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THE US PRESS, 1869-1928

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**ABSTRACT**

Using data from 1869 to 1928, we estimate the effect of party control of state governments on the entry, exit, circulation, prices, number of pages, and content of Republican and Democratic daily newspapers. We exploit changes over time in party control of the governorship and state legislatures in a differences-in-differences design. We exploit close gubernatorial elections and state legislatures with small majorities in a parallel regression-discontinuity design. Neither method reveals evidence that the party in power affects the partisan composition of the press. Our confidence intervals rule out modest effects, and we find little evidence of incumbent party influence even in times and places with high political stakes or low commercial stakes. The one exception is the Reconstruction South, an episode that we discuss in detail.

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An online appendix is available at:  
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# 1 Introduction

Governments everywhere have an interest in controlling the press. Dictatorships such as North Korea and Cuba maintain nearly total control over media content. Moves toward autocracy in Russia and Venezuela have been accompanied by reduced press freedom (Corrales et al. 2009). In the 1990s, Peru's secret-police chief Vladimiro Montesinos Torres paid 100 times more in bribes to media outlets than to all judges and politicians combined (McMillan and Zoido 2004). Even in democratic countries, governments sometimes use tools such as regulatory authority or privileged access to information to support sympathetic media (Gentzkow and Shapiro 2008; Thomas 2006; Bennett et al. 2007).

Two forces potentially restrain government capture. The first is legal protections, from constitutional guarantees of press freedom to explicit laws limiting the scope of government patronage. The second is market discipline. Theory suggests that greater commercial returns to media, private ownership, and competition should all limit capture (Besley and Prat 2006). To what extent these forces are effective in restraining government influence is an empirical question with important implications for welfare (Besley and Prat 2006).

In this paper, we study government influence on the US press from 1869 to 1928, a time when the tension between forces supporting and undermining press freedom was especially strong. All newspapers were privately owned, and newspaper markets were intensely competitive: 470 cities had two or more daily newspapers in 1928, and 25 cities had five or more. Expanding advertising markets, falling costs, and growing literacy created potent commercial incentives (Baldasty 1992; Petrova 2011; Gentzkow et al. 2006). Yet legal and institutional constraints on government influence remained relatively weak. State officeholders supported loyal newspapers with printing contracts and provided editors and publishers with patronage jobs (Baldasty 1992, 21; Summers 1994, 47-48, 54, 60, 210-214). Politicians contributed money to start new newspapers and bailed newspapers out when they were in financial trouble (Kaplan 2002, 61-63; Summers 1994, 49, 60). Half of US daily newspapers maintained explicit affiliations with political parties into the 1920s (Lee 1937, 182). Whether market forces succeeded in restraining government influence remains a point of contention among historians.<sup>1</sup>

We use panel data on all general circulation daily newspapers to estimate the effect of party control

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<sup>1</sup>Kaplan (2002) writes that “The fourth estate of both the nineteenth and twentieth centuries... is quite weak and easily overpowered by rival political powers. Indeed, the press is inevitably entangled in the debate of the public arena and influenced by the political powers that be” (3). Referring to the end of the nineteenth century, he writes, “Politicians, desiring favorable publicity... invested heavily in the journalistic market... In the end, politics decisively influenced the structure of the market” (55). In contrast, Baldasty (1992) argues that by the end of the nineteenth century, “advertisers replaced political parties as the key constituent (and chief financial angel) of the press” (5). As a result, he writes, “In 1900, American newspapers bore little resemblance to the small journals that had so earnestly debated politics in the 1820s and 1830s. Newspaper owners and editors were no longer primarily political activists.... Most everyone in the newspaper industry claimed to be independent of party dictation” (139).

of state governments on the entry, exit, circulation, prices, number of pages, and content of papers with Republican and Democratic affiliations. Patronage from state governments—whether in the form of jobs, contracts, or direct subsidies—increased the relative attractiveness of operating a paper affiliated with the party in power. As a result, changes in the party control of state government could affect our outcome measures by affecting the incentive to affiliate with the winning and losing parties.

Our fundamental empirical challenge is separating the causal impact of incumbent politicians from changes in the preferences of voters that affect both election outcomes and the demand for partisan news. We address this using two strategies. First, we run panel regressions including the share voting Democrat in presidential elections as a control for voter preferences, noting that the most obvious confounds in these regressions would bias us toward over-stating the extent of political influence. Second, we use a regression-discontinuity approach following Lee (2008) in which we focus on outcomes of close elections or on state legislatures with small majorities.

We find no evidence that incumbent governments influence the press in our sample as a whole. Our main outcome variable is the Democratic share of circulation, which we expect to capture the combined effect of many different margins of influence. Panel estimates suggest that shifting the governorship and both houses of the state legislature from Republican to Democratic control *decreases* the Democratic share of circulation by a small and statistically insignificant amount. Regression-discontinuity estimates confirm the conclusions of the panel analysis, as do estimates allowing for a range of dynamics in the influence of governments on the press.

Our failure to find an effect of incumbent party on the evolution of the press does not arise from a lack of power. Our data include a significant number of political transitions, many of which resulted in long-lived changes in party control. In our panel estimates, we can rule out an effect of Democratic control greater than 1.7 percentage points per year or 2.2 percentage points cumulatively depending on the specification.

We also look separately at the effect of the incumbent party on newspapers' entry, exit, circulation of continuing papers, prices, number of pages, and content, the last of which we capture by the frequency of presidential candidate mentions in newspaper text. These outcomes correspond to specific channels through which the historical record suggests that state government could influence the press. Newspapers could enter in order to receive patronage from the state legislature (Summers 1994, 60) or be propped up by sympathetic politicians (Kaplan 2002, 63). Legislators boosted circulation by ordering official copies (Dyer 1989, 18), and governors attempted to influence content by withdrawing patronage from newspapers that did not toe the party line (Abbott 2004, 171, 178-179). Newspapers used strategic price decreases to induce purchases for political aims (Abbott 2004, 61).

Examining these margins of influence individually, we find no evidence of any systematic effect of the party in power. We use our results for the price and number of pages to argue that our findings do not result from offsetting demand-side and supply-side effects.

While the bulk of our analysis follows the historical literature in focusing on state government (Dyer 1989), in the online appendix we present a limited analysis of the effects of federal and local officeholders, where we again find no effect. The online appendix also extends our results to a more recent period (and additional dimensions of newspaper content) using data on newspaper endorsements between 1932 and 2004. This analysis shows no significant effects.

In light of the negative results for the full sample, we turn next to examining whether incumbent party influence may be important in sub-samples where market discipline was relatively weak, and the political stakes were especially high. We re-estimate our panel specifications on data for counties with low average advertising rates, average subscription prices, income, and literacy. We also present estimates for the early part of our sample, when political patronage played a relatively larger role in newspaper finances; for state capitals and county seats, where newspapers were believed to be most politically relevant; and for presidential battleground states. In none of these settings do we find any clear evidence of incumbent party influence.

Finally, we consider the South during and after Reconstruction. This episode combined uniquely powerful political incentives, as Republican governments sought to build support among a hostile population, and greatly weakened market discipline, as economic devastation reduced demand from both newspaper readers and advertisers and dramatically limited press competition. The historical record suggests that these factors translated into deliberate efforts by Republican governments to expand the reach of Republican papers (Abbott 2004). We argue that the subsequent transition of state governments to solid Democratic control affords credible variation for identifying the effects of interest.

We estimate that the transition from Republican to Democratic control was associated with an increase in the daily circulation share of Democratic newspapers of approximately 10 percentage points, an effect well outside the confidence interval of the analogous estimate for the full sample. Supplementary data show effects of similar magnitude on the weekly circulation share of Democratic newspapers. We interpret these findings as evidence of an effect of the withdrawal of support for the Republican press, though we note that some of the effect may come from Democrats using control of the state to suppress Republican papers and provide patronage to Democratic papers.

The Reconstruction results inform the broader conclusions of our paper in two ways. First, the fact that the estimated Reconstruction effect is far outside our main confidence interval confirms that we have

the power to detect significant influence when it occurs. This test thus bolsters our conclusion that such influence was not the norm in the late nineteenth and early twentieth centuries. Second, the Reconstruction is a reminder that even if market forces discipline government intervention in most times and places, this does not prevent governments from manipulating the press when the market is particularly weak and the political incentives are especially strong.

We stress three important limitations of our findings. First, we present only limited evidence on influence by local and federal governments, both of which played a role in the system of political patronage. Second, we have only coarse measures of newspaper content. It is possible that incumbent governments influence content in ways more subtle than our measures can detect. Finally, in exploiting party transitions, our identification strategy presupposes some degree of political competition. We can therefore speak only indirectly to the extent of state influence on the press in times and places where such competition is absent.

An important literature views incumbents' distortion of public policy to maintain electoral advantage as a major source of inefficiency in competitive political systems (Besley and Coate 1998; Acemoglu and Robinson 2000; Mulligan and Tsui 2008). While efforts to influence or capture the media are widely thought to be among these distortions, little systematic evidence exists on their pervasiveness or importance.

Ours is the first study to integrate evidence on the effect of incumbent parties on the entry, exit, readership and content of the press, and to study how these influences vary with the strength of political and commercial incentives. Di Tella and Franceschelli (2011) and Qian and Yanagizawa-Drott (2013) show evidence of state influence on private media coverage of scandals in Argentina and of international human rights coverage in the US, respectively. Boas and Hidalgo (2011) show that city councilors in Brazil preferentially approve broadcasting applications of sympathetic media. Durante and Knight (2012) show that changes in control of government affected the content and viewership of public and private TV stations in Italy from 2001 to 2007.

Our study is also related to research on the agenda-setting power of the state (Edwards and Wood 1999), on the role of media in the electoral advantage of incumbents (Ansolabehere et al. 2006; Prior 2006), and on the emergence of a politically independent press in the United States (Gentzkow et al. 2006; Petrova 2011). More broadly, the paper contributes to a growing empirical and theoretical literature on the sources of media bias including owner ideology (Balan et al. 2009), tastes of reporters (Baron 2006), consumer preferences (Mullainathan and Shleifer 2005; Gentzkow and Shapiro 2010), and preferences of the wealthy (Petrova 2008).

## 2 Data

### 2.1 US Newspaper Panel

We use data from the US Newspaper Panel (Gentzkow et al. 2011). The data contain the name, city, circulation, and political affiliation of English-language daily US newspapers in presidential election years from 1869 to 1928, hand-entered from G. Rowell & Co's *American Newspaper Directory* (1869-1876) and N. W. Ayer & Son's *American Newspaper Annual* (1880-1928). (We use 1869 in place of year 1868 because we are not aware of a directory of daily newspapers published prior to 1869.) We assume that the variables in the directories are measured as of January 1 of the year in which the directory is published. We show in the online appendix that our results are robust to varying this timing assumption and to excluding data from 1869.

We define a time-constant measure of political affiliation for each newspaper. We classify a newspaper as Republican if it ever declares a Republican affiliation and as Democratic if it ever declares a Democratic affiliation. In the handful of cases in which a newspaper declares a Republican affiliation in one year and a Democratic affiliation in another, we use the affiliation declared most often by the newspaper. Newspapers that ever declare an affiliation represent 87 percent of the newspaper-years in our sample.

We treat affiliations as static because that assumption provides a good match to data on newspaper content (Gentzkow et al. 2011). In the online appendix, we show that our results survive if we use a contemporaneous measure of affiliation instead of a time-constant measure. Contemporaneous affiliation is available for 63 percent of the newspaper-years in our sample.

We calculate the total number and circulation of Democratic and Republican daily newspapers in each state in each year. Our key dependent variable of interest is the Democratic share of newspaper circulation. Among newspapers whose circulation is observed in at least one year, we classify 1974 as Republican and 1748 as Democratic. We exclude newspapers that never declare a partisan affiliation or that always declare their affiliation as "Independent." We show in the online appendix that our results are robust to including independent papers in the analysis.

There are two drawbacks to using circulation to define our dependent measure. The first is that circulation is missing in 13 percent of the newspaper-years in our sample. The second is that circulation is often based not on independent audits but on newspaper self-reports, which could be inaccurate or stale.<sup>2</sup> Both problems are more severe in the early portion of our sample. In defining the Democratic share of newspaper

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<sup>2</sup>Cases in which circulation is literally unchanged from one period to the next, an indicator for stale data, constitute 10 percent of newspaper-years overall and 4 percent if we weight by circulation.

circulation, we treat missing values as if they were zeros. We expect missing data and self-reporting to be sources of noise in our estimates, but not sources of systematic bias. In the body of the paper, we report separate results using the Democratic share of newspapers, entries, and exits, none of which depends on the circulation data. In the online appendix, we show that our conclusions are robust to dropping observations affected by missing or stale data.

For a subset of newspaper-years, we have a direct measure of the newspaper's content collected using automated searches on the website newspaperarchive.com. For each newspaper, for each presidential election from 1872 to 1928, and for each party, we search newspaperarchive.com for articles containing the last names of both the presidential and vice presidential candidates and at least one of the words "Nominee," "Candidate," "Nomination," "Race," "Ticket," "Election," or "Campaign." We compute, for each state and year, the average share of candidate mentions that go to the Democratic candidate among Democratic and Republican newspapers. Our content measure is available for seven percent of newspaper-years in our data, of which 36 percent are Democratic-affiliated newspapers (compared to 47 percent overall).

For all years excluding 1880 and 1884 we obtain data on the annual subscription price of each newspaper. For 1869 to 1912 we obtain data on the number of pages of a weekday issue of the newspaper. In cases in which the directory reports the number of pages as a range, we use the midpoint. From these we calculate the mean subscription price and the mean number of pages per issue by state, year, and political affiliation. For the years 1880 and 1884 we obtain the publisher's posted rate for a 10-line advertisement running for one month. We use this to compute mean advertising price per copy in each county. We trim implausible values of both subscription and advertising prices from our data.

We check the accuracy of the subscription prices using prices quoted in a random sample of newspapers for which scanned copies of the newspaper are available. For 75 percent of the random sample, the prices quoted in these papers are within four percent of the prices in the newspaper directories. In the online appendix we describe this audit in more detail and we present results for the subset of newspaper-years with changes in the subscription price.

We follow Berry and Waldfogel (2010) in treating number of pages as a proxy for newspaper quality, consistent with narrative evidence that subscribers valued page expansions (Kaplan 2002, 127-128). In the online appendix we show that in our sample, as in Berry and Waldfogel (2010), number of pages is correlated with market size, which in turn affects the incentive to invest in quality (Shaked and Sutton 1987). We also show that the newspapers with more pages have higher subscription prices, market share, and longevity, all consistent with interpreting number of pages as a correlate of quality.

We collect additional data on weekly newspapers to support our detailed case study of the Reconstruction

and post-Reconstruction South.<sup>3</sup> The data include the number and circulation of non-daily Republican and Democratic newspapers in each of the 11 Confederate states in 1869 and every presidential election year between 1872 and 1896.<sup>4</sup> The data are collected from the same newspaper directories as the data for the full sample.<sup>5</sup>

## 2.2 Voting and Party Control

We obtain state-level gubernatorial and presidential voting data from 1868 to 1928 from data files generously provided by James Snyder. These data include the total number of votes cast by party in each election. In a few cases we supplement these data with information on party control of the governor's office from ICPSR Study 16, *Partisan Division of American State Governments, 1834-1985* (Burnham 1984), and from the National Governors Association (2011).

We obtain state-level counts of the number of Republicans, Democrats, and others in the upper and lower houses of state legislatures from ICPSR Study 16.

For each gubernatorial election, we define the Democratic margin of victory as the difference between the Democratic vote share and the vote share of the Democrat's strongest opponent. (The strongest opponent is a Republican in 838 out of 947 elections.) For each state legislative chamber, we define the Democratic margin of control as the difference between the Democratic and Republican seat shares. If Democrats and Republicans make up fewer than half of the seats, we consider the Democratic margin of control to be missing. (This occurs in 14 out of 1374 state-years for the lower house and 14 out of 1375 state-years for the upper house.)

We assume that transitions in office occur at the beginning of the year following an election. We consider the Democrats to be the incumbent gubernatorial party if the Democratic candidate won the most recent election. We consider the Democrats to be the incumbent party in a given chamber of the state legislature if the Democrats have strictly more seats than the Republicans. We show in the online appendix that our results are robust to changes in our timing assumptions, and to dropping state-years in which Democrats and Republicans have an equal number of seats in a chamber of the state legislature.

A significant number of transitions of party control occur during our sample period. All but two states

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<sup>3</sup>We refer to all non-daily newspapers as "weeklies" throughout, although some are published at lower frequencies such as bi-weekly.

<sup>4</sup>We define a weekly newspaper as Republican or Democratic using its contemporaneous affiliation.

<sup>5</sup>We compare our data with Abbott's (2004) list of all Republican newspapers in the eleven formerly Confederate states from 1865 to 1877. The correlation of the change in the state-level Democratic share of newspapers across the two series is 0.86 for weekly newspapers and 0.70 for daily newspapers. An inspection of discrepancies suggests that most are due to short-lived papers that do not exist for long enough to be present in a directory in a presidential election year. Our series therefore is weighted towards long-lived newspapers, which are likely to have had larger-than-average circulations (Gentzkow et al. 2011).

have at least one office transition. The median state has four transitions in the governors office, three transitions in the lower house of the state legislature, and two transitions in the upper house of the state legislature. Following the average party transition, the party in power retains control for an average of 11 years in the governorship, 13 years in the lower house of the state legislature, and 19 years in the upper house. In the online appendix, we report the number of party transitions by state and office and by time period and office.

### **2.3 Area Demographics**

We match each newspaper’s headquarter city to a county and a Census place as described in Gentzkow et al. (2011).

We obtain county demographics from the US Census via ICPSR Study 2896, *Historical, Demographic, Economic, and Social Data: The United States, 1790-2002* (Haines 2005). We extract data on the literate share of the population from the 1870, 1900, 1910, 1920, and 1930 Censuses. We extract data on manufacturing output and agricultural output (value of crops) from the 1920 and 1930 Censuses. We extract data on population for all years. We construct a proxy for county per-capita income as the sum of manufacturing and agricultural output, divided by county population.

We obtain information on the name of each county’s seat from ICPSR Study 8159, *Basic Geographic and Historic Data for Interfacing ICPSR Data Sets, 1620-1983* (Sechrist 1984). We identify the corresponding city in our newspaper panel, filling in missing data using information from the Census Bureau, National Association of Counties, individual official county websites, and articles.

## **3 Government Patronage and the US Press**

Newspapers in the late nineteenth and early twentieth centuries received significant patronage from state governments. Weak legal and institutional restraints meant that this patronage was disproportionately handed out to newspapers affiliated with the party in power.<sup>6</sup>

The most important form of patronage was contracts to print government documents (records of legislative proceedings, official forms, notices, laws, and so forth); these contracts were often allocated at inflated

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<sup>6</sup>Some states did enact laws intended to limit government influence. New York, Ohio, and New Jersey enacted laws in the late-1800s explicitly requiring printing contracts to be awarded to one paper from each of the two major parties (New York Legislature 1892; Ohio General Assembly 1876; New Jersey Legislature 1889). In counties with more than 10,000 people, Oregon required contracts to go to the two largest papers in a county by circulation (Oregon Legislative Assembly 1891). California specified that contracts had to go to papers “of general circulation” which had been publishing for at least one year, limiting the use of patronage to support the entry of new papers (California Legislature 1906).

prices to newspapers affiliated with the incumbent party (Baldasty 1992, 21; Abbott 2004, 45; Summers 1994, 48, 54, 60, 210-214). A second form of patronage was the allocation of lucrative government jobs to newspaper editors. Wisconsin state governments awarded editors jobs including chief clerk, state librarian, postmaster, sergeant-at-arms, and night watchman (Dyer 1989, 22-23). In Ohio in 1868, the Democratic legislature appointed the editor of the Democratic Columbus *Ohio Statesman* clerk to the state senate, and paid him for 462 days of work in a single year (Summers 1994, 48). A third form was purchases of newspapers at government expense. In Wisconsin, in 1852, each legislator was permitted to order 30 newspaper copies per day (Dyer 1989, 18).<sup>7</sup>

Newspapers also received patronage from both federal and local governments (Dyer 1989; Baldasty 1992). The federal government awarded large printing contracts and lucrative jobs which especially benefited papers in Washington DC. Local governments awarded printing and government advertising contracts which were small in magnitude relative to state patronage, but significant for local papers outside of state capitals.

The most detailed evidence on the quantitative importance of patronage comes from the period before the Civil War. In a detailed study of Wisconsin newspapers from 1849 to 1860, Dyer (1989) shows that printing contracts from the state government accounted for roughly half of the revenue of large party newspapers in the state capital, and ten to twenty percent of the revenue of smaller English-language papers near the frontier (29-31). Abbott (2004) similarly finds that printing patronage was the “most important” revenue source for many papers throughout the Reconstruction South (45). There is broad agreement that the relative importance of patronage declined over the late nineteenth and early twentieth century (Baldasty 1992; Lee 1937; Gentzkow et al. 2006).

In the online appendix, we show a simple economic model of the news market in which patronage leads to a relationship between party control of government and the composition of the press. The mechanism in the model is simple: the presence of patronage increases the relative return to newspapers affiliated with the party in power. As a result, changes in party control signal an increase in the incentive to open newspapers affiliated with the winning party, increase net entry of these papers, and decrease net entry of papers of the opposite affiliation. Importantly, this force will be present regardless of whether patronage takes the form of contracts, jobs, promises of newspaper purchases, or any other inducement, so long as it flows differentially to the incumbent party’s papers.

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<sup>7</sup>Newspapers were also supported in some cases by direct subsidies from party committees, from local partisans, and from candidates themselves. Dyer (1989, 24) and Baldasty (1992, 22) both suggest that these transfers were small relative to the direct government patronage discussed above. These transfers are also less relevant to our analysis because they were not controlled by the party in power.

Historically, although it is clear that state patronage created an economic bounty on allegiance to the incumbent party, it is less clear whether this incentive was large enough to significantly alter the composition or content of the local press. State patronage could certainly have sustained ailing newspapers or allowed them to expand their circulation area (Summers 1994, 48). But then, as now, owners of newspapers faced powerful commercial incentives to tailor the content of their newspapers to the demands of the market. Gentzkow et al. (forthcoming) find that a 10 percentage point change in the Republican share of the two-party vote in an area translates into a 10 percent increase in the relative circulation of Republican newspapers. It would have been economically costly to maintain a newspaper out of step with market demand, and patronage would have had to outweigh such costs in order to influence newspaper content.

Market incentives may also have provided discipline in the form of lost readership to newspapers seen to be in the pocket of the state. George Booth, from 1906 publisher of the *Detroit Evening News* and head of a large regional newspaper chain, rejected an offer by the governor to appoint his brother Ralph to a vacant Senate seat (Kaplan 2002, 165). Booth saw both ethical and business sense in avoiding partisan entanglements: “It is not a bad thing to have the local business atmosphere permeated with the idea that the other paper is a machine paper supported by public pay and is largely operated for private ends and... for private advantage” (quoted in Kaplan 2002, 166).

Ultimately, then, it is an empirical question whether state patronage served to increase the health and circulation of the sympathetic press or, restrained by commercial forces, merely to distribute inframarginal rents to officeholders’ allies. We take up this question in the analysis that follows.

## 4 Empirical Models and Identification

In this section we lay out our empirical model and identification strategy. To motivate these, we outline a simple economic model of the affiliation decision, underpinned by a formal model in the online appendix.

Suppose that a state consists of several local newspaper markets. Each year, there is a chance that an existing newspaper exits and/or a new newspaper enters. Opportunities for such change may arrive exogenously due to the arrival of scarce inputs (editors) or due to endogenous startup/shutdown decisions. Newspaper profits come from two sources. The first is market profits, which are increasing in the newspaper’s political alignment with the local population. The second is a political bounty paid to any newspaper affiliated with the party in power. Elections occur at regular intervals, and newspaper owners make permanent, forward-looking affiliation decisions at the time of entry.

Such a model has two important implications. First, around a close election that induces a transition in

political power, there will be a trend break in the share of the state’s newspapers that are Republican. After the Republicans take office, there is a discrete increase in the incentive to affiliate with the Republican party. However, this does not result in a discrete jump in the market share of Republican papers, because changes in the *flow* of papers into affiliation with the Republicans do not induce an immediate change in the *stock* of Republican newspapers.

Second, even absent any political rents, changes in party power will be correlated with changes in the composition of the news market, because both newspaper profits and election results depend on the underlying ideological trends in the state.

#### 4.1 Empirical Models

Let  $a$  index states and  $t$  index calendar years. We model an outcome of interest  $y_{at}$  (e.g., the share of newspaper circulation that goes to Democratic papers). Let  $\Delta$  be the first difference operator so that  $\Delta y_{at} = y_{at} - y_{a(t-1)}$ . Let  $w_{at}$  be an indicator for whether the Democrats control a particular political office in state  $a$  at time  $t$ . Let  $\alpha_{at}$  represent area- and time-level characteristics that may be correlated with both Democratic control and trends in newspaper circulation, and let  $\epsilon_{at}$  represent idiosyncratic shocks to the newspaper market that are unrelated to Democratic control.

Our first model specification is:

$$\Delta y_{at} = w_{a(t-1)} + \alpha_{at} + \epsilon_{at}, \tag{1}$$

where we assume that  $E(\epsilon_{at} | w_{a(t-1)}, \alpha_{at}) = 0$ . In this model, if the Democrats take office in state  $a$  at time  $t - 1$ , the growth in the Democratic share of circulation during the subsequent time period is increased by  $\alpha_{at}$ . We will refer to this model as our “slope-change” specification. The assumption that political officeholders influence the trend in circulation rather than the level of circulation is motivated by a model in which incumbent governments influence gradual processes such as the opening and closing of newspapers (see the online appendix).

Our second model specification is:

$$y_{at} = w_{at} + \alpha_{at} + \epsilon_{at}, \tag{2}$$

where we assume that  $E(\epsilon_{at} | w_{at}, \alpha_{at}) = 0$ . In this model, when the Democrats take office there is an immediate and contemporaneous effect on the news market. We will refer to this model as our “on-impact” specification.

In general, we view the on-impact specification in equation (2) as less realistic than the slope-change specification in equation (1), because in most times and places newspapers will not open or close immediately in response to a change in political power. However, both models are plausible, and we will see below that model (2) captures important dynamics in some cases.

In our empirical analysis we estimate the effect of Democratic control using the dynamics implied by equations (1) and (2), and explore the sensitivity of our findings to other dynamics that combine elements of both equations. When we estimate equation (2), we exclude data from the final presidential election year in our newspaper panel so that the series  $w_{at}$  has the same termination date as in the estimation sample for model (1).

## 4.2 Econometric Assumptions

As discussed above, we assume political transitions occur at the beginning of the year following an election, and that our newspaper variables are measured as of January 1 of a directory’s publication year. Thus, if a Democrat defeats a Republican incumbent in a November, 1900 gubernatorial election, we set  $w_{a(1900)} = 0$  and  $w_{a(1901)} = 1$ , and equation (1) predicts that the change in  $y_{at}$  between the 1901 and 1902 newspaper directories will be greater by an amount  $\beta$  than the change between the 1900 and 1901 directories. In the online appendix, we show that our results are robust to varying these timing assumptions.

We cannot directly estimate equation (1) because our dependent measures are only observed in presidential election years. To take the model to our data, we average the model over the four-year intervals between presidential elections to yield for presidential years  $t$ :

$$\overline{\Delta y_{at}} = \overline{w_{a(t-1)}} + \overline{\alpha}_{at} + \overline{\beta}_{at}, \quad (3)$$

where we define  $\overline{x}_{at} = \frac{1}{4} \sum_{s=0}^3 x_{a(t-s)}$  for each variable  $x \in \{\Delta y, w, \alpha, \beta\}$ .<sup>8</sup>

Our panel identification strategy assumes that  $\alpha_{at}$  is a linear function of observable area- and time-level characteristics. In all specifications we control for year fixed effects. In some specifications we control for the Republican share of the two-party vote in the last presidential election. The presidential vote share control captures readers’ political leanings, which in turn affect newspaper circulation and affiliation choices (Gentzkow et al. forthcoming). In some specifications we include area fixed effects to allow for an area-specific time trend. (Time-constant area characteristics are “differenced out” in equation (1) because our dependent measure is in first differences.)

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<sup>8</sup>Because equation (2) assumes that the effect of Democratic control is instantaneous, we can estimate it directly.

Although we cannot rule out the possibility that there are components of  $\epsilon_{at}$  that are not captured by these proxies, following the discussion above we expect that exogenous shocks to the ideology of a state's voters will induce a positive correlation between  $w_{a(t-1)}$  (Democratic control of government) and trends in newspaper circulation. Such a positive correlation will be reinforced by any indirect effects of government control on readership, such as a preference for reading the incumbent party's news. We therefore view our panel estimates as a plausible upper bound on the extent of political influence. At the end of this section, we discuss the possibility that oppositional shifts in news demand generate a downward bias in our estimates.

Our regression-discontinuity identification strategy assumes that  $\epsilon_{at}$  is piecewise linear in the margin of victory in the last election (for governors), or the margin of control (for state legislatures), with a slope that differs depending on whether the Democrats have control. We restrict attention to cases in which the absolute margin of victory is less than 10 percentage points for governors and the absolute margin of control is less than 20 percentage points for state legislatures. This second identification strategy parallels Lee's (2008) regression-discontinuity estimates of the incumbency effect in House elections.<sup>9</sup> However, we note that we apply the approach here not only to elections but also to the party composition of legislative chambers, in which cases the assumption that close contests are "as good as random" may be less plausible.

Our main dependent measure  $y_{at}$  is the Democratic share of daily circulation. Because of the large differences in content between Democratic and Republican papers (Gentzkow et al. 2006; Gentzkow et al. 2011), the circulation share can be taken as a measure of the share of news consumed that takes a Democratic point of view. The circulation share captures many ways in which the incumbent party can influence the newspaper market, including encouraging the entry of favorable newspapers and the exit of unfavorable ones, subsidizing the cost of newspapers so that own-party papers can offer lower subscription prices, etc. In section 6 below we separately estimate the effect of the incumbent party on these various margins.

The circulation share does not capture within-affiliation changes in content which might occur following a change in party control. In our empirical analysis we use a measure of news content to explore such effects.

### 4.3 "Watchdog" Effects

Our results could understate the extent of political influence if voters respond to a party's victory by shifting readership from incumbent to opposition media, perhaps because of a perception that opposition media serve as a "watchdog" monitoring government corruption (Durante and Knight 2012). In this case, an outward shift in the supply of Democratic newspapers caused by Democratic patronage could be offset by an inward

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<sup>9</sup>Close elections pass standard tests of the regression-discontinuity identifying assumptions for a wide range of offices, though not for US House elections in the late 20th century (Eggers et al. forthcoming).

shift in the demand for Democratic papers, with the total circulation of Democratic papers remaining the same.

We present a range of evidence relevant to this hypothesis. First, we look at effects of incumbent party control on newspaper prices. If the relative supply of Democratic papers shifts out (due to patronage) and the relative demand for Democratic papers shifts in (due to “watchdog” effects), the relative prices of Democratic papers should fall. Second, we look at the circulation of continuing papers. If political patronage mainly affects the entry-exit margin (as we would expect if it is primarily a fixed-cost subsidy), the offsetting watchdog demand effects should be visible as a drop in the relative circulation of continuing Democratic papers. Finally, we use number of pages as a proxy for quality to test whether Democratic patronage funds improvements in the quality of Democratic newspapers that might offset any drop in demand.

We present direct tests of all three of these hypotheses in section 6 below, and additional supporting evidence in the online appendix. In each case, our findings are inconsistent with changes in control leading to meaningful shifts in demand either towards or away from the incumbent party’s papers.

## **5 Effect of Party Control on Daily Newspapers**

### **5.1 Estimates**

Table 1A presents estimates of the slope-change specification in equation (1) using our panel identification strategy. The dependent variable  $\Delta y_{at}$  is the change in the share of partisan newspaper circulation going to Democratic papers. Each column corresponds to the effect of Democratic control of a given state office. The first column shows the results for the governor’s office, the second for the lower house of the state legislature, and the third for the upper house of the state legislature. The fourth column shows the combined effect of Democratic control of the governor’s office and of both houses of the legislature.

The specifications in the first row include year fixed effects. The specifications in the second row add dummies for each 10 percentage point increment of the Democratic share of the vote in the previous presidential election. The specifications in the third row add state fixed effects. Although the specifications in the first row show some evidence of a correlation between party control and newspaper market shares (consistent with newspapers responding to changes in the political tastes of consumers), the magnitudes in all cases are small, and no statistically significant relationship remains when we control for presidential vote shares and state fixed effects. In our final specification, we estimate that switching the incumbent party from Republican to Democratic in all state offices would decrease the growth rate of the Democratic share of newspaper circulation by 0.001 percentage points.

Figure 1 illustrates the estimates in table 1A graphically, showing the change in Democratic circulation in the years before and after a transition to Democratic control. We see no significant pre-trends, and no evidence that our slope-change specification is masking important dynamics.

Table 1B presents results from three specifications that encode different assumptions about the dynamics of government influence. The first specification is an estimate of the on-impact specification in equation (2). The second specification is a variant of equation (2) in which the independent variable is the share of the preceding four years in which the Democrats held the office. This specification allows for a slower-moving impact than equation (2). The third specification is a variant of equation (1), in which we include a four-year lag of the Democratic control indicators and report the sum of the contemporaneous and lag coefficients.<sup>10</sup> In no case do we find evidence of an effect of Democratic incumbency on the Democratic share of circulation.

Table 2 presents estimates of model (1) using our regression-discontinuity strategy. In no case do we find a statistically significant effect of party control on the growth rate of the Democratic share of circulation.<sup>11</sup> Figure 2 illustrates these findings graphically. We show in the online appendix that the estimates in table 2 are robust to tightening or loosening the restriction on the margin of victory used to select the sample, and to using a local polynomial RD estimator for a wide range of bandwidths.

In the online appendix, we present evidence on influence by federal and local officeholders, as well as holders of other state offices. We find no evidence that the party in control in any of these offices influences the Democratic share of circulation. In the online appendix, we present estimates of the effect of the incumbent party on newspaper presidential endorsements from 1932 to 2004. We find no evidence of any such effect.

## 5.2 Discussion of Magnitudes

Table 3 presents a set of quantitative comparisons for the panel identification estimates of our slope-change and on-impact specifications. These comparisons confirm that our data allow us to detect nontrivial effects of the incumbent party on newspaper market shares.

The first row of table 3 shows the point estimate of the effect of control of the governor's office and both houses of the state legislature from row (3) of table 1A and from row (1) of table 1B. The second row of table 3 shows the upper bound of the 95-percent confidence interval of these estimates: 1.7 percentage points per

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<sup>10</sup>Where appropriate, we average the model over the four-year intervals between presidential elections as with equation (1).

<sup>11</sup>We use a relatively narrow bandwidth in table 2 to focus the estimation on close contests where it is plausible that the bias in our RD estimates will be small. The bandwidth for the state legislature is larger than for governors because a change in the winner of just a few seats results in a relatively large percentage change in the margin of control. We use a piece-wise linear functional form because figure 2 shows that it is a reasonable approximation of the relationship between margin of victory and circulation share, and local linear regression is one of the approaches to RD estimation recommended in the literature (e.g., Lee and Lemieux 2010).

year using the slope-change specification and 2.2 percentage points using the on-impact specification. The upper bound from the confidence interval is the smallest positive magnitude whose value we can distinguish statistically from the point estimate.

The third row of the table shows the upper bound of the confidence interval as a share of the between-state standard deviation in the Democratic share of circulation. We can rule out increases in the Democratic share of circulation of more than 5.2 percent of a cross-state standard deviation using the slope-change specification and 6.7 percent using the on-impact specification.

The fourth row of the table uses the contemporaneous relationship between the change in the Democratic share of the two-party presidential vote and the Democratic share of newspaper circulation to estimate the change in presidential vote share necessary to produce effects of the size in row (2). A change in presidential vote share of only 1.1 to 1.5 percentage points would be sufficient to produce changes of this magnitude. This test can be thought of as comparing the importance of political control to the importance of consumer preference in determining newspaper circulation.

The fifth row of the table uses Gentzkow et al.'s (2011) findings to estimate the implied effect that incumbent influence exerts on voters through the media market. Gentzkow et al. (2011) find that the entry of a Democratic newspaper increases the Democratic share of the Congressional vote by a statistically insignificant 0.21 percentage points, with the upper end of the 95 percent confidence interval at 0.57 percentage points. Their estimates imply that the entry of a Democratic newspaper increases the Democratic share of circulation by 25 percentage points.<sup>12</sup> Because 1.7 percentage points is about 6.8 percent of the effect of the entry of a Democratic newspaper, at the upper end of our confidence interval we find that control of all state offices for a two-year congressional term would increase the incumbent party's vote share by 0.03 percentage points in the next congressional election,<sup>13</sup> and we obtain an effect smaller than 0.1 percentage points even using the upper bound of Gentzkow et al.'s (2011) confidence interval. The corresponding effects on vote share using the on-impact estimates are 0.04 percentage points and 0.1 percentage points, respectively.

The sixth row of the table uses Gentzkow et al.'s (forthcoming) empirical model of newspaper entry to estimate the cost of implementing a targeted fixed-cost subsidy for Democratic papers that would produce a change in circulation share equivalent to the upper bound of our confidence intervals from the given specification. We find that the implicit subsidy for the average state is equivalent to 0.1 percent of the revenue of in-state newspapers, consistent with Baldasty's (1992) view that patronage was small relative to

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<sup>12</sup>Gentzkow et al. (2011) report that the entry or exit of a partisan newspaper changes the difference between Democratic circulation share and Republican circulation share by 51 percentage points, which is equivalent to a 25 percentage point increase in circulation share for a specific party.

<sup>13</sup>Specifically,  $0.068 \times 0.0021 \times 2 \text{ [years]} \times 100 = 0.03$  percentage points.

commercial incentives during the period we study.

## 6 Evidence on Specific Margins of Influence

Table 4 presents estimates of models (1) and (2) with several alternative dependent measures. Each measure corresponds to a specific margin on which the incumbent party could exert influence over newspapers. Looking at these margins individually allows us to test for effects of incumbent control through specific channels, such as preventing the exit of sympathetic newspapers, encouraging their entry, or expanding their circulation.

The first specification reproduces the all offices results from row (3) of table 1A and row (1) of table 1B for comparison.

The second specification uses the share of newspapers that are Democratic. The number of newspapers is better measured than circulation early in the sample period, so estimates using this variable may be more precise than estimates of the effect on circulation share. It also weights each paper equally, allowing us to detect an effect if the circulation of newspapers influenced by the incumbent is very small, if affected papers cannibalize the circulation of same-affiliation papers, or if the effects are on the entry and exit margins rather than changes in the size of existing papers.

The third and fourth specifications use the share of entering newspapers that are Democratic and the share of exiting newspapers that are Democratic, respectively. We will observe an effect in this specification if incumbent politicians are able to affect the affiliation of entering papers or the affiliation of exiting papers, but not the circulation of established papers.

The fifth specification uses the relative subscription prices of Democratic newspapers. If we observe a decrease in relative subscription prices, it may indicate that incumbents are subsidizing sympathetic newspapers to allow them to lower their prices, or withdrawing subsidies from opposition newspapers, even if the effect of prices on circulation is too small to be detectable.

The sixth specification uses the Democratic share of circulation of continuing newspapers. We will observe an effect in this specification if incumbents are able to affect the circulation of existing papers—for example, through marginal subsidies—but are unable to affect entry or exit. We will also observe an effect in this specification if the identity of the incumbent party directly influences demand for Democratic and Republican newspapers.

The seventh specification uses the relative number of pages of Democratic newspapers, a proxy for relative quality. If we see an increase in relative quality, it may indicate subsidies from incumbents on the

quality rather than cost margins.

The eighth and ninth specifications use our direct measure of newspaper content, the share of candidate mentions going to the Democratic candidate for president or vice-president. These estimates should be read with some caution as content measures are only available for a small fraction of the newspapers in our sample, but they provide a check on whether incumbents influence content in a way that is not captured by affiliations.

We find almost no evidence that the party in power affects the newspaper market through these channels. The most important exception is that we find a statistically significant effect of incumbent party on the Democratic share of papers using the on-impact specification. Plots shown in the online appendix reveal significant pre-trends in this specification.

In the online appendix, we reproduce this table using the RD specification and find no evidence that the incumbent party affects newspaper markets to its benefit except for the content measures which are estimated using very small samples. We also show using the slope-change specification that the incumbent party has no detectable effect on the share of people living in a county with Democratic newspapers but no Republican newspapers, or vice versa.

As discussed in section 4 above, the results on relative prices, relative circulation of continuing papers, and relative page length speak directly to the possibility that shifts in demand toward opposition newspapers (as found by Durante and Knight 2012) mask significant countervailing effects of party control. We find that following a change in office the incumbent party's newspapers become if anything slightly more expensive and slightly worse in quality, and attract no additional readership. These findings are not consistent with a meaningful shift in demand towards or away from the incumbent party's papers. In the online appendix, we show that similar patterns hold when we restrict attention to a sub-sample with high-quality circulation data and when we use price per page as a dependent measure.

## **7 Estimates for Sub-Samples**

In this section we ask whether the effect of party control of state government on the evolution of the press is greater when the market restraints on government capture are especially weak or where the political incentives are especially strong. In the online appendix we use an index of commercial and political incentives to measure the effect of control of the state government in places with both relatively strong political incentives and relatively weak commercial incentives, and find no evidence of an effect of control of the state government in such places.

## 7.1 Places where Market Incentives are Weak

Table 5A presents results for sub-samples in which we expect the profitability of newspapers to be relatively low. In such places, state patronage may have gone further in influencing the entry, exit, and circulation of sympathetic newspapers.

The first row reproduces row (3) of table 1A for comparison. The following rows present results for counties with below-median advertising rates, subscription prices, incomes, and literacy rates respectively. In the first two cases, but not the last two, we find qualitative support for the hypothesis that state influence is greater in less commercially valuable areas. In no case do we find a statistically significant effect of incumbent party on political affiliation.

The online appendix presents results using the on-impact specification introduced in table 1B, where we again find no evidence of an effect of the incumbent party.

It is worth noting that the hypothesis that greater commercial value reduces the influence of the state may be less plausible if commercial value is correlated with political value. For example, if individuals that are more attractive to advertisers (say, those with higher incomes) also play an outside role in the political process, then the hypothesis we are testing is theoretically ambiguous and hence our findings do not admit a straightforward interpretation.

On the view that commercial and political value vary independently, it is suggestive that we find evidence consistent with Petrova's (2011) hypothesis that greater advertising rates reduce the influence of political parties on the press. In contrast to Petrova (2011), this effect is not statistically significant in our context. A possible explanation is that Petrova (2011) estimates the effect of all patronage on a newspaper's decision to affiliate with a political party (rather than remain independent), whereas we estimate the effect of a change in control of state-government patronage on the market for affiliated newspapers.

In the online appendix, we decompose each of the sub-sample results above using the entry, exit, circulation, and price measures shown in table 4 for the main sample. We find a wrong-signed statistically significant effect on the circulation of continuing papers in low-income counties, and no other statistically significant effects of the incumbent party on newspaper affiliation.

## 7.2 Times and Places where Political Incentives are Strong

Table 5B presents results for sub-samples in which we expect the political incentives or scope for capture to be relatively strong. As in panel A, we reproduce row (3) of table 1A as a benchmark.

The following rows present results for the period before 1900, for newspapers in county seats, for news-

papers in state capitals, and for presidential battleground states, which we define as states that have a two-party vote margin less than or equal to 10 percentage points in at least half of the elections in our sample period. Historical evidence supports thinking of these sub-samples as cases in which political incentives and the scope for incumbent influence were especially strong. Newspapers in county seats and state capitals received a disproportionate share of state spending (Abbott 2004, 45; Baldasty 1992, 21-22, 133; Summers 1994, 54, 60-61). Presidential battleground states contained a significant fraction of electoral votes during much of our sample period (Glaeser and Ward 2006) and were by definition important sites of political competition.

In no case do we find a statistically significant effect of incumbent party on political affiliation. The online appendix presents results using the on-impact specification introduced in table 1B. We find no evidence of an effect of the incumbent party in any subsample.

In the online appendix, we decompose each of the sub-sample results above using the entry, exit, circulation, and price measures shown in table 4 for the main sample. Of the 18 new specifications reported, one (Democratic share of newspapers in state capitals) is statistically significant with a sign consistent with political influence. All other coefficients are statistically insignificant. The online appendix also shows results in which we split the sample according to the closeness of the presidential vote in the county. In the competitive counties there is a positive but statistically insignificant effect of control of the state on the share of circulation, and in the non-competitive counties the effect is negative, very small in absolute value, and not statistically significant.

The results in this section suggest that even in sub-samples where market forces were relatively weak and political incentives were relatively strong, incumbent influence over the press remained limited. These results confirm the broad finding that political influence was small in the US during this period, and suggest that commercial incentives may have provided strong discipline even in the half of the country where they were weaker than average. In the next section, we consider a far more extreme example that shows state capture can indeed emerge when market discipline becomes sufficiently weak.

## **8 Case Study: Reconstruction South**

We continue the theme of the last section by considering a final sub-sample of our data: Southern newspapers during and after Reconstruction (1869 to 1892). This episode stands out in our sample period for its combination of uniquely powerful political incentives and greatly weakened market discipline.

The chaotic environment of the post-Civil-War era provided unusually strong political incentives for

Republican governments to support the entry and growth of Republican newspapers. The Radical Republican program of enacting profound economic and social change was widely believed to require the support of favorable newspapers (Abbott 2004, 55). Yet the hostility of much of the Southern population, along with low literacy among Republican supporters, meant that few Republican papers would be viable without government support (Summers 1994, 209-210). The usual institutional constraints on efforts to aid friendly newspapers had largely evaporated, as aggressive rebuilding and economic development efforts led to a dramatic expansion of state government spending, and with it a deluge of patronage and political favors of all kinds (Foner 2002, 379-392).

Market forces that might otherwise have restrained the desire to control the press for political aims were especially weak in the postbellum South, where newspapers faced low demand, high costs, and limited market competition (Abbott 2004, 40-44). Southern newspaper circulation per capita was only a small fraction of that in the rest of the country. Subscription prices were also relatively low. The war's high death toll meant printing labor was scarce, and almost all inputs such as newsprint had to be imported from the north at high prices. Local advertising markets were limited. Roughly two-thirds of incumbent papers existing before the war had ceased publication by its end.

It seems reasonable to suppose that these conditions led to greater scope for the party in power to use state government to influence the press. Indeed, Abbott (2004) argues that these factors resulted in a program of widespread government support for Republican newspapers under Republican incumbents, followed by the rapid withdrawal of this support when Democrats regained power.

We test quantitatively for the effects of Republican intervention in the newspaper market. Our test exploits sharp transitions in control plausibly unrelated to trends in the demand for partisan news. In particular, the historical record suggests that the shift in political control was often driven by changes in who could vote (and whose vote counted) rather than changes in voters' preferences.<sup>14</sup> At the beginning of 1869, all 11 former Confederate states were controlled by Republicans. Black suffrage and the disenfranchisement of many former Confederates—both of which were mandated by Congress and enforced by the Union Army—had given Republicans a commanding position in the elections of 1867 and 1868. Over the following decade, blacks were kept from the polls through “force and threat of force” (Key 1949, 536) as federal troops ceased supervising elections. Democratic vote shares increased dramatically as a result, and by 1877 the govern-

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<sup>14</sup>Two potentially important confounds deserve note. First, the transition to Democratic control could have slowed the migration of northern Republican “carpetbaggers,” who presumably were more likely to read Republican newspapers. Because carpetbaggers accounted for no more than two percent of the population in the South (Gao 2000, 200), we expect this confound to be quantitatively small. Second, the effective disenfranchisement of black voters could have reduced the demand for Republican news, if black citizens exhibited less demand for newspapers when they lost the vote. Given the low literacy rates of blacks in Confederate states we also expect this effect to be small: the 1870 Census found that in the former Confederate states only 8 percent of the voting-age males who could write were black.

ship and legislatures of all eleven states were controlled by Democrats.

Figure 3 and an online appendix figure give a view of our data on daily and weekly newspapers, respectively. We limit the sample to the eleven Confederate states in the years 1869 to 1892. We show the share of circulation accounted for by Democratic newspapers by state and year. For each state, we indicate the first year in which Republicans controlled all branches of the state government (indicated by a red dashed line), and the first year in which Democrats regained control of all branches of government (indicated by a blue dashed line). Circulation figures for 1869 are partially imputed from 1872, and plotted with open circles to emphasize this. The raw data underlying these figures, and analogous plots using newspaper counts in place of circulation shares, are reported in the online appendix.

In the states where Republicans did not control state government for an extended period—Georgia, Texas, and Virginia—Republican papers never gained a large share of circulation, and there is no noticeable increase in Democratic circulation associated with the resumption of Democratic control. In almost all of the remaining states, Republican papers achieved a meaningful share of both daily and weekly circulation while Republicans were in power, and Republicans' share declined sharply around the time Democrats retook control.<sup>15</sup> The timing of the circulation change matches the timing of the political change closely,<sup>16</sup> and the magnitude of changes in circulation is large. For example, Republican shares of weekly circulation rose to 50 percent or more in Arkansas, Florida, and Louisiana while the Republicans were in control, but never exceeded 20 percent in these states thereafter.

Table 6 presents regression results that parallel the graphical evidence in figure 3 and the analogous online appendix figure for weeklies. The specifications in this table differ from those we use for the full sample in three ways.

First, based on the graphical evidence in figure 3 and in the online appendix figures, we expect the data to be better approximated by the on-impact specification.

Second, we use as our main independent variable a single indicator for Democratic control, which is turned on after the Democrats retake all three offices and is never again turned off. We do this because transitions are highly correlated across different offices. We do not include indicators for the three instances when Republicans took control of the state during our sample period. In the online appendix we present results from a less parsimonious specification that more closely parallels the specifications we estimate on the full sample.

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<sup>15</sup>In Florida, this statement only applies to weeklies, as the first Florida daily in our sample enters after the Democrats retake control. In Alabama, where we see a relatively small increase in the Democratic circulation share, control alternated between Democrats and Republican during the period between the red and blue dashed lines.

<sup>16</sup>In Florida and North Carolina, where the increase in the Democratic circulation share leads the blue dashed line slightly, Democrats took control of the state legislature several years before they took full control of the state.

Third, we exclude the controls for the Democratic share of the presidential vote. We do this because we want to exploit variation in political control driven by changes in the composition of the electorate, which directly affect the presidential vote. It makes sense to control for the presidential vote in the specifications estimated on the full sample, where identification comes from the discontinuous relationship between vote shares and political control, and from idiosyncratic variation in state relative to national votes. By contrast, including presidential vote controls in the models in table 6 would be akin to controlling for Democratic control of state government, our independent measure of interest. Consistent with this view, we show in the online appendix that the coefficient of interest is insignificant in regressions that do control for the presidential vote share.

The first panel of the table reports results for the Democrats' share of circulation. The second panel presents results for the Democrats' share of newspapers, to check sensitivity to missing circulation data. For robust small-sample inference, we report in addition to asymptotic standard errors the p-values from a permutation test in which the indicator for Democratic control is randomly reshuffled within each state.

The on-impact specifications in table 6 show economically large and statistically significant effects of Democratic control on the share of both Democratic dailies and weeklies. For daily papers, the effect on circulation share is 10 percentage points, well above the top of the confidence interval for the slope-change specification estimated on the full sample. For weekly newspapers, the effect is even larger, at 19 percentage points. Using our slope-change specification we find a counterintuitive wrong-signed effect: a mechanical consequence of the fact that after the return of Democratic control the newspaper market is so heavily Democratic that there is little room for further growth. Estimates are similar whether we use the Democratic share of circulation or of newspapers as our dependent measure. In the online appendix we show that, while the estimates decrease and the standard errors increase when we shorten the sample period, our key conclusions survive removing several years of post-Reconstruction data from the sample.

It is worth stressing two caveats to these results. First, because we find large effects, upward bias induced by correlated trends in reader preferences and political control no longer works against us, as it does in the specifications we estimate on the full sample. Second, although we follow Abbott (2004) in emphasizing the removal of state support for the Republican press, it is possible that at least some of the effect of political control is attributable to deliberate (legal and extralegal) efforts by Democrats to suppress Republican newspapers and bolster Democratic ones in the period following the Democrats' return to power. Both of these concerns are mitigated by the fact that Republican dailies in the Reconstruction South were commercially weak, consistent with their having been propped up by state funds.<sup>17</sup>

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<sup>17</sup>In 1872, the prices of Republican and Democratic newspapers in the average non-Confederate state were about the same; in

With those caveats in mind, the evidence from the Reconstruction and post-Reconstruction South shows that state governments did sometimes exert meaningful influence on the press, and suggests that such influence was at its height when political stakes were greatest and market forces weakest.

The results in this section also confirm that our methods and data have the power to detect large-scale political influence on the press when it occurs. Comparing our point estimate in table 6 to the upper end of our confidence interval in the slope-change specification for the full sample, we know that any influence exerted by the average state government in our sample must be significantly smaller than the estimated influence of the Reconstruction governments.

## 9 Conclusion

Incumbent officials wield powerful tools of influence. Nixon famously threatened the renewal of the broadcast licenses of the *Washington Post*'s parent corporation in the wake of its coverage of the Watergate scandal (Graham 1997). Thomas (2006) writes of the modern era, "There is management and manipulation of news by government and a supine press.... One has to wonder how much General Electric (NBC), Viacom (CBS), and Disney (ABC) care about freedom of the press when access to the White House is at stake" (xv). If public officials use their authority to distort media coverage, the result may be a less informed electorate and a less effective political system.

In this paper we study government influence on the US press at a time when the tension between forces supporting and undermining press freedom was especially strong. We find little evidence that incumbent party support affects the entry, exit, circulation, or content of like-minded newspapers. The one exception is the South during and after Reconstruction, where Republican governments made a coordinated and concerted effort to sustain a Republican press amidst limited political and market competition.

Some have argued that the economic and institutional development of the United States in the late nineteenth century was similar to that of countries like Russia and Argentina today (Åslund 2005; Shleifer and Treisman 2005). Given evidence for significant government influence over the press in those countries (Corrales et al. 2009; Di Tella and Franceschelli 2011), our finding of limited influence in the United States raises the question of what factors created such a different outcome. The historical record suggests candidate explanations—a more competitive political system, a stronger tradition of press freedom—but determining the precise role each played remains a task for future research.

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the average Confederate state Republican newspapers were 22 percent cheaper. Republican newspapers in Confederate states had circulations less than half that of Democratic newspapers on average, a much larger gap than in the rest of the country. The differences between Confederate and non-Confederate states on these two dimensions remain economically large even in a regression that controls for the Democratic share of the presidential vote.

The elimination of most forms of direct patronage and the continuing competitiveness of most media markets make it possible that incumbent influence on the press today is weaker than during the period we focus on. Consistent with this, the results in the online appendix show no relationship between incumbent control and newspaper endorsements in the 1932-2004 period, and Gentzkow and Shapiro (2010) find no correlation between the party of the incumbent governor or congressional representative and the political slant of newspapers in 2005.

We stress, however, that in the present paper we offer only limited evidence on influence by local and federal officeholders. In addition, we have only coarse measures of newspaper content. Finally, the Reconstruction episode is a reminder that incumbent influence may play an important role when stakes are high and constraints are weakened.

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Table 1: Effect of incumbent party on newspaper circulation share

Panel A: Baseline dynamics (slope-change model)				
Specifications:	Effect of Democratic incumbent on change in Democratic circulation share			
	Governors (1)	State lower house (2)	State upper house (3)	All state offices (4)
(1) Year fixed effects	0.003 (0.002)	0.006 (0.003)	0.005 (0.003)	0.003 (0.002)
(2) Year fixed effects and presidential vote share indicators	0.003 (0.003)	0.007 (0.005)	0.005 (0.004)	0.003 (0.005)
(3) Year and state fixed effects, and presidential vote share indicators	0.002 (0.004)	0.008 (0.010)	0.004 (0.008)	-0.00001 (0.00842)
Number of state-years	591	624	622	582

Panel B: Alternative dynamics				
Specifications:	Effect of Democratic incumbent on Democratic circulation share			
	Governors (1)	State lower house (2)	State upper house (3)	All state offices (4)
(1) On-impact effect	-0.011 (0.011)	-0.019 (0.019)	-0.006 (0.016)	-0.018 (0.020)
(2) Slow on-impact effect (four-year weighted average)	-0.020 (0.018)	-0.047 (0.029)	-0.018 (0.022)	-0.052 (0.032)
(3) Baseline specification with a four-year lag	-0.007 (0.004)	-0.001 (0.008)	-0.007 (0.007)	-0.002 (0.007)

Notes: Data cover the 1869-1928 period. Standard errors in parentheses are clustered by state-decade. The table reports the estimates of the coefficient on an indicator for Democratic incumbency for 24 separate regressions models. The dependent variable in all rows in panel A and row (3) of panel B is the change in the Democratic share of daily newspaper circulation, and the dependent variable in rows (1) and (2) of panel B is the level of the Democratic share of circulation. In both panels column (4) is estimated from a model that includes indicators for Democratic control of the Governor's office and the upper and lower houses of the state legislature. The estimates reported in column (4) are for the sum of the coefficients on the three state office incumbent variables. Panel A: row (1) includes year fixed effects, row (2) adds dummies for each 10 percentage point increment of the Democratic share of the vote in the previous presidential election, and row (3) adds state fixed effects. Number of observations differs across columns due to missing data on party affiliation of state officeholders. Panel B: in row (1) the independent variable is an indicator for contemporaneous Democratic control of the state office and in row (2) the independent variable is the share of the preceding four years Democrats held the office. Row (3) adds a four-year lag of the key independent variable to our baseline specification. The coefficient reported is the sum of the contemporaneous effect and the lag effect. All specifications in Panel B include presidential vote share indicators and year and state fixed effects.

Table 2: Effect of incumbent party on newspaper circulation share - Regression-discontinuity model

Variables:	Effect of Democratic incumbent on change in Democratic circulation share			
	Governors (1)	State lower house (2)	State upper house (3)	All state offices (4)
Democratic incumbent	-0.008 (0.005)	0.004 (0.017)	0.014 (0.020)	-0.006 (0.017)
Democratic margin	0.186 (0.066)	-0.017 (0.056)	-0.083 (0.057)	0.077 (0.090)
Democratic incumbent × Democratic margin	-0.094 (0.076)	0.062 (0.060)	0.089 (0.057)	-0.009 (0.086)
Number of state-years	254	136	91	582

Notes: Data cover the 1869-1928 period. Standard errors in parentheses are clustered by state-decade. The dependent variable in each regression is the change in the Democratic share of daily newspaper circulation. Democratic margin is the Democratic margin of victory in the last election for governor, and the Democratic margin of control for the state legislature. Regressions are limited to observations in which the absolute value of the Democratic margin is less than 0.1 in column (1) and less than 0.2 in columns (2) and (3). Column (4) is estimated by simultaneously including all of the independent variables from columns (1) through (3), an indicator for each office if the absolute value of the margin is greater than our threshold for inclusion in the sample, and an interaction between each variable listed in the table and its respective out-of-sample indicator.

Table 3: Magnitude of the panel estimates

		All state offices	
		Slope-change	On-impact
<b>Baseline estimates</b>			
(1)	Effect of switching all state offices from Republican to Democratic control on Democratic circulation share	-0.00001	-0.018
(2)	Upper bound of confidence interval (from row 1)	0.017	0.022
<b>Interpretation of upper bound of confidence interval</b>			
(3)	Effect on circulation share divided by the between-state standard deviation in the level of circulation share	0.052	0.067
(4)	Change in presidential vote share necessary to produce this change in circulation share	0.011	0.015
(5)	Increase in incumbent party's vote share in US Congressional elections from incumbent's effect on circulation share	0.0003	0.0004
(6)	Fixed-cost subsidy to Democratic firms from each state necessary to produce this change in circulation share, as a fraction of total newspaper revenue	0.001	0.001

Notes: Data cover the 1869-1928 period. Results in column (1) are from the slope-change model presented in table 1A and results in column (2) are from the on-impact model presented in table 1B. Row (1) reports the estimate of the effect of control of all three state offices on circulation, and row (2) reports the upper bound of the confidence interval of that point estimate. Row (3) reports the value in row (2) divided by the between-state standard deviation in the average Democratic share of circulation in each state. Row (4) reports the change in presidential vote share necessary to produce the change in circulation in row (2) from a contemporaneous cross-sectional estimate of the effect of the Democratic vote share in Presidential elections on the Democratic share of circulation. Row (5) uses Gentzkow et al.'s (2011) estimate of the effect of the Democrat's share of circulation on the Democratic vote share in US Congressional races to compute the effect of a change in circulation equivalent to the upper bound of the confidence interval on the Democratic share of the vote in Congressional elections. Row (6) uses the entry model estimated in Gentzkow et al. (forthcoming) to estimate the average total cost, as a fraction of newspaper revenue, of a fixed-cost subsidy to firms choosing Democratic affiliation required to induce an equivalent change in circulation share. See section 5.2 for details.

Table 4: Decomposition of the effect of incumbent party on newspaper circulation share

		All state offices	
		Slope-change	On-impact
(1)	Baseline	-0.00001 (0.00842)	-0.018 (0.020)
(2)	Democratic share of newspapers	-0.0003 (0.0063)	0.033 (0.016)
(3)	Democratic share of newspaper entries	0.128 (0.083)	0.142 (0.048)
(4)	Democratic share of newspaper exits	0.095 (0.101)	-0.019 (0.049)
(5)	Ratio of Democrat to Republican mean subscription prices	0.008 (0.015)	0.020 (0.043)
(6)	Democratic share of circulation of continuing papers	-0.001 (0.003)	0.013 (0.036)
(7)	Ratio of Democrat to Republican mean number of pages per issue	-0.013 (0.018)	0.020 (0.045)
(8)	Democratic share of candidate mentions in Republican newspapers	-0.004 (0.033)	0.040 (0.070)
(9)	Democratic share of candidate mentions in Democratic newspapers	-0.037 (0.052)	-0.019 (0.104)

Notes: Data cover the 1869-1928 period unless otherwise specified. The sample is restricted to observations where the baseline outcome variable is non-missing. Standard errors in parentheses are clustered by state-decade. The specifications in column (1) parallel row (3), column (4) of table 1A, and the specifications in column (2) parallel row (1), column (4) of table 1B. The rows indicate the dependent variable used in the regression. The table reports estimates of the sum of the coefficients on indicators for Democratic incumbency. Row (1) presents the baseline results from table 1. Unlike all other rows, the outcomes in the first column of rows (3) and (4) are in levels, and the indicators for control of the state in the second column of rows (3) and (4) are in changes. Subscription prices are not available in 1880 and 1884. Number of pages is available 1869-1912. Mentions of presidential and vice-presidential candidates are available from 1872-1928. All specifications include presidential vote share indicators and year and state fixed effects.

Table 5: Estimates for samples with weak market incentives or strong political incentives

Panel A: Weak market incentives		Panel B: Strong political incentives	
All state offices		All state offices	
(1) Baseline	-0.00001 (0.00842)	(1) Baseline	-0.00001 (0.00842)
Counties with below-median :		Sub-samples:	
(2) Advertising price per copy	0.007 (0.009)	(2) Before 1900	-0.009 (0.017)
(3) Subscription price	0.018 (0.014)	(3) Only county seats	-0.002 (0.008)
(4) Income per capita	-0.010 (0.008)	(4) Only state capitals	0.006 (0.009)
(5) Literacy rate	-0.009 (0.010)	(5) Presidential battleground states	0.003 (0.009)

Notes: Standard errors in parentheses are clustered by state-decade. The specifications correspond to the all state offices specification in row (3) of table 1A. All specifications include presidential vote share indicators, state and year fixed effects. Row (1) contains the baseline results from table 1A. In rows (2) - (5) of Panel A we include in our dependent measure only those newspapers located in counties that are below the state median on the dimension shown. “Advertising price per copy” refers to the mean advertising price per copy across all newspaper-years in our data. “Subscription price” refers to the mean subscription price across all newspaper-years in our data. Both of these prices are deflated to real dollars using a GDP deflator. “Income per capita” refers to the sum of manufacturing output and agricultural output per capita averaged across the 1920 and 1930 Censuses. “Literacy rate” refers to the fraction literate averaged across the 1870 and 1900-1930 US Censuses. Rows (2) through (5) of Panel B restrict the sample of states, time periods, or newspaper locations as indicated. Presidential battleground states are those in which the presidential vote margin is at or below 10 percentage points in at least half of the presidential elections in our sample period.

Table 6: Reconstruction South  
 Panel A: Democratic share of circulation

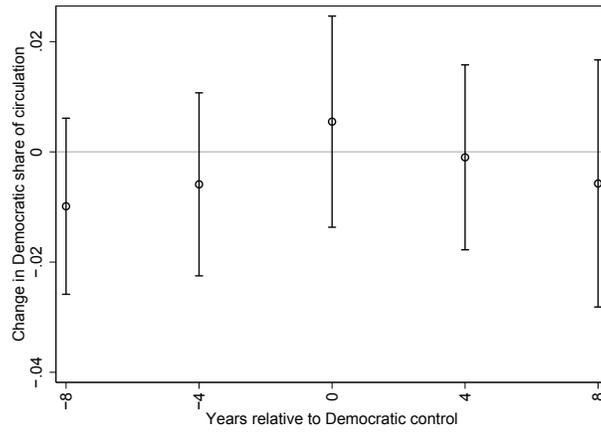
Specification	Daily newspapers		Weekly newspapers	
	Slope-change	On-impact	Slope-change	On-impact
	(1)	(2)	(3)	(4)
Democratic control of all state offices	-0.021 (0.013)	0.097 (0.050)	-0.031 (0.019)	0.188 (0.068)
[permutation p-value]	[0.058]	[0.000]	[0.001]	[0.000]
Number of state-years	83	83	77	88

Panel B: Democratic share of newspapers

Specification	Daily newspapers		Weekly newspapers	
	Slope-change	On-impact	Slope-change	On-impact
	(1)	(2)	(3)	(4)
Democratic control of all state offices	-0.017 (0.021)	0.119 (0.057)	-0.036 (0.014)	0.199 (0.055)
[permutation p-value]	[0.096]	[0.000]	[0.000]	[0.000]
Number of state-years	86	86	77	88

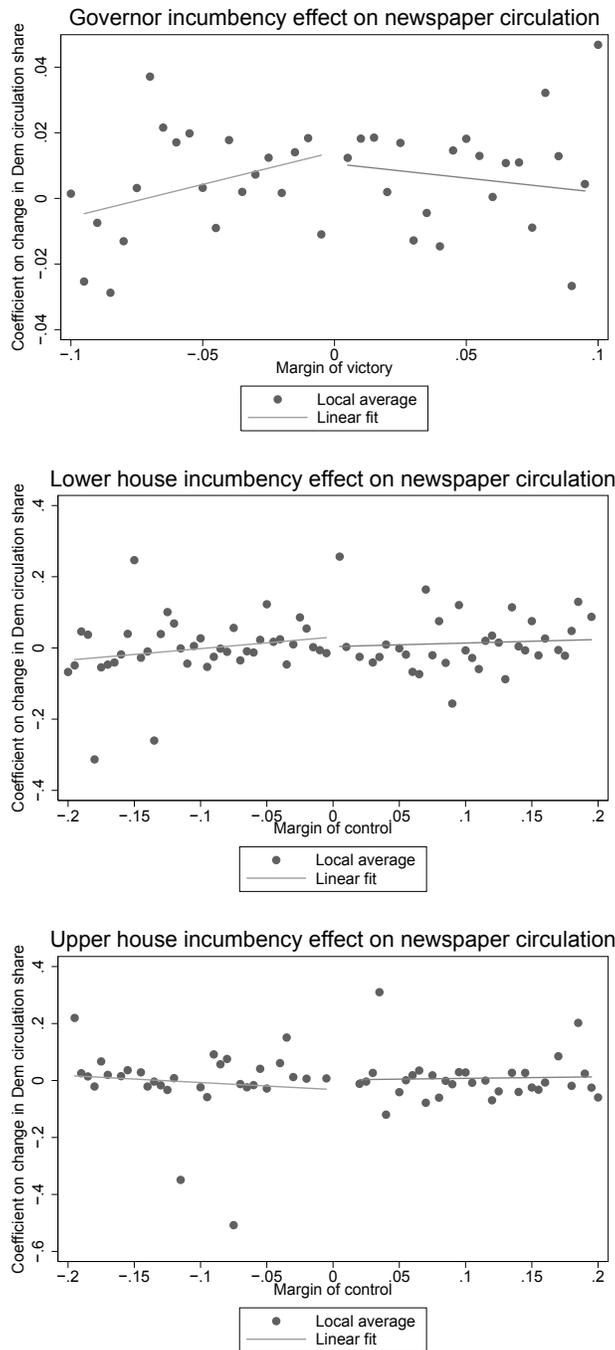
Notes: Data cover the 1869-1900 period. All specifications include state and year fixed effects. Standard errors in parentheses are clustered by state-decade. Permutation p-values in brackets are from a test of the null hypothesis of no effect of Democratic control based on 1000 permutations of the independent variable within state. In Panel A, the dependent variable is the change in the Democratic share of circulation of [daily/weekly] newspapers (slope-change specification) or the Democratic share of circulation of [daily/weekly] newspapers (on-impact specification). In Panel B, the dependent variable is the change in the Democratic share of [daily/weekly] newspapers (slope-change specification) or the Democratic share of [daily/weekly] newspapers (on-impact specification). The independent variable is a dummy for whether the year is after the Democrats first take control of the Governor's office and the upper and lower houses of the state legislature. Differences in sample size across panels are due to a small number of state-years in which no daily newspaper reports circulation. Differences in sample size between daily and weekly newspapers are due to (i) states with weekly newspapers and no daily newspapers and (ii) the fact that our weekly newspaper series ends in 1896, so that the change in weekly circulation share from 1896 to 1900 cannot be calculated.

Figure 1: Incumbency effect on newspaper circulation share - Panel estimates



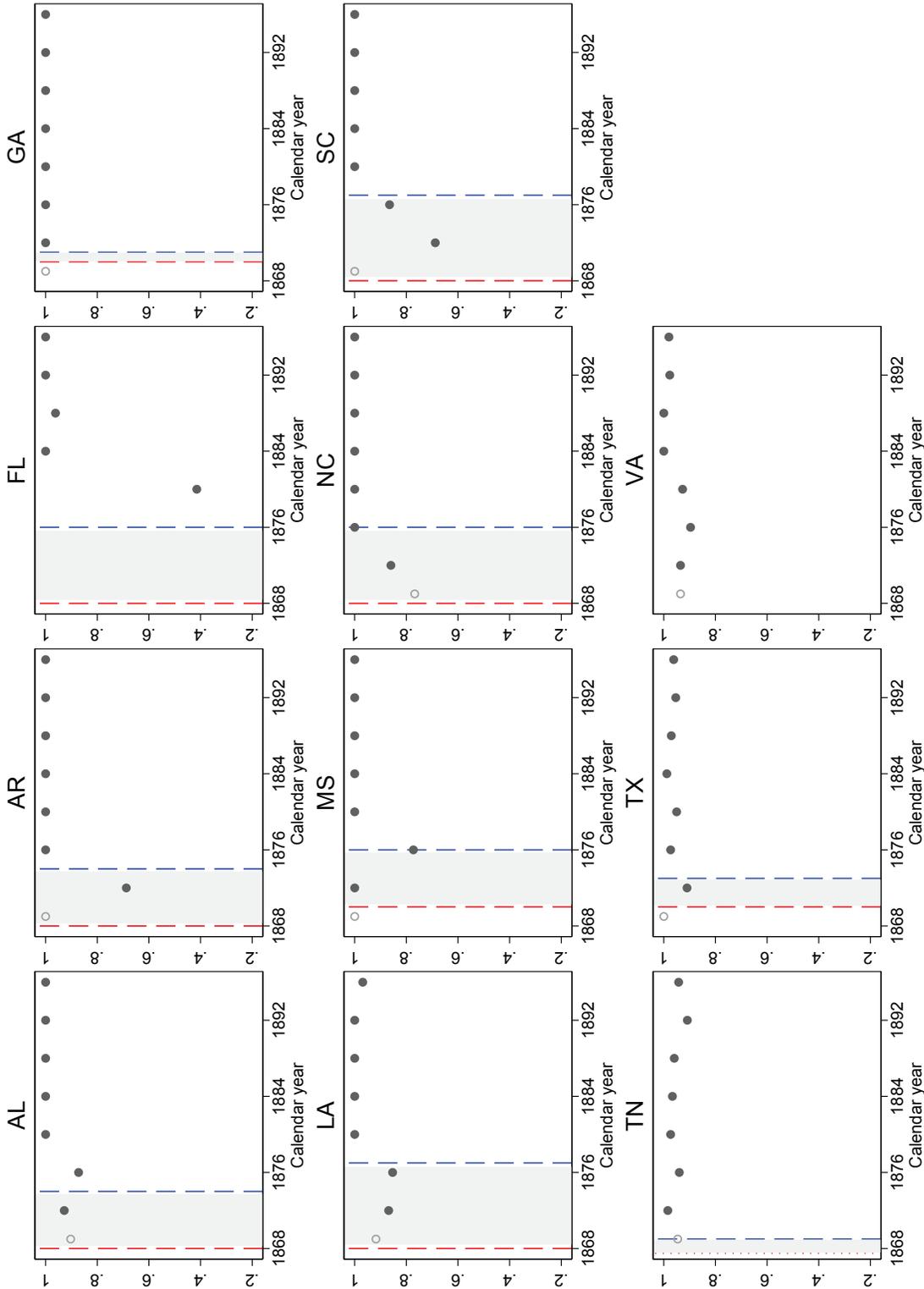
Notes: To construct this figure we augment the “all offices” specification of table 1A row (3) with leads and lags of the Democratic control indicators. We then plot the sum of the three state office indicators for each lead and lag coefficient along with their confidence intervals (constructed using standard errors clustered by state-decade).

Figure 2: Incumbency effect on newspaper circulation share - Regression-discontinuity estimates



Notes: Data points are constructed by regressing the dependent measure on a vector of indicators for whether the margin of victory (in the first panel) or control (in the second and third panels) falls in a given interval, averaged over the four-year period since the last presidential election. Following Lee (2008), the intervals are 0.005 in all three plots. The line shows the best linear fit allowing the slope to differ for positive and negative margins of victory.

Figure 3: Reconstruction South (Democratic share of daily circulation)



Notes: The figure shows the Democratic share of daily newspaper circulation by state and year. The red and blue dashed lines, respectively, reflect the years in which the Republicans and Democrats first took control of the state after the Civil War, where control is defined as occupying the governor's office and the majority of both houses of the state legislature. In Tennessee, Republicans took control of the state in 1866, indicated by the dotted red line. In Virginia there was never a Republican civilian government; federal occupation continued until late in 1869. In Alabama, partial control alternated between Republicans and Democrats between 1868 and 1874. In Texas, Florida and North Carolina, Democrats retook control of the legislature before they retook full control of the state government. Circulation data for daily newspapers is unavailable for South Carolina and Louisiana in 1869, and for Florida in 1876. There were no daily newspapers in Florida in 1869 and 1872. For papers that existed in both 1869 and 1872, but for which 1869 circulation is missing, 1869 circulation was replaced with 1872 circulation. This is indicated by the hollow circles for 1869.