funds,  $r = B - \frac{1}{2} \sum n_i e_i^2$ .

It is a dominant strategy for the incumbent to keep all resources in the second period. In every equilibrium,  $e_2 = 0$  and  $g_{i2} = \theta_i$ . The challenger receives the payoff  $B - \frac{1}{2} \sum n_i (e_{i2}^c)^2$  if he is elected and zero otherwise. Like the incumbent, the challenger always exerts minimal effort and  $g_2^c = \theta_i^c$ .

The timing is the following. In the first period, Nature selects  $\{\theta_i\}_{i=1, \dots, n}$ , which remains unknown. The incumbent politician selects effort vector  $e$  and  $g$  is realized. A share  $1 - s_i$

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<sup>6</sup>The assumption that  $\theta_i$  is independently distributed is not necessary. The present analysis could be re-done assuming that  $\theta_i$  is correlated. Indeed, a previous version of the model assumed that  $\theta_i$  was the same across all groups.

of voters in group  $i$  is uninformed and only observes  $\beta_j + \eta$ . A share  $s_i$  of voters is informed and observes  $g_i$  and  $\beta_j + \eta$ . Voters select the action  $a$ .

In the second period, voters vote for the incumbent or the challenger. If the incumbent wins,  $g_{i2}$  is realized. If the challenger wins,  $g_{i2}^c$  is realized.

As there is a continuum of voters, this electoral game has multiple equilibria. To simplify the analysis, we focus on sincere equilibria, where each voter picks the candidate who provides the higher expected utility.

It can be proved that in a pure-strategy sincere equilibrium, the incumbent selects effort

$$e_i^* = B s_i. \quad (2)$$

An informed voter  $j$  has the belief  $\hat{\theta}_i = g_i - e_i^*$  and she votes for the incumbent if and only if  $\hat{\theta}_i + \beta_j + \eta \geq -T_i$ . An uninformed voter  $j$  re-elects the incumbent if and only if  $\beta_j + \eta \geq 0$ . Thus, the vote share of the incumbent, conditional on  $(\hat{\theta}_1, \hat{\theta}_2, \dots, \hat{\theta}_n)$ , is

$$\frac{1}{2} + \sum_i n_i s_i (g_i - e_i^* + T_i). \quad (3)$$

In equilibrium, before observing  $(\hat{\theta}_1, \hat{\theta}_2, \dots, \hat{\theta}_n)$ , the expected competence of re-elected politicians on issue  $i$  is

$$E[\theta_i | s_i] = s_i n_i \frac{\bar{\theta}^2}{12}. \quad (4)$$

Uninformed voters only vote on basis of their prior ( $\beta_j + \eta \geq 0$ ). Informed voters instead use the policy outcome on their issue ( $g_i$ ) to infer the incumbent's innate ability to cater to them. This is why the incumbent wants to channel resources to groups that contain more informed voters. As in Holmstrom (1999), voters are not fooled on the equilibrium path.

### 5.1.2 Endogenous Coverage

The second building block of the model opens up the black box of information demand and supply. A first question to be answered is why voters demand news about politics. Some political news may be read for entertainment, such as scandals and personal details. Other news may be of interest because it influences the individuals' private actions and welfare, for example, the building of a new road, the placement of a new military installation, or the introduction of a school voucher system. Finally, voters may require the information because they use it when voting. However, the probability that any voter is pivotal in the election

is disappearingly small and becoming a more informed voter yields a negligible payoff in the form of improved electoral outcomes. The private action motive is probably most commonly used (e.g. Strömberg 1999, 2004a, Gentzkow and Shapiro, 2006, Anderson and McLaren, 2010), followed by the voting motive (e.g. Larcinese, 2007, Chan and Suen, 2008).

Here, we assume that readers get entertainment value from the news and also use it to decide on a private action. More exact news about future policies makes it more probable that the reader will take the right private action. We assume that the probability,  $\rho(q_i)$ , that a reader in  $i$  will find the news entertaining and will find the relevant information is linearly increasing in the amount of coverage  $q_i$  devoted to the issue.<sup>7</sup> The value of coverage  $q_i$  of the information specific to group  $i$  is  $w_i(q_i) = \tilde{T}_i \rho(q_i)$ , where  $\tilde{T}_i$  equals the entertainment value plus the value of taking the correct private action, which we label  $T_i$ .

A reader's valuation of a newspaper also depends on other pieces of news, and some characteristics that the newspapers cannot change by assumption. Other news is omitted from the analysis.<sup>8</sup> The fixed characteristics include, for example, the paper's editorial stance and the name and logotype of the newspaper. Voter  $j$  buys the newspaper if

$$w(q_i) + \gamma_j \geq p,$$

$\gamma_j$  captures individual  $j$ 's valuation of the exogenous aspects of the newspaper and  $p$  is the newspaper price. We assume that  $\gamma_j$  is uniformly distributed on  $[0, 1]$ . The share who buys the newspaper is then  $r_i(q_i, p) = \max(0, w(q_i) - p)$ .

Having specified the demand for newspapers, we now turn to their costs. News production is an increasing returns to scale industry, in the sense that once the fixed cost of gathering the news, writing and editing of the news stories has been borne, the variable cost of producing an additional copy is just the cost of reproducing and distributing the newspaper. We write the newspaper's cost function as

$$C(q) = \underbrace{c \frac{1}{2} \sum_{i=1}^n q_i^2}_{\text{first copy costs}} + \underbrace{\sum_{i=1}^n n_i r_i(q_i, p) d_i}_{\text{reproduction and distribution costs}}.$$

The newspapers also get revenue from advertisements and these revenues may differ across groups. Let  $p_{ai}$  be the average increase in advertisement revenue per additional reader in group  $i$ .

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<sup>7</sup>To guarantee that these can be interpreted as probabilities, assume that  $\rho(q_i) = \max(0, \min(q_i, 1))$ .

<sup>8</sup>If voters' utility from other news were additively separable from news on election platforms, then the equations below would still characterize news coverage of the subset of news on election platforms.

The newspaper maximizes the expected profits: the first-order conditions for an interior solution are

$$q_i = \frac{1}{c} n_i \tilde{T}_i (p - d_i + p_{ai}), \quad i = 1, 2, \dots, n, \quad (5)$$

$$p = \frac{1}{2} (\tilde{T}q + d - p_a),$$

where  $\tilde{T}q$ ,  $d$  and  $p_a$  are the population averages of  $\tilde{T}_i q_i$ ,  $d_i$ , and  $p_{ai}$ .

The newspaper covers more issues that concern large groups ( $n_i$ ) because newspapers are an increasing returns to scale industry with large first copy costs. The newspaper also covers more issues that are entertaining and where information is of high private value ( $\tilde{T}_i$ ). The newspapers finally cover more issues that concern people who are valuable to advertisers ( $p_a$ ) and groups to which it is cheap to deliver news,  $d$ .

### 5.1.3 Predictions

The voting model predicts how voters and candidates behave given media coverage. The industrial organization model predicts coverage. By bringing the two sets of results together, we have an array of predictions that we can organize as follows:

The whole political equilibrium depends on how informed different social groups are. Recall that the share of informed agents in group  $i$  is the product of the share of media users in that group,  $r_i$ , and the amount of media coverage devoted to issues of interest to that group,  $q_i$ .

**Proposition 3** *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:*

- (i) *the shared 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  $i$ ;*
- (iv) *the incumbent's vote share on average,*

*and more so if his or her competence on issue  $i$  is higher than for an average politician.*

The proposition states that (a) who gets the news and (b) what issues are covered matter for policy. Voters with media access are better able to hold their political representatives ac-

countable and receive better policies. People are also better able to hold their representatives accountable on issues that are covered in the media and receive better policies there.

Part (i) is immediate. Part (ii) reflects the fact that votes are an increasing function in  $s_i (g_i - e_i^* + T_i)$  from equation (3) and that perceived competence is  $\hat{\theta}_i = g_i - e_i^*$ . Part (iii) follows since an increase in  $s_i$  increases the out-of-equilibrium response of votes to policy  $g_i$ , which increases effort; see equation (2). In equilibrium, the above expression becomes  $s_i (\theta_i + T_i)$ . An increase in  $s_i$  increases the vote responsiveness to competence on issue  $i$  which improves the selection of elected politicians; see equation (4). In a voting model, better informed groups are more responsive to policy, which corresponds to (ii) and hence, they receive preferential treatment in equilibrium and select better politicians, corresponding to (iii).

The electoral effects of coverage are described in part (iv). Since votes are increasing in  $s_i (\theta_i + T_i)$ , an exogenous increase in  $s_i$  increases the incumbent's vote share if and only if  $\theta_i + T_i > 0$ . More information increases the electoral advantage of an average ( $\theta_i = 0$ ) incumbent. The more informed voters are about the incumbent, the more they have tailored their private actions to her characteristics and hence, the more reluctant they are to choose the challenger. Since  $T_i$  is positive, more coverage always increases the vote share of the incumbent if his competence on issue  $i$  is larger than average ( $\theta_i > 0$ ). Parts (ii) and (iv) are closely related, the former describes what happens to votes when competence changes, holding coverage constant, the latter describes what happens to votes when coverage changes, holding competence constant. The electoral effects of media coverage in our model are unintentional by-products of profit maximization. We return to these in the section on ideological bias and electoral effects.

The model also identifies which particular issues will benefit from media coverage.

**Proposition 4** *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 proposition follows as newspapers cover more issues that concern large groups,  $n_i$ , readers for whom advertisers pay more,  $p_{ai}$ , groups for whom news is entertaining or valuable,  $\tilde{T}_i$ , and groups with low distribution costs,  $d_i$ . It corresponds to Corollary 3 of Strömberg

(1999), chapter 1.

There is little reason to believe that profit maximizing mass media will cover issues in a way that maximizes social welfare, given a fixed amount of total government resources. The above proposition characterizes what issues will receive too much attention and resources, relative to this benchmark. For example, media coverage may induce too much political action on journalistically newsworthy issues ( $\tilde{T}_i$ ), 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, as well as the results in proposition 3.

## 5.2 Empirics

We will now discuss evidence on these predictions. We start by investigating effects on spending from media access in section 5.2.1 and media coverage in section 5.2.2. Section 5.2.3 will discuss the political effects of insufficient media coverage and the mechanisms of media influence. We will also discuss evidence for the biases described in proposition 4.

### 5.2.1 Who gets the news – policy effects

Are voters with media access better able to hold their representatives accountable, and do they consequently receive better policy outcomes? We will now investigate the hypothesis in Proposition 3(aiii) that public expenditures are increasing in the share of media users in a group.

Effects from media access are probably most easily measured when new media are introduced. Mass media are not neutral devices, uniformly distributing information to everyone. Rather, each of the large mass media creates its specific distribution of informed and uninformed citizens, partly because of its specific costs and revenue structure. As a result, in the wake of mass-media technology changes, there are dramatic changes in who has access to political information. Strömberg (1999, 2004b) measures the effects of the introduction of radio on government policy and voter turnout. Radio was introduced in the United States in the early 1920s, and expanded rapidly to reach a household penetration of around 80 percent by 1940. Interestingly, this was also an era of rapid changes in economic policy making. In the middle of the expansion period of radio, the New Deal was launched.

Strömberg finds that access to radio increased federal spending in the New Deal programs.

The effects are economically important. The estimates of this study imply that a one-standard deviation increase in the share of households with radios in a certain county would lead the governor to increase per capita relief spending by 9 percent. The spread of radio particularly improved the situation of rural voters, accounting for as much as 20 percent more in social assistance funds to a rural county than an identical urban county. Radio also increased voter turnout, particularly so 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.

This paper also significantly showed a new powerful way of identifying media impacts, through regional variation in who gets the news. This was applied to a new expanding media and the variation in media exposure was instrumented by quality of reception.<sup>9</sup> This research design has become one of the signifying traits of economists' research on media effects, and has subsequently been applied to a large range of media and outcomes. The first of these was a study of Besley and Burgess (2002), which we will now discuss.

In Besley and Burgess (2002), the focus is more on the conflict between politicians and voters. They study 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 the 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. The results are driven by the circulation of newspapers in local languages (other than Hindi and English). Once more, a concern is that states with a high circulation of newspapers are different. People there may have a higher interest in politics and be more politically active in general. Consequently, the authors instrument newspaper circulation with the share of newspapers that is owned by political parties, societies and individuals. After instrumentation, the key results remain or become stronger.

The strong effects of media creating accountability are encouraging. The other side of the coin is that voters without access to media risk being neglected by politicians, thus reducing social welfare. This may be of particular concern to poor rural voters in developing countries, whose lack of access to media could hinder their access to public services (Keefer

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<sup>9</sup>Olken (2009) importantly extends this methodology to instrument the quality of reception from broadcast media transmitted through the air.

and Khemani, 2005). Delivery costs will also drive this type of policy bias; see proposition 4(d). The most direct evidence of this is perhaps Reinekka and 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 that disfavors remote and rural areas. As discussed above, radio and TV may reduce this pro-urban bias because they reach rural areas at a lower cost.

### 5.2.2 What issues are covered – policy effects

Can news make policy, in other words, can news editors, by publishing a news story, influence government policy? We will now investigate the hypothesis in Proposition 3(biii) that public expenditures are increasing in issue coverage,  $q$ .

This is the main hypothesis investigated in the agenda setting research on policy effects. This research typically performs case studies, or studies the co-movement over time in coverage of an issue in the media, the importance the public attaches to the issue and some policy outcome; see Dearing and Rogers (1996). However, convincing evidence of media effects is hard to establish from these types of correlations. More severe issues are both likely to 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 and Strömberg (2007) analyze the effect of issues being covered because not much other news is 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, for example, from the Olympic Games. Others are covered because they occur when few alternative stories are available. However, disasters striking during the Olympics will be similar in all other respects to disasters striking at the same time of the year in non-Olympic years.

Eisensee and Strömberg find that the Olympic Games crowd out news coverage of natural disasters and that this decreases the probability of U.S. 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. Specifically, they study relief from the United States Agency for International Development (USAID) Office of Foreign Disaster Assistance (OFDA) to 5,212 natural disasters taking

place worldwide between 1968 and 2002. This is combined with data on whether the disaster was covered by the U.S. television network news. They used the Vanderbilt Television News Archives, which has compiled data on the content of the evening news broadcasts of the major U.S. television networks (ABC, CBS, NBC) since 1968 and CNN since the 1990s.

The effect of news biases relief in favor of certain disaster types and regions. By studying what disasters get on the news, Eisensee and Strömberg can predict the probability that a disaster with certain characteristics gets covered. For example, they estimate that around 50 times as many people must be killed in a disaster in Africa to have the same probability of being covered by the television network news as an otherwise similar disaster in Eastern Europe. Similarly, a drought must have more than two thousand times as many casualties as a volcano to have the same estimated probability of coverage. Because news coverage triggers relief, this biases U.S. relief against drought victims and African disaster victims.

This is an example of media creating a policy bias favoring issues which are newsworthy in a journalistic sense, as hypothesized in proposition 4(c). Relatedly, Dreze and Sen (1989) argue that democracies with a free press (like India) will deal more effectively with famines than with endemic hunger, because the former are more newsworthy. Similar arguments could be made that media cause excessive government action on e.g. reducing airplane rather than car crashes.

We now also discuss the evidence that advertising biases policy favoring groups valuable to advertisers, as in proposition 4(b). Here, 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 (2004) correlates the number of news stories on 20 issues on each of the networks with the share of different demographic groups which 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 a less stable purchasing behavior. Although plausible, there is little convincing evidence that groups that are valuable to advertisers benefit politically from media coverage.

### **5.2.3 Effects of muted media coverage**

How would political outcomes differ if there was no media coverage? The effects of silenced media were one of the key empirical questions that we struggled with in section 4. The

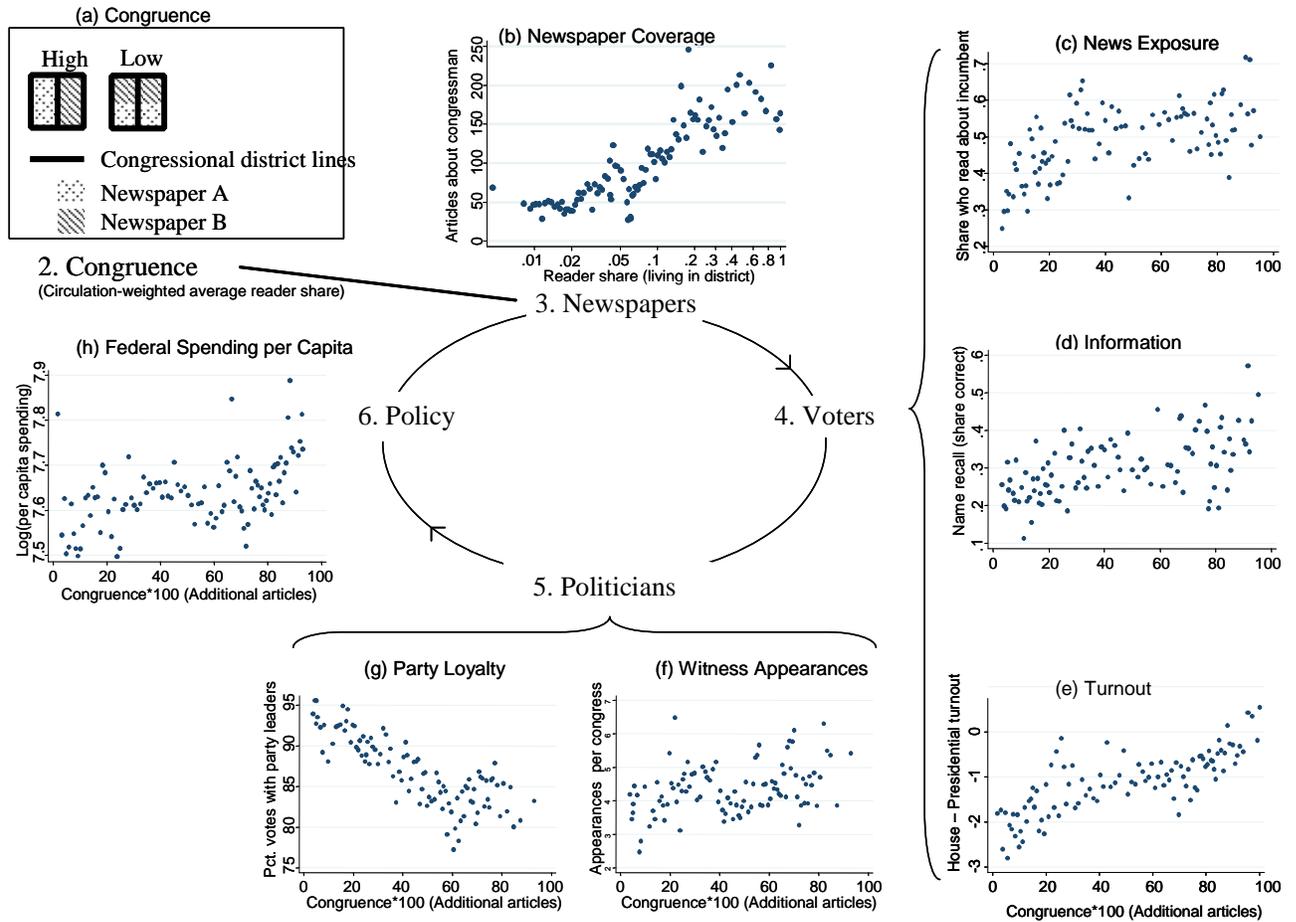
evidence presented there was mainly of cross-country nature and did not allow for strong conclusions regarding causal effects. To study this issue, one would ideally like to shut down all media coverage of politics in a number of randomly selected political jurisdictions and keep other as control. Then, one could compare the outcomes among jurisdictions with or without media regarding the effects we care about: voter information, voting, the effort and selection of politicians and policy.

Snyder and Strömberg (2010) try to answer this question by instead using a naturally occurring variation in media coverage that they argue to be as good as random with regard to these outcome variables. They analyze the effects of media coverage on U.S. congressional politics. They note that the match or congruence between media markets and political districts drives the media coverage of congressional politics. They measure this match using the average share of newspapers' readerships that live in a given district. In Figure 1(a), the left-hand image shows a perfect match between media markets and congressional districts. Every individual in both districts only buys newspapers that only sell in this district. The situation on the right-hand side depicts a worse match where each person reads a newspaper which only has half of the sales in his/her district. Intuitively, the newspaper coverage of a congressman should be increasing in this readership share. Since more than one newspaper is sold in each district, they define congruence as the circulation-weighted average of readership for all newspapers sold in a district.

They argue that some variation in this congruence is exogenous and use this to identify media effects. One specification investigates the consequences of the changing congruence between media markets and congressional district due to redrawing of the district lines. For example, the media coverage of a congressman may fall because another part the newspaper's readership was moved to a different congressional district. Another specification compares differences across counties in the same congressional district and year to identify effects.

Figure 1 shows bivariate relationships of the links investigated by Snyder and Strömberg. We will discuss their evidence and that of others regarding newspaper behavior, voters, politicians and policy in those sub graphs.

First, they document the relationship between congruence and coverage. They study coverage of U.S. House representatives in 161 newspapers covering 385 districts in each congress from 1991-2002. Their measure of the amount of coverage,  $q_i$ , of the representative from district  $i$  is the number of articles mentioning the representative's name. This was found



**Figure 1: Structure of empirical investigation**

searching online editions of the newspapers. On average, the newspapers write 101 articles about each congressman in each two-year congressional period. They find that congruence strongly drives the coverage of congressmen. Figure 1b plots the number of articles against the share of the newspaper's readership that lives in this district. In terms of magnitude, they estimate that an increase in congruence from zero to one is associated with 170 more articles written about the congressman.

**Information** Snyder and Strömberg find that local newspapers are key providers of political information, consistent with proposition 3(i). This is found after analyzing survey responses from the American National Election Studies 1984 to 2004. They find that voters in areas where the newspapers, for exogenous reasons, cover the House representatives more are considerably better informed about their representatives. More precisely, they 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, to rate their feelings toward the representative, and mention things that they like or dislike about their representative. The share who can correctly name the House representative increases by one percent for every four exogenous additional newspaper articles about the representative. These estimates suggest that the share that can name its representative would drop from 31 to 15 percent, without newspaper coverage.

Other evidence on mass media's influence on voter information is surprisingly scarce. There is survey evidence that self-reported exposure to news in newspapers and radio is positively correlated with political knowledge, e.g. Delli Carpini and Keeter (1989). One issue is that people who are interested in politics consume more political news, causing political knowledge and news exposure to be positively correlated. These selection issues are avoided in laboratory studies (e.g., Neuman, Just, and Crigler, 1992, and Norris and Sanders 2003) that find that people learn from watching news in a laboratory. 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.

Snyder and Strömberg find that people do not learn significantly about their House Representative from radio or TV. This could be because local television stations do not cover congressmen to any considerable extent (e.g. Hess, 1991; Vinson, 2003). In a setting where media extensively covers politics, Prat and Strömberg (2005) study the effects of the entry

of commercial TV in Sweden. They find that people who start watching commercial TV increase their level of political knowledge and political participation more than others.

**Political participation** Snyder and Strömberg also find that the increased media coverage makes people more politically active: it increases voter turnout. The effects are small, perhaps because when people vote for Congress, they typically also vote for more important offices such as president and this drives people to the polls.

A number of other recent papers have found larger effects of media access ( $r$  in the model) on voter turnout. Strömberg (2004b) finds that the introduction of the radio in the 1920s and the following rapid increase in the share of households with radios led to more people voting in gubernatorial races. Quantitatively, an increase in the share of households with radios from 0 to 1 is estimated to have increased the turnout by 7 percentage points in the 1920-1940 period. In contrast, Gentzkow (2006) finds that the introduction of television in the 1940s and 1950s reduced the turnout in congressional races by two percent,<sup>10</sup> and hypothesizes crowding out newspapers and radio as a possible mechanism. Oberholzer-Gee and Waldfogel (2009) find that the introduction of Spanish-language local television increases the turnout among Hispanics in a metro area by 5-10 percentage points.

A paper which finds smaller effects is Gentzkow, Shapiro and Sinkinson (forthcoming). In a massive data collection effort, this paper constructs a panel of all English language US newspapers that existed in 1869-2004, identifying all newspaper entries and exits. They find that one additional newspaper is associated with an increase in voter turnout of .3 percent.

Why are the effects of TV mixed? One explanation is that TV carries less political information than the media that it crowds out. Studies finding negative or zero effects of TV focus on U.S. House Representatives (Snyder and Strömberg, 2010, and Gentzkow, 2006). Local television stations devote much less news coverage to House Representatives than do local newspapers.<sup>11</sup> A main reason is that the TV markets are larger than newspaper markets and, consequently, only a small share of a TV station's audience is interested in news about any particular congressman. TV stations instead tend to cover state and national politicians such as senators, governors and the president relatively more. In settings where TV covers politics, it seems to produce learning and increase voter turnout, as in Prat and Strömberg (2005). Along similar lines, Norris and Sanders (2003) find that people learn significantly from

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<sup>10</sup>This is for years with no simultaneous presidential election.

<sup>11</sup>Hess (1991); Vinson (2003); see also, the discussion in Arnold (2004).

watching British TV news. Another possibility is that television as a mass medium erodes social capital, because people spend so much time in front of the TV (Putnam 2000). This is consistent with the findings of Olken (2009) that better TV signal reception in Indonesian villages leads to more time watching television and listening to the radio, and is associated with less participation in social organizations and lower self-reported trust.

**Political selection and incentives** We now discuss effects on politicians, hypothesized in proposition 3(iii). Snyder and Strömberg (2010) find that media coverage improves both the selection and incentives of politicians. US congressmen from districts where media coverage is high, for exogenous reasons, are less ideologically extreme, vote more frequently against the party leaders, are more likely to stand witness before congressional hearings, and they are, perhaps, more likely to serve on constituency-oriented committees and also less likely to serve on broad policy-oriented committees. This was found after analyzing data on roll-call voting, committee assignments and witness appearances for 1982-2004. See Figure 1(d)(e) for the bivariate relationship between Congruence and these outcomes.<sup>12</sup>

The effects seem to work both through incentives and selection (by studying whether the actions of the same politician change over time with press coverage, they can separately identify the incentive effects). Snyder and Strömberg find that selection effects are entirely responsible for the ideological moderation in roll-call voting, whereas incentive effects are entirely responsible for the increase in witness appearances. Effects on votes against party leadership are a mix of the two. These results make sense, since we would expect selection effects for preferences and constant characteristics (competence in the model and ideology in this example) and incentive effects for variables that capture effort (effort in the model and witness appearances in this example). In terms of magnitudes, their estimates imply that an exogenous increase of about 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.

As far as we know, there are no systematic studies of the possible negative selection effects of mass media, for example produced by focusing on looks rather than policy outcomes, or in fact any other studies of media effects on selection.

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<sup>12</sup>Congressmen 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.

**Policy** The final question is whether the additional effort and better selection of politicians are noticeable in public spending, as hypothesized in proposition 3(iii). Snyder and Strömberg find that more federal funds per capita were allocated to areas where the media covered their representative more. The estimated effects are substantial. A one standard deviation increase in congruence (which is associated with around 50 additional articles per congress), increases per capita federal spending by 3 percent.

Who gains and loses from reader shares driving media coverage? Proposition 4(a) states that groups who are large in the media market will benefit politically. This is clearly supported by empirical evidence. A group of voters in our model could, for example, be defined by ethnicity, policy interest, or geography. The key aspect is that politicians can target expenditures to it. The most direct evidence is in Snyder and Strömberg (2010) which shows that groups that are large in the media market get more government funds. This follows since congruence is a measure of the average reader share, that is, the average size of the group in the eyes of the media that sells in that market. Note that although two congressional districts have the same population size, they may have very different size as shares of the audiences of media that sell there.

The audience shares of ethnic groups have also been related to media coverage and participation in politics. Siegelman and Waldfogel (2001) find that black-targeted radio stations are available only in markets with many black citizens, and George and 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 and Waldfogel (2009) find that Spanish language local TV news entry is more likely in media markets with more Hispanics, and that the introduction of Spanish-language local television increases the turnout among Hispanics in a metropolitan area by 5-10 percentage points. Finally, there is some evidence consistent with issue based group size being of importance for policy. Olper and Swinnen (2009) find that the share of households with access to television is negatively correlated with taxes on agricultural products in poor countries and agricultural subsidies in rich countries.

**Vote responsiveness** Our model crucially rests on the hypothesis that news coverage of an issue increases the vote response to outcomes on that issue, as stated in Proposition 3(ii). The vote responsiveness question has been extensively explored in the priming literature

discussed in section 2. Empirically, the priming hypothesis is typically tested by seeing whether news coverage of an issue makes voters more responsive to outcomes involving that issue, using explicitly randomized exposure to news in laboratory settings. Numerous studies have concluded that media coverage increases vote responsiveness in laboratory settings; see e.g. Iyengar and Kinder (1987). While clearly informative, a concern is that people may react differently to manipulated news broadcasts in a laboratory than to real news broadcasts in their home.

Ferraz and Finan (2008) study this question using actual voting data. In 2003, as part of an anticorruption program, Brazil's federal government began to randomly select and audit municipal governments. The random selection of municipalities was held on a monthly basis and drawn in conjunction with the national lotteries. The findings were then disseminated to media sources. The paper finds that mayors in municipalities with high levels of corruption lost votes if they were randomly audited before the 2004 election, compared to equally corrupt mayors that were audited after the election. These effects were more pronounced in municipalities where local radio was present to deliver the information. The effects are sizeable. On average, the audits found 1.5 corruption violations per municipality. The paper estimates that the audit policy decreased the likelihood of reelection by 16 percentage points among municipalities with a radio station and where the audits reported three corrupt violations. On the other hand, the reduction in the likelihood of reelection is only 3.7 percentage points where local radios are not available. Radio thus seems to play a key role in creating voter response to the audit reports. A caveat here is that while the exposure of corruption before the election was random, having a local radio station is not. So the differential effects of radio are less well identified than the main effect of being exposed as corrupt prior to the election.

We have assumed that more policy responsiveness to voter demands is good. However, as discussed in section 3, information about actions may create pandering, which is bad. We are not aware of any empirical evidence of increased pandering due to media. The most closely related study is perhaps Lim et al. (2010) which finds that media coverage of elected, but not appointed, judges makes sentencing correspond more closely to public demands. In the setting of Snyder and Strömberg (2010), more local information may also lead to increased pork-barrel spending to the House districts and little activities for the general good of the nation.

In summary, there is positive evidence supporting each link in the causal chain of media effects described in our model: media coverage increases voter information, which increases the responsiveness of votes to policy, which increases the effort and selection of politicians, thus producing better policies. The empirical evidence that media help voters keep politicians accountable is fairly strong. We have also identified groups that are likely to benefit politically from media provision of news.

## 6 Ideological bias and electoral effects

One of the most common charges leveled against the media is that they are ideologically biased and that this factor skews electoral competition and ultimately produces negative policy outcomes.

Bias can take a number of forms. A media outlet can be selective in what issues it covers (*issue bias*), what aspects of the issues it includes or excludes (*facts bias*), how the facts are presented (*framing bias*), and how it is commented (*ideological stand bias*). Distinguishing these different forms of bias is useful since determinants and effects are different.

Bias can also be analyzed in different dimensions. In the previous section, we analyzed bias in a group or policy dimension as, e.g., media biases policy against minority interests. Here, the analysis specifically focuses on bias in the ideological/electoral dimension. We first summarize the leading models and then we review the empirical evidence.

### 6.1 Theory

We start with *facts bias*. Given that information is valuable to the audience, why would a profit maximizing media ever distort its messages to make it less informative? On the theoretical side, economists have organized their work on this type of bias into demand- and supply-side explanations. Bias can be explained with a supply-side story, whereby the bias stems from the preferences of the agents who work for the news organization, or a demand-side story, where the bias occurs in equilibrium because media outlets are maximizing revenues or audience as in section 5.

This distinction is essential for the purpose of regulation. In a supply-side story where owner preferences influence content, changes in media ownership are likely to affect the equilibrium bias. Instead, in a pure-demand story, the origin of bias lies elsewhere.

The simplest supply-side story is that media owners have ideological preferences, and are willing to sacrifice profits in order to advance their ideological goals. This may be due to their intrinsic political views or it may be instrumental to a long-term relationship with some political actors. In the latter case, it is a form of media capture that can be understood in the framework presented in section 4. The media owner is sacrificing short-term profit from news in order to obtain larger profits from other sources.

A more indirect supply-side story is found in Baron (2006), where journalists may distort information. A newspaper produces a news story, for example on the risk of eating genetically modified organisms (GMOs). Individuals take actions based on the news, for example whether to buy GMOs. The journalist investigates the facts and then writes his report. He cares about the content of the story. It may, for example, influence his career. A story that GMOs are dangerous may end up on the front page whereas a story that they are not may be relegated to the back pages. The journalist may also care directly about the actions taken by consumers. Consumers are Bayesian and update their beliefs based on the information received.

Newspapers are long-term profit-maximizing firms, which employ potentially biased journalists, however. The newspaper sets the wage that journalists receive and the degree of journalistic discretion. These two organizational variables are substitutes: a newspaper can compensate its journalists with money or with the ability to influence reporting.

In equilibrium, the presence of a facts bias reduces the usefulness and hence, the demand, for news. Profit-maximizing newspapers tolerate bias only inasmuch as it allows them to pay their journalists less. The model predicts that there should be a negative correlation across newspapers between facts bias and sale price. Baron's model can be used to understand the effect of competition between newspapers on facts bias. In particular, competition may decrease but also increase the informative content of news stories.<sup>13</sup>

In a demand-side story, media organizations are assumed to be profit maximizers. Yet, some of them find it profitable to distort information provision. This effect can result from the cognitive bias of readers or from the presence of herding effects.

The cognitive-bias explanation is explored by Mullainathan and Shleifer (2005). Their premise is that we buy news not only because of its information content but also because of the pure consumption benefit it gives us. In particular, there is evidence that readers display

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<sup>13</sup>Another supply-driven theory assumes that media bias is generated by elites (Bennet, 1991; Bennet, Lawrence and Livingston, 2006).

a confirmation bias: they like to hear stories that are consistent with their prior views of the world. The payoff for a reader depends on both the quality of information (it is costly to ‘reverse-engineer’ the facts bias) and how well the information he receives corresponds to his prior (the confirmation bias factor).

With appropriate assumptions, this set-up corresponds to a standard Hotelling model with quadratic transport costs, with well-known properties. The transportation cost is interpreted as the ideological distance between a reader and a newspaper. As is well-known, a monopoly will locate at the center of the ideological spectrum, while a duopoly will locate at the extreme ends of the distribution. If voter preferences are symmetric around zero, competition may in this way force newspapers to slant their news in order to avoid price competition.

The main lesson of the paper is that in a world with confirmation bias, the main driver of bias is the distribution of priors in the population. In the homogenous reader case, the distance to the truth increases with the reader’s preference for slant. For a homogenous audience, the monopoly and the duopoly produce the same amount of facts bias. This resonates with the idea in the communications literature on framing that newspapers tend to select frames that people like to hear, e.g., the U.S. downing of a Iranian passenger plane was due to technical problems whereas the Soviet downing of a Korean passenger plane was a moral outrage (Entman, 1991).

The other key point of Mullainathan and Shleifer is that mass media may select extremely biased news to differentiate and avoid price competition. Consequently, competition may increase facts bias and make media less informative.<sup>14</sup>

Gentzkow and Shapiro (2006) show that a demand-driven facts bias can also arise in a world where all readers are rational. In a career-concern model non-dissimilar from those analyzed in section 3, newspapers wish to build a reputation for being knowledgeable which can lead to incentives to misrepresent the truth. In particular, low-quality newspapers have an incentive to ignore signals that contradict prior common expectations. While this information is valuable to readers, it also tends to reveal that its source is of low quality.

In contrast to both Baron (2006) and Mullainathan and Shleifer (2005), an increase in

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<sup>14</sup>The argument does not cover advertisement financed media. Gabszewicz et al. (2001) analyze the case of duopoly media that receives revenue from both copy prices and advertisements. They find that a maximal differentiation between the media is obtained when the advertising revenue per reader,  $p_a$ , is small while the intensity of readers’ political preferences  $t$  is high. Conversely, minimal opinion differentiation is expected in the opposite case (weak political preferences and high unit advertising receipts).

competition between newspapers cannot lead to an increase in bias – and in reasonable cases it will reduce it. Intuitively, this is because, by comparing multiple reports, readers obtain a more accurate picture of the true state and, as we saw above, this reduced the incentive for strategic misrepresentation.

What are the political effects of facts bias? While Baron (2006), Mullainathan and Shleifer (2005) and Gentzkow and Shapiro (2006) help clarify the origins of facts bias, their main analysis abstracts from the effect of biased information on the political process.

Bernhardt, Krasa, and Polborn (2008) study the political effects of demand-driven facts bias. They assume that left-wing readers get more utility when they read positive news about left-wing candidates and negative news about right-wing candidates, and conversely for right-wing voters. Consequently, left-wing media do not publish negative facts about left-wing politicians. Their readers understand that this coverage is missing and expect the left-wing candidates to be as corrupt as the average politician. Consequently, a left-wing politician who is more corrupt than the average may become elected, although he would not have been so under full information. Similarly, a left-wing politician who is less corrupt than the average may not become elected, although he would have been under full information.

This way, information aggregation may fail, leading to the election of inferior candidates. This is more likely to happen when voter ideology is asymmetrically distributed. In this model, a left-wing media does not systematically benefit left-wing politicians. Rather partisan media distorts electoral choices and polarizes the electorate. This ends the discussion of facts bias.

We now turn to *issue bias*, that is, bias in what topics the media cover and how much. The determinants and effects of demand-driven issue bias were discussed in section 5, and we now only mention them briefly. Essentially, this bias arises because every person has one vote, but different people have different effects on media profits. This creates an issue bias which favors (a) large groups, (b) target audiences of advertisers, (c) newsworthy issues and (d) audiences with cheap media access as described in proposition 4 summarizing the main results from Strömberg (1999, 2004a). The large group bias is also discussed by e.g. George and Waldfogel (2003) and the target audience bias by Hamilton (2004).

Duggan and Martinelli (forthcoming) study the determinants and effects of supply-driven issue bias. A media with the motive of supporting one party should cover issues where this party is perceived to be more competent, as in proposition 3(iv). However, if the decision of

what issues to cover is taken before the realization of competence, things are different. In a model with different amounts of uncertainty on different issues, Duggan and Martinelli (forthcoming) find that pro-incumbent media should cover issues where there is less uncertainty while a media favoring the challenger should cover issues where there is much uncertainty to gamble for resurrection.

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

Chan and Suen assume that readers are rational and read newspapers for an instrumental purpose. However, they also observe that readers have a limited time to become informed. Newspapers must condensate a complex space of signals (a real line) into a binary message. The ideological position of a newspaper can then be interpreted as the cut-off point on the real line that separates the two messages. Readers are aware of the cut-off point.

Chan and Suen's spatial model yields a number of robust conclusions. First, it explains a well-know pattern – the fact that readers choose media outlets with a similar ideological position – in a purely rational context. A left-wing reader gets more decision-relevant information from a left-wing bias newspaper. The opposite is true for a right-wing reader. This effect can lead to polarization of opinion and the emergence of self-serving beliefs (Suen, 2004). Second, two independent newspapers will choose the same cut-off point. However, such a point will differ from that chosen by a monopolist and it may increase voter welfare when the effect of media on policy is weak. Third, commercial media organizations have an incentive to provide diverse views: two newspapers under joint ownership will position themselves on different extremes of the policy spectrum. Finally, the entry of a new media will always make policy less partisan.

Is the likely ideological bias of the media left or right? Given the supply-side explanations, it would depend on the preferences of journalists, which are predominantly to the left (Baron, 2006), and owners who are perhaps predominantly to the right. Given the demand-side explanations of Mullainathan and Shleifer (2005) and Gentzkow and Shapiro (2006), it would depend on voters' priors. Given the type of demand-side biases summarized in proposition (4),

advertising finance could lead to a leftist or rightist slant depending on whether advertisers pay more for audiences with leftist or rightist views, as argued by Hamilton (2004) and Strömberg (2004a), respectively. Delivery costs could produce a newspaper slant towards the party favored by urban audiences (left in the United States).

## **6.2 Empirics**

We now focus on the ideological position of media and electoral effects. We first discuss existing measures of media bias in section 6.2.1. We then explore whether this bias is driven by owner preferences or audience demand in section 6.2.2. Finally, section 6.2.3 will investigate the electoral effects of mass media. The two last sections are obviously related. Owners have less incentive to bias coverage if this has no impact on voting.

We do not cover the empirics of facts bias relative to the truth. Despite the large theoretical interest in the determinants of this bias, it has received little empirical attention. The models relate informativeness to competition, feedback and price. However, it is hard to objectively measure the informativeness of political news. The suggestive evidence provided by Gentzkow and Shapiro (2006) relates to outcomes where it is easy to assess whether the media report is correct or not, such as weather reports and sports picking.

### **6.2.1 Measuring the ideological positions of media**

By media ideology, we mean a label that quickly furnishes a rough guide to the political content the media are likely to carry. We will restrict ideology to a one-dimensional left-right position. A media with a leftist label is more likely to have content with a pro-left electoral impact, that is more likely to endorse left-wing politicians, cover issues owned by the left, include facts positive for left-wing politicians and frame issues in a way that benefits left-wing politicians. It is also more likely to use words and phrases that attract left-wing consumers and that alienate right-wing consumers.

We focus on recent work by economists. For a discussion of previous research, see e.g. D'Alessio and Allen (2000) who discuss 59 studies of media bias in U.S. presidential elections.

One component of media ideology that is straightforward to measure is the explicit ideological stands of media outlets, e.g. their endorsements of political candidates or political positions in editorials. For example, Erikson (1976) records newspaper endorsements and the political positions of their columnists. Ansolabehere et al. (2006) analyze the political orien-

tation of endorsements by U.S. newspapers 1940-2002. In the 1940s and 1950s, Republican candidates enjoyed a strong advantage in newspaper endorsements. This advantage gradually eroded and by the 1990s, there was a slight tendency for newspapers to endorse Democrats. Relatedly, Ho and Quinn (2008) collect and classify more than 1500 editorials adopted by major US newspapers on Supreme Court cases.

Another straightforward measure is the share of news stories covering each candidate in a political race. Voters may prefer politicians whom they know more about and in this case, informative coverage of a candidate will create an electoral advantage, as in proposition 3(iv). This is a commonly used measure, see e.g. D'Alessio and Allen (2000), and Durante and Knight (2009).

To measure issue bias, we need to know what issue coverage benefits what party. Proposition 3(iv) suggests that more coverage of issues where one party is viewed as more competent increases its electoral support. One way of identifying these is from survey responses. For example, in the U.S. people typically say that Republicans are more competent in handling national security and Democrats in handling social welfare issues. This is called issue ownership, and is studied by e.g. Petrocik (1996) and Puglisi (2006). Issue bias may also be used to cover issues when outcomes are good, if the incumbent is supported. Larcinese et al. (2007) find that newspapers that typically endorse Democratic politicians systematically give more coverage to high unemployment when the incumbent president is Republican, as compared to newspapers with a pro-Republican endorsement pattern. Puglisi and Snyder (2008) find that newspapers that endorse politicians from one party are less likely to write about scandals involving that party.

How much negative news will a newspaper carry about ideologically close politicians? This is obviously key to understanding how ideological bias may dampen political accountability. Puglisi and Snyder (2008) find that one standard deviation more Democratic-leaning than another would dedicate 26 percent more coverage to Republican than to Democratic scandals. In other words, in a scandal involving a Democrat where the typical paper writes 4 stories, a clearly Democratic paper (85th percent most Democratic) would write 3 stories and a clearly Republican paper would write 5 stories. The signal to bias ratio in this case is 4 to 1. This estimate suggests that much information is transmitted even with clearly biased media (in the U.S.).

Other studies position media ideologically based on how closely their behavior resembles

that of actors with known political positions. For example, Groseclose and Milyo (2005) proxy the political positions of U.S. media outlets by the average ideology of the think tanks they quote. This ideology is identified by the average political position (ADA score) of congressmen who cite them favorably. They find that media are centrist with a mass left of center, relative to congressmen.

The citing of think tanks is a small fraction of all politically relevant media coverage. A more comprehensive proxy for the ideological position of the media is produced by Gentzkow and Shapiro (2010). They use similarities between language used by media outlets and congressmen. Exploiting the Congressional Record, they identify "partisan" words and phrases (i.e., those expressions that show the largest difference in the frequency of use between Democratic and Republican representatives). Then, they measure how frequently these expressions appear in a very large sample of newspapers. This method is closely related to work in political science using computerized text analysis to estimate ideological positions, and also to study the coverage of issues, topics, and legislative agendas; see for example, Gabel and Huber (2000), Laver, Benoit and Garry (2003) and Diermeier et al. (2007). The method is attractive because it is a catch-all measure of different types of media influence: issue bias, facts bias, framing bias and ideological position taking.

### **6.2.2 What determines the ideological positions of newspapers?**

The main objective of the paper by Gentzkow and Shapiro (2010) is to see if ideological bias is driven by audience or owner preferences. They first estimate how the demand for a newspaper depends on the match between the ideology of the newspaper (proxied by its language use) and of people living in a certain ZIP code area (proxied by donations to Republican or Democratic candidates). They find that there is a strong decline in demand in the ideological distance between the newspaper and its audience. This increases the cost and decreases the benefit (because of ideological sorting) of trying to influence elections.

Gentzkow and Shapiro conclude that owners exert an insignificant influence over the ideological media bias of U.S. newspapers. Once geographical factors have been accounted for, the ideological position of a given newspaper is not significantly correlated with the average ideological position of other newspapers belonging to the same chain. The actual ideological positions of the newspapers are not systematically to the left or right of the profit maximizing position. The bias instead mainly depends on the ideological leanings of their

audiences.

Naturally, owner influence could be larger in settings where the owner is the main beneficiary of biased content, rather than just one voter among many affected by the general left-right dimension of policy. For example, Gilens and Hertzman (2000) showed that the 1996 Telecommunications Act received more favorable coverage from newspapers whose parent companies stood to gain from the act being passed. Finally, note that the ideological bias may not be evident at all times. Puglisi (2006) finds that during the presidential campaign, *The New York Times* gives more emphasis to issues that are "owned" by the Democratic party, when the incumbent President is a Republican, controlling for presidential and congressional activity across issues. He concludes that the likely reason is that the owners want to influence the election outcome.

### **6.2.3 Media effects on vote choice**

We now study media effects on partisan vote choice. We focus the discussion on key factors determining media influence on voting: filtering, ideological sorting, competition and stable voter preferences. Audiences may filter out biases. They may also select media based on ideology, in which case biasing coverage leads to changes in the audience composition that dampen effects on voting. Competition makes media selection issues more prominent.

We first discuss filtering, and start with the effects of newspaper endorsements of political candidates. Erikson (1976) estimated the impact of changes in newspaper endorsements 1960-1964 on vote shifts in the presidential election. More recently, Chiang and Knight (forthcoming) study whether newspaper endorsements have an influence on voting intentions. Their paper combines data on the endorsements of presidential candidates of a large set of U.S. newspapers with survey responses from the National Annenberg Election Surveys (NAES) 2000 and 2004. The authors know the exact date of 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. 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 which studies filtering of a more broadly defined bias is Bergan, Gerber and Karlan (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. The subscription offers were made prior to the 2005 Virginia gubernatorial election.<sup>15</sup>

Despite apparent differences in the way the newspapers framed their stories, the researchers found the effects to be qualitatively similar for *The Post* and *The Times*. Those who received either newspaper voted more for the Democrats. One explanation is that the period carried news which was challenging for the Republicans. There was a clear difference in the way the papers framed the news, but both papers covered the issues that were on the political agenda: war casualties and political controversies such as the Plame investigation and the widely criticized Miers Supreme Court nomination. That *The Times* covered these stories is consistent with Puglisi and Snyder's (2008) finding that even clearly biased media cover negative news about their preferred candidates, discussed above. It seems that the basic information contained in the news was more important than the way 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 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. Still, the result is encouraging for those who care about media creating political accountability: people exposed to media at either side of the ideological spectrum were more responsive to information than people without media access. They seem to have filtered out the bias present in these media.

Ideological audience sorting obviously exists; the question is how restraining its effects are. Durante and Knight (2009) analyze whether an owner can influence voter exposure to ideological news by changing a media's ideological bias. They study the impact of broadcast news in Italy, where a television network is owned by Silvio Berlusconi, the prime minister at the time of writing (August 2010), while the other major network is state-owned and is mainly under government control. They find that after Berlusconi's center-right coalition came into power in 2001, the news content on state television moved to the right. However, the ideological shift in public television content was offset by ideological audience sorting. Right-wing viewers shifted from more conservative channels into watching public television.

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<sup>15</sup>Note that the randomization removes all ideological audience sorting. This study estimates a different parameter than in the Chiang and Knight paper which estimated the effect of bias on those who bought the newspapers.

Left-wing viewers shifted to a more leftist channel. This shows that sorting puts real and substantial constraints on the effectiveness of manipulating media's ideological bias for electoral motives (in a competitive environment).

We now turn to the electoral effects of media entry. Given that voters filter, sort ideologically, and that the media sector is competitive, is there a final effect on votes?

Della Vigna and Kaplan (2007) look at the effects of the expanding Fox News channel. This channel started in 1996 and by 2000, 20% of the U.S. towns had access. It was considerably more right-wing than the existing channels (Groseclose and Milyo, 2005). The U.S. cable TV industry is highly competitive, so sorting effects may be expected to be large. Still, there was little ideological sorting in 2000; roughly the same share of Republicans and Democrats viewed Fox News regularly.<sup>16</sup>

The paper asks whether the increase in the Republican presidential vote share 1996 to 2000 was larger in towns that had Fox News in 2000. Naturally, this may not capture the causal effect. Fox News entered towns with a higher initial Republican vote share, with a higher number of channels, and which were larger and more urban. However, including demographic and geographic controls, Fox News entry is not correlated with the Republican vote share in 1996, and the trends in voting in 92-96 and 00-04 are unrelated to Fox News entry. The paper concludes that Fox News entry increased the Republican vote share by around half a percentage point.

Media effects on voting may be larger where voters are less stable in their political preferences and where there is less competition. Enikolopov, Petrova and Zhuravskaya (2009) study one such setting, namely the effect of the first private Russian TV channel, NTV, on voting in the Russian national election 1999 for the 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, while the two pre-existing government-run channels supported the government. The independence of NTV was short. In the next election, 2003, NTV had been taken over by the state monopoly Gazprom.

Note that this paper analyzes the effects of entry into a market controlled by a biased

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<sup>16</sup>Perhaps people were uncertain about the ideological position of the new Fox News channel and, for this reason, were less able to sort and filter. Ten years later, the share of Republicans watching Fox News is almost three times the share of Democrats. The Pew Research Center For The People & The Press, "Ideological News Sources: Who Watches and Why", 2010.

monopolist. Here increased competition, and the resulting sorting, helps remove the bias. The potential for effects on voting is large.

The main finding is that areas with NTV reception voted more for the opposition and less for the government. The aggregate analysis uses the election results in more than one thousand Russian sub-regions. In areas with NTV reception, the aggregate share that voted for the government was 8.9% lower and the share that voted for opposition parties was 6.3% higher. These effects are of an order of magnitude larger than the estimated effects of Fox News in the United States. The effects could arise because the areas with NTV access were different, supporting more liberal parties and less communist and nationalist parties even before the entry of NTV. However, the prior differences in vote support disappear once demographic characteristics have been controlled for. There are also no differences in 2003, when NTV was under government-aligned ownership.

In sum, there is clear evidence of ideological audience sorting and some evidence that people filter out ideological biases, at least endorsements. Given this, ideological bias would be expected to have moderate effects in environments with many media outlets of known political positions, and strong effects in environments where a biased monopolist receives competition, for example. This is consistent with the findings of Bergan, Gerber and Karlan (2009) and Enikolopov, Petrova and Zhuravskaya (2009). More surprising is perhaps the significant impact of Fox News found by Della Vigna and Kaplan (2007). People might not accurately have perceived the bias of Fox News, as indicated by the lack of audience sorting. The Republican vote share may also have increased because voter turnout increased among people who were already supporting the Republican candidate.

The media may also influence political preferences and other political actions. For example, Campante and Hojman (2010) find that radio and television reduced political polarization, Kern and Hainmueller (2009) find that voters in East Germany who could watch West German television became more satisfied with life in East Germany and the communist regime, and Wantchekon and Vermeersch (2009) find that individuals in Benin who are exposed to media become less averse to public goods. Yanagizawa (2010) investigates the effect of radio propaganda messages on the 1994 Rwanda genocide. He finds that violence was significantly more severe in villages where the radio reception was better.

### 6.3 Ideological bias, accountability and competition

So far, we have only discussed the empirical impact of ideological bias on voting. We now briefly discuss the wider implications for political accountability. The relationships between ideological bias, competition and accountability are theoretically unclear and empirically largely unexplored. We still want to mention a few points before closing this section, starting with the relationship between ideological bias and accountability.

Are people less able to hold their representative accountable when the media are ideologically biased? This is theoretically unclear. We saw in section 5 that accountability requires that votes are responsive to policy outcomes, and that this responsiveness increases as people make fewer mistakes when voting. The facts bias analyzed by Baron (2006), Mullainathan and Shleifer (2005), Gentzkow and Shapiro (2006), and Bernhardt et al. (2008) is clearly bad for political accountability. In these models, media bias destroys information, increasing the mistakes made by voters. Relatedly, issue bias may be bad if it is created to influence elections as in Duggan and Martinelli (forthcoming).

On the other hand, ideological bias driven by information demand or audience interest may be good. 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. This is in the spirit of Chan and Suen (2008).

Similarly, ideological issue bias may enhance the accountability because voters get information on the issues deciding their vote choice. Suppose that right-wing viewers only care about national security and left-wing voters only care about social security. Two newspapers have total coverage of 1 to devote to these issues. The best outcome in this case is extreme ideological issue bias and sorting: one newspaper only covers national security and is read by right-wing voters, the other only covers social security and is read by left-wing voters. This "issue congruence" minimizes the mistakes voters make and creates good incentives and selection on both issues, following the logic of the model in section 5.

The effect of competition on accountability is equally unclear. As discussed, competition may increase or decrease ideological bias, which may increase or decrease accountability. In addition, competition may influence the total amount of political coverage. There are theoretical arguments (increasing returns industry) and empirical evidence (Arnold, 2004)

suggesting that competition lowers the total amount of political coverage that newspapers carry.

## 7 Conclusions

While the political economy of mass media is still a young field – most of the work in this area has been published after 2000 – a number of interesting results have already emerged. We will first try to identify some general and robust lessons from the existing body of work. Perhaps, more importantly, we will also point at some areas that we believe to be particularly promising for future research

The existing evidence seems to support – with some caveats – four general statements about the political economy of mass media:

- *Media scrutiny increases political accountability, which appears to improve policy with a caveat on multi-tasking.* In our survey, we have encountered a number of papers where an increase in media activity is associated with better policy outcomes, some of which use methods that we think convincingly identify causal media effects.<sup>17</sup> There is some evidence that these media effects occur because the media transmit information to voters, which improves both the incentives and the selection of politicians. The only negative effect that is identified empirically is indirect: the government may devote less effort to an issue or to a group as a result of other issues receiving more coverage or other groups receiving more information. These types of policy biases disfavor voters without access to media and voters whose issues are less covered, in particular, minorities, groups caring for journalistically less newsworthy issues, and to whom it is costly to deliver news. It is also likely that they will disfavor voters who are not valuable to advertisers.
- *Media pluralism and a healthy commercial motive are effective defenses against media capture.* Governments have a strong incentive to control the media industry. There is evidence of capture in a large number of countries, even in high-income nations like Italy. However, capture is endogenous. Theory predicts that it is harder for a government to silence the media industry if it faces a large number of independent owners, if the

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<sup>17</sup>Besley and Burgess (2002), Besley and Prat (2006), Brunetti and Weder (2003), Djankov et al (2003), Eiseensee and Stromberg (2007), Ferraz and Finan (2008), Reinikka and Svensson (2005), Snyder and Stromberg (2010), and Stromberg (2004b).

media ownership is independent of other interests, and if the media companies have a strong commercial motive to establish a reputation for credibility. These predictions are consistent with evidence obtained through a variety of empirical approaches, such as cross-country comparisons, in-depth case studies, within-country evidence, historical series, and corporate governance data.

- *Voter information and voting outcomes are affected by the media..* We have reviewed evidence that media significantly inform voters, make votes more responsive to policy outcomes and increase voter participation in elections. Media also seem to have an impact on aggregate vote shares. In particular, effects have been found for new media and in settings where political preferences are unstable. There is evidence that voters, to some extent, filter out political biases of media. For example, expected media endorsements of political candidates have a limited impact. Moreover, there is clear evidence that voters select media that are ideologically close.

In the survey, we have tried to identify the limits of the existing work and suggest future avenues of research. Six themes appear particularly relevant and promising.

First, historical evidence highlights the role of technology in defining the structure and capability of the media industry and hence, its role in politics. We reviewed evidence of the effects of the improvements in printing technology in the second part of the 19th century and the development of radio broadcasting and later television in the 20th century. The media industry is now in the midst of a new technological revolution. Individuals enjoy increasingly direct and cheap access to both the consumption and production of news. While this is a hotly discussed topic, little high-quality empirical work has actually been done to understand how the new technologies will affect voter information and political outcomes.

Second, this survey has argued that the role of competition in the media industry is different than in other industries. Besides the classical effects on price, quality and selection, media pluralism determines the amount and type of political coverage, which affect political accountability. Hence, standard competition policy is insufficient (and may even be counterproductive). Economists have begun to push for a general re-think of media regulation: “There is much less agreement about what would constitute a healthy broadcasting sector than there is about other sectors of the economy such as manufacturing industry, financial services or even agriculture.” (Seabright and von Hagen 2007, p. 10). As shown by our

survey, it is possible to think about the effect of media ownership and conduit on policy outcomes starting from first principles and to measure such effects empirically. An applicable, microfounded theory of optimal media regulation appears to be a worthy and non-utopian research goal for economists working in this area.<sup>18</sup>

Third – although this point should be seen as a component of the previous one – what is the role of public service broadcasting in the current age? As we have argued, political information is a public good. Voters who spend resources on obtaining information to keep their government accountable produce a positive externality for their fellow citizens. Citizens may therefore be willing to tax themselves in order to reduce the cost of collecting political information, for instance by making news programs freely available without commercial interruptions. To provide this public good, most democratic countries, with the notable exception of the United States, have set up large public television networks. However, as pointed out by Armstrong (2005), a type of public intervention that was devised for advertising-funded aerial television is unlikely to be appropriate in a completely different technological and economic environment.<sup>19</sup> As expressed by a television executive: “Free school milk doesn’t work when the kids go and buy Coca-Cola because it’s available and they prefer it and they can afford it.” Instead of giving the bulk of the subsidies to one vertically integrated media organization such as the BBC, we should perhaps consider competitive fund allocation mechanisms. There is only limited evidence, like Prat and Strömberg (2005), on the differential effects of commercial and public-service broadcasting. Given the importance of the topic and the large public investments involved, it would be useful to have more data collection and disclosure on the part of public service broadcasters and more analysis on the part of media scholars.

Fourth, is media slant supply-driven and demand-driven? In section 6, we contrasted two models of slant: one where non-profit maximizing media organizations try to affect voters’ information and/or behavior, the other where media companies tailor their product to satisfy the information on psychological needs of customers. Understanding the origin of slant is potentially important for regulatory reasons. However, at this stage, the evidence is mixed. Gentzkow and Shapiro (2010) find that owner influence is an insignificant determinant of

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<sup>18</sup>See Polo (2005) for a model of optimal regulation for media pluralism.

<sup>19</sup>Here, we focus on the information provision component of the debate on the role of public service broadcasting. See Coase (1950) for seminal work in this area and Hargreaves-Heap (2005) and Armstrong and Weeds (2007) for discussions of public service broadcasting. See Ofcom (2009) for a comprehensive review of the UK case.

the ideological positions of U.S. newspapers. In contrast, Puglisi (2006) found that *The New York Times* had a systematic issue selection bias favoring the Democratic candidate during the election campaigns but not at other times.

Relatedly, the effect of ideological positions of the media on information acquisition and accountability is unclear. If the bias arises through disinformation with the motive of influencing the election or an unwillingness to cover bad news about voters' preferred candidates, information acquisition will be reduced. On the other hand, if the bias arises because the media cover the issues and facts that their audience cares about, and make recommendations from a similar political position as their audience, then ideological bias may enhance information acquisition.

Last but not least, there now exists an empirical toolbox to estimate media effects (through variation in who gets the news, what news is covered and whether coverage is muted) and to perform a computer-aided content analysis of large text masses. This toolbox can be applied to a number of outcomes outside of politics. A few of these have already been explored. As already mentioned, some recent studies show that media may influence fertility and divorce (e.g. La Ferrara et al., 2008, and Chong and La Ferrara, 2009), as well as market prices (Svensson and Yanagizawa, 2008). However, it is clear that many more of these applications are waiting.

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