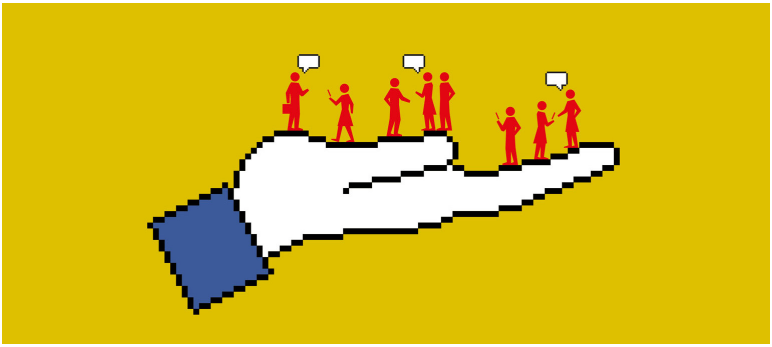
THE TECH GIANTS, MONOPOLY POWER, AND PUBLIC DISCOURSE



Measuring and Protecting Media Plurality in the Digital Age

A Political Economy Approach

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In November 2019, the Knight First Amendment Institute convened a major symposium at Columbia University, titled "The Tech Giants, Monopoly Power, and Public Discourse," to address concerns arising from the dominance of a small number of technology companies over a wide range of economic and expressive activity. The essays in this series were originally presented and discussed at this two-day event. Written by scholars and experts in law, computer science, economics, information studies, journalism, political science, and other disciplines, the essays focus on two questions: how and to what extent the technology giants' power is shaping public discourse, and whether anti-monopoly tools might usefully be deployed to expose or counter this power.

The symposium was conceptualized by Knight Institute staff, including Jameel Jaffer, Executive Director; Katy Glenn Bass, Research Director; Alex Abdo, Litigation Director; and Larry Siems, Chief of Staff. The essay series was edited by Glenn Bass with additional support from Lorraine Kenny, Communications Director; Sarah Guinee, Research Fellow; and Madeline Wood, Communications and Research Coordinator.

The full series is available at knightcolumbia.org/research/

INTRODUCTION

At least since Thomas Jefferson, we understand that democracy requires a well-functioning media industry.[1] Reporting keeps citizens informed, so they can keep government accountable and make informed electoral decisions. A well-functioning media industry is a pluralistic and independent one: different sources compete with each other to bring the truth to citizens. However, things can go wrong: powerful political or economic forces can try to "capture the media" and manipulate public opinion in order to subvert democracy. This essay will report plenty of anecdotal and systematic evidence for this type of phenomenon.

To avoid the threat of media capture, democracies around the world have put in place a number of safeguards. One is free press legislation, which protects the media against direct government interference. However, there is another source of danger. If the media industry becomes highly concentrated, powerful media owners could attempt to manipulate public opinion. This phenomenon too has been understood since the era of media mogul Randolph Hearst, [2] who would later serve as one of the inspirations for the titular character in Orson Welles' *Citizen Kane*. To counter the risks associated with

concentration, in the post-World War II period most Western democracies put in place media ownership limits. No single media owner could acquire the type of power Charles Foster Kane has in *Citizen Kane* because no single entity would be allowed to accumulate stakes in so many media outlets.

However, the safeguards of the post-war period were not designed for the Facebook era. They were meant to limit concentration on the media platforms that existed then: newspapers, radio, and network television. The objective of this essay is to discuss whether and how media plurality rules can be adapted to the digital age.

This important and complex issue can be explored from many angles. This note will take a political economy approach. The political economy of mass media is an interdisciplinary effort of experts in economics and political science based on the idea that some phenomena are best understood combining the methodologies of the two disciplines.[3] This mostly empirical field helps us answer interdisciplinary questions that guide the study of media capture: Is reporting biased? Does biased reporting affect voting outcomes? Is media captured by political and economic interests? Does better reporting reduce corruption?

This essay is organized as follows. In Section 1, I will explore the link between media concentration and media capture, and why we need to protect media plurality. The available empirical evidence highlights the link between media capture and media concentration as well as the risks a country faces when its media are not independent. In Section 2, I will argue that existing media ownership restrictions are toothless and obsolete because they apply to traditional platforms only. The problem is those rules are platform-centric: they attempt to regulate platforms – television, radio, newspapers, etc. – one by one, an impossible task in a world where media platforms are proliferating and the borders between them are blurring. In Section 3, I set forth the main argument of this note: In order to create effective media plurality defenses for the digital age, we must first find a platform-neutral way to define and measure media concentration. I discuss the notion of *attention shares* and I apply it to an example. Section 4 is empirical. It reports recent attention share information from the United States and 35 other countries. The data identifies the most powerful media owners in every country, highlighting the continued importance of broadcasting companies and the rise of Facebook. It

also highlights the presence of information inequality patterns: the poor and the less educated have a more concentrated set of information sources, which puts them at a higher risk of manipulation. Section 5 shows how the attention share approach can be used to evaluate media ownership, and in particular to decide whether a specific media merger should be blocked. The analysis is carried out in parallel by using the numerical fictional example from Section 2 as well as alongside a recent application of the attention share approach to a 2017 merger review of the proposed acquisition of Sky by 21st Century Fox in the U.K. In Section 6, I conclude by reviewing both the benefits and the limits of an attention share approach.

1. THE PROBLEM
Media Concentration and Media Capture

THE MEDIA IS DIFFERENT from other industries. Besides providing consumers with services they value as individuals, like entertainment and information, it also supplies a public good that benefits us as a society.[4] In a modern democracy, the media keeps a nation informed about its government. The media helps to inform our votes, providing information that leads us to elect (or not) our governing officials. This is a public good because its use among an entire citizenry benefits each member of that citizenry: I as an individual voter benefit if my fellow voters are better informed.[5]

Jefferson's hypothesis that the press keeps government accountable has recently been tested in a number of empirical studies. Elected politicians behave better when the media is monitoring them. For example, John M. Snyder and David Strömberg found that U.S. representatives from districts where media coverage is high are less ideologically extreme, vote more frequently against the party leaders, are more likely to stand witness before congressional hearings, more likely to serve on constituency-oriented committees and less likely to serve on broad policy-oriented committees.[6]

Note a complexity of testing the prediction that political outcomes depend on media quality. It may not be the case that the relationship between media quality and outcomes is direct. Rather, they may be spuriously

correlated (for instance, areas with higher education levels are likely to have both better media and more engagement). The political economy literature has devised clever methodologies to overcome this endogeneity problem. The idea is to find some independent variation of media coverage to measure its causal effect on political outcomes. In their study, Snyder and Strömberg studied noncongruent media markets, including areas like Gary, Indiana, that belong to a media market (Chicago, Illinois) in a different state. Citizens of such an area receive less coverage about their own state's politicians.

This positive relation between media coverage and political outcomes applies to different media and in different contexts. A study by Timothy Besley and Robin Burgess found that, in India between 1958 and 1992, the government provided more public food aid and calamity relief to areas with higher newspaper readership.[7] In Brazil, a study by Claudio Ferraz and Frederico Finan found that voters were less likely to re-elect corrupt mayors in municipalities with more radio coverage.[8]

In these examples, the media acts as an effective watchdog. Where can things go wrong? When does the media stop monitoring the government? Media owners may be tempted to ally themselves to politicians to manipulate public opinion, generating a phenomenon known as *media capture*.[9] Media capture brings benefits to both sides of the bargain. The politician finds it easier to get elected and to remain in power due to more favorable coverage. In exchange, the media owner gets favors from the government, which can be financial (the government implements policies that favor the owner's economic interests) or ideological (it supports the owner's viewpoint).

There is abundant evidence that media capture occurs. An analysis of Alberto Fujimori's presidency found direct proof of media capture in Peru: detailed records from Fujimori's security chief, Vladimiro Montesinos, link payments made to most of the country's television networks and newspapers to neutral or positive coverage of Fujimori in those media outlets.[10] More recent forensic evidence comes from a secretly taped conversation in which Israeli Prime Minister Benjamin Netanyahu negotiates more positive coverage in media mogul Arnon Mozes's newspaper in exchange for limiting the circulation of a rival daily.[11]

Countries with a long tradition of press independence are not immune from capture. In the U.K., the Leveson Inquiry, which reviewed evidence of

corruption and leaks involving newspapers, the police, and the press following the News of the World phone hacking scandal, concluded that media capture was broader than the case under investigation:

> Taken as a whole, the evidence clearly demonstrates that, over the last 30–35 years and probably much longer, the political parties of U.K. national Government and of U.K. official Opposition, have had or developed too close a relationship with the press in a way which has not been in the public interest.[12]

What makes media capture more or less likely? In a highly concentrated media market, capture is easier because it requires an "understanding" between a small number of players. If there are more owners, getting to such an agreement becomes harder. Each individual owner faces an incentive to remain uncaptured, tell the truth, and gain larger market shares. A simple game-theoretic model can illustrate this phenomenon.[13,14]

The model can be sketched as follows. An incumbent, who can be good or bad, is facing re-election. Voters would want to re-elect her if she is good and replace her if she is bad. Some hard information may surface that reveals the quality of the incumbent. If the information is positive, the incumbent has no reason to suppress it. If it's negative, the incumbent may try to "bribe" the media not to publish it. The bribe can be an actual payment as in the Peruvian example or a policy favor as in more subtle cases. The media industry comprises n outlets, who could all print the story. A scoop increases the revenue and prestige of the outlet who publishes it. The incumbent has a limited amount of resources to bribe the media. Will she succeed?

The answer crucially depends on the number of independent media outlets n. As every silenced outlet must be compensated for the lost scoop revenue, the total bribe amount increases with n. It is more expensive – perhaps prohibitively so – to silence a media industry with many independent owners. This simple model can be extended in many ways, but the key point remains: media plurality makes capture less likely.

This prediction is consistent with observed cross-country patterns.[15] The political longevity of the country's most senior elected official (prime minister or president, depending on the constitutional system) increases with media concentration (as measured by the share of audience controlled

by the top five outlets). The effect is large: for example, the average political longevity in countries with "low" concentration (the top five newspapers control less than 75% of the audience) is around five years; longevity in countries with "high" concentration is over ten years.[16]

2. WHY THE EXISTING RULES ARE NOT ENOUGH

WE HAVE JUST SEEN that media capture damages the democratic system, and that it is more likely to happen in concentrated media systems. The most obvious defense against capture is, thus, to maintain media plurality. That is why most Western democracies have put in place rules to prevent concentration buildup in the media industry. This section will review the existing rules and argue that they are no longer adequate because innovation in communication technology has radically changed the media landscape.

Most countries in Europe and North America have media ownership restrictions. For decades, the U.S. has had limits on local television and radio ownership, on radio/television cross-ownership, and newspaper/broadcast cross-ownership. Those rules cover the three traditional platforms: television, radio, and the press. They worked relatively well when those – and specifically network television – were the dominant platform. De facto, they prevented mergers between the three national networks: ABC, CBS, and NBC.

However, technology has changed. New communication channels have been introduced: cable, the internet, mobile technologies, etc. New news platforms have flourished: cable news channels, online-only sources, social media, etc. The second-most important single source of news in the U.S. in 2017 was Facebook, which is also one of the top three sources in at least 12 other countries.[17] Legacy media is now available on multiple platforms. I can read my newspaper in print, on my desktop, on my Kindle, on my phone, etc.

This makes the existing platform-centric regulation obsolete. Modern digital media is totally exempt from it and could conceivably merge with large traditional sources. Nothing in FCC ownership rules prevents Facebook, the second largest U.S. news source, from buying the largest one: Fox News.

Regulators and scholars are well aware of this issue. There have been two

reactions to it. One is to try to modernize the existing ownership restriction system. The other is to argue that media-specific ownership restrictions are unnecessary because media plurality is now protected by standard antitrust policy. Let me consider these in turn.

In 2003, the FCC attempted to reform the system by introducing the Diversity Index.[18] The index considered four news platforms: television, radio, newspapers, and the internet. Based on Nielsen data, each platform was assigned a weight according to its prevalence: television 33.8%, radio 24.9%, newspapers 28.8%, the internet 12.5%. Within each media market, the index would count the number of "voices" on each platform; one radio station counted as one voice. Each voice would be assigned a weight equal to 1 over the number of voices in that platform in that media market multiplied by the platform weight. For instance, if there were five radio stations in that market, each station would get a weight of one-fifth of 24.9%, for a final value of 4.98%. Each media owner would be assigned a total weight equal to the sum of the weights of all the voices they owned.

The Diversity Index recognized the importance of aggregating concentration across platforms. It also had the merit of seeking an objective way of performing this aggregation. However, it also had at least three serious flaws. First, it gave the same weight to each voice on the same platform in the same market. For example, in the New York City market, The New York Times and the Staten Island Advance would carry the same weight. Second, it did not consider overlaps between audiences: even if we look at two "voices" with the same audience size, one may be the exclusive source of information for certain people, while another one may be used by people who also access many other sources – a crucial factor in determining the weight of a voice (more about that later on). Third, even if all voices had the same audience and all audiences had the same number of voices, we are still left with the problem that some voices provide a lot of political information while other voices provide little or no news: If the risk is media capture, we are more worried about someone who owns two news channels than someone who owns two general channels. Indeed, the Diversity Index was struck down by the courts. Though the U.S. Court of Appeals for the Third Circuit did not object to the general goal of the approach, it rejected the index because it employed "several irrational assumptions and inconsistencies."[19]

The next section can be seen as an attempt to construct a new version of the Diversity Index starting from first principles. But for now, let us focus on the second possible response to the obsolescence of traditional media ownership restrictions.

One could argue that specific antitrust rules for the media are not necessary because we can rely on general antitrust legislation. The U.S. and most other Western democracies have rules and institutions to protect consumers against monopolies. In particular, they have a merger review process to prevent individual owners from accumulating too much market power. So why not simply use standard competition policy to protect media plurality?

The problem, as a number of scholars and regulatory bodies have pointed out, is that competition policy is meant to protect consumer welfare, not media plurality.[20] The two are very different. As we argued above, media plurality protects a public good: effective and independent political reporting as a predicate for a healthy democracy. Consumer welfare typically considers the prices paid by individual consumers. A standard merger review will typically block the transaction if the new entity will accumulate excessive market power — typically identified when a merger is likely to increase prices for consumers.

Because they have different goals, consumer welfare and news plurality define concentration in radically different ways. For consumer welfare, concentration is defined on a market: a set of firms that are competing directly with each other, namely firms whose cross-price elasticity is nonzero (we are in the same market if, when I lower my prices, your firm will sell less). For news plurality, the relevant set of firms is news producers. A media market can be larger or smaller than the set of news producers.

An example of a media market that is larger than the set of news producers is television: television providers compete with each other, but the vast majority of them are not news producers. A merger of two television companies, one of which does not do news, may reduce consumer welfare (price) but does not affect news plurality. Problematically, current price-oriented competition policy tends not to burden itself with mergers involving pure television news channels, because those are typically small fish in the large television pond (the big fish being entertainment providers).

An example of a news organization that straddles markets is a company

that owns both a newspaper and a news channel. The cross-price elasticity between the newspaper and the news channel is either zero (if you consider subscription price) or very low (if you consider the overall effect on the massive advertising market). So, their merger is typically a nonevent from a competition policy perspective. However, they both belong to the set of news producers and hence a merger may significantly reduce news plurality.

Competition policy is therefore too lenient in two crucial cases: news providers that operate on platforms that provide mainly entertainment (like television and the internet) and news providers that operate on different platforms. Section 5 will revisit this point with an example of a new approach to merger review: The 2017 proposed 21st Century Fox-Sky merger posed no risk to consumer welfare but was instead blocked on a pure news plurality ground.

As last year's report from the Stigler Commission on Digital Platforms argued, media mergers should require two parallel reviews: a standard competition policy review to protect consumer welfare and a yet-to-be-determined news plurality review meant to protect us as citizens.[21] The next two sections attempt to define and measure news plurality.

3. MEASURING CONCENTRATION
Attention Share

THIS SECTION PROPOSES one theoretically grounded way to measure news plurality.[22] I am in no way implying that this is the only way or the best way. But I see two positives. First, it is built from first principles, and we can therefore assess whether those are the right foundations for such an index. If we disagree with the foundations, we can propose new measures. Second, it is relatively simple and it can be computed – with some degree of approximation – on the basis of existing data, something I will do in the next section.

For now, let us build the measure by means of a numerical example. The hypothetical country in Figure 1 has 20 million citizens. The table represents their news consumption patterns. There are three news platforms: television, the press, and new media. Each platform has two providers. Figure

1 represents news consumption patterns. There are 10 million citizens in Segment 1 and each of them spends one hour a week watching news on one of the two TV channels (TV1). Citizens in Segment 2 (5 million) spend one hour a week watching TV2 and another hour a week reading NP1. Citizens in the last segment (5 million as well) use four news sources and spend one hour on each source.

The standard measures that are reported include an "absolute audience number" measure and a "relative platform share" measure (e.g., "newspaper circulation" or "television ratings"). This example has been designed so that the absolute audience number is the same for the two sources within every platform and the relative platform share number is the same for each of the six sources.

These aggregate figures are therefore quite "symmetric." If you look at them without knowledge of the underlying news consumption metric, you would have no idea that the figures hide a highly skewed situation. One of these six sources is very different: TV1 is the monopolist news provider for half of the population in our fictional country. TV1 is extremely dangerous from a media capture perspective: it is in a much better position to manipulate voters as its consumers do not receive information from other sources.

FIGURE 1. EXAMPLE OF AN ATTENTION SHARE MEASURE OF MEDIA CONCENTRATION

	Television		Press		New Media	
	TV2	TV1	NP1	NP2	NM1	NM2
Segment 1 (10 million people)	1 hour	-	-	-	-	-
Segment 2 (5 million people)	-	1 hour	1 hour	-	-	-
Segment 3 (5 million people)	-	1 hour	-	1 hour	1 hour	1 hour
Audience number	10 million	10 million	5 million	5 million	5 million	5 million
Platform Share	1/2	1/2	1/2	1/2	1/2	1/2
Segment 1's attention share	100%	-	-	-	-	-
Segment 2's attention share	-	50%	50%	-	-	-
Segment 3's attention share	-	25%	-	25%	25%	25%
Attention Share	**50%**	**18.75%**	**12.5%**	**6.25%**	**6.25%**	**6.25%**

This example highlights the limits of standard concentration measures, like television ratings or newspaper circulation, that are *platform-centric*: they tell us what happens on one platform. We can learn whether there is concentration on that specific platform, but that information is of limited use in situations like Figure 1.

In my previous work, I propose starting from the most granular level of analysis: news consumption by each individual voter.[23] For each voter – or for a statistically representative sample of them – we can ask: Where does this person get her political news? And as Thomas Jefferson might ask: Who provides individual voters with the information they need to keep politicians accountable?

Once we have that granular information, we will aggregate not within platforms or markets, as it is done traditionally, but across voters, thus going from "Who provides individual voters with the information they need to keep politicians accountable?" to "Who provides the electorate with the

information they need to keep politicians accountable?" In a good media system, it is a large number of independent sources. In a bad system it is a small number of powerful people who are friends with the government.

Person-centric concentration measures face a number of conceptual and practical hurdles. Let me propose the simplest one I can think of. The starting point for this simple measure is a news consumption matrix such as that in Figure 1. Suppose we know from surveys and/or direct usage analysis where a set of voters gets its political news. For each voter i, let h^i_s denote the amount of attention that i devotes to news source s. This can be measured in many ways: one possible unit is time as in Figure 1, in which case h^i_s is the number of hours per week the voter spends on that source.

Next, let us turn absolute attention into relative attention. If H^i is the total attention our voter devotes to all sources, the relative attention she devotes to source s is:

$$a^i_s = \frac{h^i_s}{H^i}$$

In the attention-as-time interpretation a^i_s is telling us what percentage of i's media time is devoted to source s. In Figure 1, for instance, people in Segment 1 devote all their attention to TV1 while people in Segment 2 only devote half of their attention to TV2.

The final step consists in aggregating attention shares across voters. Suppose there are N voters. The (total) attention share A of source s is the sum of attention shares across voters, divided by the number of voters:

$$A_s = \frac{\text{Sum}_i a^i_s}{N}$$

For instance, TV1 has a 100% attention share over 10 million voters and a 0% attention share over the remaining 10 million. Thus, its (total) attention share A_{TV1} is 50%, as reported in the bottom row of Figure 1.

Unlike the other metrics – raw audience numbers and market shares – attention share captures the skewness of consumption patterns: Though TV1 and TV2 have an equal number of viewers, TV1's attention share is a whopping 50%, and TV2's is only 18.75% because TV2's viewers also consume news through other platforms. Additionally, NP2, NM1, and NM2 each command

only one-sixteenth of the attention (6.25%), though they each reach half of the amount of consumers as the TV platforms.

Attention share A_s can be seen as a measure of the source *s*'s potential to manipulate political elections by characterizing the relation between an outlet's attention share and the maximum vote share the outlet can hope to swing.[24] An extremely simple case is when every voter can be vulnerable to manipulation ("naïve") with probability *m* of voters or immune to manipulation with probability 1-*m*. To make things even simpler, assume a naïve voter follows the advice of one of the sources he follows at random.

In this ultrasimple scenario, the probability that source *s* – should it wish to do so – successfully manipulates voter *i* is that voter's attention share a^i_s multiplied by the naïveté probability *m*. As a result, the total vote share source *s* controls is simply mA_s. The maximum vote share a source can swing is given by its attention share times the naïveté share.[25]

4. ATTENTION SHARES IN PRACTICE

How can attention shares be computed in practice?[26] One needs news diet information similar to that of Figure 1. Namely, one needs to know, for a representative set of citizens, where they get their political information. Datasets that only cover a subset of platforms are not appropriate. For instance, computer usage information may have information about news consumption on electronic devices but does not tell us about newspaper reading and television watching. Similarly, standard television surveys do not tell us about news consumption on other platforms. One needs a dataset that covers *all* news sources.

In a study we published last year,[27] Patrick J. Kennedy and I relied on an online survey run by the Reuters Institute for the Study of Journalism (RISJ).[28] In January and February of 2017, RISJ contracted with the polling firm YouGov to conduct a series of international internet surveys for their annual Digital News Report. All together, these surveys cover more than 72,000 individuals in 36 countries.

The survey asks: "Which, if any, of the following sources have you used

to access news in the last week? Please select all that apply." An extensive list of potential sources is tailored to each country, and the choice ordering is randomized for each respondent. The question is repeated to distinguish between traditional media platforms (television, radio, and print), online platforms (web, mobile, tablet, or e-reader), and social media platforms (such as Facebook and Twitter). Unfortunately, the survey does not ask how much time the respondent devotes to each source, so we can only assume equal time for each source.

The same source can be accessed offline (a copy of The New York Times) or electronically (New York Times app or nytimes.com). We merge all modes of access. Because we are ultimately interested in media ownership, sources are grouped according to parent companies when applicable. For instance, Fox News and the Wall Street Journal are grouped under News Corp to capture their shared majority ownership by the Murdoch family.

Before discussing the results, let me highlight three important data limitations. First, the data does not have information about the amount of time users devote to sources in the baseline tables presented; source usage is assumed to be constant across sources. If a consumer uses three sources, we assume she devotes one-third of her attention to each of them. While quantitative time information is ideal, earlier research provides qualitative information about usage frequency ("regularly", "sometimes", "hardly ever" or "never").[29] Attention shares are roughly similar if one chooses "regularly" or "sometimes."

Second, no systematic evidence exists to determine whether the same attention devoted to different sources may yield different amounts of information. For example, we may consider reading a newspaper to be intrinsically more informative than watching television, but current research does not provide a way to calculate this effectively. I therefore assume that equal time yields equal amounts of information.

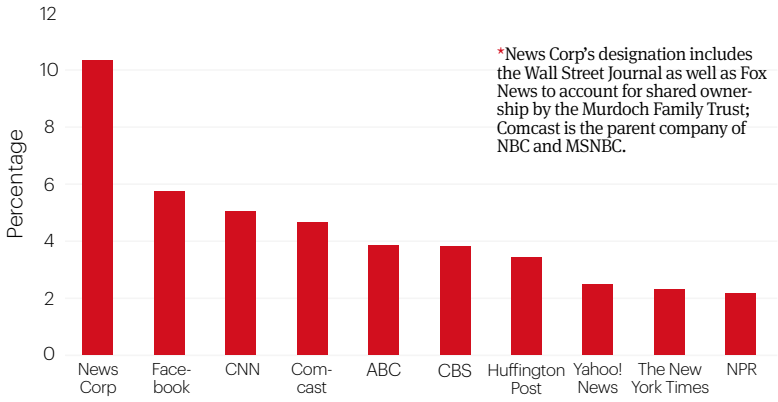
Finally, while the editorial process is transparent on traditional platforms – news stories are selected by an editorial hierarchy – it is sometimes opaque or decentralized on new platforms. The selection of news stories I see on my Facebook account is partly under my control, partly determined by my connections, and partly determined by a secret Facebook algorithm. So, while we can compare attention shares devoted to different platforms,

we should be extremely cautious in interpreting them.

Figure 2 reports the results of our exercise for the United States.[30] The top ten positions comprise:

- **5** television-based news providers: News Corp,[31] CNN, Comcast,[32] ABC, and CBS.
- **3** new media companies: Facebook, Yahoo, and the Huffington Post.
- **1** newspaper: **The New York Times**.
- **1** radio network: NPR.

FIGURE 2. ATTENTION SHARE IN THE U.S., 2017[33]



The attention share model, developed by Kennedy & Prat, applied to survey findings from Reuters Institute for the Study of Journalism's Digital News Report 2017.

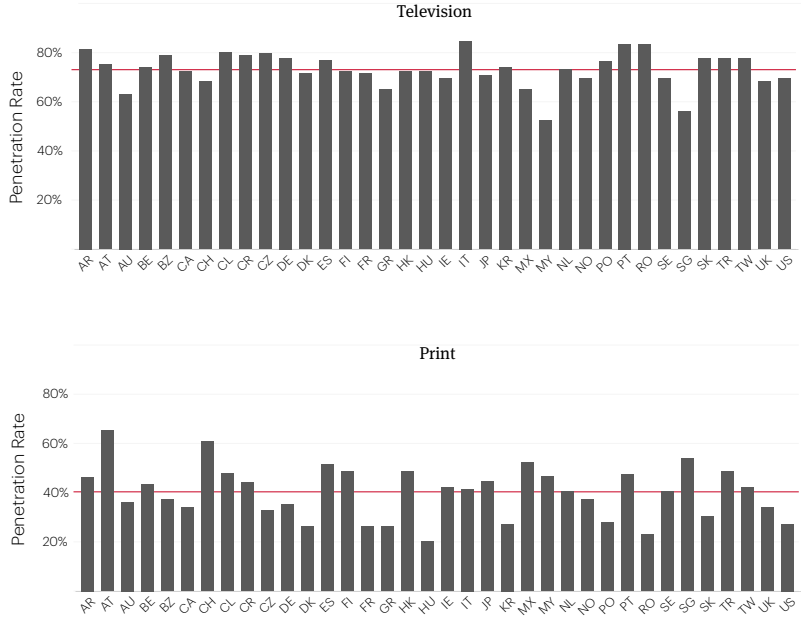
The first striking fact is that television and new media are the dominant platforms while traditional print journalism is almost absent. This is mostly due to a broad news consumption pattern. In the U.S. over 60% of respondents uses a television news source, while less than 30% of them use an online print source. This pattern is found in most of the 36 countries in our sample. The average television penetration is over 70%, while print is around 40%.[34]

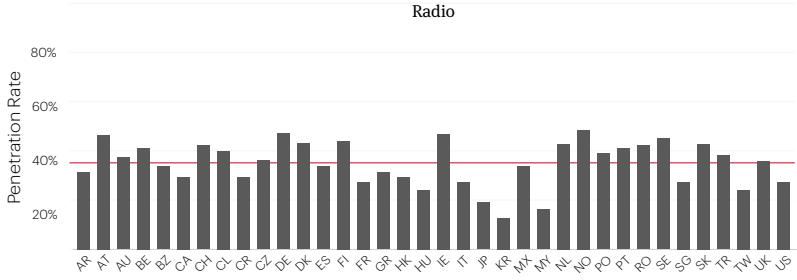
To have a sense of who the dominant players are, one can take the three highest ranked news providers according to our measure. In the U.S., it would be News Corp, Facebook, and CNN – therefore comprising two mainly television-based providers and a social media company. This is a global

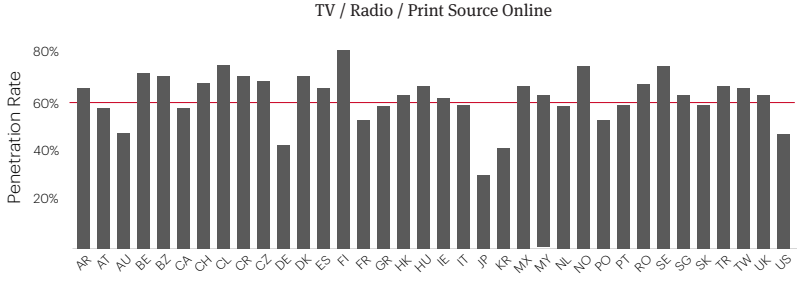
pattern. If we look at the other 35 countries, in all of them at least one of the top-three players is TV-based, and in 31 of the 35 countries, at least two of the top-three players are TV-based. Facebook scores high among non-TV-based companies: It is in the top-three list in 12 countries outside of the United States (Argentina, Austria, Brazil, Canada, Chile, Czech Republic, Greece, Hungary, Malaysia, Romania, Singapore, Turkey). No other news company has as much international reach as Facebook.

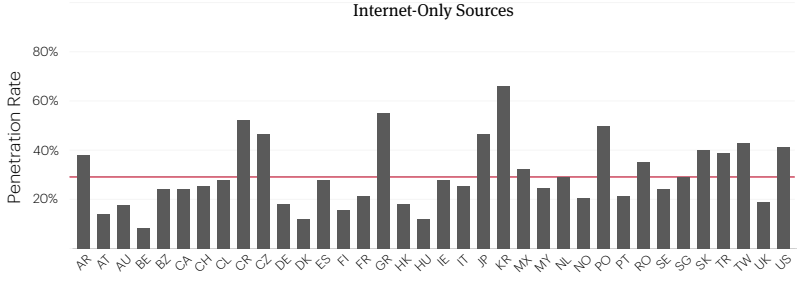
New media can be subdivided into three categories: internet-only sources (like the Huffington Post), traditional print/TV/radio sources with an online presence (like the online/app versions of The New York Times or Fox News), and social media. Internet-only sources play a relatively limited role. In most countries, the online version of traditional sources plays a more important role, with an average penetration rate around 60%. The U.S. is somewhat of an outlier: its traditional media have a lower online presence, while pure internet sources seem to be doing better than in other countries.

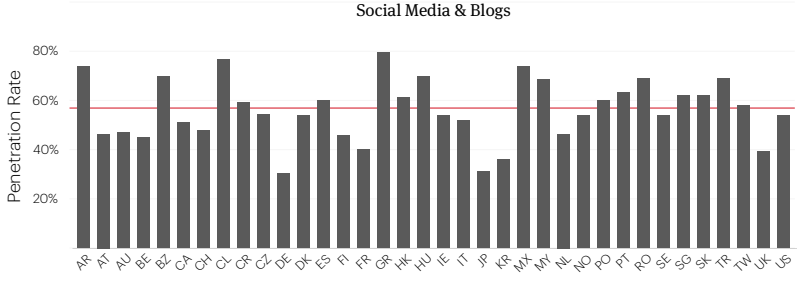
FIGURE 3. PENETRATION RATE BY PLATFORM IN 36 COUNTRIES.[35]




Radio
Penetration Rate
80%
60%
40%
20%
AR AT AU BE BZ CA CH CL CR CZ DE DK ES FI FR GR HK HU IE IT JP KR MX MY NL NO PO PT RO SE SG SK TR TW UK US


TV / Radio / Print Source Online
Penetration Rate
80%
60%
40%
20%
AR AT AU BE BZ CA CH CL CR CZ DE DK ES FI FR GR HK HU IE IT JP KR MX MY NL NO PO PT RO SE SG SK TR TW UK US

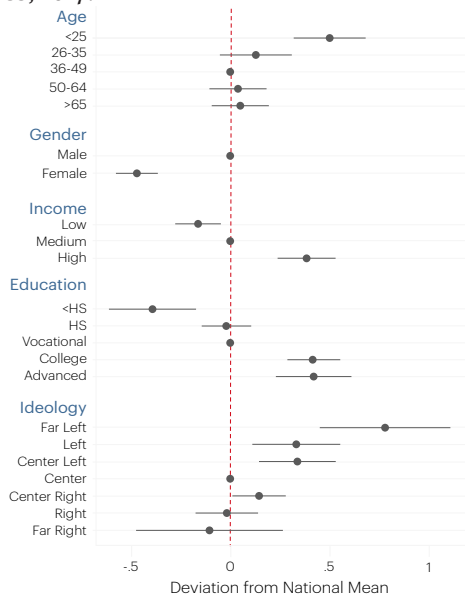

Internet-Only Sources
Penetration Rate
80%
60%
40%
20%
AR AT AU BE BZ CA CH CL CR CZ DE DK ES FI FR GR HK HU IE IT JP KR MX MY NL NO PO PT RO SE SG SK TR TW UK US


Social Media & Blogs
Penetration Rate
80%
60%
40%
20%
AR AT AU BE BZ CA CH CL CR CZ DE DK ES FI FR GR HK HU IE IT JP KR MX MY NL NO PO PT RO SE SG SK TR TW UK US

Another important pattern that emerges relates to *information inequality*. Some people get their news from many sources while others use a very small number of sources. Information inequality is an important factor in our approach to media concentration. Suppose Alice and Bob both get their news from source *S*, but Alice also uses nine other sources while Bob only accesses *S*. If *S* is trying to manipulate the views of its users, we may hypothesize that it is more likely to be successful with Bob, who is *information-poor*, than Alice, who can cross-check her information with her other sources. As I will argue later, we should be more worried about media mergers that involve companies with information-poor users.

Our work also attempted to identify which socioeconomic variables drive information inequality. We found that older people, women, low earners, and people who did not go to college tend to access a smaller number of sources.[36] Right-wing people also appear to use fewer sources.[37]

FIGURE 4. NUMBER OF NEWS SOURCES AS A FUNCTION OF PERSONAL CHARACTERISTICS, 2017.[38]



The number of news sources, expressed as a deviation from the national mean, according to personal characteristics. First calculated in Kennedy & Prat, the figure is based on results accounting for all 36 countries surveyed in the Reuters Institute for the Study of Journalism's Digital News Report 2017.

The individual-level link between income and information that we saw in Figure 4 translates into a country-level relation between income inequality and information inequality. If rich people tend to have many sources and poor people tend to have few sources, a country with an unequal income distribution will tend to have an unequal information distribution, too. For both variables, we use the same inequality measure – the Gini index – which takes a value of zero if all citizens in a country have equal income (or use an equal number of sources) and a value of 1 in the case of perfect inequality. Gini is a standard measure of income inequality; we extend its application to information.

Figure 4 plots the income inequality index and the information inequality index of every high-income country[39] in the sample. As the fitted regression line shows, there is a strong relationship between the two. At the bottom left, Finland displays a relatively equal income distribution and a relatively equal information distribution. At the top right, U.S. citizens are the most unequal both in terms of income and number of sources.

FIGURE 5. INFORMATION INEQUALITY AND INCOME INEQUALITY[40]



The relationship between income inequality and information inequality for 18 OECD member countries with high internet penetration rates (greater than 85%). The income Gini metric is pulled from the OECD's 2015 measurement; the information Gini is calculated by Kennedy & Prat.

Figure 5 is of course just a correlation. Income inequality may be causing information inequality, as hypothesized above. But causality may also run in the opposite direction. As we saw in Section 2, there is evidence that the political system discriminates against voters with less information. In the long term, that discrimination may keep them poor. Information inequality can lead to political inequality and eventually economic inequality.[41]

5. TOWARD A NEW MEDIA MERGER POLICY

Now that we have defined attention shares theoretically and explored their empirical patterns, let us discuss how they can be used to protect news plurality.

To illustrate the issues at stake, this section will develop two examples in parallel. The first is based on the fictional country in Figure 1: we are going to look at a merger between TV1 and NM1 and see how the different metrics record the increase in concentration.

The second example is real: the 2017 proposed acquisition of Sky (a European television company with a sizeable news operation) by 21st Century Fox (a company owned by Rupert Murdoch). The proposed merger would have arguably led to concentration in the U.K. news market as Rupert Murdoch's News Corp also owns two British newspapers with both print and digital platforms, The Times and The Sun.

In the first part of this section, we will analyze how current competition policy, based on the consumer welfare standard, acts in these two examples. In the second part, we see how it would act under a broader citizen welfare standard that prioritizes media pluralism.

Let us begin with the fictional merger. Current competition policy would not have much to say about the TV1-NM1 transaction. There are two cases depending on whether TV1 and NM1 derive their revenues purely from advertising or also partly from subscriptions. If they both follow a subscription model, the merger review could try to argue that the merger is likely to increase the prices they charge consumers. However, because the two companies operate in different markets (television and online), cross-price elasticity is likely to be negligible and the threat of higher prices quickly written off.

If they instead derive revenue from advertising, one could try to argue that the merged entity will have a greater market power vis-a-vis advertisers, and this will lead to higher ad prices that may hurt consumers. This argument is unlikely to work in practice for the advertising market because of its vast scale and the relatively tiny piece of it that the news industry comprises; entertainment and sports are much more important from an advertising revenue standpoint. Also, the effect on consumers is indirect, and one would have to prove not just that there will be an effect on ad supply but that the effect will hurt consumers. A similar argument that the merged entity will have greater market power vis-a-vis content providers is also unlikely to work because different platforms are unlikely to compete for the same content.

Now, consider the 2017 proposed acquisition of Sky by 21st Century Fox in the U.K. As this merger involved a company with operations in multiple countries, the merger review was carried out by the European Commission, who cleared the merger. Their rationale was that the merging companies are mainly active at different levels of the market, and so their assessment focused on whether, as a result of the proposed transaction:

- Fox would be able to prevent or significantly limit access by Sky's competitors to its films and other TV content, as well as to its TV channels. The Commission concluded that these possible concerns were not founded. This is because the parties' audience shares remain limited and pay-TV distributors would continue to have access to content from Fox's competitors and alternative channels with comparable programming and audiences in the relevant Member States.
- Sky would be incentivized to cease purchasing content from Fox's competitors. The Commission found that this was unlikely as it would reduce the quality of Sky's product offering.
- Sky could prevent competing channels from accessing its platform. The investigation found that the merged companies' ability to shut out Fox's rivals was significantly mitigated by existing regulations in the U.K., Germany, and Austria. In addition, competitors that could have been targeted for exclusion are either contractually protected for a sufficient period of time or are not dependent on Sky's retail platform in the relevant Member States.

Based on the results of its market investigation, the Commission concluded that the proposed transaction would raise no competition concerns.[42]

As the two examples illustrate, the consumer welfare criterion may be insufficient for evaluating the full impact of mergers between news providers. What can be done instead?

For the fictional TV1-NM1 case, one can look at the effect on attention shares. The effect of a merger is easy to compute: the attention share of the new entity is equal to the sum of the shares of the merging entities. As TV1 had a 50% share and NM1 had a 6.25% share, the new company would have a 56.25% share. Given that TV1 already has the largest attention share, it is easy to argue that the new company would have an even larger potential to manipulate the democratic process in our fictional country.

To account for this effect, the Stigler Committee proposed a parallel merger review. Every merger between media companies would be assessed according to two standards:

1. A regular competition policy merger review: This would assess the potential damage to consumer welfare. This would be the same as the current review and would be performed by the relevant competition authority.
2. A media plurality review: This would assess the potential damage to the democratic process in terms of excessive concentration of attention shares in the hands of one owner. An attention share threshold applicable to the proposed merged entity would trigger a plurality review.[43]

To see how this might work in practice, let us return to the Sky-21st Century Fox merger. In its April 2017 decision allowing the merger after a competition policy review, the European Commission noted that:

> The Commission has exclusive jurisdiction to assess the impact of the proposed transaction on competition in the various markets affected within the European Economic Area. However, Article 21 of the EU Merger Regulation recognises that Member States may take appropriate measures, including prohibiting proposed transactions, to protect other legitimate interests, such as media plurality.[44]

The purpose of, and legal frameworks for, competition assessments and media plurality assessments are very different. The competition rules focus broadly on whether consumers would be faced with higher prices or reduced innovation as a result of a transaction. A media plurality assessment typically looks at wider concerns about whether the number, range, and variety of persons with control of media enterprises is sufficiently diverse.

Shortly before the European Commission's decision, the U.K. Secretary of State for Culture, Media and Sport issued a European intervention notice requiring the relevant U.K. authorities to investigate and report on whether the proposed transaction is, or may be, against the public interest.[45] The Secretary of State asked the Competition and Markets Authority (CMA) to carry out a review to determine "whether, taking account only of the media plurality consideration and the broadcasting standards consideration concerned, the creation of that situation may be expected to operate against the public interest."[46] Note that the relevant standard set out was the public interest rather than consumer welfare.

The CMA's review found that the proposed transaction "may be expected to operate against the public interest taking account of the need, in relation to every different audience in the U.K. or in a particular area or locality of the U.K., for there to be a sufficient plurality of persons with control of the media enterprises serving that audience (the media plurality consideration)."[47] The CMA recommended that the merger should be allowed only if 21st Century Fox was going to divest the whole of Sky News – a draconian remedy. The merger was never finalized.

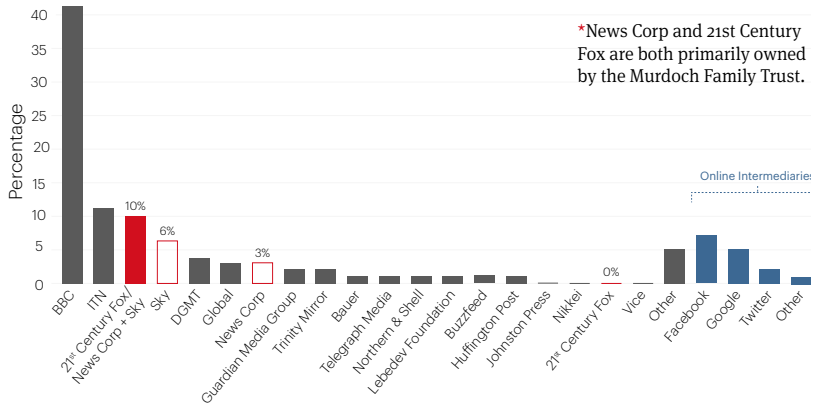
The CMA arrived at its conclusion through an empirical analysis of the attention shares of the merging entities. According to the stated objective, "The media plurality consideration seeks to guard against the control of media enterprises being overly concentrated in the hands of a limited number of persons and the fact that it would be a concern for any one person to control too much of the media."[48]

For its empirical assessment, the CMA used Ofcom's 2016 News Consumption Survey (NCS) based on interviews with 2,894 U.K. residents.[49] Like the survey[50] from RISJ used in Kennedy and my research, NCS asked which news sources respondents use. One difference is that RISJ suggests

a specific timeframe ("last week") while NCS is more vague ("nowadays"). Another difference is that RISJ uses an online questionnaire while NCS relies on face-to-face interviews.[51]

Figure 6 reports the values of the attention shares used in the CMA review of the Sky-21st Century Fox merger. The two merging entities, Sky and News Corp, currently command approximately 6% and 3% of overall attention for news in the U.K., respectively. This puts Sky in the fourth position after BBC, ITN, and Facebook, and News Corp in the eighth position. If the merger was allowed, the new entity would have an approximate attention share of 10% and be in the third position after BBC and ITN. However, the CMA noted that these two organizations have different structures compared to Sky and News Corp. BBC's funding structure and governance place special constraints on it to be impartial and ITN is composed of three channels (ITV, Channel 4, and Channel 5) that enjoy editorial separation.

Figure 6. Attention "Shares of Reference" in the U.K., 2016



The share of reference *of news sources in the UK as presented by the Competition and Markets Authority, calculated using Ofcom's measurement framework (an alternative measure to the author's* attention share *model for assessing media consumption) and survey findings from its News Consumption in the UK: 2016.*

6. CONCLUSION

THIS ESSAY HAS ARGUED that media is central to the democratic system but it is also vulnerable to capture. The risk of capture can be reduced by ensuring that the media industry remains relatively unconcentrated. The traditional platform-centric media ownership limits have lost their effectiveness and need to be replaced by platform-neutral rules that can adapt to a growing set of platforms with blurred boundaries. Standard competition policy is also inadequate. We need to rethink how to measure and protect media plurality.

One possible platform-neutral media concentration measure is attention share. It attempts to capture the importance of each media organization in delivering news to voters and it can be computed from existing news consumption data. A study of attention shares in 36 countries reveals some global patterns: the presence of powerful media owners who tend to be traditional broadcasting companies or social media, as well as a degree of information inequality among voters that is explained by sociodemographic factors. Attention share indices can be part of the review of media merger cases, as illustrated theoretically and through a recent U.K. decision.

It is urgent that we strengthen media plurality defenses and that we adapt them to the digital age. This note has argued that this is not an impossible task: there is at least one way to define and operationalize news plurality and use it to enforce ownership limits.

However, this is just one safeguard against media capture. We should conclude by pointing out that there are other important policy questions about media ownership that require our attention.

First, even the strictest ownership limits cannot prevent a sufficiently powerful autocrat from capturing the media industry. Besides putting limits on how much media one individual owner can acquire, we might want to introduce conflict of interest rules. Most private media organizations are owned by powerful families with large industrial interests.[52] For those owners, the potential profit from selling news is swamped by the prospective profits of their other financial interests: someone who owns a car manufacturer and a newspaper typically has much more at stake financially from the former than the latter. They may therefore be tempted to use their newspaper

as a way to curry policy favors from the government, like car import tariffs in exchange for favorable coverage. We must find ways to either restrict this type of ownership or impose effective governance safeguards against potential conflict of interest.

Second, we should reignite the debate on how to deal with the public good nature of political news. The information inequality analysis in Section 4 highlights the presence of a large gap between a privileged minority that accesses a large range of high-quality outlets and an information-poor majority. The digital age is making this gap worse: those who are not willing to pay for subscription-based news are at the mercy of lesser-quality, easily manipulated news sources. Given the public nature of political information, it makes sense to invest to reduce this gap – just like we invest in public education and public health. The traditional solution to this problem – in all large Western democracies but the U.S. – is a well-funded public sector broadcaster. Additionally, a media voucher system is among many proposed solutions that we can consider.[53]

NOTES

1 Letter from Thomas Jefferson to Edward Carrington (Jan. 16, 1787), https://founders.archives.gov/documents/Jefferson/01-11-02-0047 [https://perma.cc/E45X-GEHD] (emphasizing the importance of newspapers and that "public opinion … restrains morals as powerfully as laws ever did anywhere").

2 Upton Sinclair, The Brass Check: A Study of Am. Journalism (1919).

3 *See generally* Handbook of Media Economics (Simon Anderson, Joel Waldfogel & David Strömberg eds., 2015); Andrea Prat & David Strömberg, *The Political Economy of Mass Media*, *in* 2 Advances in Econ. and Econometrics: Tenth World Congress 135 (Daron Acemoglu, Manuel Arellano & Eddie Dekel eds., 2013).

4 Ronald Coase, British Broadcasting: A Study in Monopoly (1950).

5 The media provides other public goods besides political information. For instance, it can change our social attitudes. *See* 1A Handbook of Media Economics, *supra* note 3.

6 James M. Snyder & David Strömberg, *Press Coverage and Political Accountability*, 118 J. Pol. Econ. 355 (2010).

7 Timothy Besley & Robin Burgess, *The Political Economy of Government Responsiveness: Theory and Evidence from India*, 117 Q. J. of Econ. 1415 (2002) (studying the period from 1958 to 1992).

8 Claudio Ferraz & Frederico Finan, *Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes*, 123 Q.J. Econ. 703 (2008).

9 Media Capture in the Digital Age (Anya Schiffrin ed., 2020); In the Service of Power: Media Capture and the Threat to Democracy (Anya Schiffrin ed., 2017); Timothy Besley & Andrea Prat, *Handcuffs for the Grabbing Hand? Media Capture and Government Accountability*, 96 Am. Econ. Rev. 720 (2006); Anya Schiffrin, *Governments and Corporations Hinder Journalists with "Media Capture,"* Colum. J. Rev. (2017), https://www.cjr.org/watchdog/media-capture.php [https://perma.cc/V6AF-9KJT].

10 The authors reconstructed the complex system of bribes created during Alberto Fujimori's presidency of Peru from 1990 to 2000 using Montesinos's written and video records of payments made to various actors, including most of the country's television networks and newspapers. In turn, those media outlets provided neutral or positive coverage of Fujimori. John McMillan & Pablo Zoido, *How to Subvert Democracy: Montesinos in Peru*, J. Econ. Persp., Fall 2004, at 69.

11 Nati Tucker, *In Secret Tape, Netanyahu Negotiated Favorable Coverage with Israeli Media Mogul*, Haaretz (Jan. 8, 2017), https://www.haaretz.com/israel-news/netanyahu-negotiated-favorable-coverage-with-media-mogul-1.5483124 [https://perma.cc/5S6A-ZZU8].

12 Henry Leveson, An Inquiry into the Culture, Practices and Ethics of the Press, 2012–13, HC 779, at 26 (U.K.), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/229039/0779.pdf [https://perma.cc/JS4C-Q8LK]. For a comprehensive overview of media capture as a growing phenomenon that occurs in different geographies, different platforms, and through different actors, see In the Service of Power, *supra* note 7.

13 Besley & Prat, *supra* note 9.

14 Media capture is not limited to politics. Media can also be used to manipulate financial markets. *See, e.g.*, Alexander Dyck, Natlya Volchkovav & Luigi Zingales, *The Corporate Governance Role of the Media: Evidence from Russia*, 63 J. Finance 1093 (2008). Powerful interests may also want to control the media to affect society at large. This essay focuses on politics, but most of its results would extend to other domains of possible media capture.

15 Besley & Prat, *supra* note 9; Aymo Brunetti & Beatrice Weder, *A Free Press is Bad News for Corruption*, 87 J. of Pub. Econ. 1801 (2003); Simeon Djankov, et al., *Who Owns the Media?*, 46 J.L. & Econ. 341 (2003)?

16 Besley & Prat, *supra* note 9, at 726.

17 Based on calculations of media power by Patrick J. Kennedy & Andrea Prat, *Where Do People Get Their News?*, Econ. Pol'y, Jan. 2019, at 19–20.

18 Philip M. Napoli, *Assessing Media Diversity in the U.S.: A Comparative Analysis of the FCC's Diversity Index and the EU's Media Pluralism Monitor, in* Media Pluralism and Diversity 141 (Peggy Valcke, Miklós Sükösd & Robert Picard eds., 2015).

19 Prometheus Radio Project v. FCC, 373 F.3d 372, 402 (3d Cir. 2004).

20 *See, e.g.*, Michele Polo, *Regulation for Pluralism in the Media Markets, in* The Econ. Reg. of Broadcast Markets 150, 175–78 (Paul Seabright & Jürgen von Hagen eds., 2007).

21 Stigler Comm. on Digital Platforms, Final Report 186 (2019), https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf [https://perma.cc/VN7R-ZJ7Y].

22 Andrea Prat, *Media Power*, 126 J. Pol. Econ. 1747 (2018). *See generally* Eli Noam, Who Owns the World's Media? (2016).

23 Prat, *Media Power, supra* note 22.

24 *Id*.

25 In less simple scenarios, the relationship between attention share and control of vote share is mediated by other factors. Including ideology, bandwidth, and the electoral system, among others. *See* Prat, *Media Power, supra* note 22.

26 *See also* Noam, *supra* note 22; Prat, *Media Power, supra* note 22.

27 Kennedy & Prat, *supra* note 17.

28 Nic Newman et al., Reuters Inst. for the Study of Journalism, Digital News Rep. 2017 (2017), https://reutersinstitute.politics.ox.ac.uk/sites/default/files/Digital%20News%20Report%202017%20web_0.pdf [https://perma.cc/Z73J-GUX5] [hereinafter RISJ Digital News Rep.].

29 Prat, *Media Power, supra* note 22, at 1763, 1780.

30 Kennedy and I gauge potential measurement problems by comparing the RISJ results with that of other surveys. For the U.S., we compare the 2017 RISJ survey to the 2012 Pew survey and find that the relative ranking of news sources on traditional platforms is very similar. Kennedy & Prat, *supra* note 17. New media has much higher attention in 2017 Reuters than in 2012 Pew, but that is probably due to an actual growth of those sources. For the U.K., we compare the 2017 RISJ survey with a face-to-face 2016 survey conducted by Ofcom – a more useful comparison because the two surveys are almost contemporaneous. Ofcom, News Consumption in the U.K.: 2016 (2017), https://www.ofcom.org.uk/__data/assets/pdf_file/0016/103570/news-consumption-uk-2016.pdf [https://perma.cc/Y8PB-EU7T] [hereinafter Ofcom NCS].

31 The attention attributed to News Corp (referring to media entities primarily owned by the Murdoch family) in the U.S. comes almost entirely from Fox News. The *Wall Street Journal* on its own commands less attention than the *New York Times* and would not be a top-ten source.

32 Comcast is the parent company of NBC and MSNBC.

33 Kennedy & Prat, *supra* note 17 (applying their attention share model to survey data from RISJ Digital News Rep., *supra* note 28).

34 *See infra* Figure 3.

35 Kennedy & Prat, *supra* note 17, at 10 (analyzing survey data from RISJ Digital News Rep., *supra* note 27).

36 *See infra* Figure 4.

37 This pattern does, however, vary from country to country. In the U.S., right-wing voters access a particularly small number of sources. Kennedy & Prat, *supra* note 17, at 15.

38 Figure 4 shows the number of sources, expressed as deviation from the national mean, as a function of personal characteristics. The figure shows results accounting for all countries surveyed. *Id*. at 15 (analyzing survey data from RISJ Digital News Rep., *supra* note 28).

39 The high-income countries included are OECD member countries with internet penetration greater than 85%.

40 Kennedy & Prat, *supra* note 17, at 17 (analyzing survey data from RISJ Digital News Rep., *supra* note 28 and using the income Gini coefficient calculated in *Income Inequality*, OECD, https://data.oecd.org/inequality/income-inequality.htm [https://perma.cc/R8RA-QEZB].

41 Maria Petrova, *Inequality and Media Capture*,

92 J. Pub. Econ. 183 (2008).

42 Press Release, European Comm'n, Mergers: Commission Clears 21st Century Fox's Proposed Acquisition of Sky Under EU Merger Rules (Apr. 7, 2017), https://ec.europa.eu/commission/presscorner/detail/en/IP_17_902 [https://perma.cc/HLS6-V7LL].

43 Stigler Comm., *supra* note 21, at 145.

44 European Comm'n, *supra* note 42.

45 Karen Bradley, Secretary of State for Culture, Media and Sport (U.K.), European Intervention Notice Given Pursuant to Section 67 Enterprise Act 2002 Anticipated Acquisition of Sky Plc by Twenty-First Century Fox, Inc. (Mar. 16, 2017), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/600344/European_Intervention_Notice_Sky_Fox__16_March_2017.pdf [https://perma.cc/894U-J785].

46 Competition and Markets Authority, United Kingdom, Report on the Anticipated Acquisition by 21st Century Fox, Inc and Sky Plc 7 (2018), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/713920/CMAFoxSky_report_non-confidential.pdf [https://perma.cc/C8N8-4BCS] [hereinafter CMA].

47 *Id*.

48 *Id*. at 10.

49 Ofcom NCS, *supra* note 30.

50 RISJ Digital News Rep., supra note 28.

51 Despite these differences, the relative ranking of different sources is quite similar. Eight of the top ten news providers according to RISJ are present in the top ten list of NCS in a similar relative order. The big exception is the Huffington Post, possibly because it has an exclusively online presence. For details, see Kennedy & Prat, *supra* note 17, at 12.

52 Djankov et al., *supra* note 15 (analyzing media ownership in 97 countries).

53 Stigler Comm., *supra* note 21, at 176–84.

About the Author

Andrea Prat is Richard Paul Richman Professor of Business at Columbia Business School and Professor of Economics at Columbia University. Prat's research in organizational economics explores issues such as incentive provision, corporate leadership, employee motivation, and organizational language. His recent work in political economy attempts to define and measure the influence of the media industry on the democratic process. In addition to publishing numerous articles in economics and finance journals, Prat served as Chairman and Managing Editor of the Review of Economic Studies. He is also Associate Editor of Theoretical Economics and a director of the Industrial Organization program of the Center for Economic Policy Research. Prat is a Fellow of the Econometric Society and the British Academy.

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